Astah

Reference Manual

Ver. 7.1

Astah Professional

Astah UML

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Astah Reference Manual

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Introduction

This Manual, "Astah Reference Manual", briefly explains the functions of Astah and how to use them.

Astah Professional is a system design tool that supports UML (Unified Modeling Language) 2.x (partly), UML1.4, Flowchart, Data Flow Diagram, ER diagram, CRUD, Requirement diagram and Mind Map.

Astah UML is a modeling tool that supports UML (Unified Modeling Language) 2.x (partly), UML1.4 and Mind Map.

Structure of this Manual

- Chapter 1-3 Overview of Astah and getting started
- Chapter 4-6 Basic Astah concepts and Main Menu functions
- Chapter 7-13 Basic diagram and model operations
- Chapter14 Specific diagram and diagram element operations
- Chapter15-44 System set-up and specific Astah features

Note

- Functions with **[P]** are supported in Astah Professional only. These are not included in Astah UML.
- Functions with **[Not in Mac]** are not available in Astah for MAC
- .Please refer to Astah website (http://astah.net/) for the answers to frequently asked questions.

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1. Overview of Astah Functions

1. 1. Overview

Astah Professional is a system design tool that supports UML (Unified Modeling Language) 2.x (partly), UML1.4, Flowchart, Data Flow Diagram, ER Diagram, CRUD, Requirement Diagram, Requirement Table, Traceability Map and Mind Map.
Astah UML is a modeling tool that supports UML (Unified Modeling Language) 2.x (partly), UML1.4 and Mind Map.

- Creation of diagrams that conform to UML2.x
  - Sequence Diagram, Statemachine Diagram, Communication Diagram, Activity Diagram, Composite Structure Diagram
- Creation of diagrams that conform to UML1.4
  - Class Diagram (Object Diagram, Package Diagram, Robustness Diagram), UseCase Diagram, Component Diagram, Deployment Diagram
- Creation of other diagrams
  - Flowchart **[P]**/ Data Flow Diagram (DFD) **[P]** / ER Diagram **[P]** / CRUD**[P]** / Requirement Diagram**[P]** / Requirement Table**[P]** / Traceability Map**[P]**
  - Mind Map
- UseCase Descriptions
- Print to Multi-pages, Print to a Single Page, Print Preview
- **[Not in Mac]**Copy diagrams as EMF (Vector format) and paste onto Microsoft Office
- Save diagrams as PNG/JPEG/EMF/SVG
- Easy layout and alignment of Models
- Generation of Class Diagrams / Generation of detailed Class Diagrams
- Import Java source code / Generation of Java skeleton code
- Generation of C#, C++ skeleton code
- Document creation in HTML (javadoc) format and RTF format
- SQL Export, Entity Definition Report Export **[P]**
- Reference and edit of Astah API
- Project Merge
- Alias **[P]**
- XML Input-Output **[P]**
- External Tool **[P]**
- Reference Model Management and comparison with other projects **[P]**
- CRUD, CRUD statics report Export **[P]**
- Astah Command line tool (Export diagram images by Command line) **[P]**

1.Overview of Astah Functions

1. 2. Restrictions on Mac OS X

- Copying as EMF is not supported.
- RTF document generated by [Export RTF] is designed for Microsoft Office Word. When opening generated RT with a text editor, the images would not appear.
- While Aqua Look and Feel is applied, you can't drag diagram tabs to move them sideways.

2. Application Installation and Start-up

2. 1. Installing Astah

To start installing the Astah, double-click on the installer.

2. 2. Astah Start-up

i) Start-up from the Start Menu or the Astah Short Cut

Select Astah in the Start-up Menu or double-click on the Astah icon on the Desktop.

ii) Start-up by double-clicking on a Astah file

Double-click on an Astah file.

Note) Astah automatically checks software update information through HTTP access when starts launching.

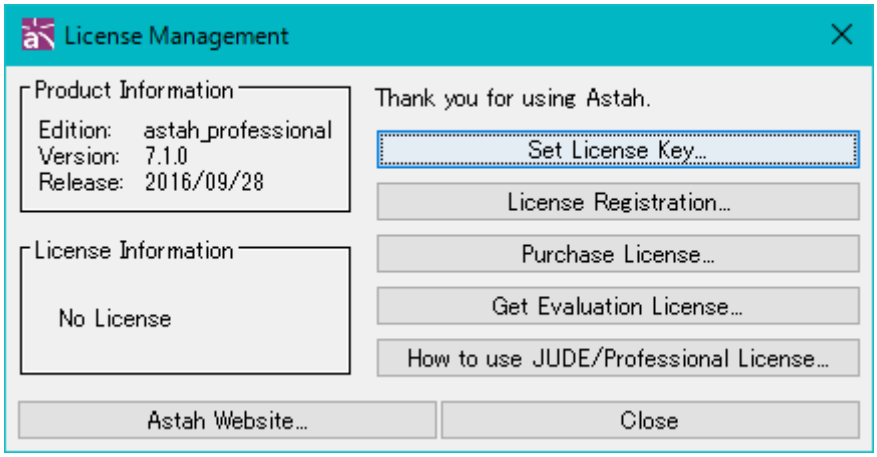
2. 3. Astah Model Version

Astah Model version can be referred by [Help]-[Version Information] in Main Menu. .asta files are upward compatible. If the file has been edited with a newer version, it cannot be opened with an older version.

To find out which model version of Astah was used for your .asta file, open the .asta file and then go to the project view of the project.

2. 4. License

If the license is not set in Astah, the "License Management" dialog comes up when starting Astah. If the license is already set in Astah, go to [tool] - [License Management] in the main menu. To set up the license, run Astah as Administrator.



2.Application Installation and Start-up

2. 4. 1. Setting the License Key

Select “Set License Key” in the “License Management” dialog and specify the license key (astah_professional_license.xml/astah_uml_license.xml/astah_engineering_license.xml) and click “Select License File”. After license is set up, your license will be copied to the directory as below:

If you have a Timed License or Node Count License :

Astah install directory

If you have other types of License :

User Home/.astah/professional (uml) directory

2. 4. 2. License Registration

To register a license and receive a license key, select “License Registration” in the “License Management” dialog.

2. 4. 3. How to get a License

(1) Select “Purchase License” in the “License Management” dialog
(2) Purchase a license from Change Vision’s distributors
(3) You will receive License Number and Validation Code
(4) Register them on the Astah Web site

2. 4. 4. Evaluation License

Select “Evaluation License” in the “License Management” dialog. Astah can be used on a trial basis for a limited period.

2. 4. 5. Using JUDE/Professional License [P]

You can use Astah Professional with JUDE/Professional as long as the Astah professional is released within your license support period. Select “How to use JUDE/Professional License” in the “License Management” dialog for details.

2. 4. 6. Node Count License

If you have Node Count License set up in Astah, activation will be required. You have to set up your network environment and administration before you execute the activation. Modification or deactivation of Node Count License can be done by [Tool] – [License]

dialog menu as well.

3. Creating and Using Project Files

3. 1. .asta File

Astah Project files contain an extension as ".asta" in name.

3. 2. Creating New Project Files

a. Using [File]- [New] in the Main Menu
b. Using [Create a new file] on the Tool bar

3. 2. 1. Creating Default Model Project

You can select which default project file to be opened when you create a new file. This can be specified in the System Properties

a. None
b. User Template
   Your customized project file saved in:
   USERHOME/.astah/professional(uml)/template/project/
c. Astah Built-in Template
   One of Astah pre-installed template files in Astah install folder/template/project/.
   (Java1.4.asta, Java5.asta, Java6.asta, Java7.asta, C_Sharp.asta and C++.asta)

3. 3. Creating Project by Template

To create a project by using template files, go to [File]-[New By Template] in the Main Menu. Which template you want to use can be selected in the menu.

a. Template file you customized
b. Recently-used file
c. Astah built-in template in Astah install folder/template/project/.

3. 4. Opening Existing Project Files

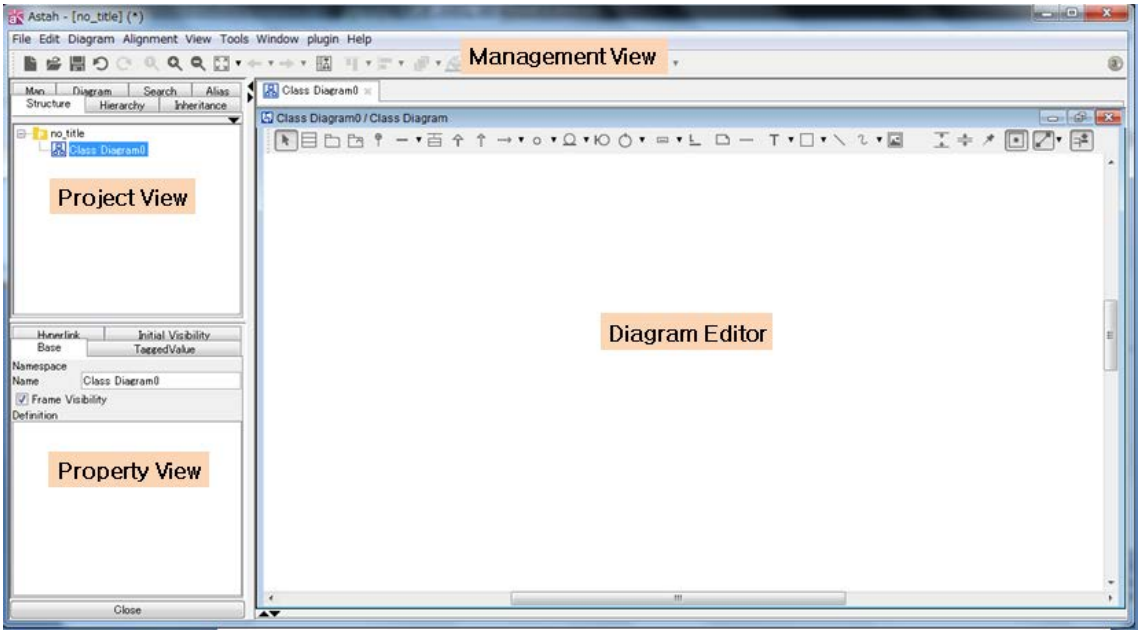
a. Using [File]-[Open] in the Main Menu
b. Using [Open a file] on the Tool bar
c. Select an existing Project from [File] in the Main menu
d. Drag a *.asta file to the Astah icon on the desktop
e. Drag a *.asta file to the Astah window

4. Basic Concepts

This chapter describes the fundamental components and the features of Astah.

4. 1. Fundamental Components

The window consists of “Management View”, “Project View”, “Property View”, and “Diagram Editor”.



4. 1. 1. Management View

The Management View is used for the basic operations of Astah. The Main Menu includes functions related to the whole Project, such as file operation and editing. Frequently used functions can also be found on the Tool Bar.

4. 1. 2. Project View

The Project View provides an overview of the whole Project. Tabs at the top can be used to switch the Project View between “Structure Tree”, “Hierarchy Tree **[P]**”, “Inheritance Tree”, “Map”, “Diagram”, “Search”, and “Alias” views **[P]**.

(a) Structure Tree

The Structure Tree View displays Models in a tree structure. Various operations can be carried out by using the Pop-up Menu of Model Elements.

(b) Hierarchy Tree [P]

The Hierarchy Tree View displays the hierarchy of Statemachine, Activity and Data

Flow Diagrams.

(c) Inheritance Tree

The Inheritance Tree View displays Models in a tree structure based on the inheritance relationships between Classes.

(d) Map

The Map View provides an overview of the Diagram that is opened in the Diagram Editor. The area displayed in the Diagram Editor can be specified by a right-drag. The Diagram in the Diagram Editor can be scrolled using a left-drag. This function is especially useful for big Diagrams that do not fit in the screen.

(e) Diagram

The Diagram View provides a list of all Diagrams included in the Project.
Diagrams can be opened in the Diagram Editor by selecting them in this view.

(f) Search

This view is used to search for Model Elements in the Project or to replace a string that is included in the names of Model Elements and invalid hyperlinks.

(g) Alias [P]

This view is used to set aliases to Model Elements in the Project.

4. 1. 3. Property View

The Property View is used to display and edit the properties of Model Elements.
Select the target Model in the Structure Tree or in the Diagram Editor for the same project.

4. 1. 4. Diagram Editor

The Diagram Editor is used to edit Diagrams and Models. Multiple Diagrams can be opened in the Diagram Editor. Use Tabs on the top to switch between Diagrams.

4. 2. Basic Concepts

4. 2. 1. Model and Diagram Element

Elements in Projects, such as Classes or UseCases, are called Model or Diagram Element. Model is an element that exists in the project, in contrast, Diagram Element is a notation that represents the Model in diagrams.

A Model can be represented in multiple diagrams as Diagram Elements and each Diagram Element can have different color or size.

4. 2. 2. “Delete from Diagram” and “Delete from Model”

[Delete from Diagram] deletes a target Diagram Element from the Diagram. [Delete from Model] deletes a target Model from the Project completely.

4. 2. 3. Copying and Pasting

When copying and pasting models of Class Diagrams, UseCase Diagrams, ER Diagrams and DataStores/External entities of Data Flow Diagrams within a same file, they would be copied as “Diagram Elements”, and Models themselves would be shared between original and copied Diagram Elements. In other diagrams except ones listed above or when you copy and paste models from one Astah to the another, both Models and Diagram Elements would be copied.

5. Main Menu

The Menu items in the Main Menu are [File], [Edit], [Diagram], [Alignment], [View], [Tool], [Window] and [Help]. Each Menu item is briefly explained below.

5. 1. File

[File] is used for general Input-Output functions.

5. 1. 1. New [Ctrl+N]

Create a new Project.

5. 1. 2. New By Template

Create a new Project by using a template file.

5. 1. 3. Open

Open an existing Project.

5. 1. 4. Save [Ctrl+S]

Save a Project. When saving a project for the first time, its name will be a top diagram's name in the structure tree.

5. 1. 5. Save As

Save a Project with a different name.

5. 1. 6. Close

Close a Project.

5. 1. 7. Merge Project

Merge two different Projects.

5. 1. 8. Reference Model Management [P]

Import other projects as read-only.

5. 1. 9. Compare Project [P]

Compare two projects.

5. 1. 10. Print Setup (Project)

Set up printing options for the Project.

5. 1. 11. Print Setup (Diagram)

Set up printing option for current diagram.

5. 1. 12. Print Preview

View the print preview of the Diagram displayed in the Diagram Editor.

5. 1. 13. Print [Ctrl+P]

Print the Diagram displayed in the Diagram Editor.

5. 1. 14. Preview Multi

View the print preview of multiple Diagrams at the same time.

a. Print Preview Multi-Diagram

b. Print Preview Multi-UseCase Description

c. Print Preview Multi-CRUD [P]

d. Print Preview Multi-Requirement Table [P]

5. 1. 15. Print Multi

Print multiple Diagrams at the same time.

a. Print Multi-Diagram

b. Print Multi-UseCase Description

c. Print Multi-CRUD [P]

d. Print Multi-Requirement Table [P]

5. 1. 16. Exit [Ctrl+Q]

Exit Astah.

5. 1. 17. Recently used Projects

The 5 most recently used Projects are listed.

5. 2. Edit

[Edit] is used to edit Models.

5. 2. 1. Undo [Ctrl+Z]

Undo the most recent edit.

5. 2. 2. Redo [Ctrl+Y]

Undo the most recent [Undo] action.

5. 2. 3. Copy [Ctrl+C]

Copy Diagram Elements in the Diagram Editor.

5. 2. 4. Copy to Clipboard

Data can be copied to the clipboard in one of these formats: “Graphics (BMP, PNG)” and

"Extended Meta File (EMF)". *EMF is not supported in Mac.

a. BMP, PNG [Ctrl+Alt+C]

Copy the selected Diagram Elements to the Clipboard in a graphic format.

b. [Not in Mac] EMF [Ctrl+Shift+C]

Copy the selected Diagram Elements to the Clipboard in Extended Meta File (EMF) format.

5. 2. 5. Paste [Ctrl+V]

Pastes copied Diagram Elements to a Diagram. Diagram Elements can only be pasted into Diagrams in which they can be created.

5. 2. 6. Copy Style

Copy the style of Diagram Elements to a Diagram.

5. 2. 7. Paste Style

Paste copied style of Diagram Elements to a Diagram.

5. 2. 8. Delete from Model [Ctrl+D]

Delete the selected Diagram Elements from the Diagram Editor and the Models.

5. 2. 9. Delete from Diagram [Delete]

Delete the selected Diagram Elements from the Diagram Editor.

5. 2. 10. Line Style

a. Line [Ctrl+L]

Using [Line], Diagram Elements are connected with straight or polygonal lines.

b. Line (Right Angle) [Ctrl+E]

Using [Line (Right Angle)], Diagram Elements are connected with right-angle lines.

c. Curve

Using [Curve], Diagram Elements are connected with curved lines.

d. Curve (Right Angle)

Using [Curve (Right Angle)], Diagram Elements are connected with right-angle curved lines.

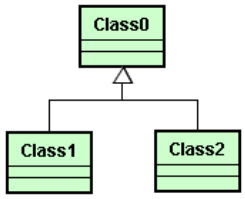
5. 2. 11. Generalization Style

When a Class is inherited by multiple Classes, the Line Styles can be selected from

[Vertical Shared],[Horizontal Shared] or [Separated].

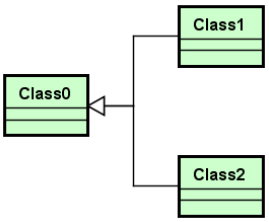
a. Vertical Shared

Depict multiple Generalization Lines as integrated Lines as shown on the right.



b. Horizontal Shared

Depict multiple Generalization Lines as integrated Lines as shown on the right.



c. Separated

Depict multiple Generalization Lines as separated Lines.

5. 2. 12. Stereotype

Stereotype Notation can be selected from [Normal], [Normal Icon], and [Customized Icon].

a. **Normal** Stereotypes are displayed with guillemets ("<<", ">>").
b. **Icon** Diagram Elements are displayed with Astah standard Icons.
c. **Customize** Diagram Elements are displayed with user-specific Icons.

5. 2. 13. Set Color

Set up the colors of selected Diagram Elements in the Diagram Editor.

5. 2. 14. Set Line Color

Change colors of Lines in the Diagram Editor.

5. 2. 15. Set Font Color

Change colors of texts.

5. 2. 16. Set Color for Stereotype

Set up the colors of Diagram Elements for each Stereotype.

5. 2. 17. Search on Diagram [Ctrl+F]

Search Model Elements in the diagram with text.

5. 2. 18. Select All [Ctrl+A]

Select all Diagram Elements in current Diagram.

5. 2. 19. Depth Arrangement

Change orders of overlapped Diagram Elements in the diagram.

(1) Bring to Front

Move the selected Diagram Element to the top.

(2) Bring Forward

Move the selected Diagram Element one step closer to the front.

(3) Send Backward

Move the selected Diagram Element one step back.

(4) Send to Back

Send the selected Diagram Element to the back of all the Diagram Elements.

5. 3. Diagram

Using the [Diagram] menu, a diagram can be created under the selected Model and opened in the Diagram Editor. The following Diagrams can be created:

a. Class Diagram
b. Use Case Diagram
c. Statemachine Diagram
d. Activity Diagram (New Activity Diagram, Template Activity Diagram)
e. Sequence Diagram
f. Communication Diagram
g. Component Diagram
h. Deployment Diagram
i. Composite Structure Diagram
j. Flowchart (New Flowchart, Template Flowchart) **[P]**
k. Data Flow Diagram (New Data Flow Diagram, Template Data Flow Diagram) **[P]**
l. ER Diagram **[P]**
m. CRUD **[P]**
n. Mind Map (New Mind Map, Template Mind Map)
o. Requirement Diagram **[P]**
p. Requirement Table **[P]**

5. 4. Alignment

5. 4. 1. Align Horizontally

This aligns multiple Diagram Elements horizontally in the Diagram Editor.

a. Align Top [Ctrl+Alt+Up]

Align selected Diagram Elements with the top end of the highest Diagram Element.

b. Align Horizontal Center [Ctrl+Alt+Minus(-)]

Align Diagram Elements along the midpoint between the highest and lowest Diagram Elements

c. Align Bottom [Ctrl+Alt+Down]

Align selected Diagram Elements with the bottom end of the lowest Diagram Element.

d. Align Horizontal Even

Horizontally align Diagram Elements with even spacing.

5. 4. 2. Align Vertically

This aligns multiple Diagram Elements vertically in the Diagram Editor.

a. Align Left [Ctrl+Alt+Left]

Align Diagram Elements with the left side of the leftmost Diagram Element.

b. Align Vertical Center [Ctrl+Ctrl+I]

Align Diagram Elements along the midpoint between the leftmost and rightmost Diagram Elements.

c. Align Right [Ctrl+Alt+Right]

Align Diagram Elements with the right side of the rightmost Diagram Element.

d. Align Vertical Even

Vertically align Diagram Elements with even spacing between the highest and lowest Diagram Elements.

5. 4. 3. Adjust Size

a. Adjust Width

Adjust the width of Diagram Elements so that they are the same width as the widest Diagram Element.

b. Adjust Height

Adjust the height of Diagram Elements so that they are the same height as the highest Diagram Element.

c. Adjust Size

Adjust the size of Diagram Elements by inputting the size or by selecting a particular

Element.

5. 4. 4. Auto Layout

[Auto Layout] is used to automatically rearrange all Diagram Elements in the Diagram Editor.

5. 4. 5. Partial Auto Layout

[Partial Auto Layout] is used to automatically rearrange the selected Diagram Elements in the Diagram Editor.

5. 5. View

Set up and change the view of the Diagram Editor or the Structure Tree.

5. 5. 1. Zoom [Ctrl+1]

Restore the default Zoom rate (100%) of the Diagram displayed in the Diagram Editor.

5. 5. 2. Zoom In [Ctrl+[]

Enlarge the Diagram displayed in the Diagram Editor.

5. 5. 3. Zoom Out [Ctrl+]]

Shrink the Diagram displayed in the Diagram Editor.

5. 5. 4. Fit to Window

Make the diagram to fit in the window of the Diagram Editor.

(1) Fit to Window [Ctrl+0]
Make the whole diagram fit in the Diagram Editor.

(2) Fit to Window Width
Adjust the width of diagram to fit in the width of the Diagram Editor.

(3) Fit to Window Height
Adjust the height of diagram to fit in the height of the Diagram Editor.

5. 5. 5. Back to Previous Editor [Alt+Left]

See the previous Diagram Editor.

5. 5. 6. Forward to Next Editor [Alt+Right]

See the next Diagram Editor.

5. 5. 7. Show/Hide Project View

Show or hide the Tree and View included in Project View.

a. Project View [Ctrl+Shift+P]

b. Structure Tree [Ctrl+Shift+S]

c. Inheritance Tree [Ctrl+Shift+G]

d. Map View [Ctrl+Shift+M]

e. Diagram View [Ctrl+Shift+D]

f. Search View [Ctrl+Shift+H]

5. 5. 8. Look & Feel

Change the Look & Feel (the appearance and usability). This function only supports Look & Feel Styles that are supported by the running environment.

- Metal
- Nimbus
- CDE/Motif
- Windows
- Windows Classic

5. 5. 9. Alias [P]

Select names to display in Diagram Elements on the Diagram Editor.

a. Name

Display names in the Diagram Elements.

b. Alias1 (or Name)

Display Alias1s in the Diagram Elements. If Alias1 is not set, the original name is used.

c. Alias2 (or Name)

Display Alias2s in the Diagram Elements. If Alias2 is not set, the original name is used.

5. 6. Tool

The Tool Menu is used to perform operations on Diagrams and to set up the System

Properties in “System Properties”.

5. 6. 1. Export Image

Save Diagram as a Graphic file.

5. 6. 2. Export Html (javadoc) [Ctrl+T]

Generate an API Document of the current Project in HTML (javadoc) format.

5. 6. 3. Export CSV

Export the Class, Attribute, Operation and the UseCase List in CSV (Comma Separated Values) format.

5. 6. 4. XML Input & Output [P]

Input and output XML Project files in XMI 1.1 format.

5. 6. 5. Export RTF

Generate an API Document of the Project in RTF format.

5. 6. 6. Mindmap

a. Export RTF

Generate an API Document of Mindmap in RTF format.

b. Export PowerPoint

Generate a PowerPoint of Mindmap.

5. 6. 7. Java

a. Import Java

Import files with .java extension to generate the Classes (Model Elements) and the Parent Packages.

b. Export Java

Generate Java Skeleton Code from the selected items. Class and Method Definitions are output as Documentation Comments.

5. 6. 8. C#

a. Export C#

Generate C# Skeleton Code from the selected items. Class and Method Definitions are output as Documentation Comments.

5. 6. 9. C++

a. Export C++

Generate C++ Skeleton Code from the selected items. Class and Method Definitions are output as Documentation Comments.

5. 6. 10. ER Diagram [P]

a. Export Sql　Export SQL from ER diagrams.

b. Set ER Data Type　Set the data type for ER diagrams.

c. Add ER Domains　Add multiple ER domains at once.

d. Export Entity Definition Report

Export Entity Definition Report from the ER diagrams.

e. Convert ER Model to UML Model

f. Convert UML Model to ER Model

5. 6. 11. CRUD [P]

a. Export CRUD to Excel

b. Export CRUD Statistics to Excel

5. 6. 12. Requirement [P]

a. Import Requirement Table from Excel

b. Export Requirement Table to Excel

5. 6. 13. Traceability Map [P]

a. Open Traceability Map

b. Update All Traceability Maps

c. Delete All Traceability Maps

d. Export RTF : Generate an API Document of Traceability Maps in RTF format.

5. 6. 14. Set Template

Set up the following Templates.

a. UseCase Description

b. Flow Symbol [P]

c. Mindmap Style

5. 6. 15. Search Invalid Hyperlinks

Search Invalid Hyperlinks in Project File.

5. 6. 16. Import User Defined TaggedValue [P]

Import the TaggedValues to Models.

5. 6. 17. External Tool [P]

Configure to run External Tools on Astah.

5. 6. 18. Correct Model

a. Check Invalid Models

[Check Invalid Models] is used to scan the whole project to see if there are any invalid models which are created by software bugs from previous versions. This function is not for to check or correct the consistency of UML. If you continue to use Astah with invalid models in, an exception error may occur. When any invalid models are detected, you can decide if you want to correct them or not.

b. Correct Invalid Models

[Correct Invalid Models] is used to delete or restore invalid Models that exist in the Project because of bugs in a previous version. This function is not for to check or correct the consistency of UML.

c. Reset All Models ID

[Reset All Models ID] is used to reset all the ID of models. Backup is recommended before you execute this command.

- When a file is cloned, cloned models would have identical IDs as the original model's even after their names have been changed. So when you merge projects (including the merge of Reference Model Management), original models and cloned models are considered as same models as they have the same ID's. This command will reset the ID's of all the models, so it avoids the problem on merge of two different models with the same IDs.
- This command shouldn't be done more than once toward one project.

5. 6. 19. License

Set up Astah Licenses.

5. 6. 20. Project

a. Set Project Properties

Set up the properties of current project.

b. Synchronize Project Properties

Synchronize the properties of current project with the setting of System Properties.

c. Set Icon for Stereotype [P]

Register images and use them as stereotype icon.

d. Default Font

Set font to use in current project.

5. 6. 21. System Properties

Set up the System Properties of Astah.

5. 7. Window

[Window] is used to organize currently opened windows in Diagram Editor.

5. 7. 1. Close Close the window that is currently edited.

5. 7. 2. Close Left Tabs Close all windows in the left side of currently edited window.

5. 7. 3. Close Right Tabs Close all windows in the right side of currently edited window.

5. 7. 4. Close Others Close all windows except one that is currently edited.

5. 7. 5. Close All Close all windows.

5. 7. 6. Alignment

a. Horizontal Align all windows horizontally in Diagram Editor.

b. Vertical Align all windows vertically in Diagram Editor.

c. Tile Align all windows in square shapes horizontally and vertically.

5. 8. Help

[Help] is used to display

- “Ask a Question” (Astah Support)
- “Astah Reference Manual”
- “TIPS & TRICKS”
- “Bug Information”
- “Plugin List”
- “Software Update Information”
- “Version Information”

6. Tool Bar

Frequently used commands from the Main Menu are listed as buttons on the Tool Bar. These buttons are called “Tool Buttons”.

(1)		[Create a new file] Create a new Project.
(2)		[Open a file] Open an existing Project.
(3)		[Save to a file] Save a Project.
(4)		[Undo] Undo the most recent action.
(5)		[Redo] Cancel the most recent [Undo] command.
(6)		[Zoom to Default] Display the Diagram in the Diagram Editor by default (100%).
(7)		[Zoom in current Diagram Editor] Zoom in a Diagram in the Diagram Editor.
(8)		[Zoom out current Diagram Editor] Zoom out a Diagram in the Diagram Editor.
(9)		[Fit to Window], [Fit to Window Width], [Fit to Window Height] Scroll/Zoom to fit the whole Diagram in the size of the Diagram Editor.
(10)		[Back to Previous Editor] Display the previous editor.
(11)		[Forward to Next Editor] Display the next editor.
(12)		[Show/Hide Project View] Show/Hide Project View.
(13)		[Align Top/Horizontal Center/Bottom/Horizontal Even/Height] Align Diagram Elements horizontally.

6.Tool Bar

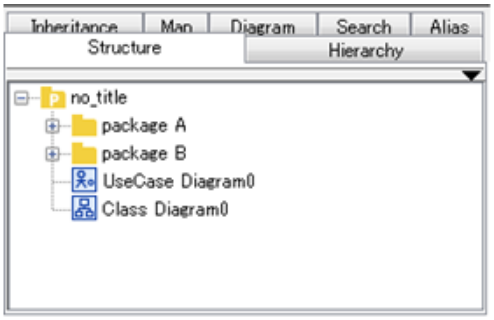
(14)		[Align Left/Vertical Center/ Right/Vertical Even/Width] Align Diagram Elements vertically.
(15)		[Bring to Front], [Bring Forward], [Send Backward], [Send to Back] Change the order of overlapped Diagram Elements.
(16)		[Set Color] Set color to selected Diagram Elements.
(17)		[Set Line Color] Set Line color to selected lines.
(18)		[Set Font Color] Set Font color to selected texts.
(19)		[Line], [Line (Right Angle)], [Curve], [Curve (Right Angle)] Connect Diagram Elements with straight, right-angle, polygonal, curved lines or right-angle curved line.
(20)		[Vertical Style] [Horizontal Style] [Separate Style] Depict multiple Generalization lines as integrated or separated lines.
(21)		[Stereotype Normal], [Stereotype Icon], [Stereotype Customize] [P] Switch the way to depict Model Elements with stereotype.
(22)		[Add Mini Icon] Add Mini Icon to Diagram Elements.

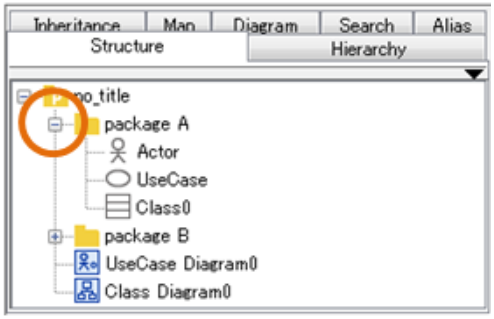
7. Structure Tree

Diagrams/Models can be created and controlled using the [Structure Tree] in the "Project View".

7. 1. Opening Nodes of the Structure Tree

Model Elements with child elements, such as Packages or Classes, are depicted as Nodes.





7. 2. Opening Diagrams

7. 2. 1. Open a Diagram by selecting it

Double-click on the target Diagram or right-click on the target Diagram and select [Open Diagram].

7. 2. 2. Open a Diagram by selecting it under Packages

1. Right-click on the target Package (or Project) and select [Open Diagram]
2. All the Diagrams under the Package are listed
3. Select a Diagram to open from the list

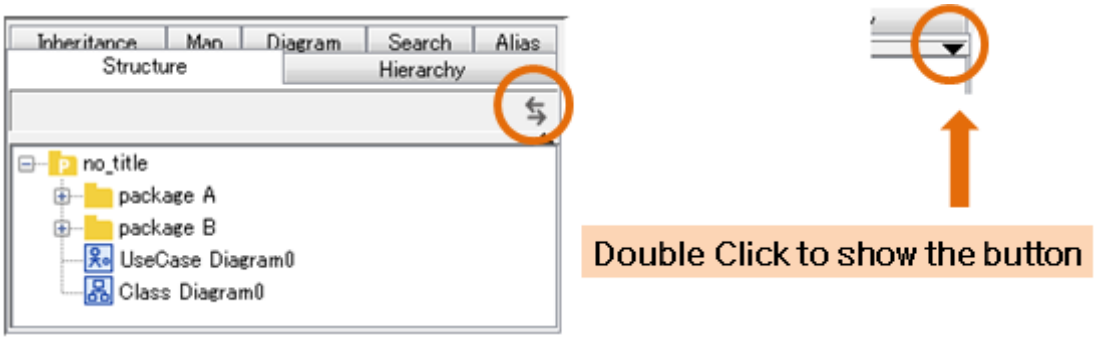
7. 2. 3. Open all the Diagrams under a Package

Right-click on the target Package (or Project) and select [Open All Diagrams]

7. 3. Synchronize with Diagram Editor

Synchronize a selection of a Diagram or Diagram Elements on Diagram Editor with Structure Tree.

7.Structure Tree



7. 4. Creating Diagrams/Models

a. Right-click on the target node in the Structure Tree and select [Create Diagram] or [Create Model]. And select a Diagram Type or a Model Type.

Note1) Diagrams and Models are created directly under the selected node. Models with the same name cannot be created under the same parent element.
Note2) UseCase Descriptions are displayed under UseCase in the Structure Tree.

Parent Node	Possible Child Diagrams/Models
Project	Package Model Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] ExternalEntity [P] DataStore [P]

7.Structure Tree

	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] Data Flow Diagram (DFD) [P] CRUD [P] ER Diagram [P] Mind Map Requirement Diagram [P] Requirement Table [P]
Package	Package Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] ExternalEntity [P] DataStore [P]

7.Structure Tree

	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] Data Flow Diagram (DFD) [P] CRUD [P] Mind Map Requirement Diagram [P] Requirement Table [P] Traceability Map [P]
Model	Model Package Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] ExternalEntity [P] DataStore [P]

7.Structure Tree

	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] Data Flow Diagram (DFD) [P] CRUD [P] Mind Map Requirement Diagram [P] Requirement Table [P] Traceability Map [P]
Subsystem	Model Package Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] ExternalEntity [P] DataStore [P] Operation

7.Structure Tree

	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] Data Flow Diagram (DFD) [P] CRUD [P] Mind Map Requirement Diagram [P] Requirement Table [P] Traceability Map [P]
Class Interface Actor	Attribute Operation Property Nested Class
	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] CRUD [P] Mind Map Traceability Map [P]
Operation	Statemachine Diagram Activity Diagram Sequence Diagram

7.Structure Tree

	Communication Diagram Flowchart [P]
UseCase	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart [P] CRUD [P] Mind Map Traceability Map [P]
ER Model (Note 1) [P]	Entity
	ER Diagram CRUD
Domain Model (Note 1)	Domain [P]
Component	Traceability Map [P]
Artifact	
Node	
ExternalEntity	
DataStore	
Entity [P]	Attribute (Primary Key) Attribute
	Traceability Map
Requirement [P]	Requirement

	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart **[P]** Data Flow Diagram(DFD) **[P]** CRUD Mind Map Requirement Table **[P]** Requirement Table **[P]** Traceability Map **[P]**
TestCase **[P]**	TestCase
	Class Diagram UseCase Diagram Statemachine Diagram Activity Diagram Sequence Diagram Communication Diagram Component Diagram Deployment Diagram Composite Structure Diagram Flowchart **[P]** CRUD **[P]** Mind Map Traceability Map **[P]**

7. 5. Moving Diagrams/Models

Model can be transferred by dragging & dropping them in the Structure Tree or from the Structure Tree into the Diagram Editor. Models can only be moved to Nodes where the target Model can be created. Models cannot be moved to a destination that already contains another Model with the same name.

7.Structure Tree

Diagrams/Models to move	Possible Destination
Class Diagram UseCase Diagram Component Diagram Deployment Diagram Composite Structure Diagram Mind Map	Project Package Model Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P]
Statemachine Diagram Activity Diagram Flowchart Sequence Diagram Communication Diagram	Project Package Model Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] Operation
ER Diagram [P]	ER Model
CRUD [P]	Project Package Model Subsystem Class Interface Actor UseCase Requirement [P] TestCase [P] ER Model [P]
Package	Project

7.Structure Tree

Subsystem UseCase Component Node Requirement [P] TestCase [P] ExternalEntity [P] DataStore [P] Data Flow Diagram (DFD) [P]	Package Model Subsystem
Requirement Diagram [P]	Project Package Model Subsystem Requirement [P]
Model	Project Model Subsystem
Class Interface Actor	Project Package Model Subsystem Class Interface Actor
Attribute	Class Interface Actor
Operation	Class Interface Actor Subsystem

7. 6. Editing the Names of Diagrams/Models

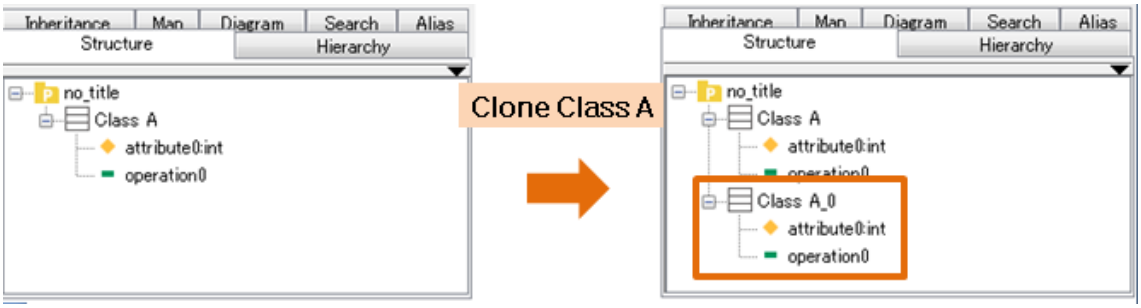
Right-click on the target Element and select [Modify Name].

7. 7. Deleting Diagrams/Models

Right-click on the target Element and select [Delete].

7. 8. Cloning Models

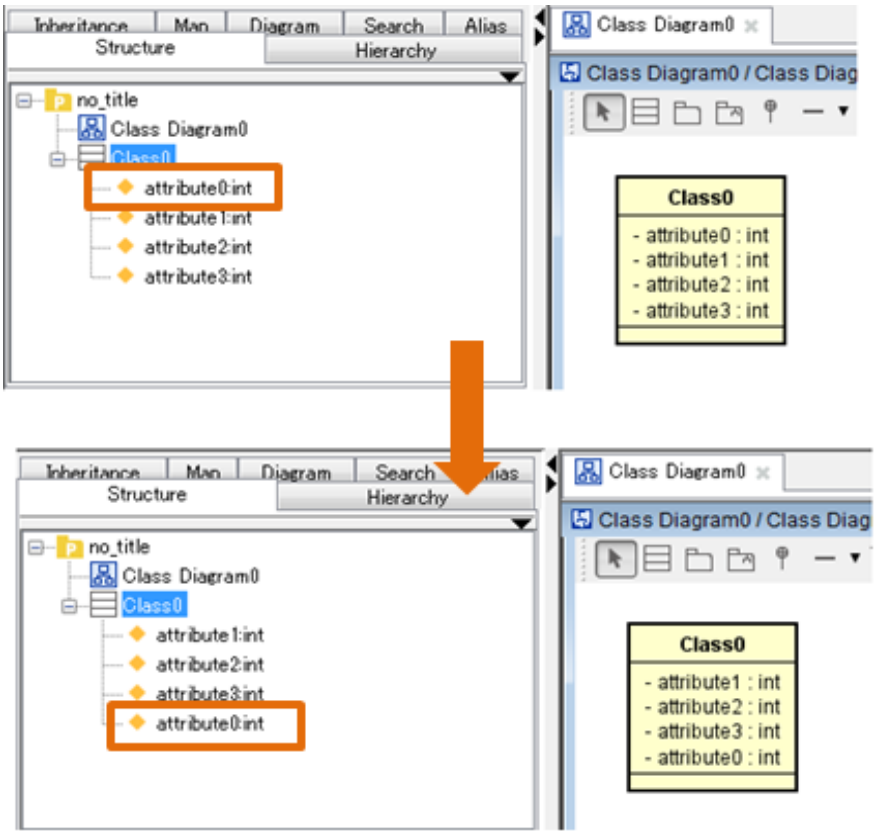
Right-click on the target model and select [Clone]. The clone will be created with the name “Original Name_(number)”. The “(number)” part is incremented automatically.



7. 9. Rearranging Operations/Attributes

Attributes and Operations can be rearranged by doing Drag & Drop them in the Structure Tree.

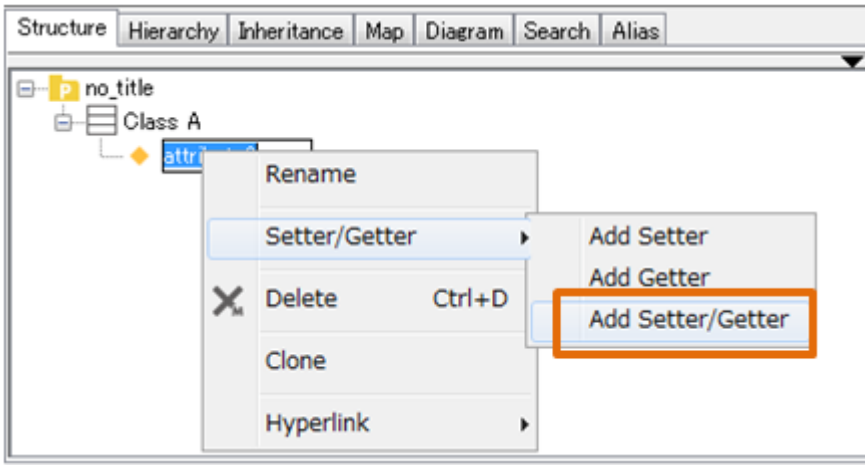
i.e.) Moving an attribute4



7. 10. Creating Setters/Getters of Attributes

(1) Right-click on the target Attribute in the [Structure Tree]

(2) Select [Setter/Getter] and click an Operation (Setter/Getter)



7. 11. All Related Diagrams

(1) Right-click on target model in the [Structure Tree] and select [All Related Diagrams]

(2) A list of diagrams where the selected model is drawn appears. By selecting one of the diagrams, you can open it in Diagram Editor with the target model selected.

7. 12. Setting Mind Map Style

(1) Right-click on Mindmap in the [Structure Tree] and select [Set Mindmap Style]

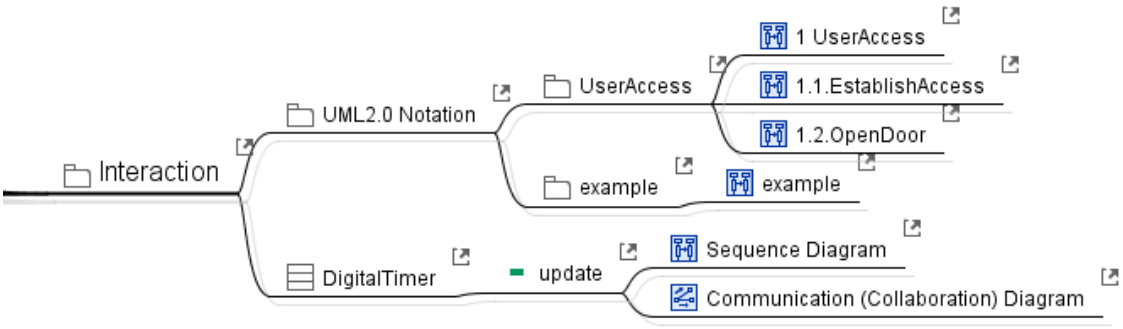
(2) Set the Mindmap style in the [Set Mindmap Style] dialog

7. 13. Creating Artifact Map

(1) Right-click on the project in the [Structure Tree] and select [Create Artifact Map]

(2) An artifact map is displayed in the Diagram Editor and hyperlinks are set to each element

(e.g..) Artifact Map

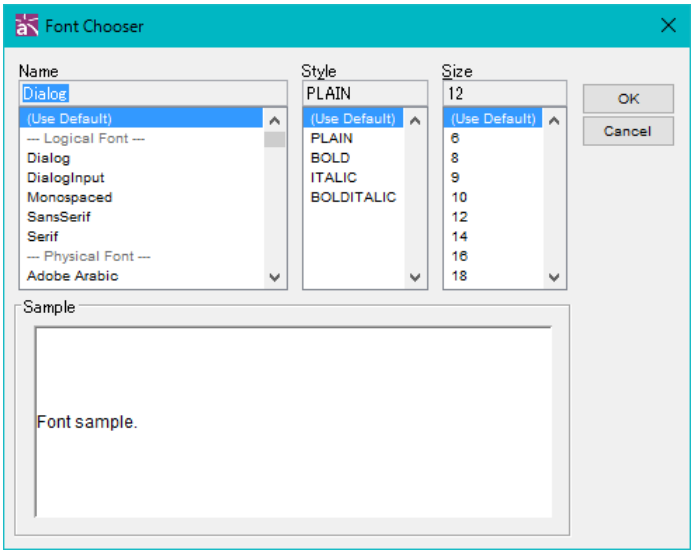


7. 14. Setting Font

(1) Right-click on the project in the Structure Tree and select [Set Font]

(2) Set the font in [Font Chooser] dialog

This applies for all the model elements. When font is changed, all the size of model elements will be adjusted automatically.



Available font size is from 6 to 18.

Font can be also set in the Property view of the Project.

Once the large size font is set, it may no longer be adjusted by the [Auto Resize] option.

The setting of font works for all diagrams except Mind Map. To change the font for Mind Maps, use the Mindmap Style Template

7. 15. Print Setup (Project)

(1) Right-click on the project in the Structure Tree and select [Print Setup (Project)]

(2) Specify the way you like this project to be printed in [Print Setup (Project)] dialog

7. 16. Apply Current Project Style to Items

Right-click on the project in the Structure Tree and select [Apply Current Project Style to Items].The Project Style (This can be set in the [Set Property (Project)] in the Project's Pop-up menu or the [Project Setting] tab of Project's Property will be applied for the existing models.

7. 17. Set Property (Project)

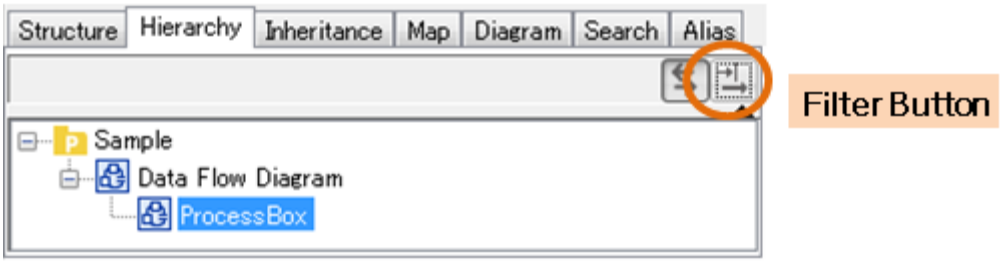
Right-click on the project in the Structure Tree and select [Set Property (Project)] and specify the style for project.

7. 18. Synchronize Property (Project)

Right-click on the project in the Structure Tree and select [Synchronize Property (Project)] to synchronize the setting of System Properties to the current project.

8. Hierarchy Tree [P]

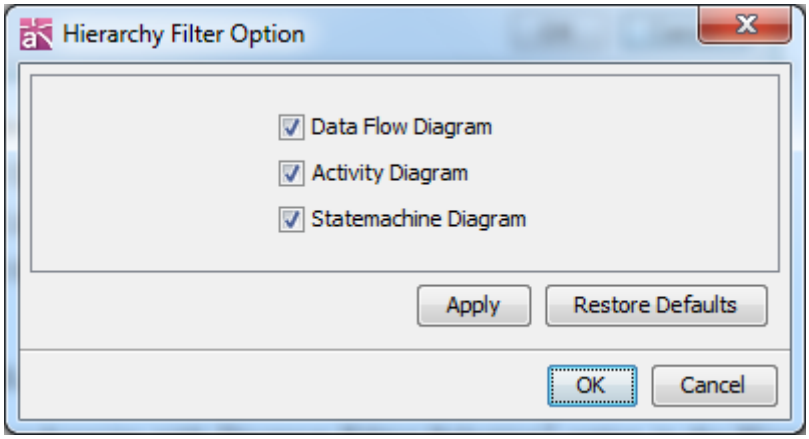
Hierarchy Tree displays the hierarchy of Statemachine, Activity and Data Flow Diagrams.



8.1. Hierarchy Tree Functions

8.1.1. Filtering Aliases

To set the Hierarchy Tree options, click [Filter] button in the Hierarchy Tree tab.



The Hierarchy Filter Option dialog is used to set diagrams.

(1) Data Flow Diagram

(2) Activity Diagram

(3) Statemachine Diagram

8.1.2. Selecting Hierarchy Tree

[Synchronize with Diagram Editor Selection] option in the Hierarchy tab can be used to select models in the Hierarchy Tree when the Diagram Elements are selected.

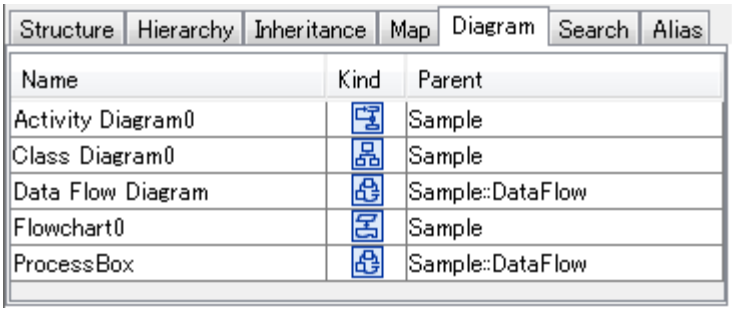
9. Diagram (List)

In [Diagram], all diagrams in the Project are listed.

9. 1. Opening Diagrams

To open a diagram, double-click on the target diagram.

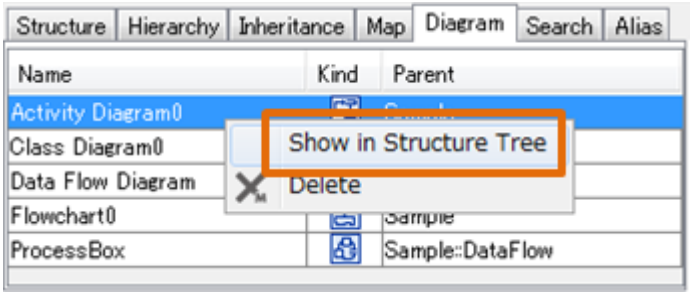
9. 2. Updating the List



The list does not automatically update while it is on even though new diagrams are created. To update the list, click [Update].

9. 3. Jumping to Models on the Structure Tree

You can jump to where the diagram is in the Structure Tree by right-clicking on the diagram and selecting [Show in Structure Tree] from its Pop-up menu.



9. 4. Deleting Diagrams

Diagrams can be deleted using the Pop-up Menu. Right-click on the target diagram and select [Delete].

10. Search and Replace

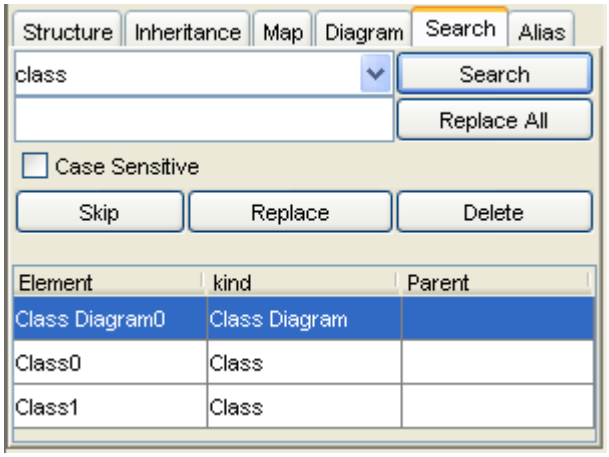
To search model elements or hyperlinks in the Project and replace strings contained in the names by using [Search] in the "Project View".
To search model elements in the Diagram with strings, use the [Search Bar] in the Diagram Editor.

10. 1. [Search] Tab

In this tab, you can search model elements or hyperlinks in the Project and replace strings contained in the names.

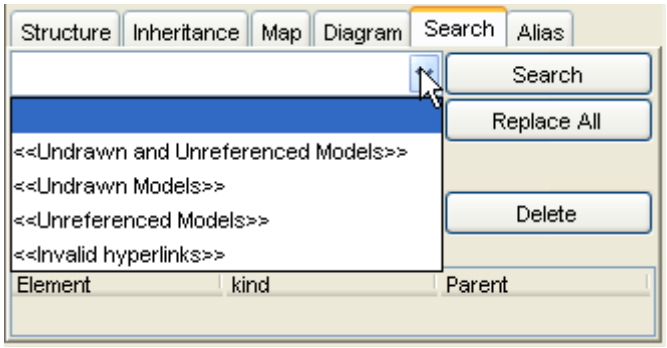
10. 1. 1. Search by Strings

Enter key strings that are included in the name of the target model element and click [Search]. To distinguish between Capital or non-capital letters, check [Case Sensitive].



10. 1. 2. Additional Search Options

The following search options can be selected from the combobox.



(1) **<<Undrawn and Unreferenced Models>>**

Search for the Models that are not drawn in Diagrams and that are not referred by

other Diagram Elements.

(2) **<<Undrawn Models>>**

Search for the Models that are not drawn in Diagrams.

(3) **<<Unreferenced Models>>**

Search for the Models that are referred by other Diagram Elements.

(4) **<<Invalid Hyperlinks>>**

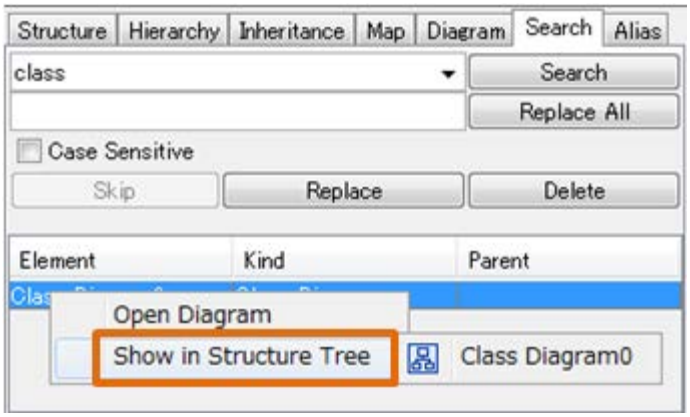
Search for the disabled hyperlinks.

10. 1. 3. Jumping to Diagram Elements

Right-click on the search results and select [Open Diagrams].

10. 1. 4. Jumping to Models on the Structure Tree

Right-click on the target search result and selecting [Show in Structure Tree]. And, select a Diagram from the list.



10. 2. Replace

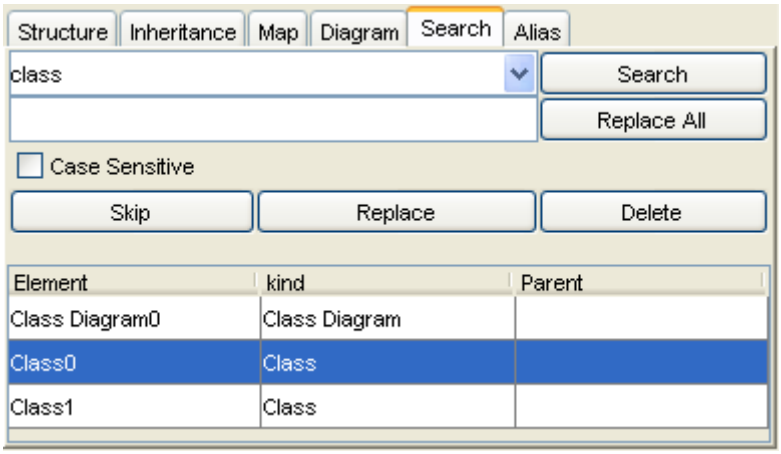
Strings that are included in the names of model elements can be replaced as follows:

(1) Search model elements

(2) From the search result, select a target model element

(3) Enter a string in the replace text box and click [Replace]

10.Search and Replace

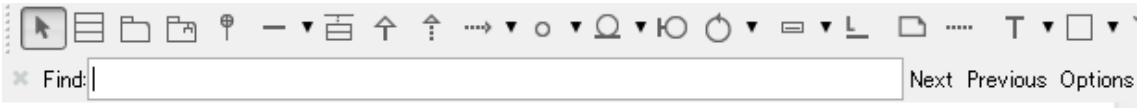


Replace All

To replace the names of all the model elements displayed in the search result, click [Replace All].

10. 3. Search Bar

You can directly search Diagram Models on the Diagram by typing texts. Press down [Ctrl + F] or select [Edit] – [Search on Diagram] from Main Menu after you open the Diagram(*) you want to search in. As a search result, the text includes the keyword will be highlighted. (*) Except UseCase Description, CRUD and Requirement Table.



10. 3. 1. Search Box

Enter Text you want to search for.

- [x]: Close the Search bar
- [Next] button: Move to next result (Shortcut key: Enter key)
- [Previous] button: Move to previous result (Shortcut key: Enter + Shift key)
- [Option] button: Open the option dialog

  Case Sensitive Default: OFF

  Include Folded Topics (Mind Map) Default:OFF

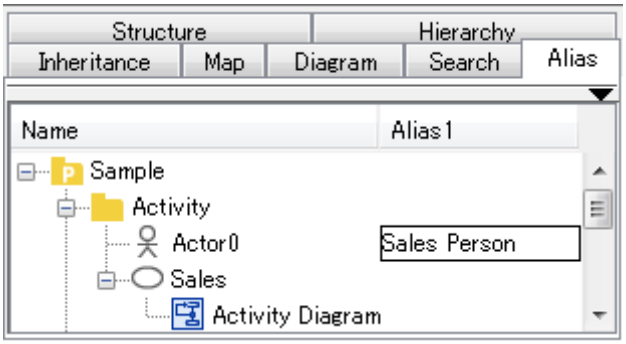
11. Alias Function [P]

Aliases can be set to model elements by using [Alias] in the “Project View”.

11. 1. Editing Aliases

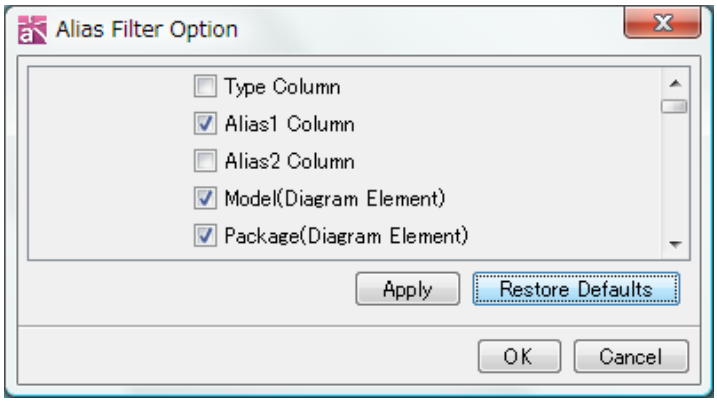
11. 1. 1. Inputting Aliases

To set Aliases, double-click on the Alias column.



11. 1. 2. Filtering Aliases

To set the Alias options, click [Filter] button in the right top of the Alias tab.



The Alias Filter Option dialog is used to set columns and models.

1) Type Column

2) Alias1 Column

3) Alias2 Column

4) Model (Diagram Element)

5) Package (Diagram Element)

6) SubSystem (Diagram Element)

7) Diagram

8) Class

9) Attribute

10) Operation
11) Parameter
12) Template Parameter
13) Association
14) Association End
15) Qualifier
16) Generalization
17) Usage
18) Realization
19) Dependency
20) InstanceSpecification
21) Link
22) Link End
23) UseCase
24) Extend
25) Include
26) Extension Point
27) Entity
28) Domain
29) Primary Key
30) Other Key
31) External Entity
32) Data Store
33) Requirement
34) TestCase
35) Note
36) Text

11. 1. 3. Selecting Alias Tree

[Synchronize with Diagram Editor Selection] option in the Alias tab can be used to select models in the Alias Tree when the Diagram Elements are selected.

11. 2. Displaying Aliases

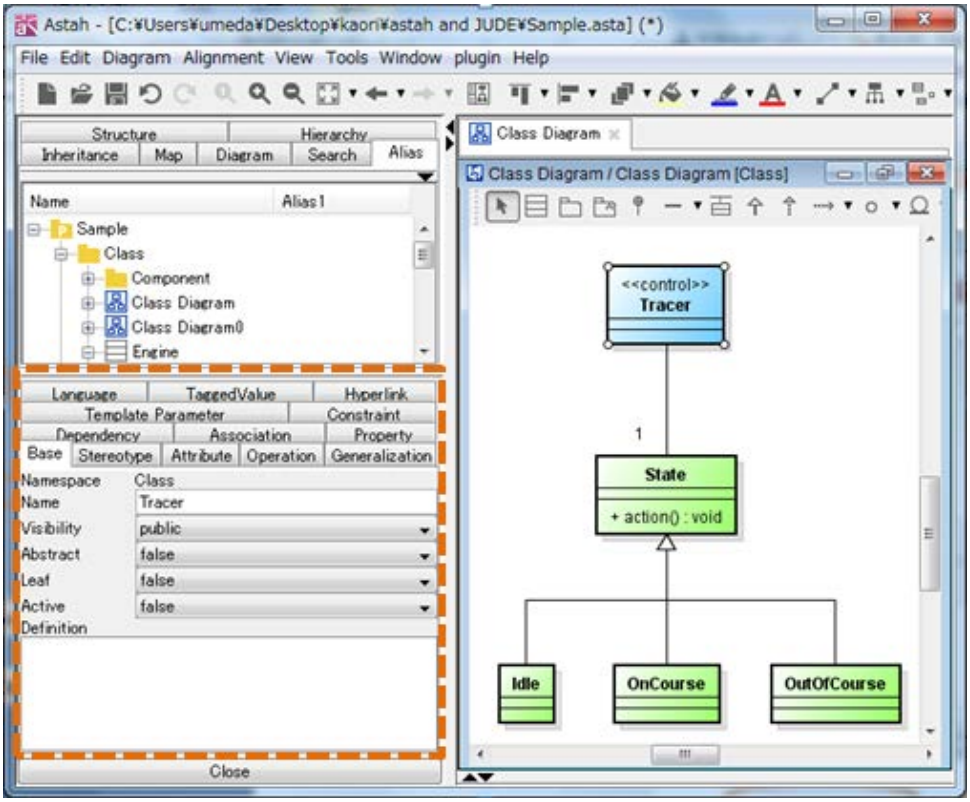
To display Aliases, select the following menu on the Main Menu in [View] - [Alias].
1) Name 2) Alias1 (or Name) 3) Alias2 (or Name)

12. Property View

The Property View displays properties of the selected Model Element or Diagram. Model information can be edited in the Property View.

12. 1. Displaying Properties

To display the properties of a Model Element or a Diagram, select the target Model Element or the Diagram Element in the Project View or the Diagram Editor.

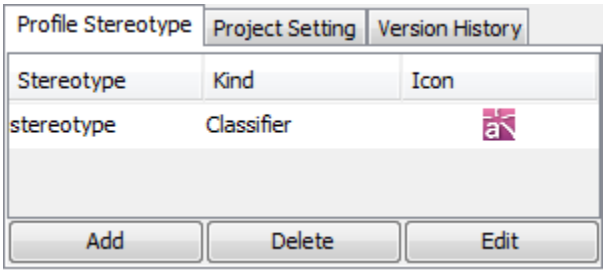


12. 2. Structure of Properties

Several Tabs are displayed in the Property View. The structure depends on each Model Element or Diagram. For example, the Property View for a Class contains the following 10 Tabs: [Base], [Stereotype], [Attribute], [Operation], [Generalization], [Dependency], [Association], [Property], [Template Parameter], [Constraint], [Language], [TaggedValue] and [Hyperlink].

12. 3. Project File Properties

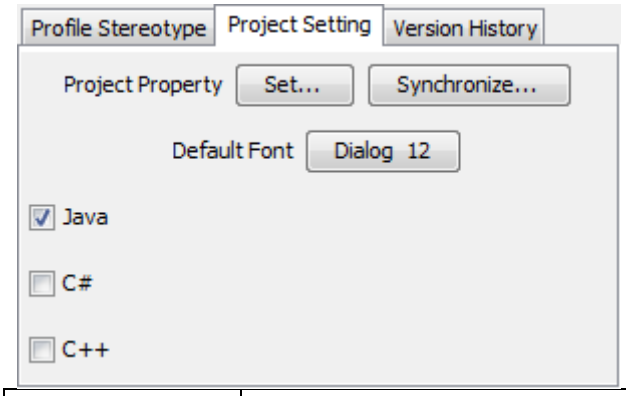
12. 3. 1. [Profile Stereotype] Tab [P]



Element	Function
Stereotype	Display Stereotype
Kind	Specify the kind whether it is a Classifier or an Action
Icon	Display customized Icon
Add	Add a new Stereotype
Delete	Delete the selected Stereotype
Edit	Edit the profile stereotype

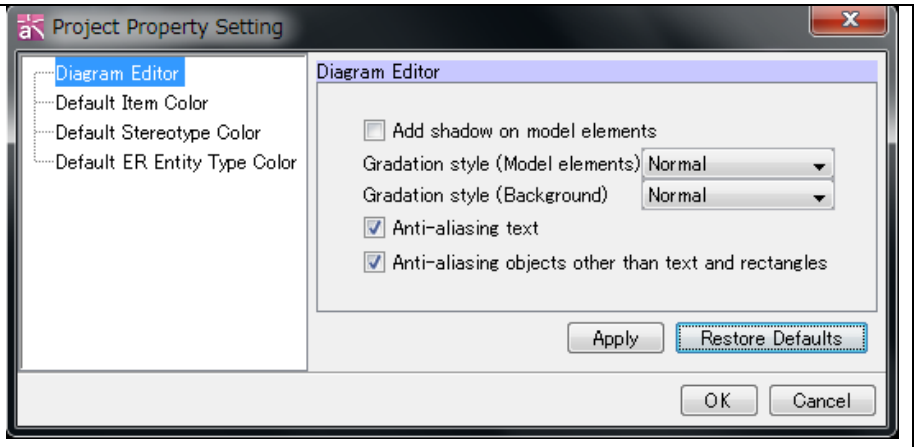
-> Please refer to the Customized Icons for how to set customized Icons.

12. 3. 2. [Project Setting] Tab

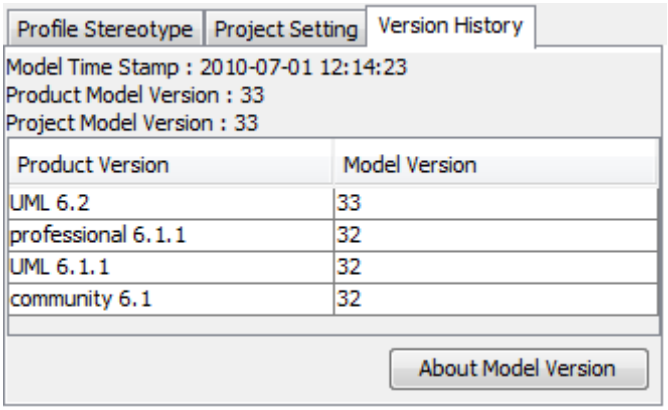


Element	Function
ProjectProperty [Set]	Opens the [Project Property Setting] window where you can specify the property of the project.

12.Property View

	 Property Information listed below from the [System Properties] will be saved for each project file. Diagram Editor Default Item Color Default Stereotype Color Default ER Entity Type Color
Project Property [Synchronize]	This synchronizes the System Property settings to the Project Property Setting of current opened project file.
Java	By checking on the checkbox of Java, Class, its Attributes and Operations can be created in Java language. By taking the check off the box, the specific attributes that are defined by Java language will be all cleared.
C#	By checking on the checkbox of C#, Class, its Attributes and Operations can be created in C# Language. By taking the check off the box, the specific attributes that are defined by C# language will be all cleared.
C++	By checking on the checkbox of C++, Class, its Attributes and Operations can be created in C++ Language. By taking the check off the box, the specific attributes that are defined by C# language will be all cleared.

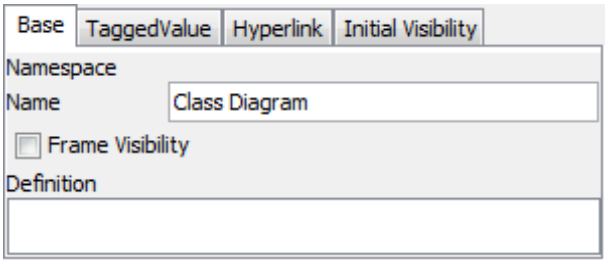
12. 3. 3. [Version History] Tab



Element	Function
Model Time Stamp	Display the model time stamp.
Product Model Version	Display the model version of Astah you currently use.
Project Model Version	Display the model version of the current project.
Product Version	Display the all product versions that the current file has been modified with.
Model Version	Display Model Versions of the Product Versions
About Model Version	Access to Astah Webpage about Model Version

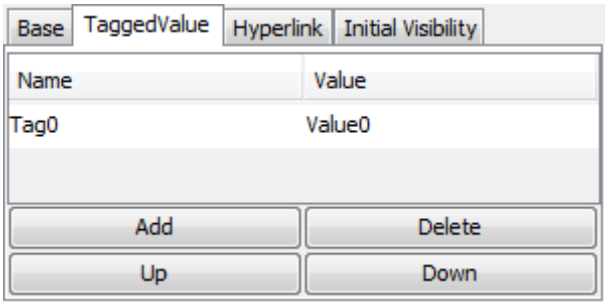
12. 4. Class Diagram Properties

12. 4. 1. [Base] Tab



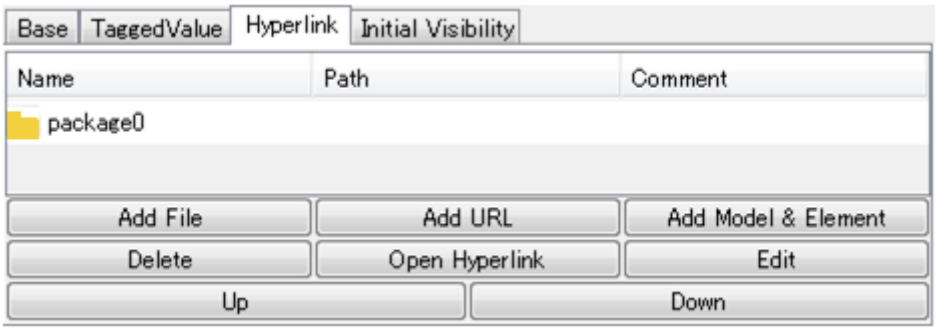
Element	Function
Namespace	Display the Namespace
Name	Edit the Class Diagram Name
Frame Visibility	Specify whether the Frame is displayed
Definition	Edit the Definition

12. 4. 2. [TaggedValue] Tab [P]



Element	Function
Name	Edit the TaggedValue Name
Value	Display the Tagged Value
Add	Add a new Tagged Value
Delete	Delete selected Tagged Value
Up/Down	Rearrange the order of Tagged Value.

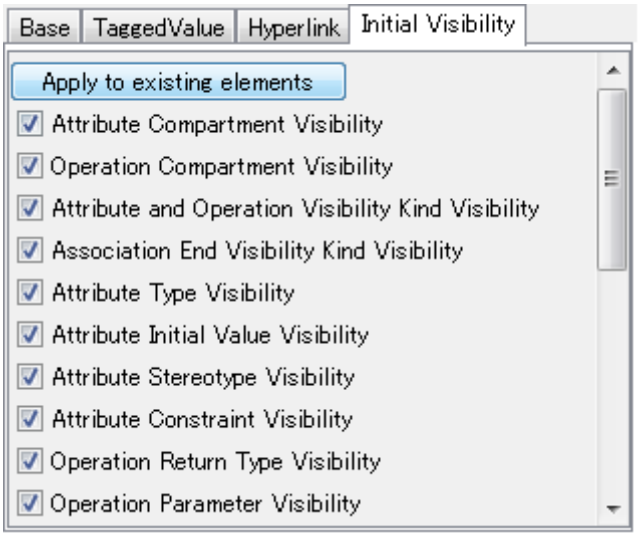
12. 4. 3. [Hyperlink] Tab



Element	Function
Name	Edit the Hyperlink name
Path	Display the Path of the Hyperlink
Comment	Edit comment
Add File	Add Hyperlink file
Add URL	Add Hyperlink URLs
Add Model & Element	Add Hyperlink models or model elements
Delete	Delete selected Hyperlink
Open Hyperlink	Open selected Hyperlink
Edit	Edit Hyperlink

-> Please refer to the Hyperlinks for more detail.

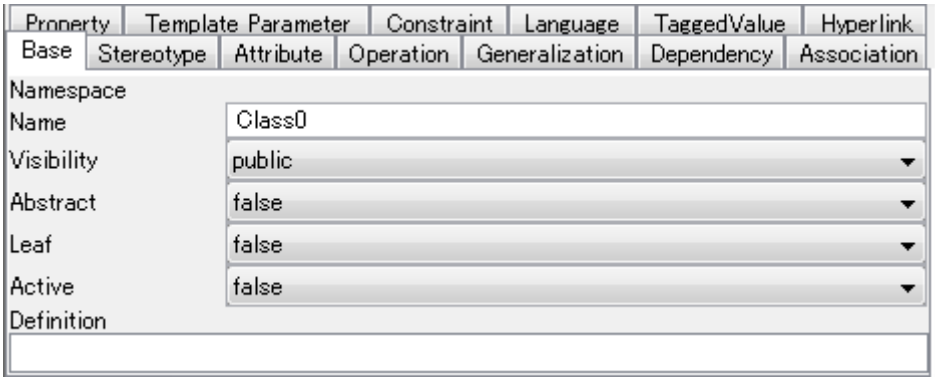
12. 4. 4. [Initial visibility] Tab



The visibility of some models on Class diagrams can be set. Check on the box of models you want them to appear on the diagram. When creating a new Class Diagram, the setting of System Properties - Initial Visibility 1 applies to this tab. By pressing [Apply to existing elements], you can apply this visibility setting to the existing model elements in the diagram which is open.

12. 5. Class Properties

12. 5. 1. [Base] Tab

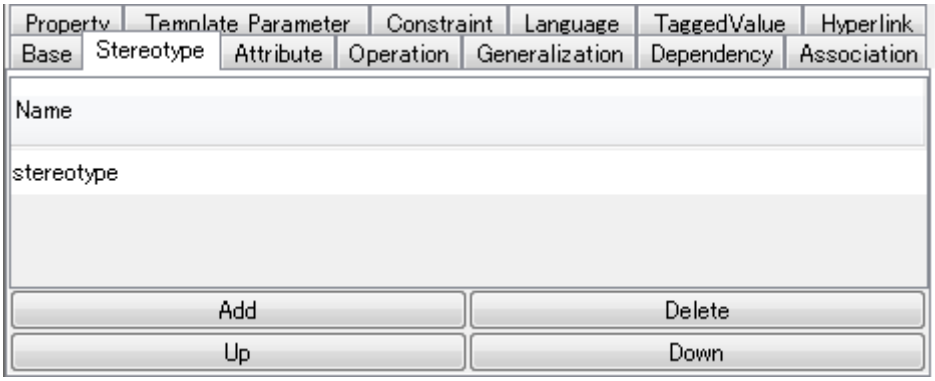


Element	Function
Namespace	Display the name of model which the Class belongs to
Name	Edit the Class Name
Visibility	Specify the visibility, “public”, “protected”, “package” or “private”

12.Property View

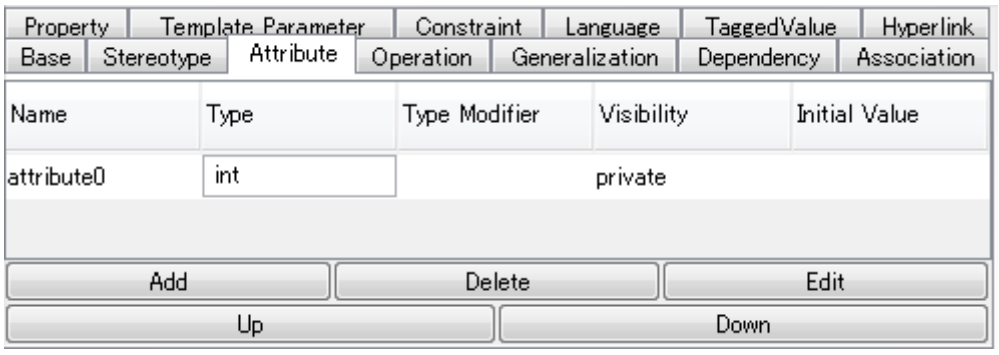
Abstract	Specify whether the target is an abstract Class or not
Leaf	Specify whether the target is a leaf Class or not
Active	Specify whether the target is active or not
Definition	Edit the Definition. The Definition will be exported as a comment when executing [Export Java].

12. 5. 2. [Stereotype] Tab



Element	Function
Name	Edit the Stereotype Name
Add	Add a new Stereotype
Delete	Delete selected Stereotype
Up/Down	Rearrange the order of Stereotypes

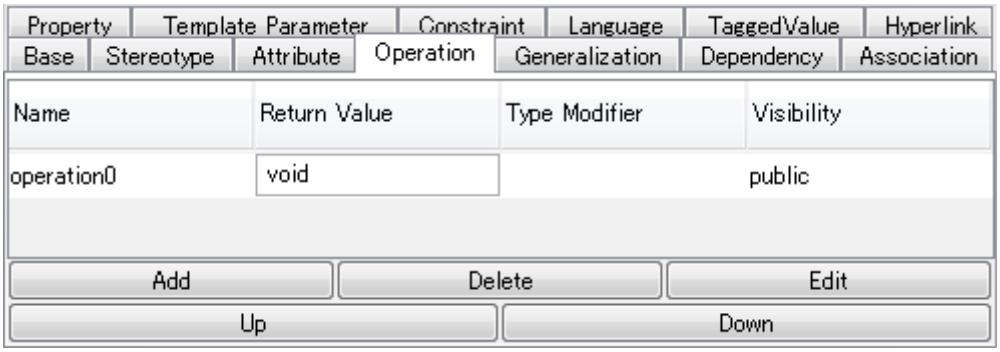
12. 5. 3. [Attribute] Tab



Element	Function
Name	Edit the Attribute Name
Type	Edit the type. Select a type in the combobox or input a type name directly. If a new type is entered, the Class is automatically

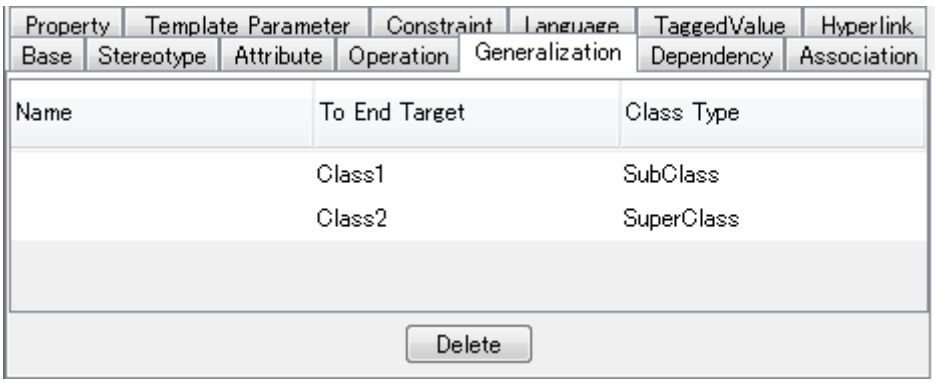
	created under the same Package.
Type Modifier	Edit Type Modifier. (*, **, &)
Visibility	Specify the visibility, “public”, “protected”, “package” or “private”
Initial Value	Specify the initial value for the Attribute
Add	Add a new Attribute
Delete	Delete selected Attribute
Edit	Open properties of selected Attribute
Up/Down	Rearrange the order of Attributes

12. 5. 4. [Operation] Tab



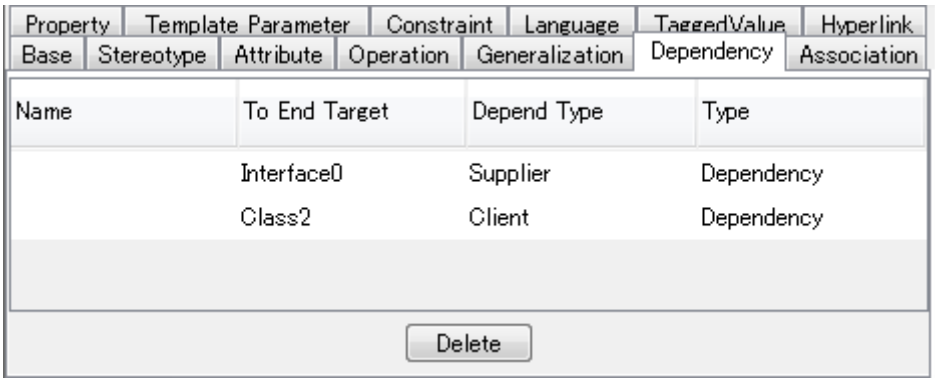
Element	**Function**
Name	Edit the Operation Name
Return Value	Edit the return value type
Type Modifier	Edit Type Modifier (*, **, &)
Visibility	Specify the visibility, “public”, “protected”, “package” or “private”
Add	Add a new Operation
Delete	Delete selected Operation.
Edit	Open properties of selected Operation
Up/Down	Rearrange the order of Operations.

12. 5. 5. [Generalization] Tab



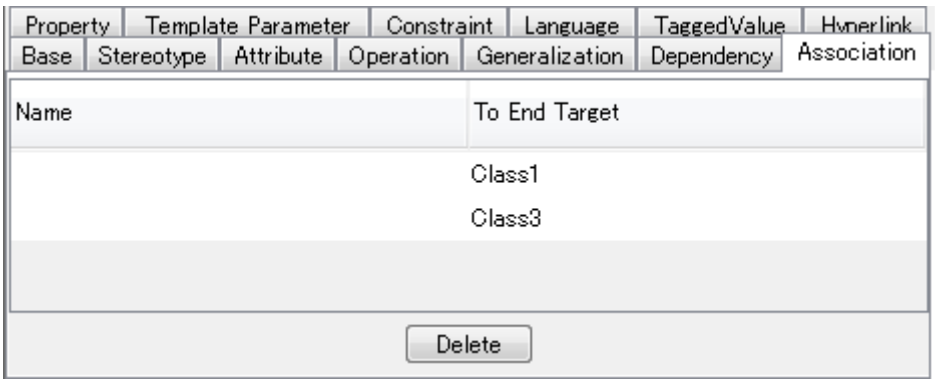
Element	Function
Name	Edit the Generalization Name
To End Target	Display the target Class Name of the Generalization
Class Type	Indicate whether it is a Superclass or a Subclass
Delete	Delete selected Generalization

12. 5. 6. [Dependency] Tab



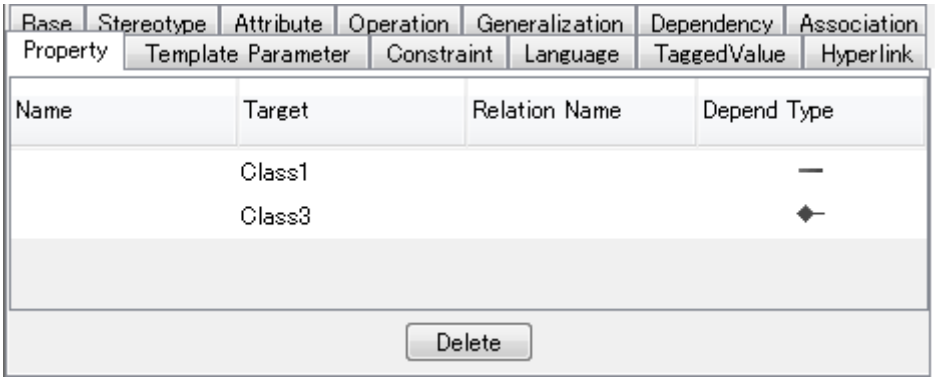
Element	Function
Name	Edit the Dependency Name
To End Target	Display the target Class Name of the Dependency
Depend Type	Display the type whether it is a Supplier or a Client
Type	Display the dependency type
Delete	Delete selected Dependency

12. 5. 7. [Association] Tab



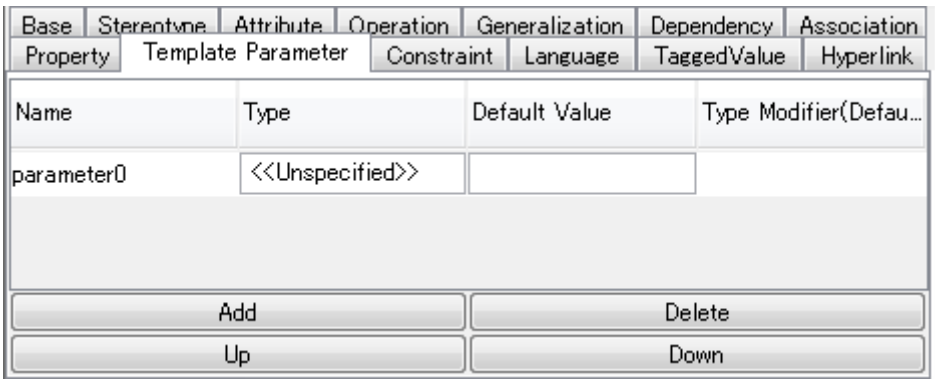
Element	Function
Name	Edit the Association Name
To End Class	Display the target Class Name of the Association
Delete	Delete selected Association

12. 5. 8. [Property] Tab



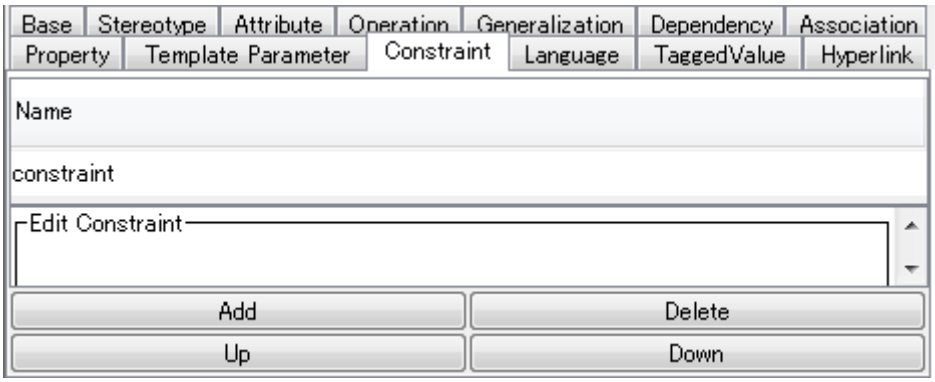
Element	Function
Name	Edit Property Name
Target	Display the target Class Name
Relation Name	Display the Relation Name
Depend Type	Display the Type of Association
Delete	Delete selected Property

12. 5. 9. [Template Parameter] Tab



Element	Function
Name	Edit the Template Parameter Name
Type	Edit the type. Select a type in the combobox or input a type name directly. If a new type is entered, the Class is automatically created under the same Package.
Default value	Specify the default value for Template Parameter
Type Modifier (Default Value)	Edit Type Modifier of Default Value. (*, **, &)
Add	Add a new Template Parameter
Delete	Delete selected Template Parameter
Up/Down	Rearrange the order of Template Parameter

12. 5. 10. [Constraint] Tab

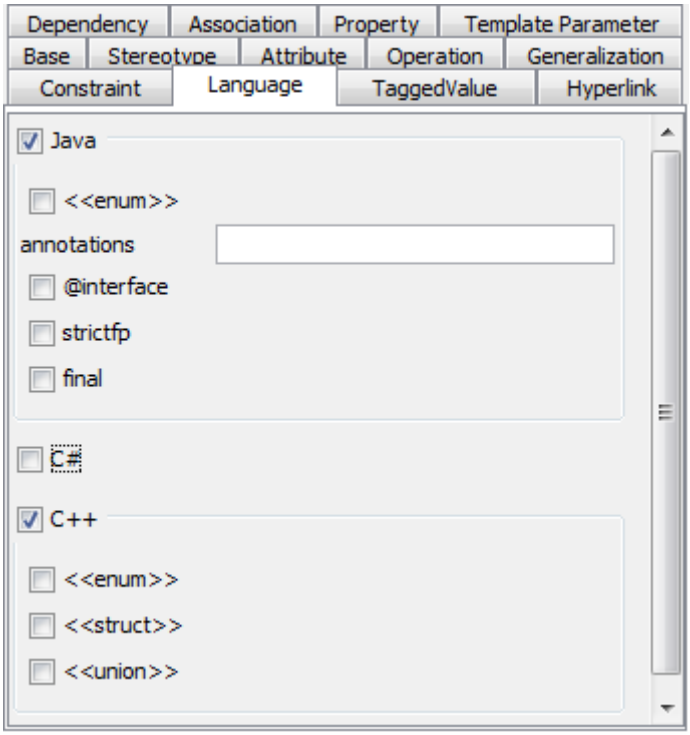


Element	Function
Name	Display the Constraint Name
Edit Constraint	Edit the Constraint.

12.Property View

	Select the target Constraint in [Name] and edit in this column.
Add	Add a Constraint
Delete	Delete selected Constraint
Up/Down	Rearrange the order of Constraints

12. 5. 11. [Language] Tab



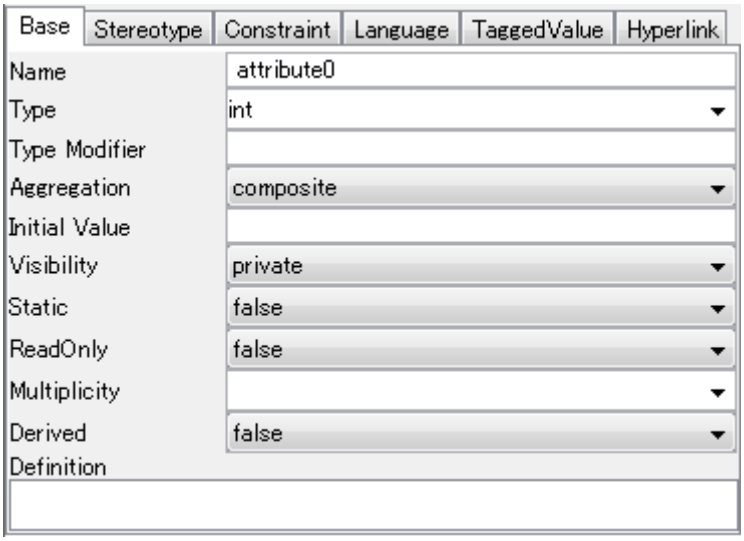
Element	Function
Java	Check this if you want to model in Java to Class. To enable to do so, [Java] box needs to be checked on in the project property
<<enum>>	Specify whether the target is an <<enum>> Class
annotations	Add annotations
@interface	Specify whether @interface is added to the target Class
strictfp	Specify whether the target is a strictfp Class
final	Specify whether the target is a final Class
C#	Check this if you want to model in C# to Class. To enable to do so, [C#] box needs to be checked on in the project property
<<delegate>>	Specify whether the target is a <<delegate>> Class
<<struct>>	Specify whether the target is a <<struct>> Class
<<enum>>	Specify whether the target is an <<enum>> Class

attributes	Add attributes
sealed	Specify whether the target is a sealed Class
static	Specify whether the target is a static Class
internal	Specify whether the target is an internal Class
C++	Check this if you want to model in C++ to Class. To enable to do so, [C++] needs to be checked on in the project property.
<<enum>>	Specify whether the target is a <<enum>> Class
<<struct>>	Specify whether the target is a <<struct>> Class
<<union>>	Specify whether the target is a <<union>> Class

-> Please refer to Class Diagram Properties for [TaggedValue] tab and [Hyperlink] tab.

12. 6. Attribute Properties (Class Diagram)

12. 6. 1. [Base] Tab



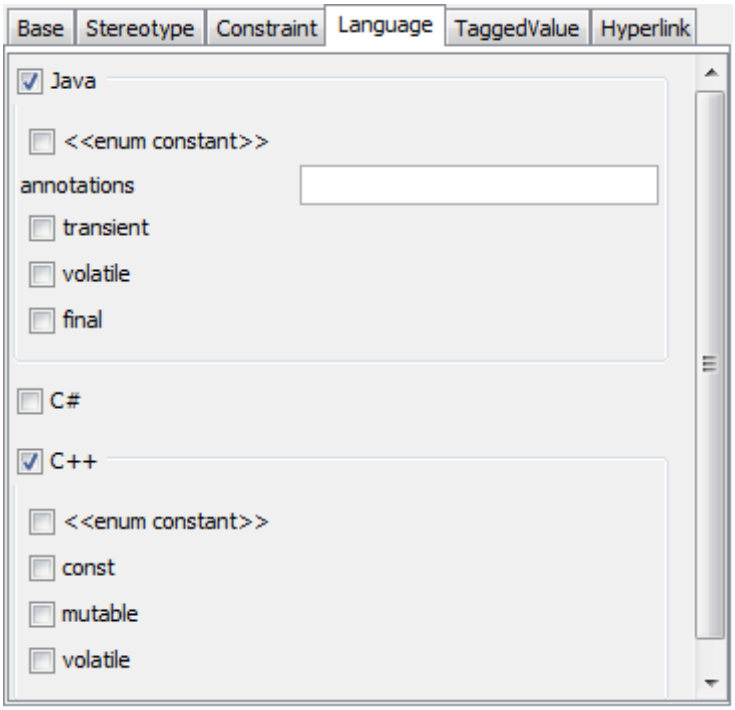
Element	Function
Name	Edit the Attribute Name
Type	Edit the type. Select a type from the combobox or input a type name directly. If a new type is entered, the Class is created under the same Package.
Type Modifier	Edit Type Modifier. (*, **, &)
Aggregation	Edit the Aggregation. Select an aggregation from [None], [Aggregate], or [Composite] from the combobox.
Initial Value	Specify the initial value
Visibility	Specify the visibility, “public”, “protected”, “package” or “private”

12.Property View

Static	Specify whether the Attribute is static or not
ReadOnly	Specify whether the Attribute is read-only or not
Multiplicity	Specify the Multiplicity. [1], [0..1], [0..*], [*], [1..*]. Alternatively, input the value directly.
Derived	Specify whether the Attribute is derived or not
Definition	Add a definition

-> Please refer to Class Properties for [Stereotype] tab.

12. 6. 2. [Language] Tab



Element	**Function**
Java	Check this if you want to model in Java to Attribute. To enable to do so, [Java] box needs to be checked on in the project property
<<enum constant>>	Add an enum constant
annotations	Add annotations
Transient	Specify whether the Attribute is transient or not
Volatile	Specify whether the Attribute is volatile or not
Final	Specify whether the Attribute is final or not
C#	Check this if you want to model in C# to Attribute. To enable to do so, [C#] box needs to be checked on in the project property.

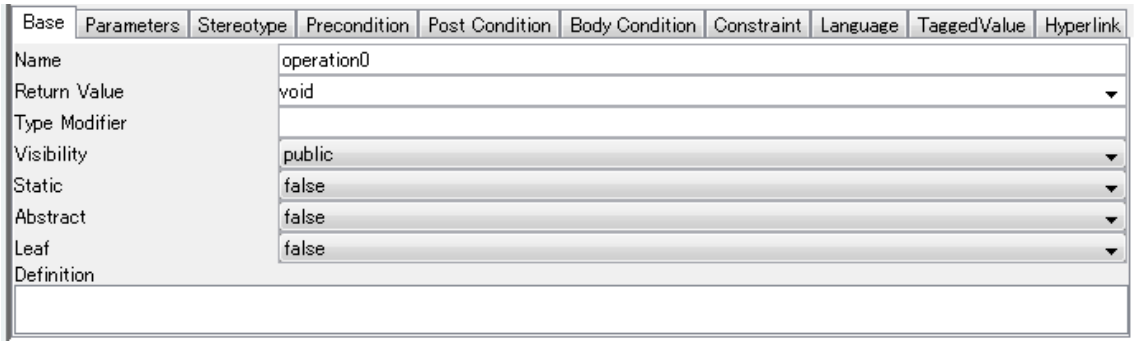
12.Property View

<<property>>	Add <<property>>
<<property>>get	Add <<property>> get
<<property>>set	Add << property>> set
<<enum constant>>	Add << enum constant>>
attributes	Add attributes
const	Specify whether the Attribute is const or not
override	Specify whether the Attribute is override or not
volatile	Specify whether the Attribute is volatile or not
Internal	Specify whether the Attribute is internal or not
Readonly	Specify whether the Attribute is read-only or not
C++	Check this if you want to model in C++ to Attribute. To enable to do so, [C++] box needs to be checked on in the project property.
<<enum constant>>	Add an enum constant.
Const	Specify whether the Attribute is const or not
mutable	Specify whether the Attribute is Mutable or not
Volatile	Specify whether the Attribute is volatile or not

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab, and Class Properties for [Stereotype] and [Constraint] tab.

12. 7. Operation Properties

12. 7. 1. [Base] Tab

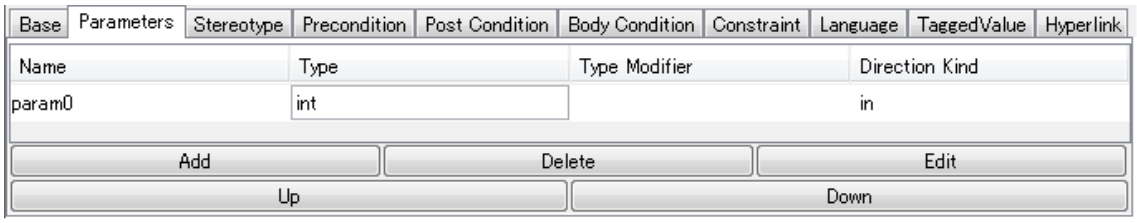


Element	Function
Name	Edit the Operation Name
Return Value	Edit the return value. Select a type from the combobox or input a type name directly. If a new type is entered, the Class is automatically created under the same Package.

12.Property View

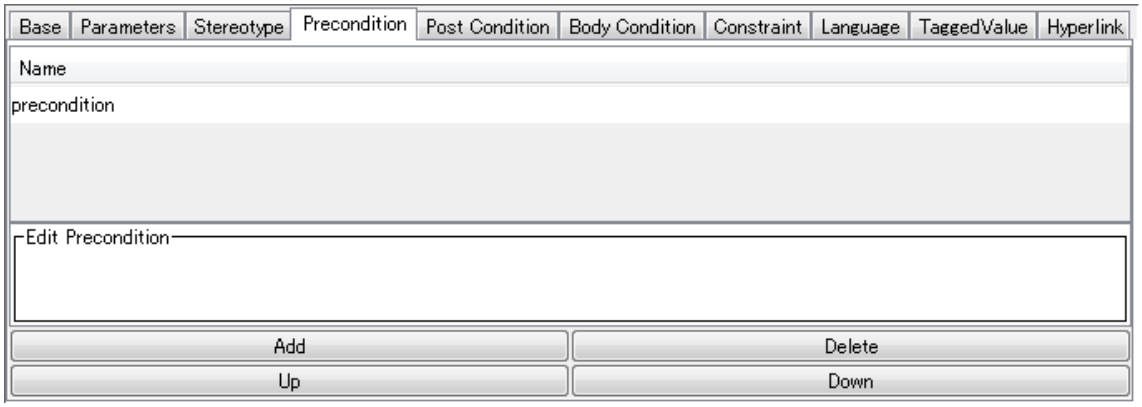
Type Modifier	Edit Type Modifier. (*, **, &)
Visibility	Specify the visibility. “public”, “protected”, “package” or “private”
Static	Specify whether the Operation is static or not.
Abstract	Specify whether the Operation is abstract or not
Leaf	Specify whether the Operation is leaf or not
Definition	Add Definition

12. 7. 2. [Parameter] Tab



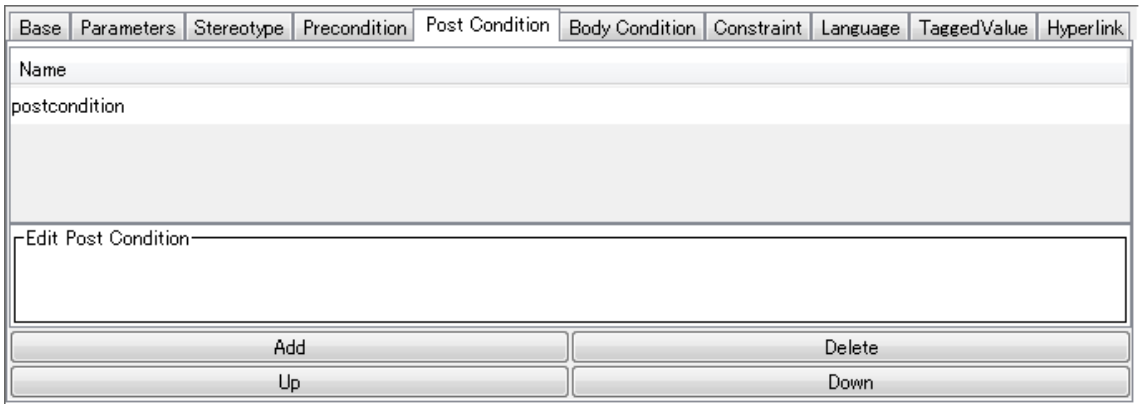
Element	**Function**
Name	Edit the Parameter Name
Type	Edit the parameter type. Select a type from the combobox or input a type name directly. If a new type is entered, the Class is automatically created under the same Package.
Type Modifier	Edit Type Modifier. (*, **, &)
Direction Kind	Specify Direction Kind from in, out or inout.
Add	Add a new Parameter
Delete	Delete selected Parameter
Edit	Edit the detail of selected Parameter
Up/Down	Rearrange the order of Parameters

12. 7. 3. [Precondition] Tab



Element	Function
Name	Edit Precondition Name
Edit Precondition	Edit the Precondition. Select the target Precondition in [Name] and edit in this column.
Add	Add a new Precondition
Delete	Delete selected Precondition
Up/Down	Rearrange the order of Precondition

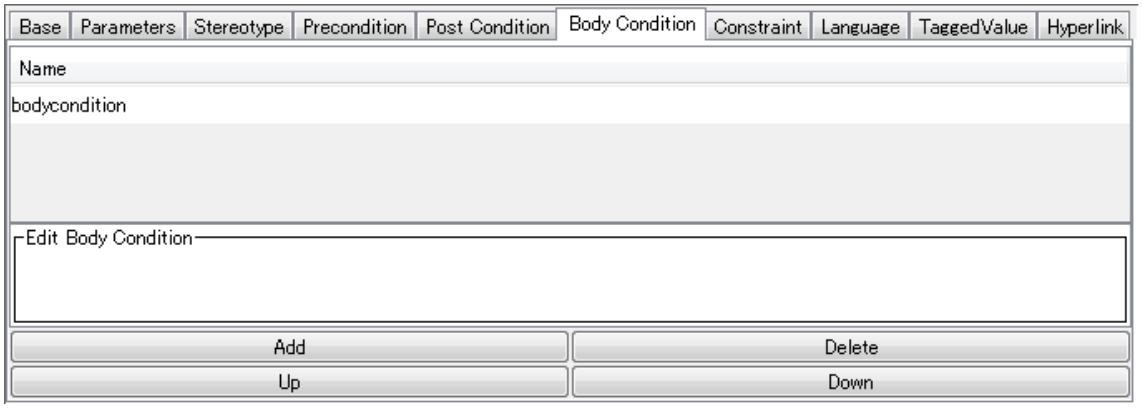
12. 7. 4. [Post Condition] Tab



Element	Function
Name	Edit the Post Condition Name
Edit Post Condition	Edit the Post Condition. Select the target Post Condition in [Name] and edit in this column.
Add	Add a new Post Condition

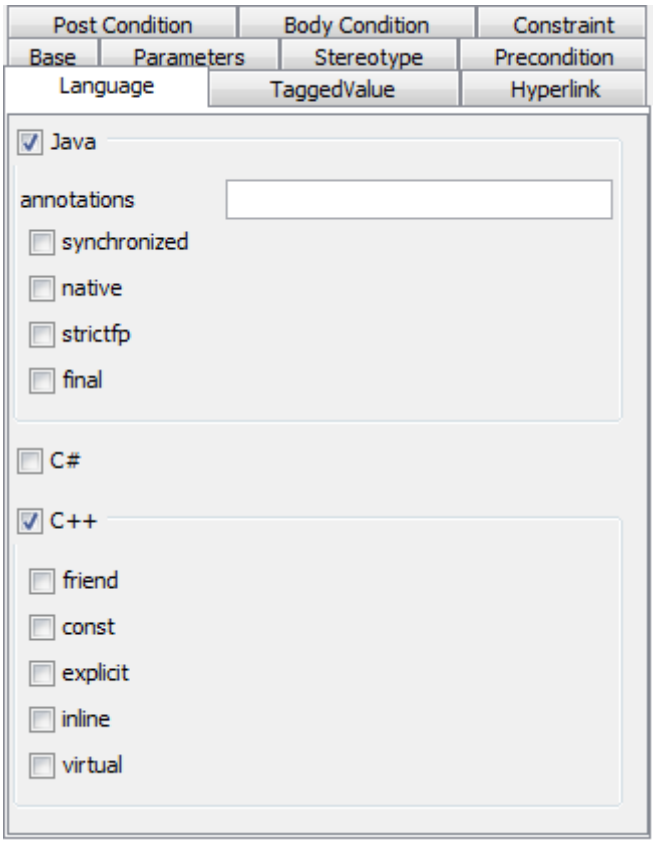
Delete	Delete selected Post Condition
Up/Down	Rearrange the order of Post Condition

12. 7. 5. [Body Condition] Tab



Element	Function
Name	Edit the Body Condition Name
Edit Body Condition	Edit the Body Condition Select the target Body Condition in [Name] and edit in this column.
Add	Add a new Body Condition
Delete	Delete selected Body Condition
Up/Down	Rearrange the order of Body Condition

12. 7. 6. [Language] Tab



Element	Function
Java	Check this if you want to model in Java to Operation. To enable to do so, [Java] box needs to be checked on in the project property.
Annotations	Add annotations
Synchronized	Specify the Operation is synchronized or not
Native	Specify the Operation is native or not
Strictfp	Specify the Operation is strictfp or not
Final	Specify the Operation is final or not
C#	Check this if you want to model in C# to Operation. To enable to do so, [C#] needs to be checked on in the project property.
<<event>>	Add an event.
<<event>>add	Add an add event.
<<event>>remove	Add a remove event.
<<indexer>>	Add an indexer.
<<indexer>>get	Add a get indexer.
<<indexer>>set	Add a set indexer.

12.Property View

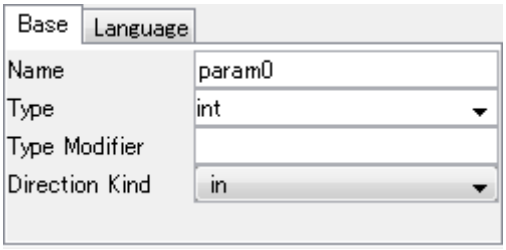
attributes	Add attributes.
extern	Specify whether the Operation is extern or not
override	Specify whether the Operation is override or not
sealed	Specify whether the Operation is sealed or not
unsafe	Specify whether the Operation is unsafe or not
virtual	Specify whether the Operation is virtual or not
internal	Specify whether the Operation is internal or not
Extension Method	Specify whether the Operation is an extension method or not
C++	Check this if you want to model in C++ to Operation. To enable to do so, [C++] box needs to be checked in the project property.
friend	Specify whether the Operation is friend or not
const	Specify whether the Operation is const or not
explicit	Specify whether the Operation is explicit or not
inline	Specify whether the Operation is inline or not
virtual	Specify whether the Operation is virtual or not

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

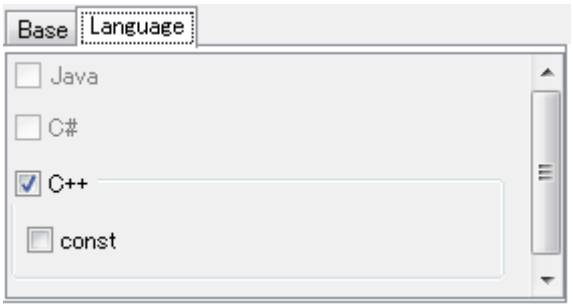
12. 8. Parameter Properties

12. 8. 1. [Base] Tab



Element	Function
Name	Edit the Parameter Name
Type	Edit the Parameter Type
Type Modifier	Edit the Parameter Type Modifier
Direction Kind	Edit the Direction Kind

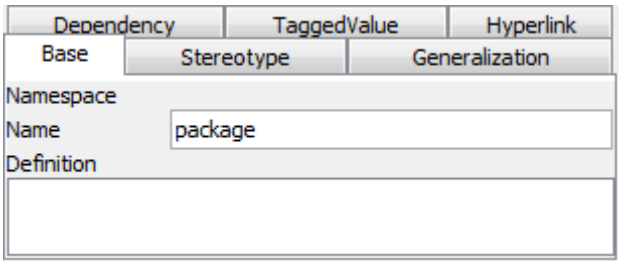
12. 8. 2. [Language] Tab



Element	Function
C++	Check this if you want to model in C++ to Parameter. To enable to do so, [C++] box needs to be checked in the project property.
const	Specify whether the Parameter is const or not

12. 9. Package Properties

12. 9. 1. [Base] Tab



Element	Function
Namespace	Display the Name of model where the Package belongs
Name	Edit the Package Name
Definition	Add Definition

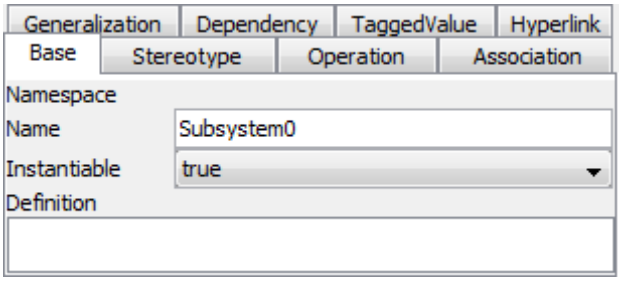
-> Please refer to Class Properties for [Stereotype], [Generalization], [Dependency], [TaggedValue] and [Hyperlink] tab.

12. 10. Model Properties

The editable contents are the same as they are for Packages. -> See the Package Properties.

12. 11. Subsystem Properties

12. 11. 1. [Base] Tab

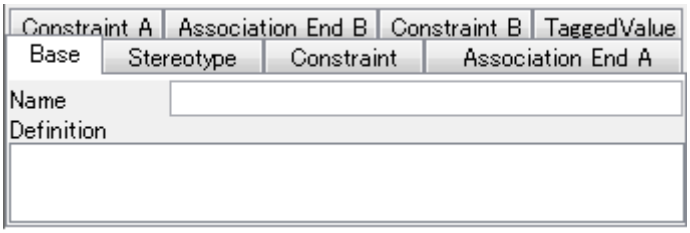


Element	Function
Namespace	Display the Name of model where the Subsystem belongs
Name	Edit the Subsystem Name
Instantiable	Specify whether an Instance of the Subsystem can be created or not
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype], [Operation], [Association], [Generalization] and [Dependency] tab, and refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 12. Association Properties

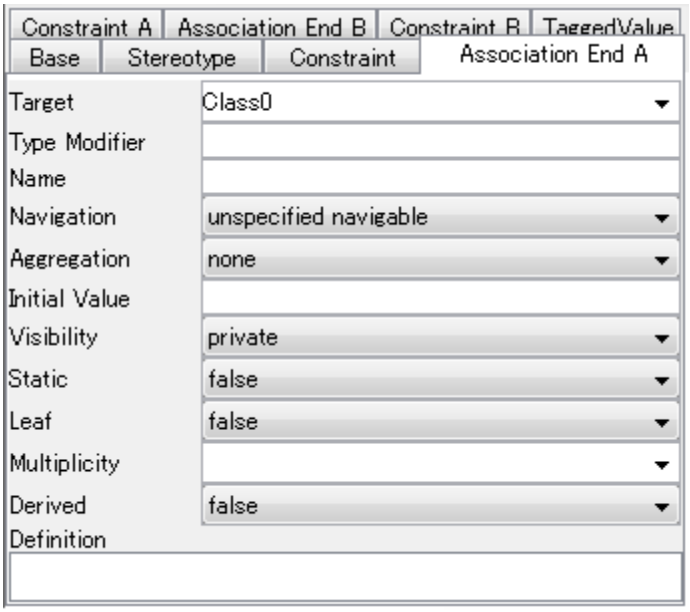
12. 12. 1. [Base] Tab



Element	Function
Name	Edit the Association Name
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab.

12. 12. 2. [Association End] Tab



Element	Function
Target	Display the target Model Element Name
Type Modifier	Edit Type Modifier (*, **, &)
Name	Edit the Association End Name
Navigation	Specify whether the direction of Navigation is “Navigable”, “Non Navigable” or “Unspecified Navigable”
Aggregation	Specify the Aggregation, “none”, “aggregate”, “composite”
Initial Value	Edit the initial value
Visibility	Specify the visibility, “public”, “protected”, “package” or “private”
Static	Specify whether the Association is static or not
Leaf	Specify whether the Association is leaf or not
Multiplicity	Specify the Multiplicity from [1], [0..1], [0..*], [*], [1..*] or alternatively input the value.
Derived	Specify whether the Association is derived or not
Definition	Add definition

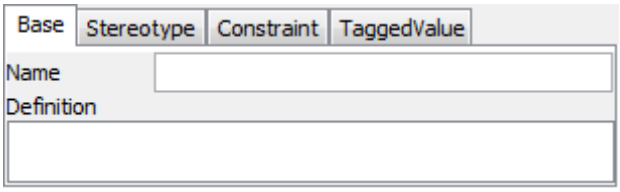
-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 12. 3. [Constraint A], [Constraint B] Tab

Please refer to Class Properties for [Constraint] tab.

12. 13. Generalization Properties

12. 13. 1. [Base] Tab



Element	Function
Name	Edit the Generalization Name
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab, and refer to Class Diagram Properties for [TaggedValue] tab.

12. 14. Realization Properties

The editable contents are the same as they are for Generalizations.

-> See to the Generalization Properties section.

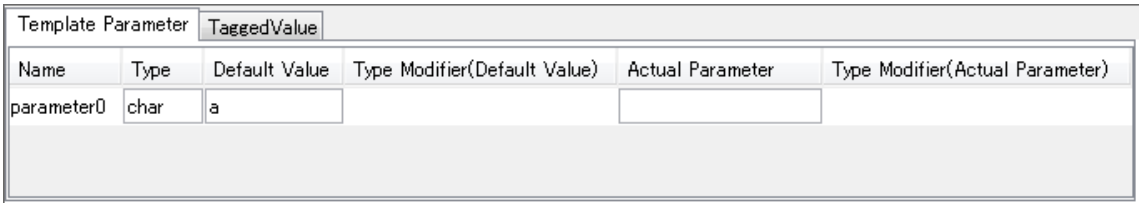
12. 15. Dependency Properties

The editable contents are the same as they are for Generalizations.

-> See the Generalization Properties section.

12. 16. TemplateBinding Properties

12. 16. 1. [Base] Tab



Element	Function
Name	Display the Name of Template Parameter.
Type	Display the Type of Template Parameter
Default Value	Display the Default Value of Template Parameter
Type Modifier (Default Value)	Edit Type Modifier (*, **, &) for Default Value

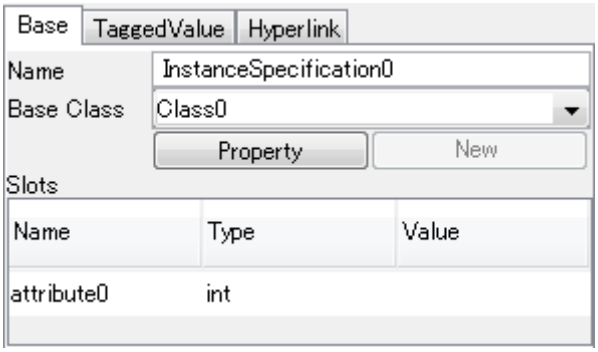
12.Property View

Actual Parameter	Edit the Actual Parameter. Select a type in the combobox or input a type name if the type is unspecified to the Template Parameter. Or, input a type name if the type is already specified. If a new type is entered, the Class is automatically created under the same Package.
Type Modifier (Actual Parameter)	Edit Type Modifier (*, **, &) for Actual Parameter.

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 17. Instance Specification Properties (Class Diagram)

12. 17. 1. [Base] Tab

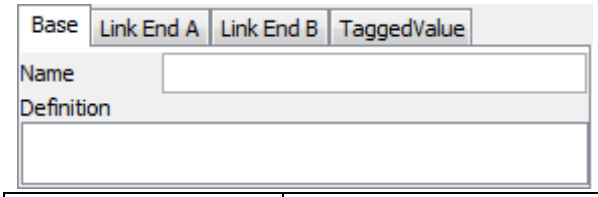


Element	Function
Name	Edit the Instance Specification Name.
Base Class	Specify the Base Class. Select a Base Class using the combobox
Property	Open properties of the Base Class
New	Create a new Class to be used as the Base Class
Slots	Display Slots (Attributes of the Base Class)

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 18. Link Properties (Class Diagram)

12. 18. 1. [Base] Tab



Element	Function

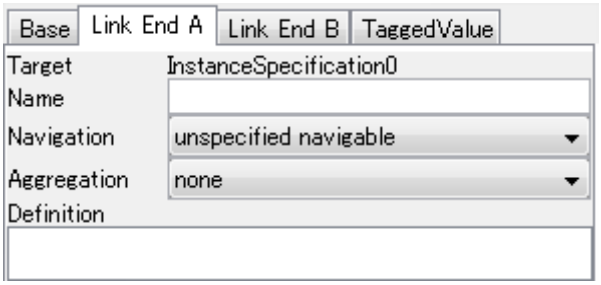
12.Property View

Name	Edit the Link Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 18. 2. [Link End] Tab

Two [Link End] Tabs are displayed at each end of a Link, at the starting point and at the end point.



Element	Function
Target	Display the target Instance Specification Name
Name	Edit the Link End Name
Navigation	Specify whether the direction of Navigation, “Navigable”, “Non Navigable” or “Unspecified Navigable”
Aggregation	Specify the Aggregation. “none”, “aggregate” or “composite”
Definition	Add Definition

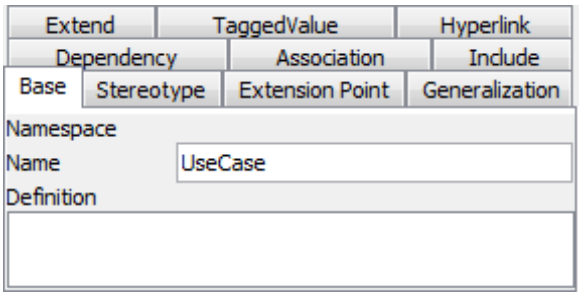
-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 19. Actor Properties

-> Please refer to the Class Properties section for more details.

12. 20. UseCase Properties

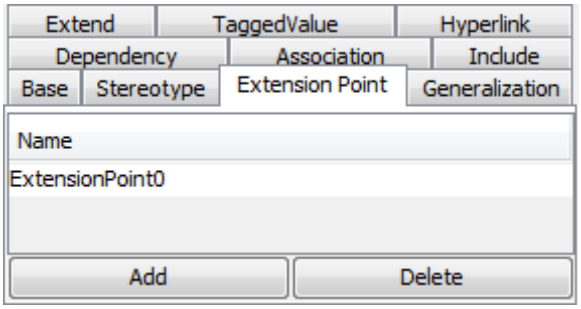
12. 20. 1. [Base] Tab



Element	Function
Namespace	Display the name of model where the UseCase belongs
Name	Edit the UseCase Name
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype] tab.

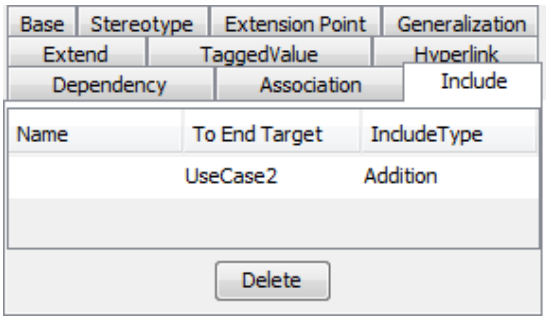
12. 20. 2. [Extension Point] Tab

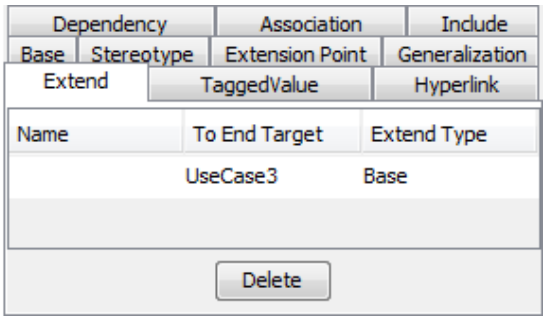


Element	Function
Name	Edit the Extension Point Name.
Add	Add a new Extension Point.
Delete	Delete selected Extension Point.

-> Please refer to Class Properties for [Generalization], [Dependency], and [Association] tab.

12. 20. 3. [Include] Tab / [Extend] Tab





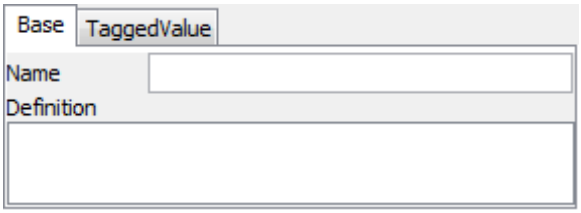
Element	Function
Name	Edit the Include / Extend Name.
To End Class	Display the target Class Name of the Include / Extend.
IncludeType/	Specify whether the Include / Extend is an “Addition” or a “Base”.

Extend Type	
Delete	Delete selected Include / Extend.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 21. Include Properties

12. 21. 1. [Base] Tab



Element	Function
Name	Edit the Include Name.
Definition	Add Definition.

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

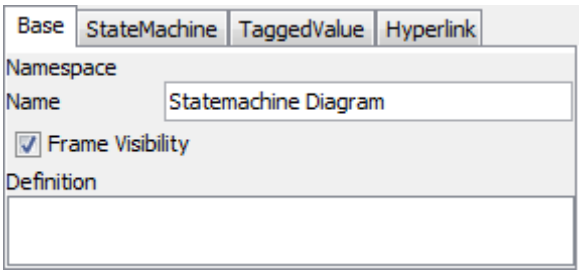
12. 22. Extend Properties

The editable contents are the same as they are for Includes.

-> Please refer to the Include Properties section for more details.

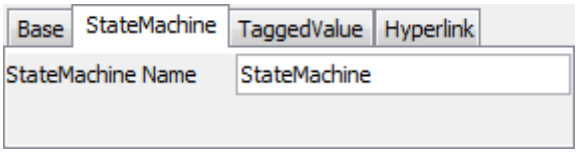
12. 23. Statemachine Diagram Properties

12. 23. 1. [Base] Tab



Element	Function
Namespace	Display the namespace where the Statemachine belongs
Name	Edit the Statemachine Diagram Name
Frame Visibility	Check on to show Frame in the Diagram
Definition	Add Definition

12. 23. 2. [StateMachine] Tab

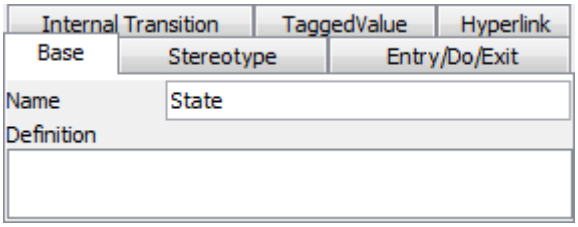


Element	Function
StateMachine Name	Edit the StateMachine Name.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 24. State Properties

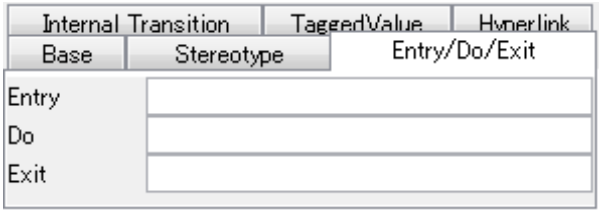
12. 24. 1. [Base] Tab



Element	Function
Name	Edit the State Name.
Definition	Edit the Definition.

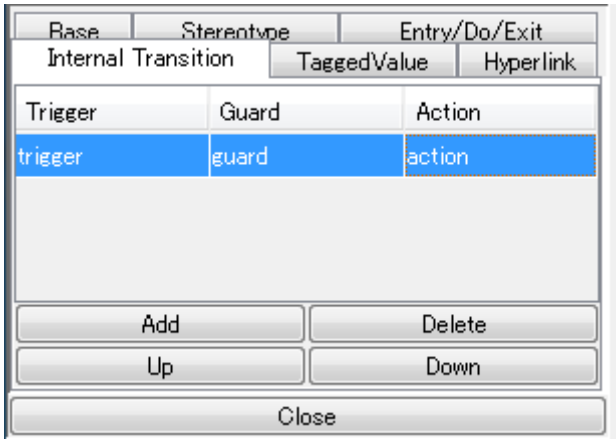
-> Please refer to Class Properties for [Stereotype] tab.

12. 24. 2. [Entry/Do/Exit] Tab



Element	Function
Entry	Edit the Entry action.
Do	Edit the Do activity.
Exit	Edit the Exit action.

12. 24. 3. [Internal Transition] Tab

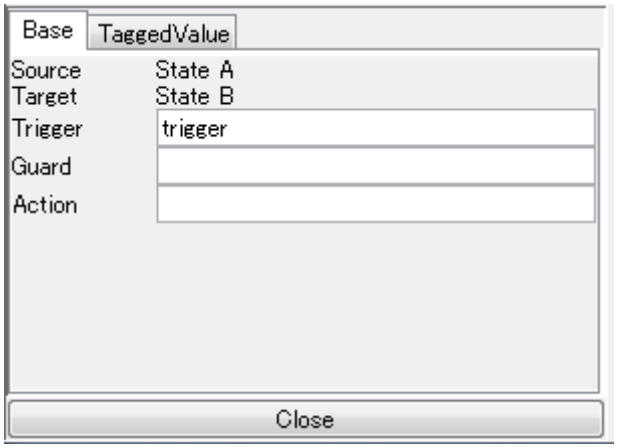


Element	Function
Trigger	Edit the Trigger
Guard	Edit the Guard condition
Action	Edit Action
Add	Add Internal Transition
Delete	Delete selected Internal Transition
Up/Down	Rearrange the order of Internal Transitions

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 25. Transition (Control Flow/Object Flow) Properties

12. 25. 1. [Base] Tab



Element	Function
Source	Display the Source of the transition

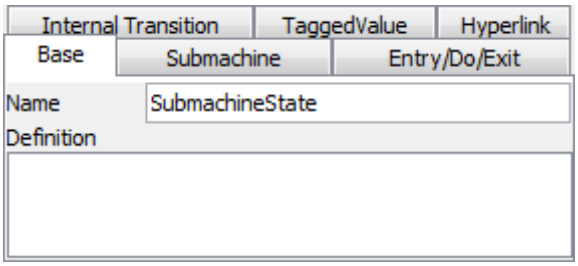
12.Property View

Target	Display the target to Transit
Trigger	Edit the Trigger
Guard	Edit the Guard condition
Action	Edit the Action

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

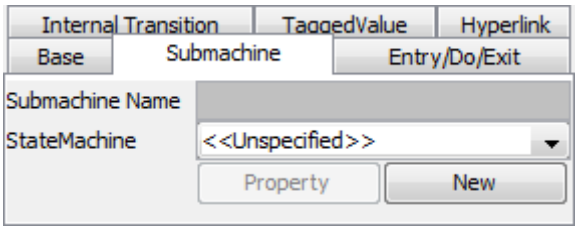
12. 26. Submachine State Properties

12. 26. 1. [Base] Tab



Element	Function
Name	Edit the Submachine State Name
Definition	Add Definition

12. 26. 2. [Submachine] Tab

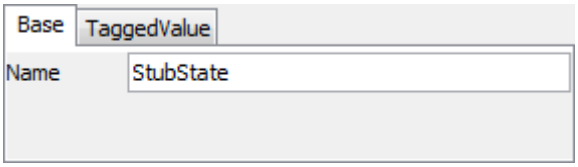


Element	Function
Submachine Name	Edit the Submachine Name
StateMachine	Specify the Statemachine Diagram to refer to
Property	Open properties of the Statemachine Diagram
New	Create a new Statemachine Diagram to be referred

-> Please refer to Sate Properties for [Entry/Do/Exit], [Internal Transition] tab, and Class Diagram Properties for [TaggedValue] tab and [Hyperlink] tab.

12. 27. StubState Properties

12. 27. 1. [Base] Tab

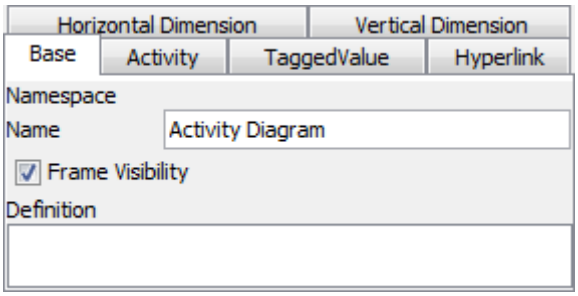


Element	Function
Name	Edit the StubState Name

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

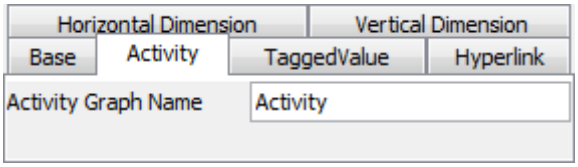
12. 28. Activity Diagram Properties

12. 28. 1. [Base] Tab



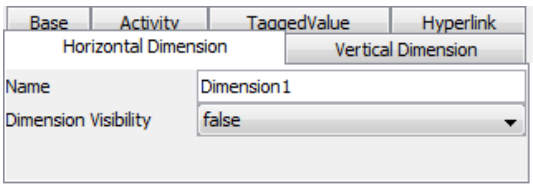
Element	Function
Namespace	Display the namespace where the Activity Diagram belongs
Name	Edit the Activity Diagram Name
Frame Visibility	Check this on to show a frame in the diagram
Definition	Add Definition

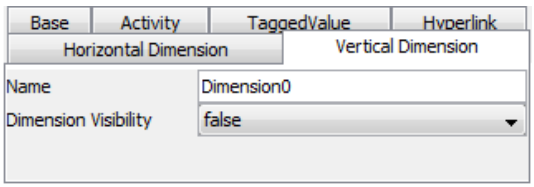
12. 28. 2. [Activity] Tab



Element	Function
Activity Graph Name	Edit the Activity Graph Name

12. 28. 3. [Horizontal Dimension] Tab / [Vertical Dimension] Tab



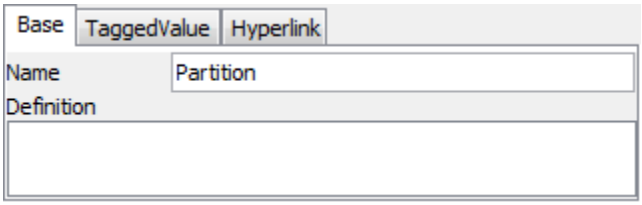


Element	Function
Name	Edit the Dimension Name
Dimension Visibility	Select the Dimension Visibility

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 29. Partition Properties

12. 29. 1. [Base] Tab

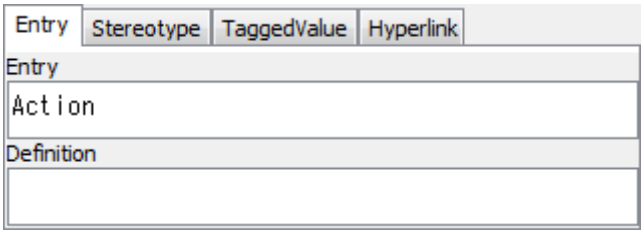


Element	Function
Name	Edit the Partition Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 30. Action Properties

12. 30. 1. [Entry] Tab



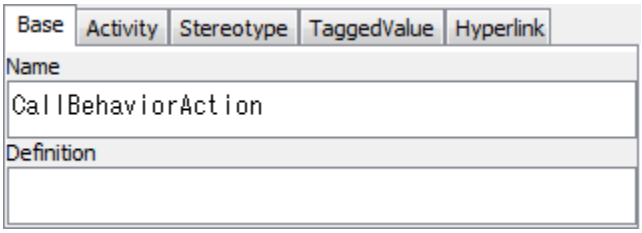
Element	Function
Entry	Edit the Action Name
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype] tab and Class Diagram Properties for

[TaggedValue] and [Hyperlink] tab.

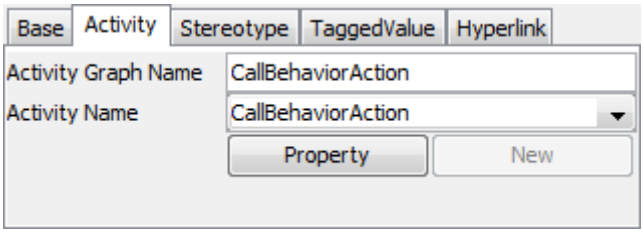
12. 31. CallBehaviorAction Properties

12. 31. 1. [Base] Tab



Element	Function
Name	Edit the CallBehaviorAction Name
Definition	Add Definition

12. 31. 2. [Activity] Tab



Element	Function
Activity Graph Name	Edit the Activity Graph Name
Activity Name	Edit the Activity Name
Property	Open properties of the Activity Graph
New	Create a new Activity Diagram as its Activity Graph.

-> Please refer to Class Properties for [Stereotype] tab, Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 32. Flow Final Node Properties

The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 33. SendSignalAction Properties

The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 34. AcceptEventAction Properties

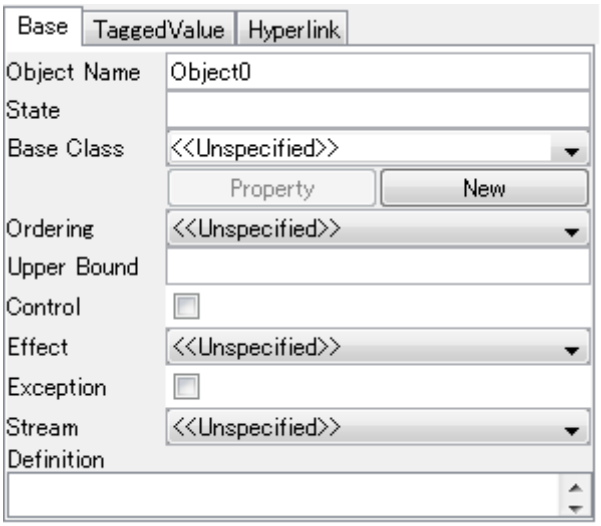
The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 35. AcceptTimeEventAction Properties

The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 36. Pin, Object Node Properties

12. 36. 1. [Base] Tab



Element	Function
Object Name	Edit the Object Name
State	Edit the State
Base Class	Edit the Base Class
Property	Open properties of the Base Class
New	Create a new Class as its Base Class
Ordering	Specify the Ordering by choosing from <<Unspecified>>, unordered, ordered, LIFO or FIFO
Upper Bound	Edit the Upper Bound
Control	Tick the box to check as Control
Effect	Specify the Effect by choosing from <<Unspecified>>, create, read, update or delete
Exception	Tick the box to check as Exception
Stream	Specify the Stream by choosing from <<Unspecified>>, stream or nonstream
Definition	Add Definition

12.Property View

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 37. Process Properties

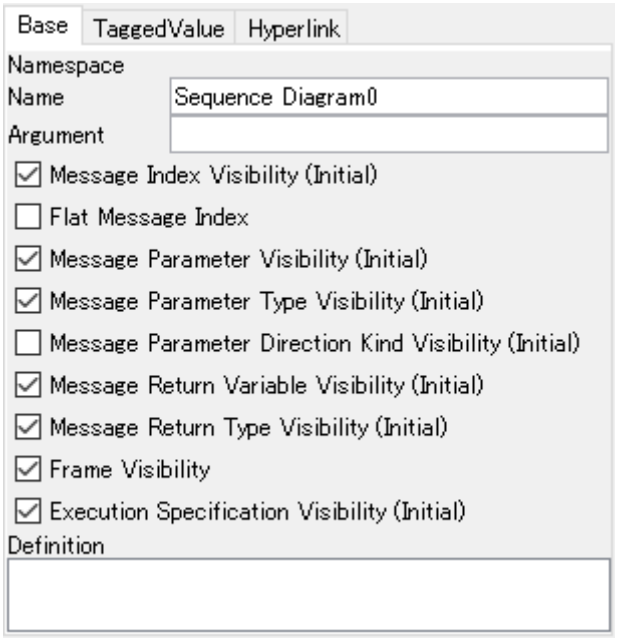
The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 38. Connector Properties

The editable contents are the same as they are for Actions. -> See the Action Properties.

12. 39. Sequence Diagram Properties

12. 39. 1. [Base] Tab



Element	Function
Namespace	Display the Namespace where the Sequence Diagram belongs
Name	Edit the Sequence Diagram Name
Argument	Edit the Sequence Argument
Message Index Visibility	Check this to show Message Index on the diagram
Flat Message Index	Check this to have a hierarchy in the Message Index
Message Parameter Visibility (Initial)	Check this to show Message Parameters on the diagram
Message Parameter	Check this to show Message Parameter Types on the diagram

12.Property View

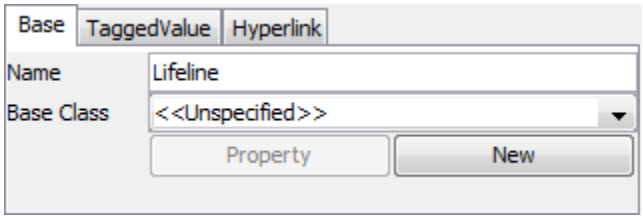
Type Visibility (Initial)	
Message Parameter Direction Kind Visibility (Initial)	Check this to show Message Parameter Direction Kinds on the diagram
Message Return Value Variable Visibility (Initial)	Check this to show Message Return Value Variable on the diagram
Message Return Value Visibility (Initial)	Check this to show Message Return Value on the diagram
Frame Visibility	Check this to show a frame in the diagram
Execution Specification Visibility	Check this to show Execution Specification Value on the diagram
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

Note) To enable [Message Parameter Initial Visibility] setting, this option must be set before creating Messages.
When creating a new Sequence diagram, the setting of System Properties – Initial Visibility 2 applies to this tab.

12. 40. Lifeline Properties (Sequence Diagram/Communication Diagram)

12. 40. 1. [Base] Tab

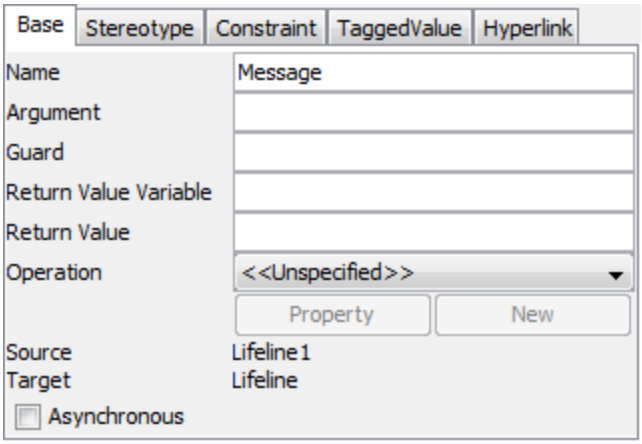


Element	Function
Name	Edit the Lifeline Name
Base Class	Specify the Base Class
Property	Open properties of the Base Class
New	Create a new Class to be used as the Base Class.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 41. Message Properties (Sequence Diagram)

12. 41. 1. [Base] Tab

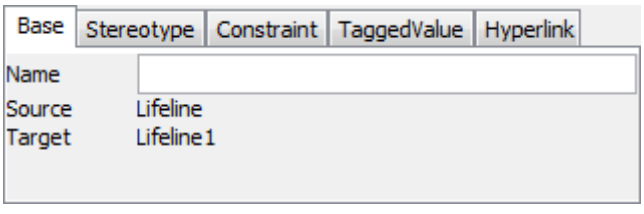


Element	Function
Name	Edit the Message Name
Argument	Edit the Message Arguments
Guard	Edit the Guard condition
Return Value Variable	Edit the Return Value Variable
Return Value	Edit the Return Value
Operation	Specify an Operation
Property	Open properties of the selected Operation
New	Create a new Class to be used as the Base Class
Source	Display the Source Lifeline
Target	Display the Target Lifeline
Asynchronous	Check this to make the Message asynchronous

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab, and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab

12. 42. Reply Message Properties

12. 42. 1. [Base] Tab



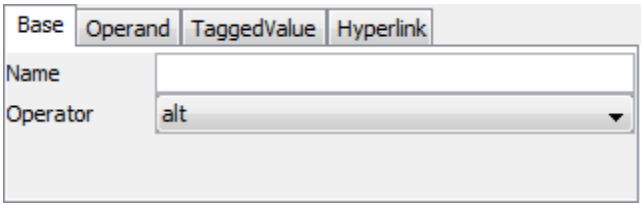
12.Property View

Element	Function
Name	Edit the Reply Message Name
Source	Display the Source Lifeline
Target	Display the Target Lifeline

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab, and Class Diagram Properties for [TaggedValue] tab.

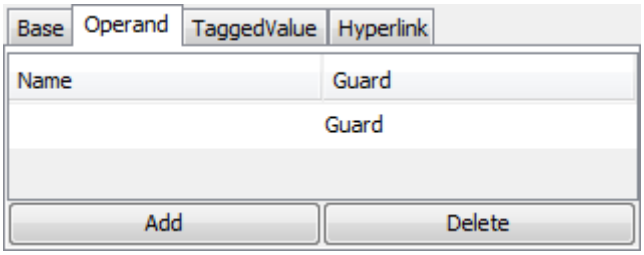
12. 43. CombinedFragment Properties (Sequence Diagram)

12. 43. 1. [Base] Tab



Element	Function
Name	Edit the Combined Fragment Name
Operator	Select the Operator

12. 43. 2. [Operand] Tab

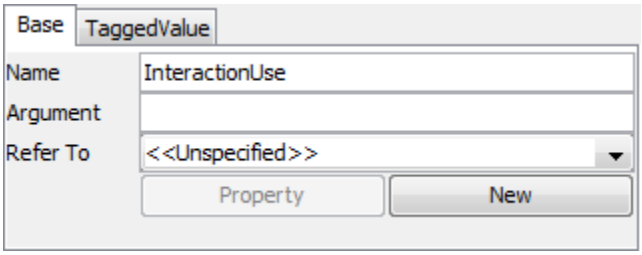


Element	Function
Name	Edit the Operand Name
Guard	Edit the Guard
Add	Add new Operands
Delete	Delete selected Operands

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 44. InteractionUse Properties (Sequence Diagram)

12. 44. 1. [Base] Tab

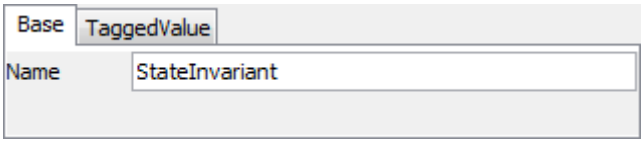


Element	Function
Name	Edit the InteractionUse Name
Argument	Edit the InteractionUse Argument
Refer to	Select Sequence Diagrams to refer to
Property	Edit the Sequence Diagram to refer to
New	Create a new Sequence Diagram to be referred to

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 45. State Invariant Properties (Sequence Diagram)

12. 45. 1. [Base] Tab

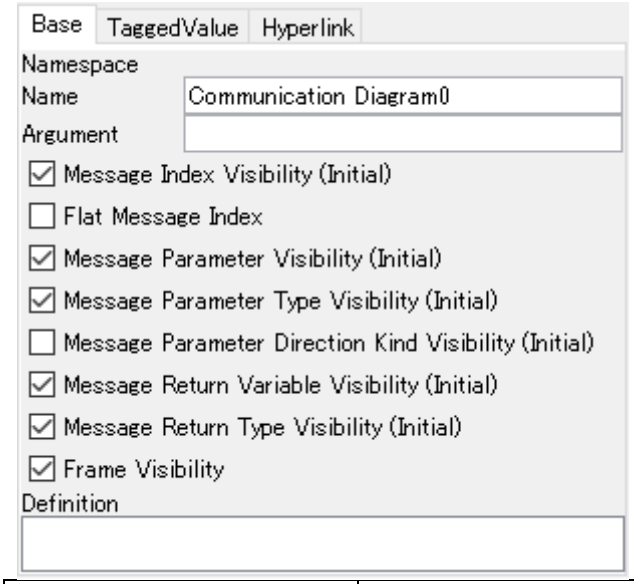


Element	Function
Name	Edit the StateInvariant Name.

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 46. Communication Diagram Properties

12. 46. 1. [Base] Tab



Element	Function
Namespace	Display the Namespace where the Communication Diagram belongs to
Name	Edit the Communication Diagram Name
Argument	Edit the Argument
Message Index Visibility	Check to show Message Index on the diagram
Flat Message Index	Check to make a hierarchy in the Message Index.
Message Parameter Visibility (Initial)	Check to show Message parameter on the diagram
Message Parameter Type Visibility (Initial)	Check to show Message parameter Type on the diagram
Message Parameter Direction Kind Visibility (Initial)	Check to show Message Parameter Direction Kind on the diagram
Message Return Value Variable Visibility (Initial)	Check to show Message Return Value Variable on the diagram
Message Return Value Visibility (Initial)	Check to show Message Return Value on the diagram
Frame Visibility	Check to show a frame in the diagram
Definition	Add Definition.

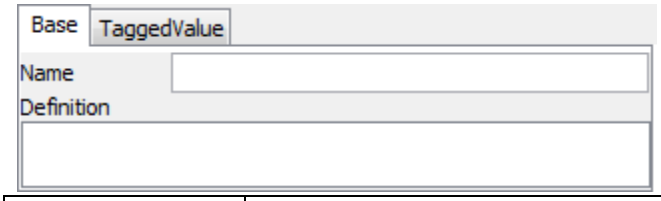
12.Property View

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

Note) To enable the [Message Parameter Initial Visibility] setting, this needs to be checked on before creating Messages.
When creating a new Communication Diagram, the setting of System Properties - Initial Visibility 2 will apply to this Tab.

12. 47. Link Properties (Communication Diagram)

12. 47. 1. [Base] Tab

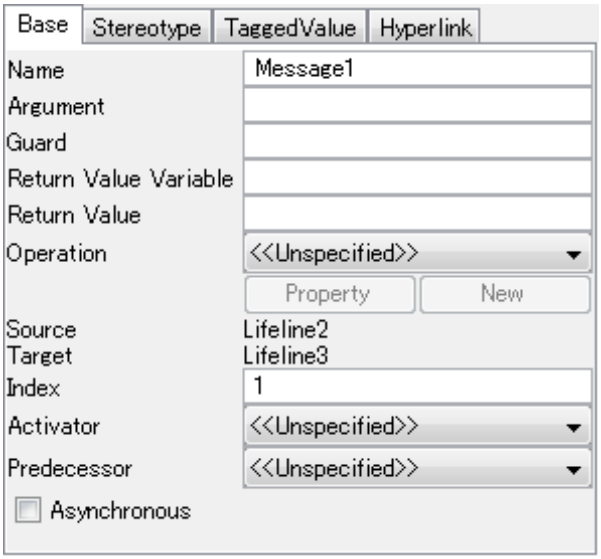


Element	Function
Name	Edit the Link Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 48. Message Properties (Communication Diagram)

12. 48. 1. [Base] Tab



Element	Function
Name	Edit the Message Name.

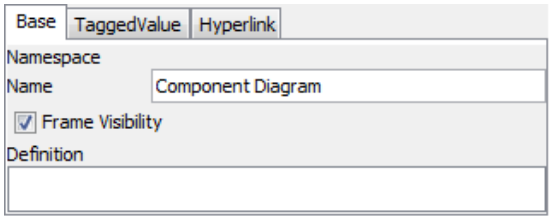
12.Property View

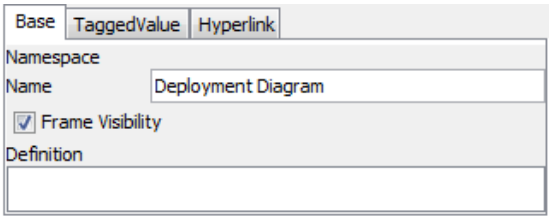
Argument	Edit the Message Arguments.
Guard	Edit the Guard condition.
Return Value Variable	Edit the Return Value Variable.
Return Value	Edit the Return Value.
Operation	Specify the Operation.
Property	Open properties of the selected Operation.
New	Create a new Operation in the Base Class of the Target Lifeline.
Source	Display the Source Lifeline.
Target	Display the Target Lifeline.
Index	Edit the sequence number.
Activator	Specify the Activator.
Predecessor	Specify the Predecessor.
Asynchronous	Specify whether the Message is synchronous or asynchronous.

-> Please refer to Class Properties for [Stereotype] tab, and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 49. Component Diagram / Deployment Diagram Properties

12. 49. 1. [Base] Tab



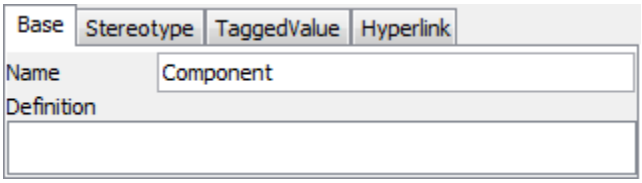


Element	Function
Namespace	Show the Namespace where the diagram belongs to
Name	Edit the diagram name
Frame Visibility	Specify whether the Frame is displayed
Definition	Edit the Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 50. Component Properties

12. 50. 1. [Base] Tab



Element	Function
Name	Edit the Component Name
Definition	Edit the Definition

-> Please refer to Class Properties for [Stereotype] tab and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

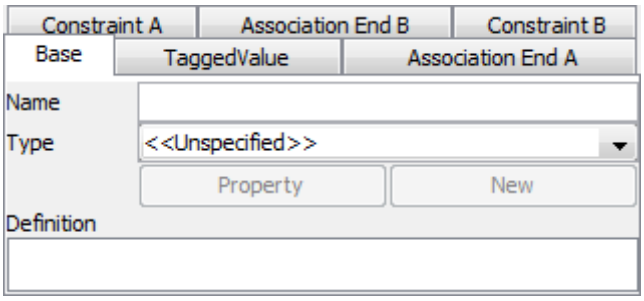
12. 51. Part Properties

The editable contents are the same as they are for Associations.

-> Please refer to the Association Properties section for more details.

12. 52. Connector Properties

12. 52. 1. [Base] Tab



Element	Function
Name	Edit the Connector Name
Type	Specify the Connector Type
Property	Open the Property of Connector Type
New	[Association Property] dialog opens to create a new Association
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 52. 2. [Association End] Tab

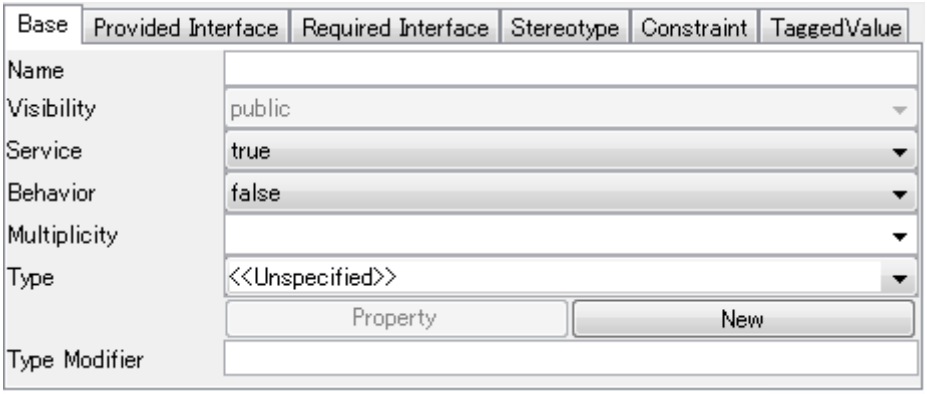
-> Please refer to the [Association End] section.

12. 52. 3. [Constraint] Tab

-> Please refer to the [Constraint] section.

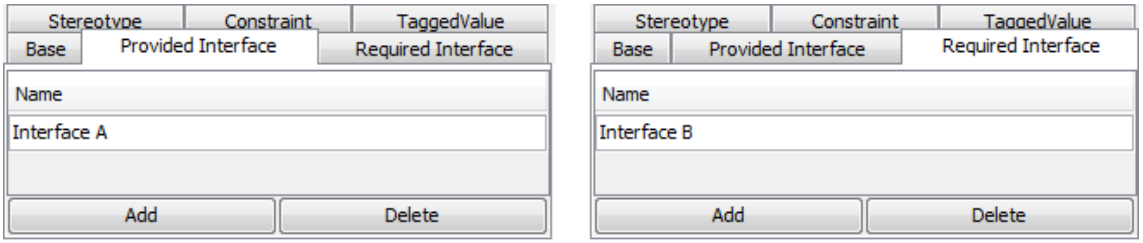
12. 53. Port Properties

12. 53. 1. [Base] Tab



Element	Function
Name	Edit the Port Name
Visibility	Indicate the visibility
Service	Specify the Service whether it is true or false or not
Behavior	Specify the Behavior whether it is true or false or not
Multiplicity	Specify the Multiplicity, [1], [0..1], [0..*], [*], [1..*] or alternatively, input the value.
Type	Edit the type. Select a type in the combobox or input a type name directly. If a new type is entered, the Class is automatically created under the same Package.
Property	Open properties of the Base Class
New	Create a new Class to be used as the Base Class
Type Modifier	Edit Type Modifier (*, **, &)

12. 53. 2. [Provided Interface] Tab / Required Interface] Tab



Element	Function
Name	Edit the Provided / Required Interface Name
Add	Add a new Provided / Required Interface
Delete	Delete selected Provided / Required Interface

-> Please refer to Class Properties for [Stereotype] and [Constraint] tab, and Class Diagram Properties for [TaggedValue] tab.

12. 54. Usage Dependency Properties

The editable contents are the same as they are for Generalizations.

-> See the Generalization Properties section.

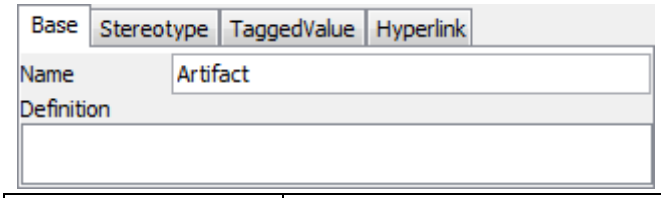
12. 55. Classifier Properties

In Component Diagrams, Classifiers are treated as Classes.

-> Please refer to the Class Properties section for more details.

12. 56. Artifact Properties

12. 56. 1. [Base] Tab

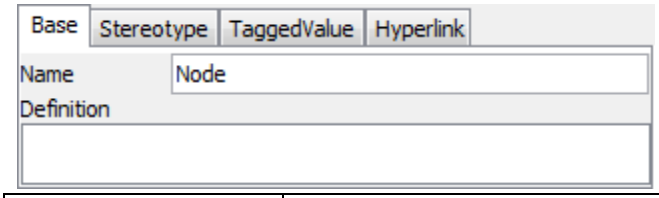


Element	Function
Name	Edit the Artifact Name
Definition	Edit the Definition

-> Please refer to Class Properties for [Stereotype] tab, and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 57. Node Properties

12. 57. 1. [Base] Tab

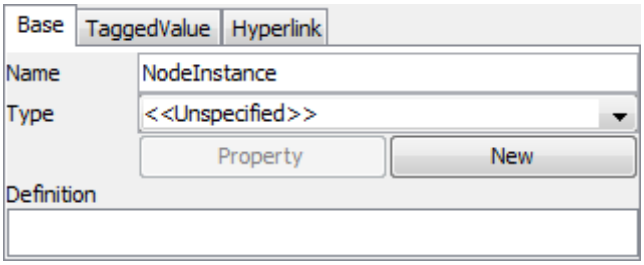


Element	Function
Name	Edit the Node Name
Definition	Add Definition

-> Please refer to Class Properties for [Stereotype] tab, and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 58. NodeInstance Properties

12. 58. 1. [Base] Tab

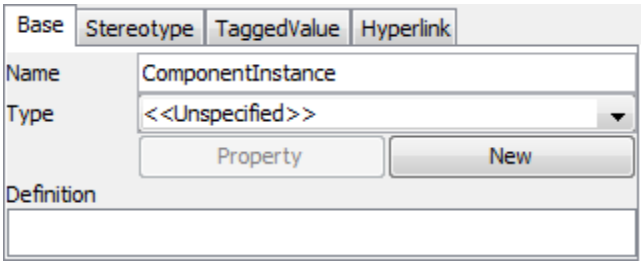


Element	Function
Name	Edit the NodeInstance Name
Type	Specify the Node Type
Property	Open properties of the Node that is specified as a Node Type
New	Create a new Node to be used as a Node Type
Definition	Add Definition.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 59. ComponentInstance Properties

12. 59. 1. [Base] Tab



Element	Function
Name	Edit the ComponentInstance Name.
Type	Specify the Component Type
Property	Open properties of the Component that is specified as the Component Type
New	Create a new Component to be used as a Component Type
Definition	Add Definition

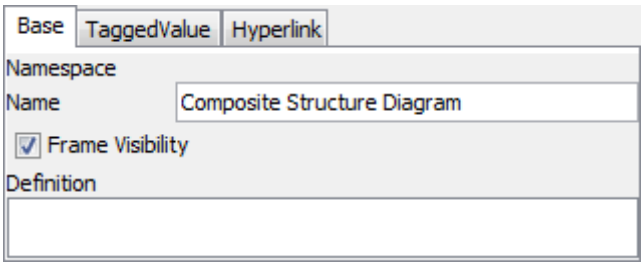
-> Please refer to Class Properties for [Stereotype] tab, and Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 60. Link Properties (Deployment Diagram)

-> Please refer to the Link Properties section for more details.

12. 61. Composite Structure Diagram Properties

12. 61. 1. [Base] Tab



Element	Function
Namespace	Show the Namespace where the diagram belongs to
Name	Edit the Composite Structure Diagram Name
Frame Visibility	Check this on to show a frame in the diagram

Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

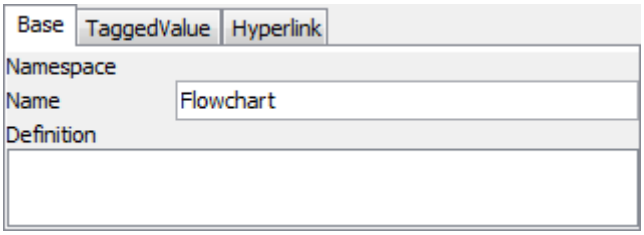
12. 62. Structured Class Properties

The editable contents are the same as they are for Classes.

-> Please refer to the Class Properties section for more details.

12. 63. Flowchart Properties [P]

12. 63. 1. [Base] Tab

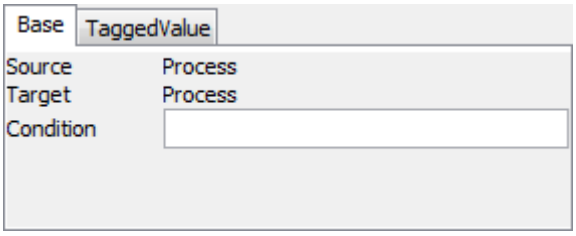


Element	Function
Namespace	Show the namespace where the Flowchart belongs
Name	Edit the Flowchart Name
Definition	Edit the Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 64. Transition Properties [P]

12. 64. 1. [Base] Tab

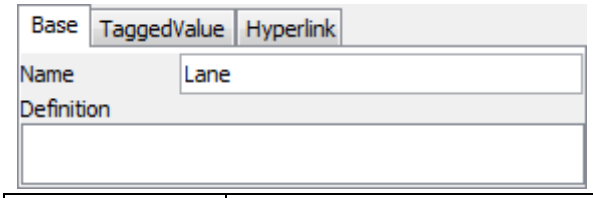


Element	Function
Source	Display the Source
Target	Display the target to Transit
Condition	Modify the condition of Transition. The contents of this Condition will appear in the diagram.

-> Please refer to Class Diagram Properties for [TaggedValue] tab.

12. 65. Lane Properties [P]

12. 65. 1. [Base] Tab

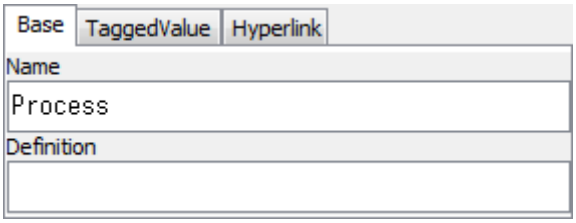


Element	Function
Name	Edit the Lane Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 66. Flow Symbol Properties [P]

12. 66. 1. [Base] Tab

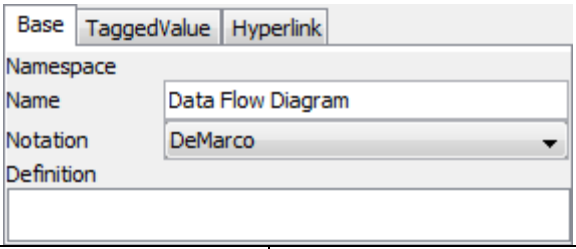


Element	Function
Name	Edit the name of flow symbol
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 67. Data Flow Diagram (DFD) Properties [P]

12. 67. 1. [Base] Tab



Element	Function
Namespace	Display the namespace where the Data Flow Diagram belongs
Name	Edit the Data Flow Diagram Name

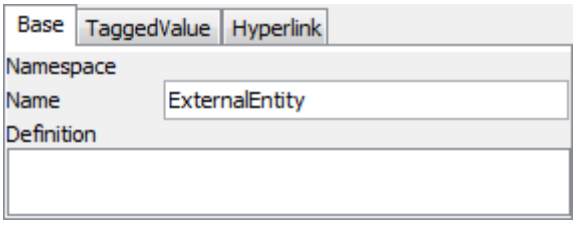
12.Property View

Notation	Switch the Notation of Data Flow Diagram between DeMarco and Gane/Sarson.
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 68. External Entity Properties [P]

12. 68. 1. [Base] Tab

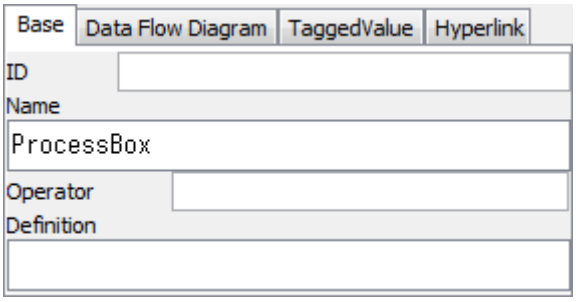


Element	Function
Namespace	Display the namespace where the External Entity belongs
Name	Edit the External Entity Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

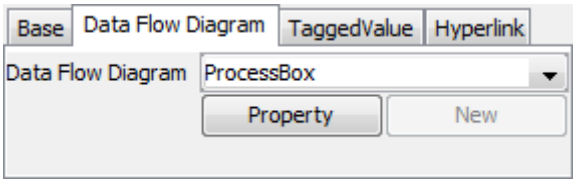
12. 69. Process Box Properties [P]

12. 69. 1. [Base] Tab



Element	Function
ID	Edit the Process Box ID
Name	Edit the Process Box Name
Operator	Edit the Operator
Definition	Add Definition

12. 69. 2. [Data Flow Diagram] Tab

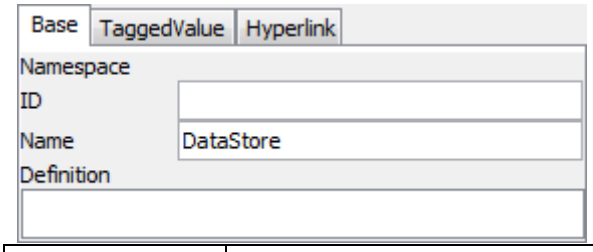


Element	Function
Data Flow Diagram	Specify the Data Flow Diagram to refer to
Property	Open properties of the Data Flow Diagram
New	Create a new Data Flow Diagram to be referred

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 70. Data Store Properties [P]

12. 70. 1. [Base] Tab

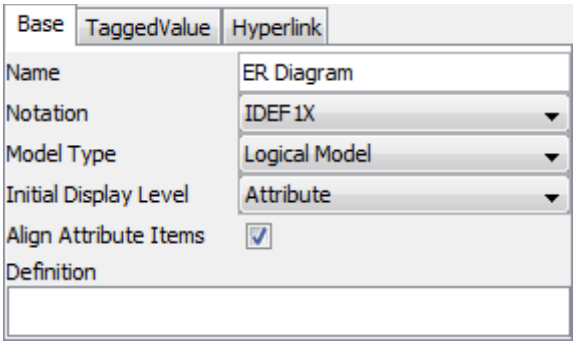


Element	Function
Namespace	Display the Namespace where the Namespace belongs
ID	Edit the Data Store ID
Name	Edit the Data Store Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 71. ER Diagram Properties [P]

12. 71. 1. [Base] Tab



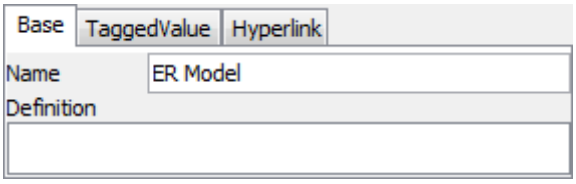
12.Property View

Element	Function
Name	Edit the ER Diagram Name
Notation	Switch the Notation of ER Diagram between IDEF1X and IE.
Model Type	Switch the Model type of ER Diagram between Logical Model and Physical Model.
Initial Display Level	Configure the display level of Entity from combobox; Entity, Primary Key or Attribute. -> Please refer to the ER Diagram - Display Level for more details.
Align Attribute Items	Check this to align the display of Attribute Items in line
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 72. ER Model Properties [P]

12. 72. 1. [Base] Tab

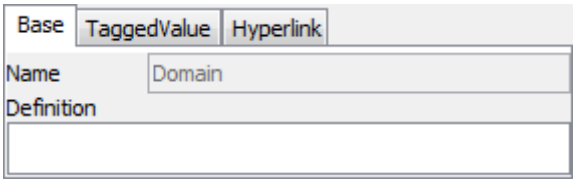


Element	Function
Name	Edit the ER Diagram Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 73. Domain Model Properties [P]

12. 73. 1. [Base] Tab

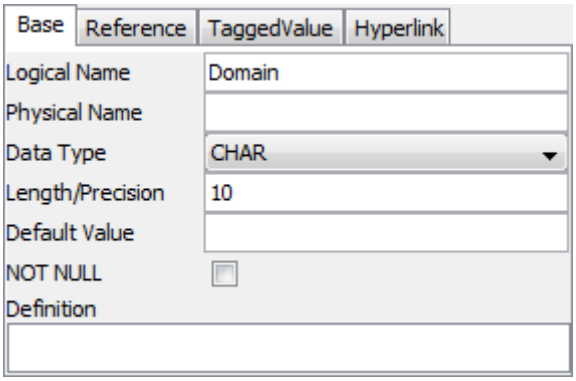


Element	Function
Name	Display the Domain Model Name
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

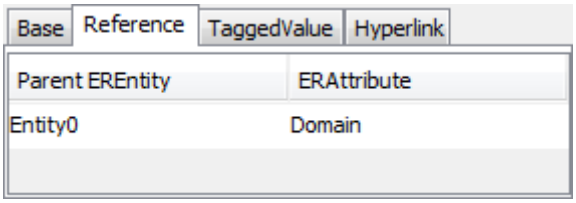
12. 74. Domain Properties [P]

12. 74. 1. [Base] Tab



Element	Function
Logical Name	Edit the Logical Name of Domain
Physical Name	Edit the Physical Name of Domain
Data Type	Specify the Data Type from Combo box
Length/Precision	Input the Length and Precision
Default Value	Edit the Default Value.
NOT NULL	Specify it if it is NOT NULL or not
Definition	Add Definition

12. 74. 2. [Reference] Tab

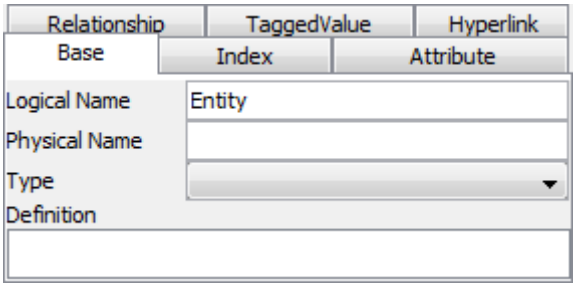


Element	Function
Parent EREntity	Display the name of the parent ER Entity.
ERAttribute	Display the name of the ER Attribute.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

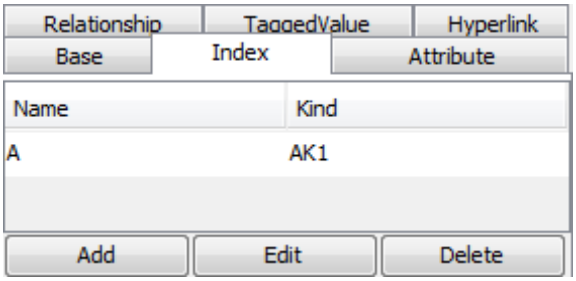
12. 75. Entity Properties [P]

12. 75. 1. [Base] Tab



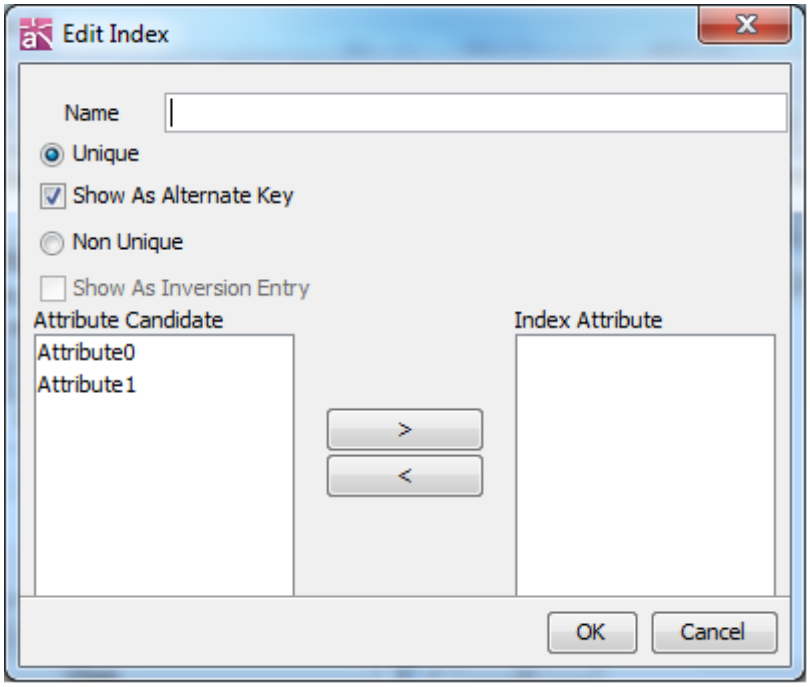
Element	Function
Logical Name	Edit the Logical Name of Entity
Physical Name	Edit the Physical Name of Entity
Type	Specify the Type from the combo box, [Resource], [Event], or [Summary]
Definition	Add Definition

12. 75. 2. [Index] Tab



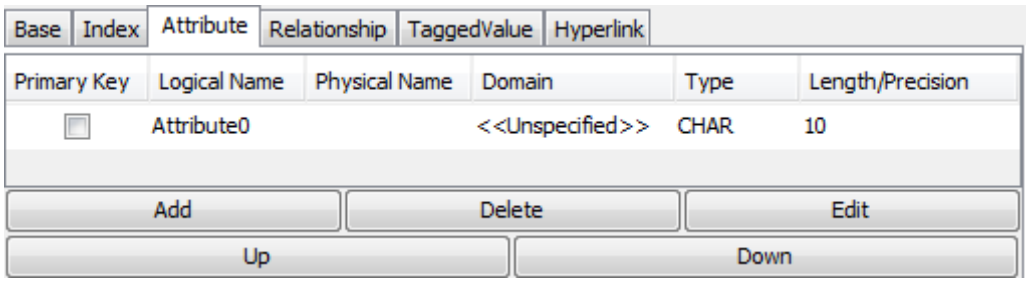
Element	Function
Name	Edit the Index Name
Kind	Edit the Index Kind
Add	Add Index
Edit	Edit Index
Delete	Delete selected Index

12.Property View



Element	Function
Name	Edit the Index Name
Unique	Set unique
Show As Alternate Key	Specify if it is shown as an alternate key
Non Unique	Set non-unique
Show As Inversion Entry	Specify if it is shown as an inversion entry

12. 75. 3. [Attribute] Tab

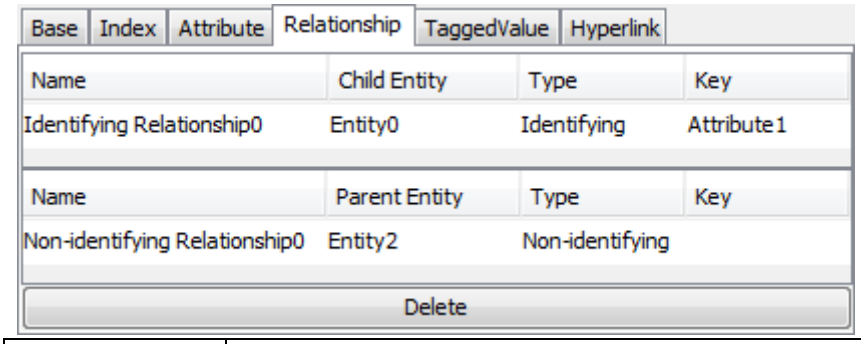


Element	Function
Primary Key	Select if it is a Primary Key or not
Logical Name	Edit the Logical Name
Physical Name	Edit the Physical Name
Domain	Specify the Domain from the Combo box

12.Property View

Type	Specify the Type from the Combo box
Length/Precision	Input the Length and Precision
Add	Add a new Attribute
Delete	Delete selected Attribute
Edit	Open properties of the selected Attribute
Up/Down	Rearrange the order of Attributes

12. 75. 4. [Relationship] Tab

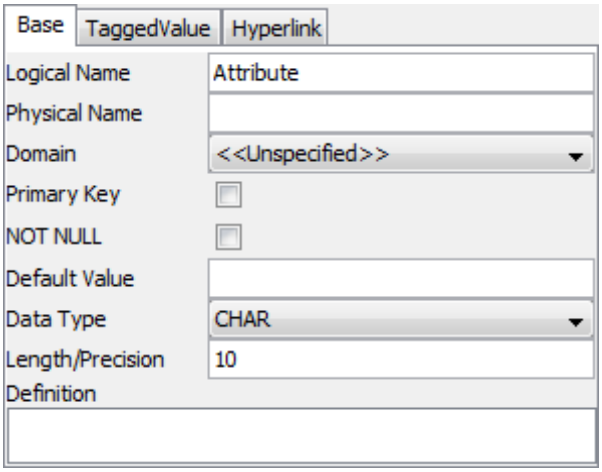


Element	**Function**
Name	Display the name of Relationship
Child Entity/ Parent Entity	Display the name of Child Entity/Parent Entity of the relationship
Type	Display the relation Type
Key	Display the key that related Entity has
Delete	Delete selected Relationship

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 76. Attribute Properties (ER Diagram) [P]

12. 76. 1. [Base] Tab

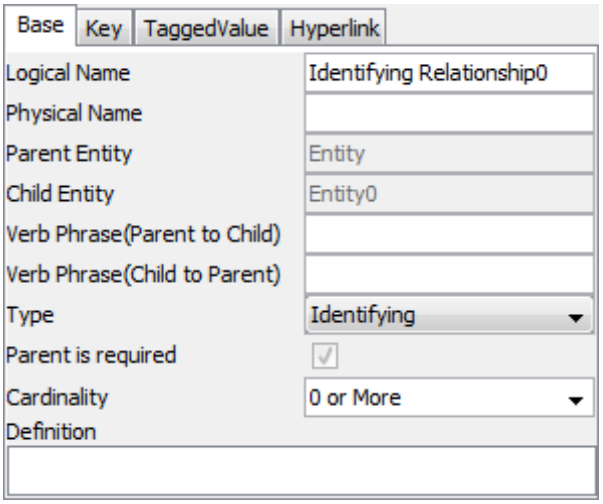


Element	Function
Logical Name	Edit the Logical Name of Attribute
Physical Name	Edit the Physical Name of Attribute
Domain	Specify the Domain from the Combo box
Primary Key	Specify if it is a Primary Key or not
NOT NULL	Specify if it is NOT Null or not
Default Value	Edit the Default Value
Data Type	Specify the Data type from the combo box
Length/Precision	Input the Length and Precision
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

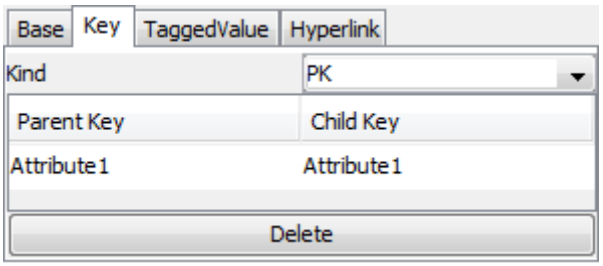
12. 77. Relationship Properties (ER Diagram) [P]

12. 77. 1. [Base] Tab



Element	Function
Logical Name	Edit the Logical Name of Relationship
Physical Name	Edit the Physical Name of Relationship
Parent Entity	Display the Parent Entity in the relationship
Child Entity	Display the Child Entity in the relationship
Verb Phrase (Parent to Child)	Edit the verb phrase from Parent to Child
Verb Phrase (Child to Parent)	Edit the verb phrase from Child to Parent
Type	Specify the Type from the combo box to [Identifying] or [Non-Identifying].
Parent is required	Check if the parent is required or not. (* Non-Identifying Relationship only)
Cardinality	Specify the Cardinality from the combo box. (0 or more), [1 or more], [0 or 1].)
Definition	Add Definition

12. 77. 2. [Key] Tab

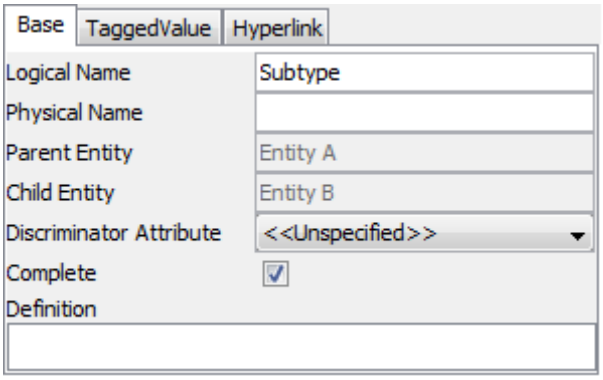


Element	Function
Kind	Select PK or Unique Index.
Parent Key	Edit the Parent Key.
Child Key	Select the Child Key.
Delete	Delete selected Key.

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 78. Subtype Properties [P]

12. 78. 1. [Base] Tab

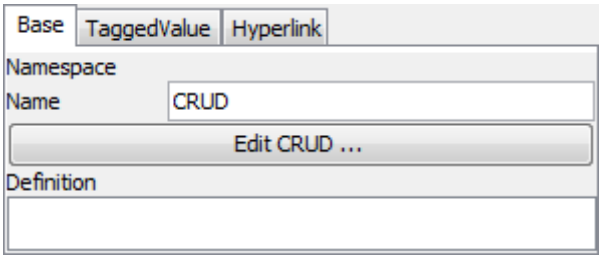


Element	Function
Logical Name/Physical Name	Edit the Logical Name/Physical Name of Subtype
Parent Entity / Child Entry	Display the Parent/Child Entity in the relationship
Discriminator Attribute	Specify the Discriminator Attribute from the Combo box
Complete	Specify it is complete or not
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 79. CRUD Properties [P]

12. 79. 1. [Base] Tab

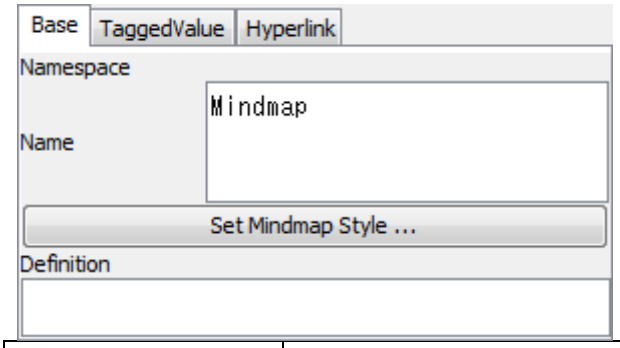


Element	Function
Namespace	Display the Namespace where the CRUD belongs
Name	Edit the CRUD Name
Edit CRUD	Open the dialog to configure CRUD
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 80. Mindmap Properties

12. 80. 1. [Base] Tab

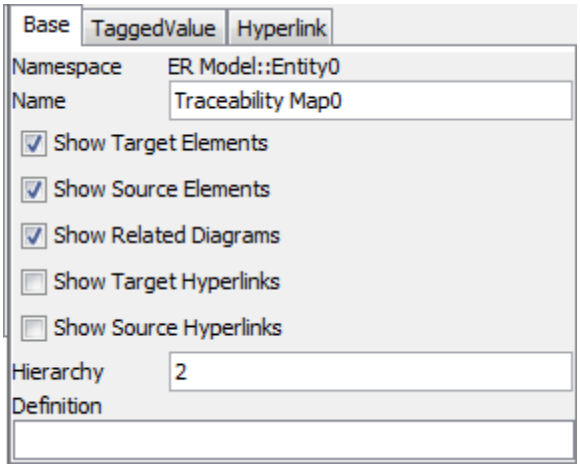


Element	Function
Namespace	Display the Namespace where the Mind Map belongs
Name	Edit the Mindmap Name
Set Mindmap Style	Open the dialog to configure Mindmap style
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 81. Traceability Map Properties [P]

12. 81. 1. [Base] Tab

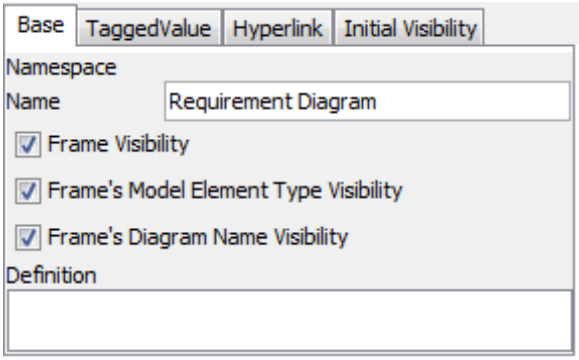


Element	Function
Namespace	Display the Namespace where this Traceability Map belong
Name	Edit the Traceability Map Name
Show Target Elements	Specify whether the elements are displayed
Show Source Elements	
Show Related Diagrams	
Show Target Hyperlinks	
Show Source Hyperlinks	
Hierarchy	Show the Hierarchy
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 82. Requirement Diagram Properties [P]

12. 82. 1. [Base] Tab

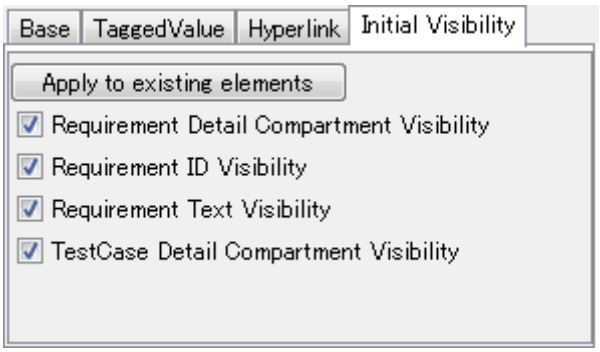


12.Property View

Element	Function
Namespace	Display the Namespace where the Requirement Diagram belong
Name	Edit the Requirement Diagram Name
Frame Visibility	Check to show a frame in a diagram
Frame"s Model Element Type Visibility	Check to show a model element type in the frame
Frames Diagram Name Visibility	Check to show a diagram name in the frame
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

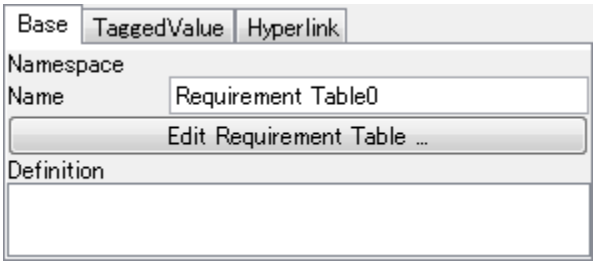
12. 82. 2. [Initial visibility] Tab



Check these box to show them on the diagram. When creating a new Requirement Diagram, the setting of System Properties - Initial Visibility 3 applies to this tab. By pressing [Apply to existing elements], you can apply this visibility setting to the existing model elements in the diagram which is open.

12. 83. Requirement Table Properties [P]

12. 83. 1. [Base] Tab



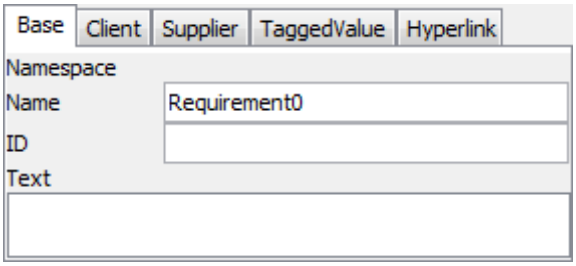
12.Property View

Element	Function
Namespace	Display the Namespace where this Requirement Table belongs
Name	Edit the Requirement Table Name
Edit Requirement Table	Open the dialog to configure Requirement Table
Definition	Add Definition

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

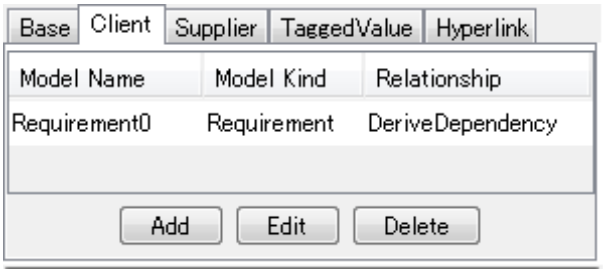
12. 84. Requirement Properties [P]

12. 84. 1. [Base] Tab



Element	Function
Namespace	Display the Namespace where the Requirement belongs
Name	Edit the Requirement Name
ID	Edit the Requirement ID
Text	Add Text

12. 84. 2. [Client] Tab

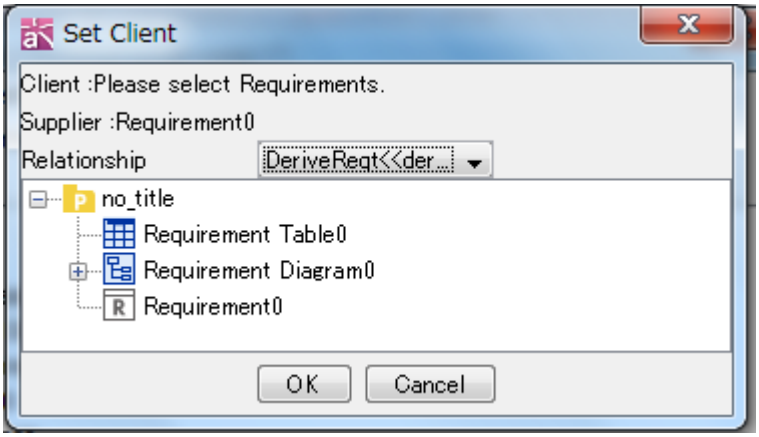


Element	Function
Model Name	Show the Model Name of Client
Model Kind	Show the Model Kind of Client
Relationship	Show the Relationship of Client
Add	Add Client

12.Property View

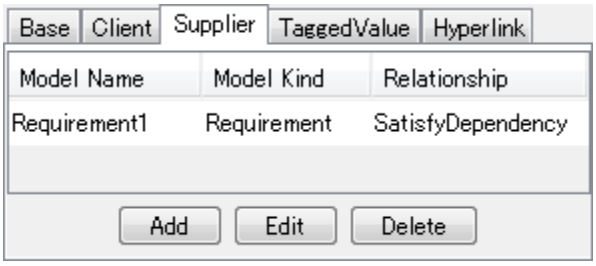
Edit	Edit Client.
Delete	Delete selected Client.

[Set Client] dialog opens when clicking [Add] or [Edit].



Relationship	**Target Model**
DeriveReqt<<deriveReqt>>	Requirement
Copy<<copy>>	Requirement
Satisfy<<satisfy>>	Package, Model, Subsystem, Class (Entity, Boundary, Control), AssociationClass, Interface, Actor, UseCase, Component, Artifact, Node, Requirement and TestCase
Verify<<verify>>	TestCase
Refine<<refine>>	Package, Model, Subsystem, Class (Entity, Boundary, Control), AssociationClass, Interface, Actor, UseCase, Component, Artifact, Node, Requirement and TestCase
Trace<<trace>>	Requirement

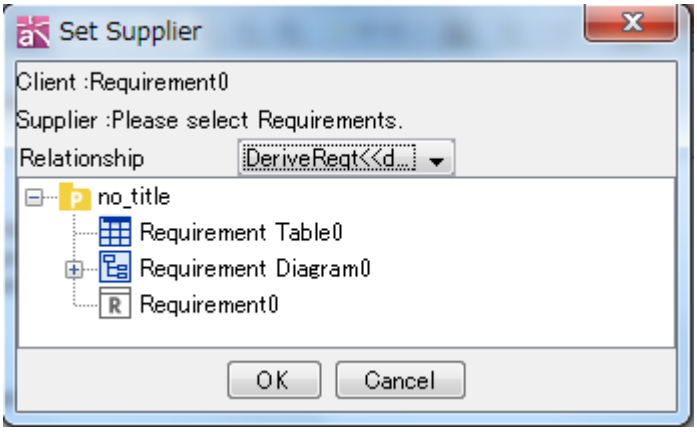
12. 84. 3. [Supplier] Tab



12.Property View

Element	Function
Model Name	Show the Model Name of Supplier
Model Kind	Show the Model Kind of Supplier
Relationship	Show the Relationship of Supplier
Add	Add the Supplier
Edit	Edit the Supplier
Delete	Delete selected Supplier

[Set Supplier] dialog opens when selecting [Add] or [Edit].

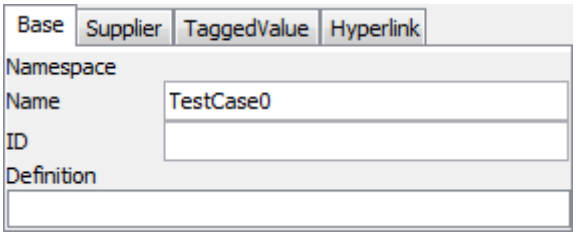


Relationship	Target Model
DeriveReqt<<deriveReqt>>	Requirement
Copy<<copy>>	
Satisfy<<satisfy>>	
Refine<<refine>>	
Trace<<trace>>	

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab.

12. 85. TestCase Properties [P]

12. 85. 1. [Base] Tab

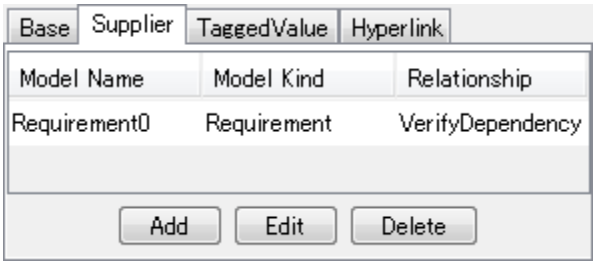


Element	Function

12.Property View

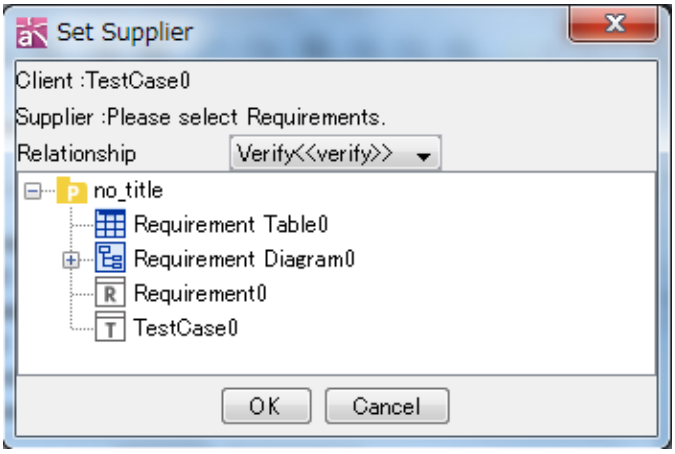
Namespace	Display the Namespace where the TestCase belongs
Name	Edit the TestCase Name
ID	Edit the TestCase ID
Definition	Add Definition

12. 85. 2. [Supplier] Tab



Element	Function
Model Name	Show the Model Name of Supplier
Model Kind	Show the Model Kind of Supplier
Relationship	Show the Relationship of Supplier
Add	Add Supplier
Edit	Edit the Supplier
Delete	Delete Supplier

[Set Supplier] dialog opens when selecting [Add] or [Edit].



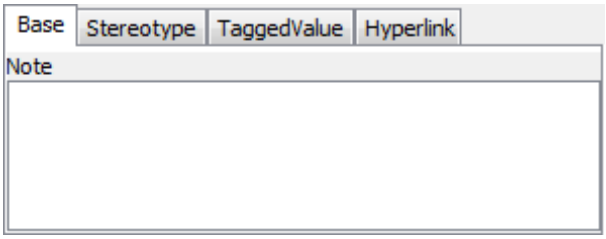
Relationship	Model
Verify<<verify>>	Requirement
Satisfy<<satisfy>>	
Refine<<refine>>	

12.Property View

-> Please refer to Class Diagram Properties for [TaggedValue] and [Hyperlink] tab

12. 86. Note Properties

12. 86. 1. [Base] Tab

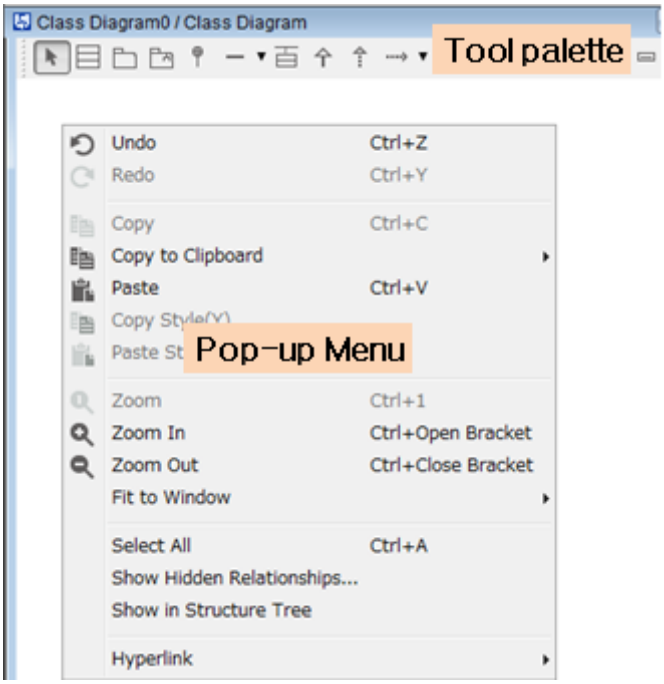


Element	Function
Note	Edit Note.

-> Please refer to Class Diagram Properties for [Stereotype], [TaggedValue] and [Hyperlink] tab

13. Editing Diagrams

This chapter describes the Diagram Editor that is used to edit Diagrams.



13. 1. Diagram Editor Popup Menu

a. Close

   Close the selected diagram

b. Close Left Tabs

   Close all the Diagram Editors on the left side of the selected diagram

c. Close Right Tabs

   Close all the Diagram Editors on the right side of the selected diagram

d. Close Others

   Close all the Diagram Editors except the selected diagram

e. Close All

   Close all diagrams.

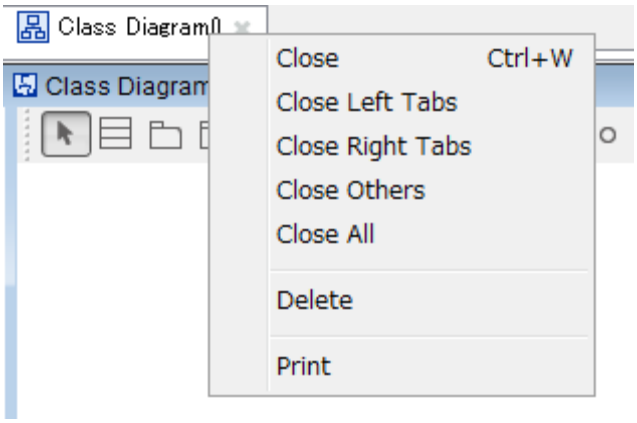
f. Delete

   Delete the selected diagram.

g. Print

   Print the current Diagram.

13.Editing Diagrams



13. 2. Draw Suggest Feature

Draw Suggest Feature appears when you have a mouse over a Model Element in the diagram, providing with a set of suggested Model Elements to help you with modeling faster.

To switch On/Off the Draw Suggest Feature, click [Suggest Feature] on the Tool palette.

While you hold [Shift] key down, setting is toggled another one.

The default setting can be done in the [Tool]-[System Properties]-[Diagram Editor]-[Enable Suggest Feature on the Diagram Editor].

13. 3. Creating Diagram Elements

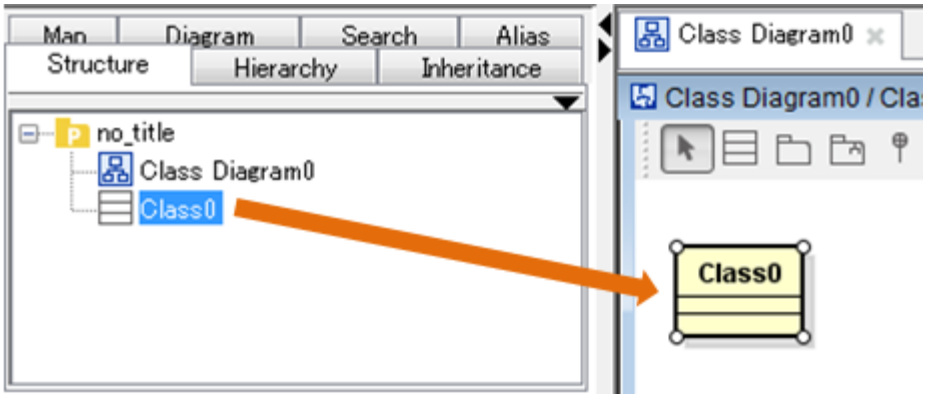
13. 3. 1. Using the Tool Palette

a. Select the target Diagram Element on the Tool Palette in the Diagram Editor
b. Click on the Diagram to create the Diagram Element
c. The new Diagram Element is added to the Structure Tree

Note) Some elements (e.g. Instance Specification, Generalization) won't be added to the Structure Tree.

13. 3. 2. By dragging and dropping from the [Structure Tree] onto a Diagram

1. Drag a model from the [Structure Tree] in the Project View.
2. Drop it onto a Diagram in the Diagram Editor to create the model



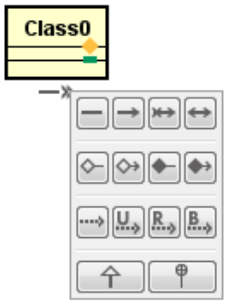
13. 3. 3. By double-clicking on the Diagram Editor

Double-click on the diagram editor creates a main model element of that diagram.

Diagram	Model elements to be created by double-click
Class Diagram	Class
UseCase Diagram	UseCase
Statemachine Diagram	State
Activity Diagram	Action
Sequence Diagram	Lifeline
Communication Diagram	Lifeline
Component Diagram	Component
Deployment Diagram	Node
Composite Structure Diagram	Structured Class, Part if you double-click in the Structured Class
Flowchart	Process
Data Flow Diagram (DFD)	ProcessBox
ER Diagram	ER Entity
Requirement Diagram	Requirement

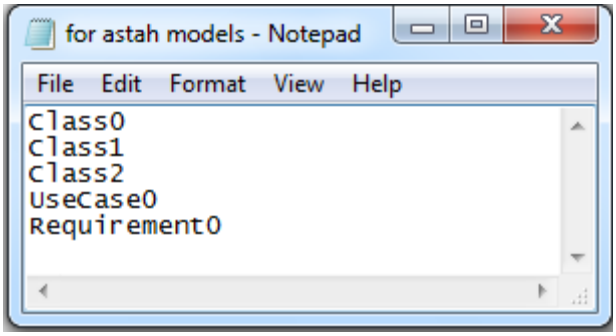
13. 3. 4. By using the suggest feature

1. Mouse-over a target model element
2. Models you can create will show
3. Choose a model you would like to create and click

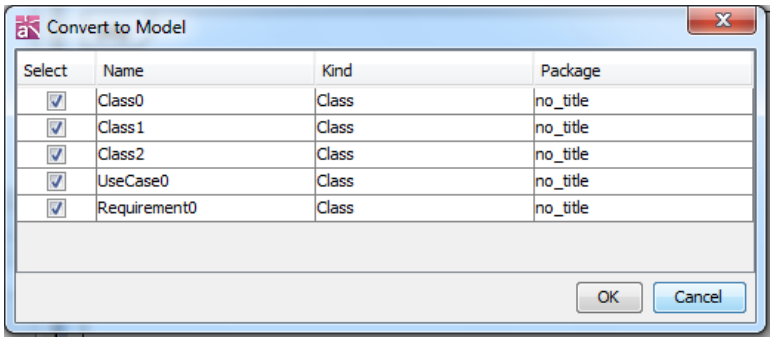


13. 3. 5. By pasting Text from Clipboard

1. Copy Text on Clipboard



2. Paste Text from Clipboard in the diagram, [Convert to Model] dialog appears



3. Specify the Kind and packages and then click [OK]

13. 4. Creating Diagram Elements in Succession

13. 4. 1. Using the [Lock Selected Mode] of the Tool Palette

a. Click on the [Lock Selected Mode] of the Tool Palette in the Diagram Editor to activate [Lock Selected Mode]
b. Select the target model element from tool palette
c. Click on the diagram repeatedly to create diagram elements in succession

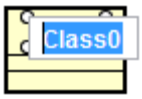
13. 4. 2. Using the [Shift] Key

a. Select the target diagram element from tool bar
b. While holding down the [Shift] Key, click on the diagram repeatedly to create diagram elements in succession

13. 5. Editing Diagram Elements

13. 5. 1. Editing Names

Place the cursor over the Name of a diagram element in the diagram editor.
Double-click and then edit the Name.



Note) Elements with no default name, such as Associations or Inheritance relationships, can be given a Name from the Property View or the popup menu.
Note) Names can be edited in the [Structure Tree] or in the [Property View] also.

13. 5. 2. Resizing

a. Using the Auto-Resize Function

If the Auto-Resize function is ON, a Diagram Element is automatically adjusted when actions are performed on it, for example when its Name is edited.

b. Resizing Manually

1. Select the target Diagram Element
2. Drag a corner to resize

Note) Auto-Resize Function can be turned ON/OFF using the Pop-up Menu.

13. 5. 3. Stereotype Notation

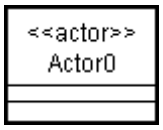
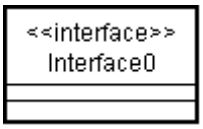
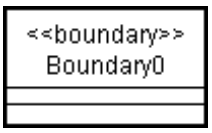
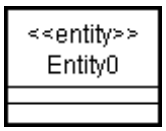
There are three types of notation for Stereotypes: [Normal], [Icon], and [Customize **[P]**]. When [Normal] is used, Stereotype Names are displayed enclosed with guillemets ("<<", ">>"). When [Icon] is used, Stereotypes are displayed with a default Icon.
When [Customize **[P]**] is used, Stereotypes are displayed with Icons defined by the user.

a. Standard Icons

(a) Standard Icon Types

By default, Astah defines the following standard Stereotypes: Actor, Interface, Boundary,

Control, and Entity. New Stereotypes can also be defined.

<Stereotype>	*<Normal Notation>*	*<Standard Icon Notation>*
Actor		
Interface		
Boundary		
Control		
Entity		

(b) Switching between Normal and Standard Icons

To switch icons between Normal and Standard Icons, right-click on the target model element, and select [Change Icon] in the Popup menu. Then select [Normal] or [Icon].

b. Customized Icons [P]

A user-defined Image can be used for Stereotype Icons.
Note) Customized Icons can be specified for Classifiers, Actions and Object Nodes only. (To do so, its Base Class must have the Stereotype has the customized Icon.)

(a) Creating Customized Icons

i) Clicking on the Project in the [Structure Tree]

(1) Select the Project in the Structure Tree
(2) Go down to its Property View and then click [Add] in the [Profile Stereotype] tab
(3) Select the Stereotype shown in the property view and click [Edit]

(4) Click on the Icon button and select an image

(5) Specify a Stereotype name to associate to the Stereotype and click [OK]

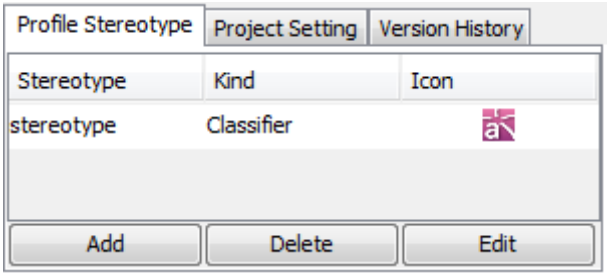
ii) Using the [Set Icon for Stereotype] on [Tool]

(1) Click [Tool] in the Main Menu and select [Set Icon for Stereotype]

(2)-(5) As described in i) above.

(b) Deleting Customized Icons

Select the target Icon and click [Delete]



(c) Switching between Normal and Customized Icons

To switch icons between Normal and Customized ones, right-click on the target model element, and then select [Change Icon] in the Popup menu. Then select [Normal] or [Customize].

13. 6. Multiple Selection/Cancel

13. 6. 1. Multiple Selection

a. By dragging the cursor over the target area

Drag the cursor over the Diagram Editor to select the target model elements.

b. Using the [Shift] ([Ctrl]) key

Select model elements in the Diagram Editor by holding down the [Shift] or [Ctrl] key.

Selecting all model elements in a Diagram

To select all the model elements in a diagram, select [Edit]-[Select All] in the Main Menu, or right-click on the Diagram Editor and select [Select All] from Pop-Up Menu. [Ctrl+A], the short cut key for [Select All] is also available.

13. 6. 2. Canceling the Selection

To cancel a selection, reselect the selected model elements with holding either [Shift] or [Ctrl] key down.

13. 7. Copying and Pasting

a. Using the Popup menu.

(a) Right-click on the target model element in the Diagram Editor and select [Copy]

(b) Right-click on the Diagram Editor and select [Paste]

13. 7. 1. b. Using [Edit] in the Main Menu

a. Click [Edit] in the Main Menu and select [Copy] or [Paste].

b. [Ctrl+C], [Ctrl+V] are available as a short cut key.

Note)

Model Elements can be pasted only on the same type of diagrams where the original Model Elements are. Model Elements can be pasted directly into a Package or a Subsystem. When you do, pasted model elements would appear under the Package or Subsystem in the Structure Tree. (Except when you copy from one Astah to another.)

13. 8. Copying as Images

Diagram Elements copied by [Copy to Clipboard] are stored in the Clipboard. They can be pasted into other applications (MS Word, etc) as images.

[Not in Mac] Model elements can also be stored in the Clipboard as EMFs (Enhanced Meta File).

13. 9. Copying/Pasting Style

This copies and pastes the style and background color of Texts, Freehands, Rectangles, Ovals and Lines.

a. Using the [Edit] in the Main Menu

(a) Select [Edit]-[Copy Style] in the Main Menu

(b) Select [Edit]-[Paste Style] in the Main Menu

b. Using [Copy Style]/[Paste Style] on the Tool Bar.

(a) Click [Copy Style] on the Tool Bar

(b) Click [Paste Style] on the Tool Bar

d. Using the Popup menu.

(a) Right-click on the target Diagram Element(s) and select [Copy Style]
(b) Right-click on the Diagram Element(s) and select [Paste Style]

13. 10. Color Setup

13. 10. 1. Setting up Colors of Diagram Elements

a. Using the [Edit] in the Main Menu

(a) Select [Edit]-[Set Color] in the Main Menu
(b) Select or create a color and click [OK] in the Color Chooser

a. Using the Tool Bar in the [Management View]

(a) Select the target Diagram Element(s) in the Diagram Editor
(b) Click the triangle mark of [Set Color] on the Tool Bar
(c) Select or create a color
(d) To use the color used in the previous operation, click the color rectangle of the button

b. Using the Pop-up Menu

(a) Right-click on the target Diagram Element(s) and select [Set Color].
(b) Select or create a color and click [OK] in the Color Chooser.

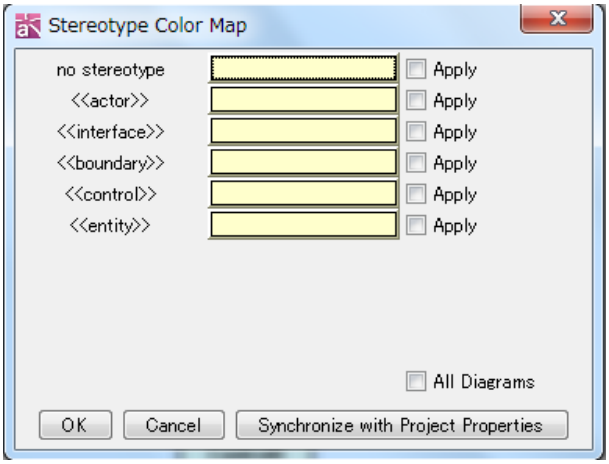
The Color Chooser Dialog

The Color Chooser contains six image color groups: Aqua, Earth, Nature, Spring, Passion, and Winter. You can get good color combinations by using these color groups. [Favorite] can be used to store your favorite colors up to 10 colors.

13. 10. 2. Setting up Colors for Diagram Elements of each Stereotype

Please refer to the Default Stereotype Color section for the supported Diagram Element Types. Please refer to the Color Setup section for how to set the color for Elements.

(1) Select [Edit] - [Set color for Stereotype] from the Main Menu
(2) A [Stereotype Color Map] window shows up
(3) Select the Stereotype box then choose color
(4) Check on [Apply] or [All Diagrams] then press down [OK] button



To synchronize the setting of the System Properties, press [Synchronize with Project Properties].

13. 10. 3. Setting up Font Colors of Diagram Elements

a. Using the [Edit] in the Main Menu

(1) Select [Edit]-[Set Font Color] in the Main Menu.

(2) Select or create a color and click [OK] in the Color Chooser.

a. Using the Tool Bar in the [Management View]

(1) Select string(s) of the target Diagram Element(s) in the Diagram Editor.

(2) Click the triangle mark of A [Set Font Color] on the Tool Bar.

(3) Select or create a color.

(4) To use the color used in the previous operation, click the color rectangle of the button.

b. Using the Pop-up Menu

(1) Right-click on string of the target Diagram Element and select A [Set Font Color].

(2) Select or create a color and click [OK] in the Color Chooser.

[Diagram Element to set font color]

- Classes (Attributes and Operations)
- Packages
- Subsystems (Operations)
- Association Classes (Attributes and Operations)
- Associations (Association Ends)
- Generalizations
- Realizations

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- Dependencies
- Usages
- Interfaces
- Entities
- Boundaries
- Controls
- Instance Specifications
- Slots
- Links (Link Ends)
- Actors
- UseCases
- Extends
- Includes
- States
- Trigger, Guard and Action of Transitions
- Submachine states
- StubState of Submachines
- Partitions
- Actions
- CallBehaviorActions
- Flow Final Nodes
- SendSignalActions
- AcceptEventActions
- Control Flows/Object Flows
- Object Nodes
- Processes
- Connectors
- Lifelines
- Messages（Argument, Guard, Return Value Variable, Return Value and Operation）
- Asynchronous Messages（Argument, Guard, Return Value Variable, Return Value and Operation）
- Create Messages（Argument, Guard, Return Value Variable, Return Value and Operation）
- Destroy Messages（Argument, Guard, Return Value Variable, Return Value and Operation）
- Reply Messages

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- CombinedFragments
- InteractionUses
- StateInvariants
- Components
- Parts
- External Parts
- Ports (Multiplicity and Type)
- Classifiers
- Artifacts
- Nodes
- NodeInstances
- Components
- ComponentInstances
- Structured Classes
- Processes
- Transition Conditions
- External Entities
- Processes
- Data Stores
- Data Flows
- ER Entities (ER Attributes)
- Requirement
- TestCase

13. 11. Set Style

To edit the style of elements, use their Pop-up menu.

a. Line width, Line type and Line color can be set for Lines, Freehands, Rectangles and ovals
b. Line color, Text color, Background color and font can be set for Texts
c. Font color and Font can be set for Notes

13. 12. Editing Lines

13. 12. 1. Creating Lines

There are various types of Line Elements including Association, Inheritance, Realization, Dependency, and Transition. They can all be created in a similar way:

a. Select the target line type from the Tool Palette in the Diagram Editor
b. Click on a Diagram Element to select the starting point of the line
c. Click on a second Diagram Element to select the endpoint
Note)

- To draw a polygonal line, click on a Diagram Element to select the starting point. Next, click on any point on the Diagram. Finally, click on a Diagram Element to select the endpoint.
- Lines can be also created by dragging the cursor between model elements.
- Lines can be redrawn by pressing the [Esc] key or by right-clicking while drawing.

13. 12. 2. Editing Targets of Lines

To change the endpoint of a Line, simply drag the endpoint onto a new target.

13. 12. 3. Line Styles

There are four line styles: "Line", "Line (Right Angle)", "Curve", and "Curve (Right Angle)". By default, "Line" is used for all diagrams except Data Flow Diagram (DFD) and ER Diagram. ("Line (Right Angle) is default for these two diagrams.)

a. Using [Edit] in the Main Menu

(1) Select a Line in the Diagram Editor.
(2) Select [Edit]-[Line style]-[Line]/[Line (Right Angle)]/[Curve]/[Curve (Right Angle)].

b. Using buttons on the Tool Bar

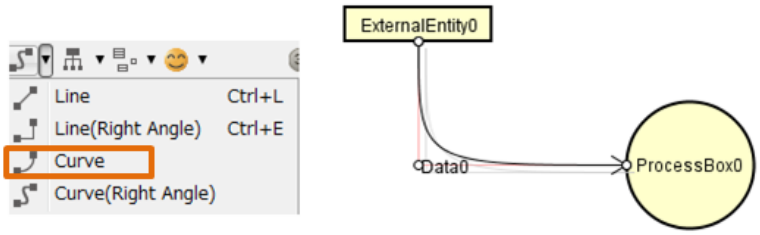
(1) Select the target Line in the Diagram Editor.
(2) Click [Line]/[Line (Right Angle)]/[Curve]/[Curve (Right Angle)] on the Tool Bar in the Management View.

c. Using the Pop-up Menu

Right-click on the target Line in the Diagram Editor and select [Line style] - [Line]/[Line (Right Angle)]/[Curve]/[Curve (Right Angle)].

Changing the default setting of Line Mode

In the Diagram Editor, select the line mode on the Tool Bar.



Note 1) Existing Lines are not changed to the selected line mode

Note 2) Default Line styles can be set for each Diagram type in the System Properties.

13. 12. 4. Setting up Line Color

a. Using the [Edit] in the Main Menu

(1) Select [Edit]-[Set Line Color] in the Main Menu.

(2) Select or create a color and click [OK] in the Color Chooser.

b. Using the Tool Bar in the [Management View]

(1) Select a line in the Diagram Editor.

(2) Click the triangle mark of [Set Line Color] on the Tool Bar.

(3) Select or create a color.

(4) To use the color used in the previous operation, click the color rectangle of the button.

c. Using the Pop-up Menu

(1) Right-click on string of the target Diagram Element and select [Set Font Color].

(2) Select or create a color and click [OK] in the Color Chooser.

13. 13. Mini Icon

You can add Mini Icon on the right top corner of the Model Elements (See the list below).

13. 13. 1. Adding Mini Icon

i) Select a model in diagram and click the [Add Mini Icon] you want to add from the tool bar.

ii) Right-click on a model in the Diagram and select [Add Mini Icon] from its Pop-up menu

13. 13. 2. Deleting Mini Icon

Right-click on a model in the Diagram and select [Delete Mini Icon] from its Pop-up menu.

Diagram	Model Elements
Multiple diagrams commonly	Model, Subsystem, Package, Note, Text, Interface, Entity, BusinessEntity, Boundary, Control, BusinessWorker, Instance Specification
Class Diagram	Class, Association Class
UseCase Diagram	Actor, UseCase
Statemachine Diagram	State, Submachine State
Activity Diagram	Action, Callbehavior Action, FlowFinal Node, SendSignal Action, AcceptEvent Action, Object Node, Process, Connector
Sequence Diagram	Lifeline, Message
Communication Diagram	Lifeline, Message
Component Diagram	Component, Part, Classifier, Artifact
Deployment Diagram	Node, Node Instance, Component, Component Instance
Composite Structure Diagram	Structured Class, Part, Class, Association Class
Flowchart[P]	Process
Data Flow Diagram (DFD)[P]	External Entity, ProcessBox, DataStore
ER Diagram[P]	ER Entity
Requirement Diagram[P]	Requirement, TestCase

13. 14. Displaying Diagrams

This section describes operations that affect the display of diagrams in the Diagram Editor.

13. 14. 1. Enlarging Diagrams

a. Using [View] in the Main Menu

Select [View]-[Zoom In] in the Main Menu.

Note) Enlarging operations can be repeated by pressing the shortcut key [Ctrl+[ ].

b. Using [Zoom in current Diagram Editor] on the Tool Bar.

Click [Zoom in current Diagram Editor].

Note) Enlarging operations can be repeated by pressing this icon.

c. Using the Pop-up Menu

(a) Right-click on the Diagram Editor.

(b) Select [Zoom In].

d. Using the [Ctrl] key and the mouse

(a) Press the [Ctrl] key and right-drag upwards.

(b) Press the [Ctrl] key and rotate the mouse wheel forwards.

13. 14. 2. Shrinking Diagrams

a. Using [View] in the Main Menu

Select [View]-[Zoom Out] in the Main Menu.

Note) Shrinking operations can be repeated by pressing the shortcut key [Ctrl+]].

b. Using [Zoom out current Diagram Editor]

Select [Zoom out current Diagram Editor] on the Tool Bar.

Note) Shrinking operations can be repeated by pressing this icon.

c. Using the Pop-up Menu

(a) Right-click on the Diagram Editor.

(b) Select [Zoom Out].

d. Using the [Ctrl] key and the mouse

(a) Press the [Ctrl] key and right-drag downwards.

(b) Press the [Ctrl] key and rotate the mouse wheel backwards.

13. 14. 3. Displaying Diagrams in their Original Size

a. Using [View] in the Main Menu

Select [View]-[Zoom] in the Main Menu.

b. Using [Zoom to Default] on the Tool Bar.

Select [Zoom to Default] on the Tool Bar.

c. Using the Pop-up Menu

(a) Right-click on the Diagram Editor.

(b) Select [Zoom].

13. 14. 4. Displaying the Diagram Overview

[Fit to Window]		Make the whole diagram fit in the window

[Fit to Window Width]		Make the diagram to fit in the width of the wind of Diagram Editor.
[Fit to Window Height]		Make the diagram to fit in the height of the wind of Diagram Editor.

a. Using [View] – [Fit to Window] in the Main Menu

Select the way you would like to display from [View]-[Fit to Window] in the Main Menu.

b. Using [Fit to Window] on the Tool Bar

Select [Fit to Window] on the Tool Bar and select the way you would like to display.

c. Using the Pop-up Menu

(a) Right-click on the Diagram Editor.

(b) Select [Fit to Window].

Note) [Map] on the Project View can be also used to enlarge and shrink Diagrams.

13. 14. 5. Moving Diagrams

Right-drag diagrams to move them in the Diagram Editor.

(a) Moving Diagrams Vertically

Diagrams can be moved vertically by rotating the mouse wheel. When the mouse wheel is rotated forwards, Diagrams are moved upwards. When the mouse wheel is rotated backwards, Diagrams are moved downwards.

(b) Moving Diagrams Horizontally

Diagrams can be moved horizontally by rotating the mouse wheel and pressing the [Shift] key. When the mouse wheel is rotated forwards, Diagrams are moved to the right. When the mouse wheel is rotated backwards, Diagrams are moved to the left.

13. 15. Alignment of Diagram Elements

[Align Top]		Align Diagram Elements with the top end of the highest Diagram Element.
[Align Horizontal Center]		Align Diagram Elements along the midpoint between the highest and lowest Diagram Elements.
[Align Bottom]		Align Diagram Elements with the bottom end of the lowest Diagram Element.

13.Editing Diagrams

[Align Horizontal Even]		Horizontally align Diagram Elements with even spacing.
[Adjust Height]		Adjust the height of Diagram Elements so that they are the same height as the highest Diagram Element.
[Align Left]		Align Diagram Elements with the left side of the leftmost Diagram Element.
[Align Vertical Center]		Align Diagram Elements along the midpoint between the leftmost and rightmost Diagram Elements.
[Align Right]		Align Diagram Elements with the right side of the rightmost Diagram Element.
[Align Vertical Even]		Vertically align Diagram Elements with even spacing between the highest and lowest Diagram Elements.
[Adjust Width]		Adjust the width of Diagram Elements so that they are the same width as the widest Diagram Element.

a. Using the Tool Buttons

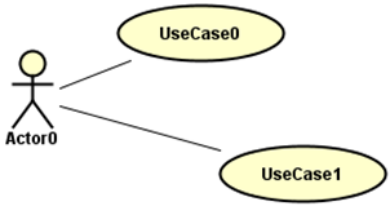
(a) Select the target Diagram Elements to align.

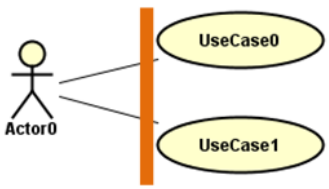
(b) Click one of the Align Buttons on the Tool Bar.

b. Using [Align] on the Menu

(a) Select the target Diagram Elements to align.

(b) Select one of the options from the [Alignment] Menu.





Adjusting Size

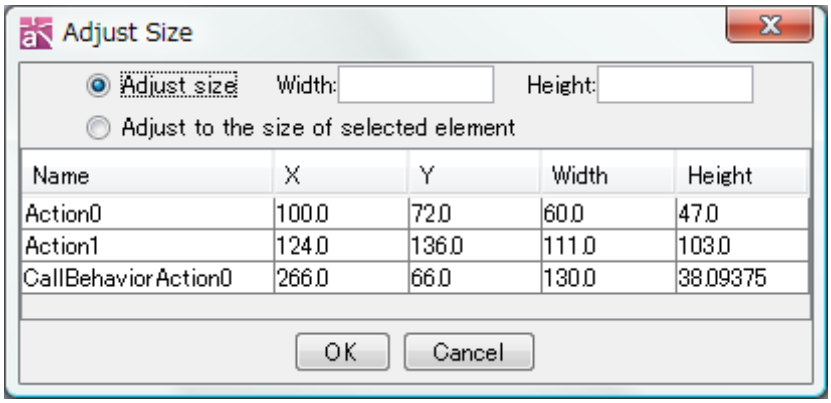
Adjust the size of Diagram Elements by inputting the size directly or selecting the element.

(1) Select Diagram Elements

(2) Select [Alignment]-[Adjust Size]-[Adjust Size]

13. 15. 1. Input the size directly

To adjust Diagram Elements by the specified size, select [Adjust Size] then input the size for both of the Width and Height then press [OK].

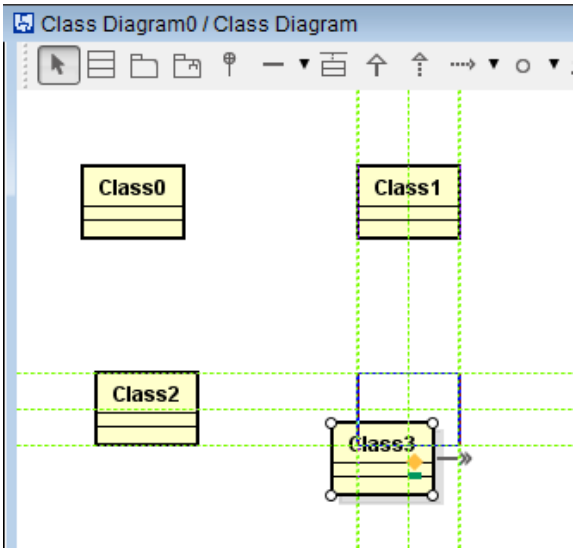


13. 15. 2. Adjust to the selected Element Size

To adjust Diagram Elements by selecting a particular model elements size, select [Align to the size of the selected element] then select a Model Element and press [OK].
Note) Some of model elements may not be adjusted properly depending on the length of names or comments inside of them.

13. 16. Align Guide

The red line (Align Guide) appears on the Diagram Editor when moving a model element. It helps you to place model elements aligned with other model elements.



13. 17. Jumping to Models in the Structure Tree

Jump to a Model in the Structure Tree from a Diagram Element on Diagrams.

a. Right-click on the target Diagram Element in the Diagram Editor.

b. Select [Show in Structure Tree].

c. The target Diagram is displayed and selected in the Structure Tree.

13. 18. Jumping to Diagrams in the Structure Tree

Jump to the Diagrams in the Structure Tree from the Diagram Editor

a. Right-click on the Diagram Editor

b. Select [Show in Structure Tree]

c. The target Diagram is displayed and selected in the Structure Tree

13. 19. Changing the order of overlapped Model Elements

[Bring to Front]		Move the selected Diagram Element to the top.
[Bring Forward]		Move the selected Diagram Element one step closer to the front.
[Send Backward]		Move the selected Diagram Element one step back.
[Send to Back]		Send the selected Diagram Element to the back of all the Diagram Element.

a. Using [Edit] – [Depth Arrangement] in the Main Menu

Select the Model Element in the Diagram Editor and select the way you would like to move it from [Edit]-[Depth Arrangement] in the Main Menu.

b. Using on the Tool Bar

Select the icon of the way you would like to move the selected Model Element on the Tool Bar.

c. Using the Pop-up Menu

(a) Right-click on the Model Element(s) you would like to move.

(b) Select the way you would like to move from the [Depth Arrangement] menu.

Note) [Map] on the Project View can be also used to enlarge and shrink Diagrams.

14. Diagrams and Diagram Elements

This chapter describes Diagram Types and Elements.

14. 1. Class Diagram

Class Diagrams are used to draw 4 types of Diagrams: Class Diagrams, Object Diagrams, Package Diagrams, and Robustness Diagrams.

Class Diagram	Depict the static structure of a system.
Object Diagram	Depict a static snapshot of Class instances.
Package Diagram	Depict the hierarchical structure of Packages and dependencies between Packages.
Robustness Diagram	Depict the basic structure of a system.

14. 1. 1. Creating Class Diagrams

a. Using [Diagram]-[Class Diagram] in the Main Menu.

b. Using the Pop-up Menu in the Structure Tree in the "Project View".

14. 1. 2. Diagram Elements of Class Diagrams

The Diagram Elements that can be used in Class Diagrams are listed below.

Select		Mode for basic operations in the Diagram Editor
Class		Add Classes
Package		Add Packages
Subsystem		Add Subsystems
Nest		Add Nests
Association		Add Associations (Unspecified Association to Unspecified Association)
Association		Add Associations (Unspecified Association to Navigable Association)
Association		Add Associations (Non-Navigable Association to Navigable Association)
Association		Add Associations. (Navigable Association to Navigable Association)
Aggregation		Add Aggregations. (Aggregation to Unspecified Association)

Aggregation		Add Aggregations. (Aggregation to Navigable Association)
Composition		Add Compositions. (Composition to Unspecified Association)
Composition		Add Compositions. (Composition to Navigable Association)
Association Class		Add Association Classes.
Generalization		Add Generalizations.
Realization		Add Realizations.
Dependency		Add Dependencies.
Usage		Add Usages.
Realization		Add Realizations.
Template Binding		Add Template Bindings.
Interface		Add Interfaces with icon notation.
Interface (Normal)		Add Interfaces with normal notation.
Required Interface		Add Required Interfaces.
Provided Interface		Add Provided Interfaces.
Entity		Add Entities.
BusinessEntity		Add BusinessEntities.
Boundary		Add Boundaries.
Control		Add Controls.
BusinessWorker		Add BusinessWorkers.
Instance Specification		Add Instance Specification (Entities/BusinessEntities/ Boundaries/Controls/BusinessWorkers).
Link		Add Links.
		See "Common Diagram Elements"

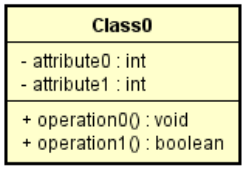
14. 1. 3. Class

a. Creating Classes

(a) Using [Class] on the Tool Palette

(b) Using the [Structure Tree] in the "Project View"

(c) Double-click on the Class Diagram



b. Editing Classes

(a) Adding Stereotypes

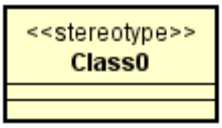
i) Using the Pop-up Menu

Right-click on the target Class and select [Add Stereotype].

ii) Using the "Property View".

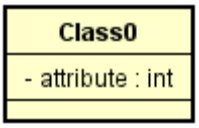
iii) Using the short-cut key

Click on the target Class and press [Ctrl+Alt+S]



Note) To add stereotype, use the shortcut key [Ctrl+Alt+S].

(b) Adding Attributes



i) Using the [Structure Tree] in the "Project View"

ii) Using the Pop-up Menu

Right-click on the target Class and select [Add Attribute].

iii) Using the "Property View".

iv) Using a draw suggest feature

Note) The default type of Attributes can be set in System Properties.

(c) Deleting Attributes

i) Using the [Structure Tree] in the "Project View".

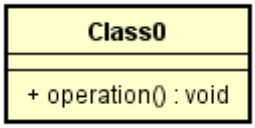
ii) Using the Pop-up Menu.

Right-click on the target Class and select [Delete Attribute] and click one you want to

delete from Attribute list

iii) Using the "Property View".

(d) Adding Operations



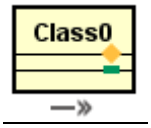
i) Using the [Structure Tree] in the "Project View".

ii) Using the Pop-up Menu.

Right-click on the target Class and select [Add Operation].

iii) Using the "Property View"

iv) Using a draw suggest feature



TIP) Shortcut keys for Attributes/Operations in diagram

- [Enter] to create continuously
- [Shift + Enter] to insert new one above selected one
- [Ctrl + Upward Arrow cursor] to move up
- [Ctrl + Downward Arrow cursor] to move down
- [Ctrl + C] to copy
- [Ctrl + V] to paste
- Transferable between Classes by drag & drop

(e) Deleting Operations

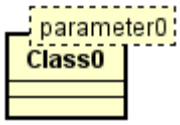
i) Using the [Structure Tree] in the "Project View".

ii) Using the Pop-up Menu.

Right-click on the target Class and select [Delete Operation] and click one you want to delete from Operation list

iii) Using the "Property View".

(f) Adding Template Parameters



i) Using the Pop-up Menu on the Class

Right-click on the target Class and select [Add Template Parameter].

ii) Using the Pop-up Menu on the Template Parameter

Right-click on the target Template Parameter and select [Add Template Parameter].

iii) Using the "Property View"

(g) Deleting Template Parameters

i) Using the Pop-up Menu on the Class.

(1) Right-click on the target Class and select [Delete Template Parameter].

(2) Select a Template Parameter to delete.

ii) Using the Pop-up Menu on the Template Parameter.

(1) Right-click on the target Template Parameter and select [Delete Template Parameter].

(2) Select a Template Parameter to delete.

iii) Using the [Delete] / [Ctrl + D] key

Click the Template Parameter on the Diagram Editor, then press [Delete] or [Ctrl + D] Key.

iv) Using the "Property View".

(h) Editing Class Names

Double-click the Name in the diagram and then edit the name, or go to Base tab of the Class in the Property View.

(i) Showing Related Elements

(1) Right-click on the target Class and select [Show Related Elements].

(2) All elements that are related to Classes appear on the Diagram Editor including Generalization, Realization and Dependency relationships.

(j) Showing Hidden Relationships

(1) Right-click on the target Class and select [Show Hidden Relationships].

(2) To show hidden relationships, select relationships (e.g. Generalization, Realization and Dependency) in Show Hidden Relationships dialog and click OK.

(k) Notation of Classes

i) Stereotype Visibility

The display/non-display settings for a Class Stereotype can be selected from the Pop-up Menu.

ii) Attribute/Operation Compartment Visibility

The display/non-display settings for Attributes and Operations of a Class can be selected from the Pop-up Menu.

iii) Show/Hide Namespace

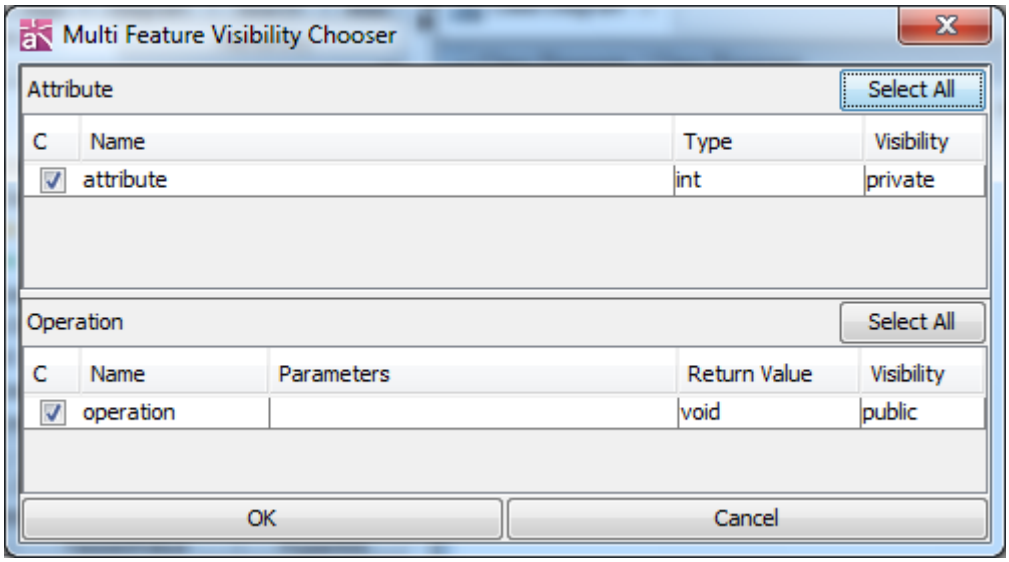
(1) Right-click on the target Class and select [Extended Visibility]-[Show/Hide Namespace].

(2) Select one of the following package levels to display.

None	None of Parent Package Names will be added to the Class Name.
Package	Only the direct Parent Package Name will be added.
All Packages	All the Parent Package Names will be added.

iv) Individual Attribute/Operation Visibility

The display/non-display settings for each Attribute and Operation of a Class can be selected from the Pop-up Menu.



v) Attribute/Operation Elements Visibility

The display/non-display settings for Elements of a Class Attribute or Operation can be selected from the Pop-up Menu.

vi) Visibility of Attribute/Operation

The display/non-display settings for Elements of a Class Attribute or Operation by the visibility (Public, Protected, Package, and Private) can be selected from the Pop-up Menu.

vii) Other Visibilities of Attribute/Operation

The display/non-display settings for other visibilities of a Class Attribute or Operation can be selected from the Pop-up Menu.

(1) Attribute

Type, Initial Value, Stereotype and Constraint

(2) Operation

Return Type, Parameter, Parameter Type, Parameter Direction Kind, Stereotype and Constraint

(3) Template Parameter

Template Bound Information, Template Formal Parameter

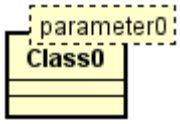
c. Reference from CRUD

To open the CRUD, right-click on the target Class and select [Reference from CRUD].

14. 1. 4. Template Class

a. Creating Template Classes

Right-click on the target Class and select [Add Template Parameter], or go to Template parameter tab in the Class Property View.



14. 1. 5. Bound Class

a. Creating Bound Classes

Add a Template Binding from a Class to a Template Class.

-> Please refer to the Template Binding for more details.

b. Creating Anonymous Bound Classes

Delete the name of a Bound Class.

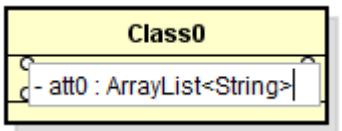
c. Specifying Anonymous Bound Classes

Anonymous Bound Classes can be specified to the following:

- Attribute Type
- Operation Return Value
- Operation Parameter Type
- Target of Association End A and Association End B
- Base Class of Instance Specification in Class
- Base Class of Object Node in Activity Diagram
- Base Class of Lifeline in Sequence Diagram and Communication Diagram

d. Creating Bound Classes by specifying Anonymous Bound Classes

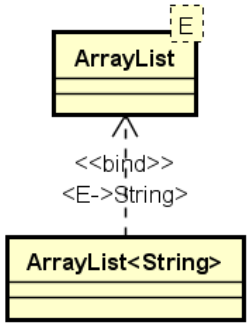
(a) Add an attribute whose type is bound class.



(b) Crate Anonymous Bound Class

Select “Yes” to the message asking to create new class.

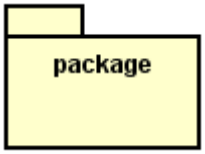
You can confirm the relationship of the anonymous bound class by dragging and dropping the created class from the structure tree to a class diagram. It is necessary to execute [Show Hidden Relationships…] in the popup menu of Class, if the template class is not in the class diagram.



14. 1. 6. Package

a. Creating Packages

(a) Using [Package] on the Tool Palette.
(b) Using the [Structure Tree] in the "Project View".



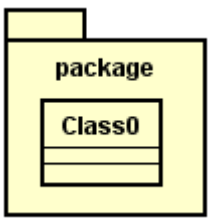
b. Editing Packages

(a) Editing Package Names

Double-click the name of package in the diagram and then edit the name directly, or go to Base tab of the Package in the Property View.

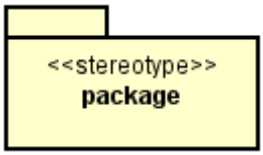
(b) Specific operations for Packages

Models in Packages can be handled as a unit in the Diagram Editor. Diagram Elements can be added to Packages by dragging and dropping.



(c) Adding Stereotypes

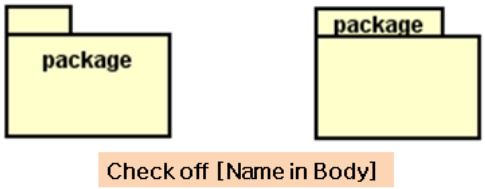
Right-click on the target Package and select [Add Stereotype], or go to Stereotype tab in the Property View.



(d) Package Visibility

i) Name in Body

The display/non-display settings for a Package Name can be selected from the Pop-up Menu.



ii) Stereotype Visibility

The display/non-display settings for a Package Stereotype can be selected from the Pop-up Menu.

iii) Show/Hide Namespace

(1) Right-click on the target Package and select [Show/Hide Namespace].
(2) Select a package level to display.

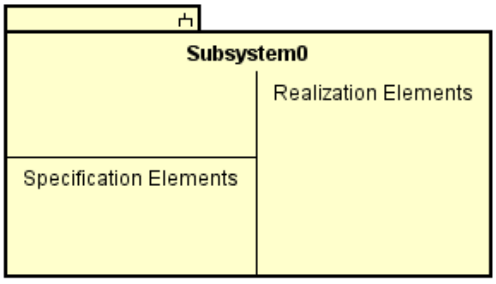
None	None of parent package names will appear
Show Parent	A direct parent package name will appear
Show All Parents	All the parent package names will appear

14. 1. 7. Subsystem

a. Creating Subsystems

(a) Using [Subsystem] on the Tool Palette.

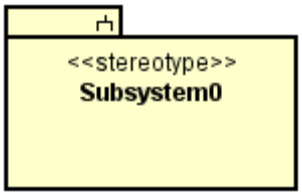
(b) Using the [Structure Tree] in the "Project View".



b. Editing Subsystems

(a) Adding Stereotypes

Right-click on the target Subsystem and select [Add Stereotype], or go to Stereotype tab in the Property View.



(b) Adding Operations

i) Using the [Structure Tree] in the "Project View"

ii) Using the Pop-up Menu

Right-click on the target Subsystem and select [Add Operation].

Note) Operations can be added continuously by pressing Enter key when selecting operations on the Diagram Editor.

iii) Using the "Property View".

(c) Deleting Operations

i) Using the [Structure Tree] in the "Project View"

ii) Using the Pop-up Menu

Right-click on the target Subsystem and select an Operation to delete from [Delete Operation]

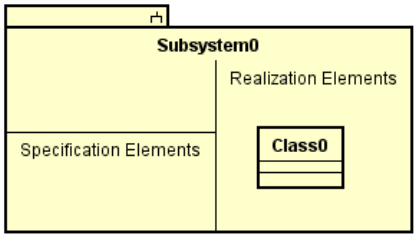
iii) Using the "Property View"

(d) Editing Subsystem Names

Double-click the subsystem in the diagram and edit it directly, or go to Base tab of the Subsystem in the Property View.

(e) Specific operations for Subsystems

Models in a Subsystem can be handled as a unit in the Diagram Editor.
Diagram Elements can be added to a Subsystem by dragging and dropping.

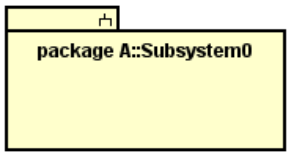


(f) Notation of Subsystems

i) Show/Hide Namespace

(1) Right-click on the Subsystem and select [Show/Hide Namespace]
(2) Select a level to display

None	None of parent package names will appear.
Show Parent	A direct parent package name will appear.
Show All Parents	All the parent package names will appear.



ii) Stereotype Visibility

The display/non-display settings for a Subsystem Stereotype can be selected from the Pop-up Menu.

iii) Detail Visibility

The display/non-display settings for Details (Operations, Specification Elements,

Realization Elements) that appear in the body of a Subsystem can be selected from the Pop-up Menu.

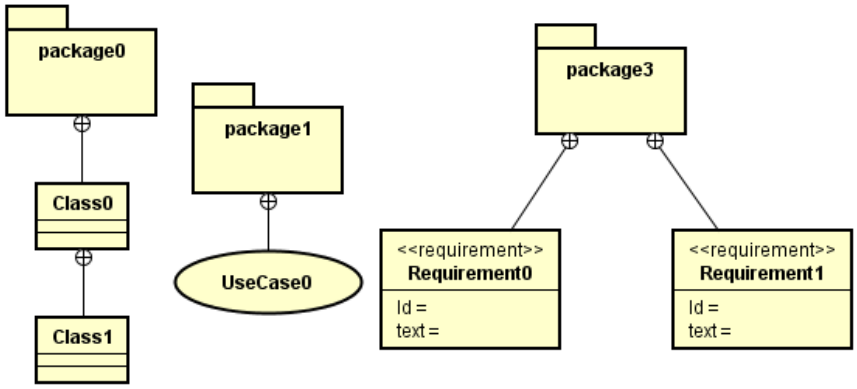
iv) Extended Visibility

If Detail Visibility option is on, you can select to display or not for Parameter, Return Type, and Parameter Direction Kind, Stereotype and Constraints of operations.

14. 1. 8. Nest

a. Creating Nests

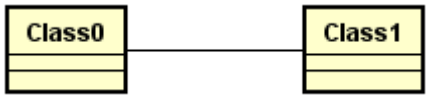
To create a Nest, use [Nest] on the Tool Palette.
To use shared style, Please refer to [Generalization].



14. 1. 9. Association / Unidirectional Association

a. Creating Associations

To create an Association, use Association] on the Tool Palette.



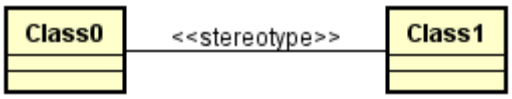
b. Editing Associations

(a) Setting Association Names

Double-click the name of the Association and edit it directly, or go to Base tab of the Association in the Property View.

(b) Adding Stereotypes

Right-click on the target Association and select [Add Stereotype] or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for an Association Stereotype can be selected from the Pop-up Menu.

(d) Adding Constraints

Right-click on the target Association and select [Add Constraint], or go to Constraint tab of the Association in the Property View.

(1) Adding a Constraint for an Association
(2) Adding a Constraint for Role A
(3) Adding a Constraint for Role B

(e) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

(f) Setting Navigations

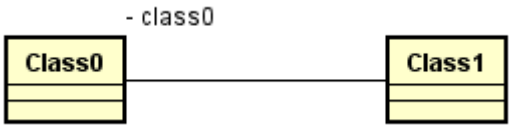
i) Using the Pop-up Menu.

Right-click on the target Association and select [Navigation].

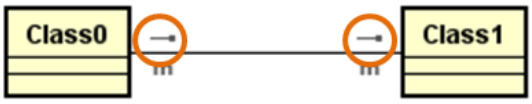
(g) Setting Association End Names

i) Using the Pop-up Menu

Right-click on the target Association and select [Set Association End Name].



ii) Using the draw suggest feature



(h) Set Aggregation Type

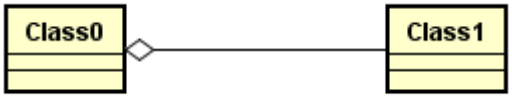
i) Using the Button on Tool Palette

Use from [Association] buttons from Tool Palette in Main Menu.

ii) Using the Pop-up Menu.

(1) Right-click on the Association near the target to set the Aggregation type

(2) Select [Aggregation] and choose one of the following: [Aggregate], [Composite], or [None]



-> In this example, an Aggregation is set from Class0 to Class1.

(i) Set the Multiplicity of an Association

i) Using the Pop-up Menu.

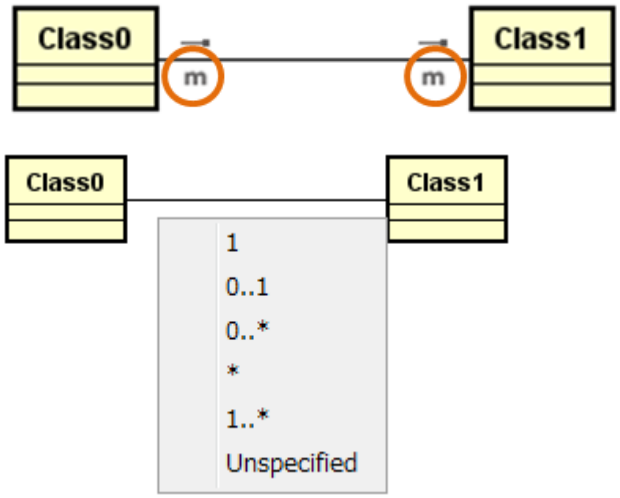
(1) Right-click on the end of the target Association.

(2) Select [Multiplicity] and choose one of the following: [1], [0..1], [0..*], [*], [1..*], or [Unspecified].

ii) Using the "Property View".

-> Please refer to the [Association End] Tab section for more details.

iii) Using the Draw Suggest feature



(j) Name Direction

Use the Pop-up Menu to display the Name Direction of an Association.

(1) Right-click on the target Association and select [Name Direction]

(2) Check [Visibility]

(3) To reverse the direction, click [Reverse Direction]

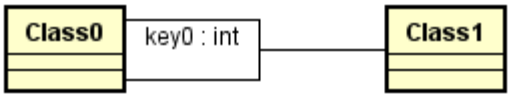
Note) To show a name direction, Association Name must be already set.

(k) Line Style

The association lines can be shown one of 4 Styles: "Line" or "Line (Right Angle)", "Curve", "Curve (Right Angle)".

(l) Adding Qualifiers

Right-click on the target Association and select [Add Qualifier].

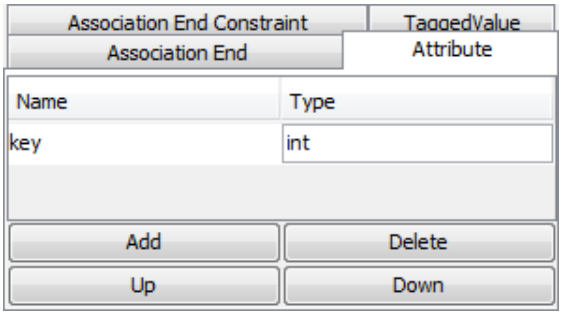


Qualifier Properties

Qualifiers can be added and deleted in the "Property View".

(1) Select the target Qualifier to display its properties in the "Property View"

(2) Open [Attribute View] and select [Add], [Delete], [Up], or [Down] (to add, delete, or change the order of Qualifier properties respectively)



Qualifier Attribute Properties

Qualifier Attributes can be set in "Property View".

(1) Select a target Qualifier Attribute to display its properties in "Property View".

(2) Set components of the Attribute.

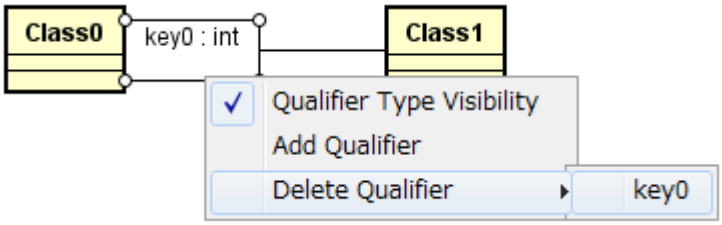
(m) Deleting Qualifiers

i) Using the Pop-up Menu of the Association.

Right-click on the target Association and select [Delete Qualifier]. Then select a Qualifier to delete.

ii) Using the Pop-up Menu of the Qualifier.

Right-click on the target Qualifier and select [Delete Qualifier]. Then select a Qualifier to delete.



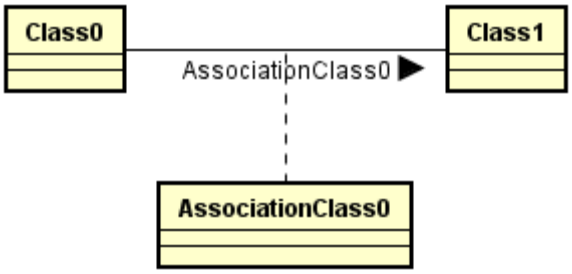
iii) Using the "Property View".

14. 1. 10. Association Class

a. Creating Association Classes

To create an Association Class, use [Association Class] on the Tool Palette.

1. Click [Association Class] on the Tool Palette.
2. Click 2 Classes to associate.



b. Editing Association Classes

(a) Setting Association Class Names

Double-click the target Association name in the diagram, and then enter the name directly.

(b) Name Visibility for Association Classes

The display/non-display settings for names of Association Classes can be selected from

the Pop-up Menu.

(c) Converting Association Class to Class or Association

Association Classes can be converted to Classes or Associations.
To convert Association Classes, go to [Convert to Class] / [Convert to Associations] in the popup menu of Association Class.

(d) Adding Constraints

Right-click on the target Association and select [Add Constraint].
(1) Click near the center of an Association -> A Constraint for the Association is added
(2) Click near the start point of an Association -> A Constraint for Role A is added
(3) Click near the end point of an Association -> A Constraint for Role B is added

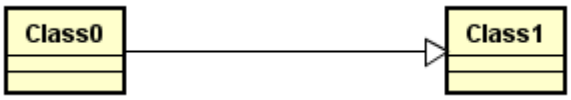
(e) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 1. 11. Generalization

a. Creating Generalizations

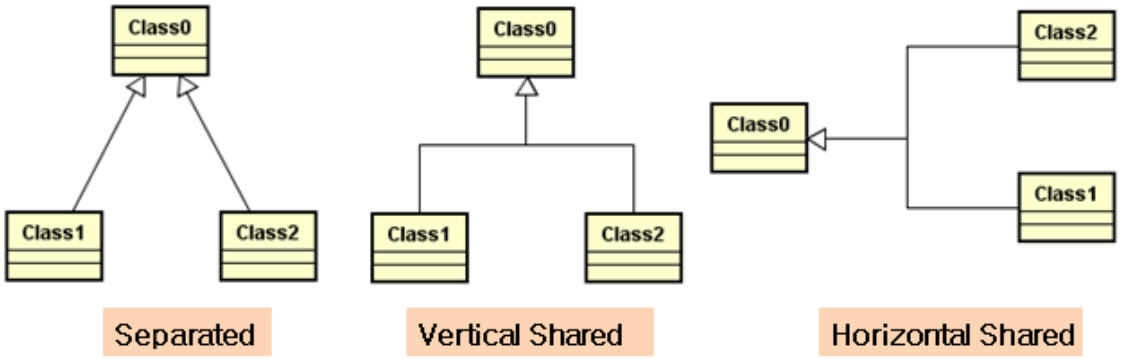
To create a Generalization, use [Generalization] on the Tool Palette or draw suggest of Class.



b. Editing Generalizations

(a) Notation of Inheritance

There are 3 notation types for Inheritance, “Separated”, “Vertical Shared” and “Horizontal Shred”.



i) Using [Edit] in the Main menu.

(1) In the Diagram Editor, select target Inheritance

(2) Select [Edit] - [Shared Style] in Main Menu

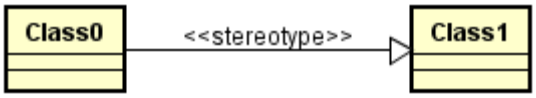
ii) Using [Shared] on the Tool Bar.

(1) In the Diagram Editor, select the target Inheritance

(2)Click [Vertical Shared Style] or [Horizontal Shared Style] on the Tool Bar in the "Management View"

(b) Adding Stereotypes

Right-click on the target Generalization and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Generalization Stereotype can be selected from the Pop-up Menu.

(d) Adding Constraints

Right-click on the target Generalization and select [Add Constraint], or go to Constraint tab in the Property View.

(e) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 1. 12. Realization

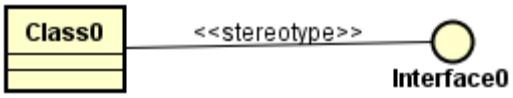
a. Creating Realizations

To create a Realization, use / [Realization] on the Tool Palette or draw suggest of Class.

b. Editing Realizations

(a) Adding Stereotypes

Right-click on the target Realization and select [Add Stereotype], or go to Stereotype tab in the Property View.



(b) Stereotype Visibility

The display/non-display settings for a Realization Stereotype can be selected from the Pop-up Menu.

(c) Adding Constraints

Right-click on the target Realization and select [Add Constraint], or go to Constraint tab in the Property View.

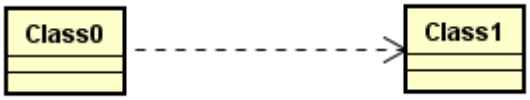
(d) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 1. 13. Dependency

a. Creating Dependencies

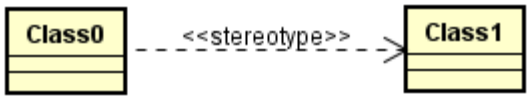
To create a Dependency, use [Dependency] on the Tool Palette.



b. Editing Dependencies

(a) Adding Stereotypes

Right-click on the target Dependency and select [Add Stereotype], or go to Stereotype tab in the Property View.



(b) Stereotype Visibility

The display/non-display settings for a Dependency Stereotype can be selected from the Pop-up Menu.

(c) Adding Constraints

Right-click on the target Dependency and select [Add Constraint], or go to Constraint tab in the Property View.

(d) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 1. 14. Usage

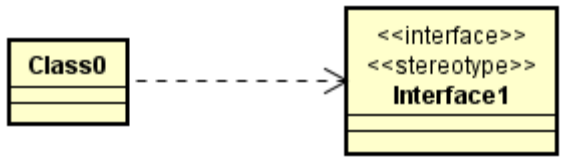
a. Creating Usages

To create a Usage, use [Usage] on the Tool Palette or draw suggest of Class.

b. Editing Usages

(a) Adding Stereotypes

Right-click on the target Usage and select [Add Stereotype], or go to Stereotype tab in the Property View.



Note) To display stereotypes, interface needs to be shown in Stereotype Normal.

(b) Stereotype Visibility

The display/non-display settings for a Usage Stereotype can be selected from the Pop-up Menu.

(c) Adding Constraints

Right-click on the target Usage and select [Add Constraint], or go to Constraint tab in the Property View.

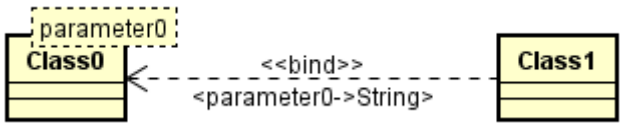
(d) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

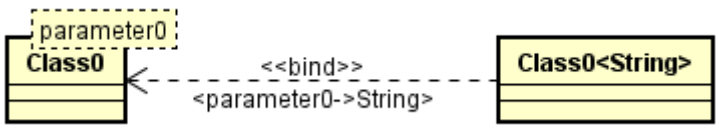
14. 1. 15. Template Binding

a. Creating Template Bindings

To create a Template Binding, use [Template Binding] on the Tool Palette. It can be created from a Class or a Template Class to Class.



To create a binding class as below, edit its name to empty after binding to a template class.



b. Editing Template Bindings

(a) Visibility of Template Bindings

Right-click on the target Class and select [Extended Visibility] - [Template Bound Information Visibility].

14. 1. 16. Interface/Required Interface/Provided Interface

a. Creating Interfaces, Required Interfaces, Provided Interfaces

To create an Interface, use [Interface], [Interface (Normal)], [Required Interface], [Provided Interface] on the Tool Palette.
*Interface can be created using the [Structure Tree] in the "Project View".

b. Editing Interfaces

Double-click the Name of the Diagram Element in the Diagram Editor and then edit the Name, or go to Base tab of the Interface in the Property View.

14. 1. 17. Entity/BusinessEntity/Boundary/Control/BusinessWorker

a. Creating Entities, BusinessEntities, Boundaries, Controls and BusinessWorkers

Click the icon shown as below from the tool palette.

Entity / BusinessEntity	/
Boundary	
Control / BusinessWorker	/

b. Editing Entities/BusinessEntities/Boundaries/Controls/BusinessWorkers

Double-click the Name of the models in the diagram and then edit it directly, or go to Base tab of these models in the Property View.

14. 1. 18. Instance Specification

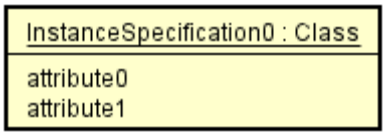
a. Creating Instance Specifications

i) Use [Instance Specification] on the Tool Palette.

Instance Specification or Instance Specification with Entity/BusinessEntity/Boundary/Control/BusinessWorker will be created.

ii) Drag & Drop the Class on the Diagram Editor from the Structure Tree.

A new Instance Specification will be created with the dragged class as its base class.



b. Editing Instance Specifications

(a) Editing the Name of Instance Specification/Base Class

Double-click the name of Instance Specification in the diagram and then edit it directly, or go to Base tab of the Instance Specification in the Property View.

(b) Notation of Instance Specifications

i) Instance Specification Name Visibility

The display/non-display settings for an Instance Specification Name can be selected from the Pop-up Menu.

ii) Classifier Visibility

The display/non-display settings for a Classifier can be selected from the Pop-up Menu.

iii) Slot Visibility/Slot Value Visibility/No Value Slot Visibility

The display/non-display settings for a Slot and Slot Value can be selected from the Pop-up Menu. Slots are Attributes of the base class.

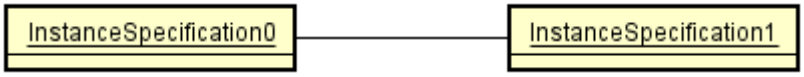
iv) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

14. 1. 19. Link

a. Creating Links

To create a Link, use [Link] on the Tool Palette, or draw suggest feature.



(a) Setting Navigations

Right-click on the target Link, then Check [Navigation].

(b) Set Aggregation Type

(1) Right-click on the Association near the target to set the Aggregation type.
(2) Select [Aggregation] and choose one of the following: [Aggregate], [Composite], or [None].

14. 2. UseCase Diagrams

This section describes UseCase Diagrams and the Diagram Elements.

14. 2. 1. Creating UseCase Diagrams

i) Using [Diagram]-[UseCase Diagram] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 2. 2. Diagram Elements in UseCase Diagrams

Select		Mode for basic operations in the Diagram Editor.
Actor		Add Actors.
BusinessActor		Add BusinessActors.
UseCase		Add UseCases.
BusinessUseCase		Add Business UseCases.
Package		Add Packages.
Subsystem		Add Subsystems.
Nest		Add Nests.
Association		Add Associations. (Unspecified Association to Unspecified Association)
Association		Add Associations. (Unspecified Association to Navigable Association)
Association		Add Associations. (Non-Navigable Association to Navigable Association)
Association		Add Associations. (Navigable Association to Navigable Association)
Aggregation		Add Aggregations. (Aggregation to Unspecified Association)
Aggregation		Add Aggregations. (Aggregation to Navigable Association)
Composition		Add Composition. (Composition to Unspecified Association)
Composition		Add Composition. (Composition to Navigable Association)
Extend		Add Extends.
Include		Add Includes.

Generalization		Add Generalizations.
Dependency		Add Dependencies.
Template Binding		Add Template Bindings.
Entity		Add Entities.
BusinessEntity		Add BusinessEntities.
Boundary		Add Boundaries.
Control		Add Controls.
BusinessWorker		Add BusinessWorkers.
		See "Common Diagram Elements".

14. 2. 3. Actor

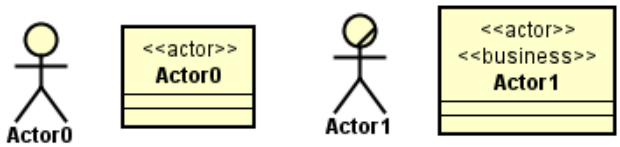
a. Creating Actors

Note) Actor is outside the scope of Java Skeleton Code Generation.

(a) Using [Actor] / [BusinessActor] on the Tool Palette

(b) Using the [Structure Tree] in the "Project View"

There are 2 notations for Actors/Business Actors: "Icon" (left) and "Normal" (right).



b. Editing Actors

Double-click the Actor in the diagram and then edit its name directly, or go to Base tab of the Actor in the Property View.

14. 2. 4. UseCases/BusinessUseCases

a. Creating UseCases/BusinessUseCase

(a) Using [UseCase] / [Business UseCase] on the Tool Palette

(b) Using the [Structure Tree] in the "Project View"

(c) Double-clicking the UseCase diagram (Only for UseCase)

b. Editing UseCases

(a) UseCase Description

-> Please refer to the UseCase Description section.

(b) Adding Stereotypes

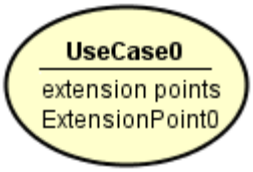
Right-click on the target UseCase and select [Add Stereotype], or go to Stereotype tab in the Property View.

(c) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(d) Adding Extension Points

Right-click on the target UseCase and select [Add Extension Point] or go to Extension Point tab in the Property View.

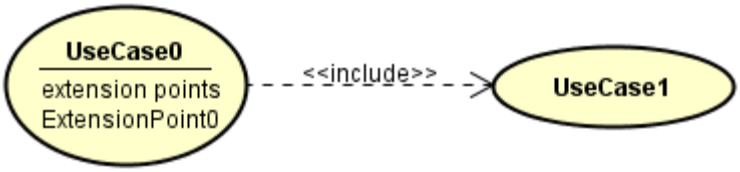


(e) Adding Included UseCases

i) Drawing an Include line between UseCases.

(1) Create new UseCases.

(2) Use [Include] on the Tool Palette to set an Include between the UseCases.



ii) Using the Pop-up Menu.

Right-click on the target UseCase and select [Add Included UseCase].

(f) Editing UseCase Names

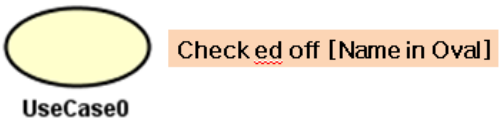
Double-click the Name of the Diagram Element in the Diagram Editor and then edit the Name, or go to Base tab of the UseCase in the Property View.

(g) Showing related Elements

To show the related elements (Association, Dependency, Extend, Include) to the selected UseCase, right-click on the target UseCase and select [Show Related Elements].

(h) Notation of UseCases

Right-click on the UseCase and select [Name in Oval]. The Name will be shown under the oval.



(i) Opening UseCase Description

Right-click on the target UseCase and select [Open UseCase Description].

(j) Reference from CRUD

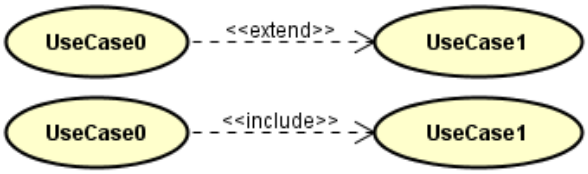
To open the CRUD, right-click on the target UseCase and select [Reference from CRUD].

14. 2. 5. Extends and Includes

a. Creating Extends and Includes

To create an Extend, use [Extend] on the Tool Palette.

To create an Include, use [Include] on the Tool Palette.



Notes about Extends and Includes

Extends are not the same as Dependencies with the Stereotype <<extend>>. Similarly

and Includes are not the same as Dependencies with the Stereotype<<include>>. Dependencies with “extend” or “include” as their Stereotypes are not recognized as Extends or Includes by Astah.

14. 3. Statemachine Diagrams

This section describes Statemachine Diagrams and the Diagram Elements that they can contain.

14. 3. 1. Creating Statemachine Diagrams

a. Using [Diagram]-[Statemachine Diagram] in the Main Menu.

b. Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 3. 2. Diagram Elements of Statemachine Diagrams

Select		Mode for basic operations in the Diagram Editor.
Initial Pseudo State		Add Initial Pseudo State.
State		Add States.
Subamachine State		Add States.
Final State		Add Final State.
Entry Point		Add Entry Point
Exit Point		Add Exit Point
Transition		Add Transitions.
Shallow History Pseudo State		Add Shallow History Pseudo States.
Deep History Pseudo State		Add Deep History Pseudo State.
Junction Pseudo State		Add Junction Pseudo States.
Choice Pseudo State		Add Choice Pseudo States.
Fork Pseudo State		Add Fork Pseudo States. Able to choose Vertical or Horizontal
Join Pseudo State		Add Join Pseudo States. Able to choose Vertical or Horizontal
StubState In Submachine State		Add StubStates in Submachine State.
		See "Common Diagram Elements".

14. 3. 3. Initial Pseudo States

a. Creating Initial Pseudo States

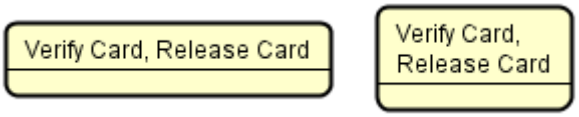
To create an Initial Pseudo State, use [Initial Pseudo State] on the Tool Palette.

Note) Initial Pseudo State cannot be created more than one in a diagram.

14. 3. 4. States

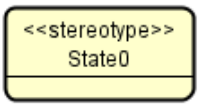
a. Creating States

To create a State, use [State] on the Tool Palette or double-click on the Statemachine diagram. To insert new lines in the State name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.



(a) Adding Stereotypes

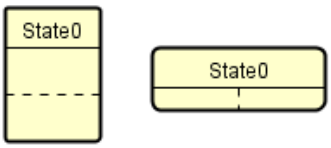
Right-click on the State and select [Add Stereotype], or go to Stereotype tab in the Property View.



(b) Adding Regions

i) Using the Pop-up Menu.

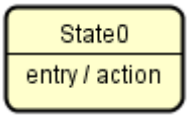
Right-click on the State and select [Add Region].



(c) Adding Actions

i) Using the Pop-up Menu.

Right-click on the State and select [Add Action]. To insert new lines in the Action name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.



ii) Using the "Property View".

(d) Deleting Actions

i) Using the Pop-up Menu.

Right-click on the State and select [Remove Action] and then select an Action ([Entry]/[Do]/[Exit]) to remove.

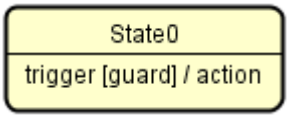
ii) Using the "Property View".

(e) Adding Internal Transitions

i) Using the Pop-up Menu.

(1) Right-click on State and select [Add Internal Transition].

(2) Double-click on the Internal Transition and enter the trigger, [guard], and /action names. To insert new lines in the Internal Transitions name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.



Note) When entering Internal Transitions, the guard conditions should be enclosed in square brackets ([ ]) and actions should be preceded with a "/".

i.e.) trigger[guard]/action.

ii) Using the "Property View".

(f) Deleting Internal Transitions

To delete an Internal Transition, use [Internal Transition] tab of States Property View.

(g) Editing State Names

Double-click the name of state in the diagram and then edit it directly, or go to Base tab of the State in the Property View.

(h) Action Visibility

The display/non-display settings for an Action (including Internal Transitions) can be selected from the Pop-up Menu.

(i) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

14. 3. 5. Final States

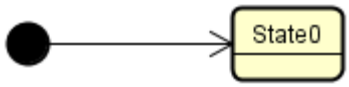
a. Creating Final States

To create a Final State, use [Final State] on the Tool Palette.

14. 3. 6. Transitions

a. Creating Transitions

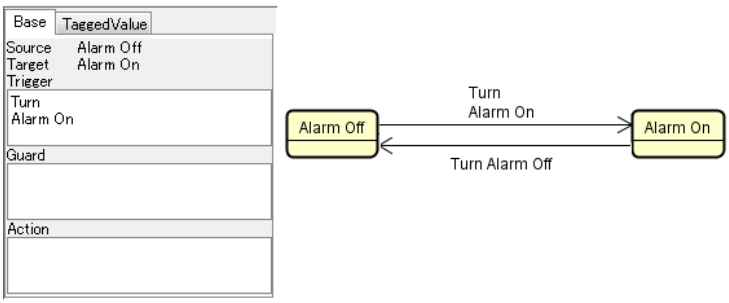
To create a Transition, use [Transition] on the Tool Palette or draw suggest feature of State.



"Trigger" is added to a transition automatically when creating a transition from State/Submachine State. Also "[Guard]" is added to a transition automatically when creating a transition from Junction Pseudo State/Choices Pseudo State.

b. Editing Transitions

Use Transition Properties to set an Action on a Transition. To insert new lines in the Transitions name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.



14. 3. 7. Shallow History Pseudo State and Deep History Pseudo State

a. Creating History Pseudo State

To create a history Pseudo State, use [Shallow History Pseudo State] or [Deep History Pseudo State] on the Tool Palette.

<Shallow History Pseudo State > *<Deep History Pseudo State >*

14. 3. 8. Junction Pseudostates

a. Creating Junction Pseudostates

To create a Junction Pseudo State, use [Junction Pseudostate] on the Tool Palette.

14. 3. 9. Choices Pseudostates

a. Creating Choices Pseudostates

To create a Choice Pseudo State, use [Choice Pseudostate] on the Tool Palette.

14. 3. 10. Fork Pseudostates and Join Pseudostates

a. Creating Fork Pseudo States and Join Pseudo States

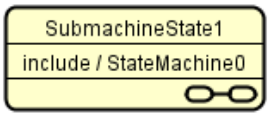
To create a Fork Pseudo State, use [Fork Pseudostate] on the Tool Palette.
To create a Join Pseudo State, use [Join Pseudostate] on the Tool Palette.

14. 3. 11. Submachine States

a. Creating Submachine States

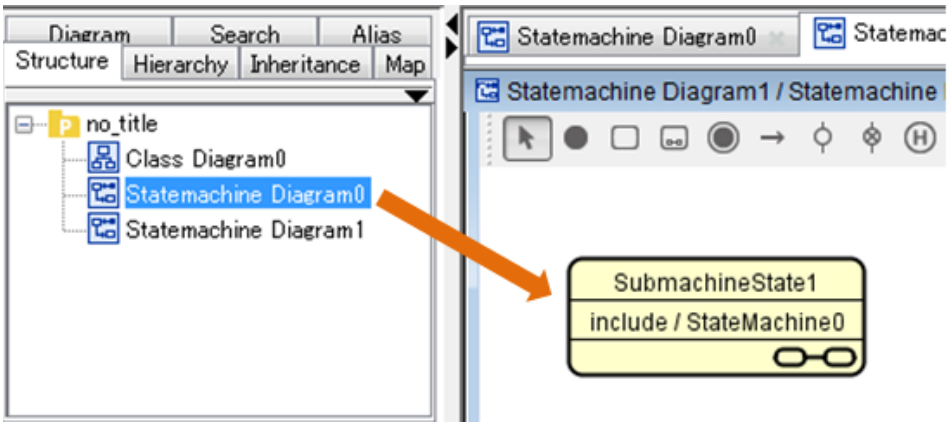
i) Using a Tool Bar

To create a Submachine State, use a [Submachine State] on the Tool Palette.



ii) Drag the Submachine Diagram from the Structure Tree and drop it onto another Submachine Diagram on the Diagram Editor

(1) Select a Submachine diagram in the Structure Tree
(2) Drag the Submachine diagrams and drop them onto another Submachine Diagram Editor

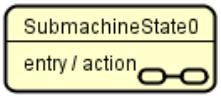


b. Editing Submachine States

(a) Adding Actions

i) Using the Pop-up Menu.

Right-click on the target Submachine State and select [Add Action]. Then select an Action ([Entry]/[Do]/[Exit]) to add.



ii) Using the "Property View".

(b) Deleting Actions

i) Using the Pop-up Menu.

Right-click on the target Action and select [Remove Action]. Then select an Action ([Entry]/[Do]/[Exit]) to delete.

ii) Using the "Property View".

(c) Adding Internal Transitions

i) Using the Pop-up Menu.

(1) Right-click on the target State and select [Add Internal Transition].

(2) Double-click on the Internal Transition and enter the trigger, [guard], and /action names.

Note) When entering Internal Transitions, the guard conditions should be enclosed in square brackets ([ ]) and actions should be preceded with a "/".

i.e.) trigger[guard]/action.

ii) Using the "Property View".

(d) Deleting Internal Transitions

To delete Internal Transitions, use [Internal Transition] of SubmachineState property view.

(e) Editing Submachine State Names

Double-click the name of Submachine state in the diagram and then edit it directly, or go to Base tab of the Submachine State in the Property View.

(f) Action Visibility

The display/non-display settings for an Action can be selected from the Pop-up Menu.

(g) Creating a Submachine State

Right-click on a Submachine State and select [Create Nested Diagram], or double-click on the target Submachine State. Also, use Submachine tab of Submachine State in the Property View.

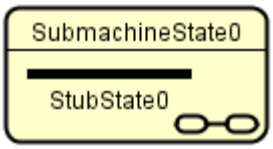
(h) Opening Statemachine Diagram

Right-click on the target Submachine State and select [Open Nested Diagram], or double-click on the target Submachine State.

14. 3. 12. StubStates in Submachine States

a. Creating StubStates

To create a StubState, use [StubState in Submachine State] on the Tool Palette. StubStates are created inside Submachine States.



14. 4. Activity Diagrams

This section describes Activity Diagrams and the Diagram Elements that they can contain.

14. 4. 1. Creating Activity Diagrams

a. Using [Diagram] - [Activity Diagram] - [New Activity Diagram] or [Template Activity Diagram] in the Main Menu.
b. Using the [Structure Tree] in the "Project View" (by right-clicking).

- Notes to use Template Activity Diagrams -

a. A new Activity diagram will be created based on the selected Activity diagram by [Template Activity Diagram] and it will lose both of the references of CallBehaviorActions and class information of the type of Object Node from the original Activity diagram.
b. To select a project file that contains more than one Activity Diagram, a new Activity diagram will be created based on the top Activity diagram in the project file.

14. 4. 2. Diagram Elements of Activity Diagrams

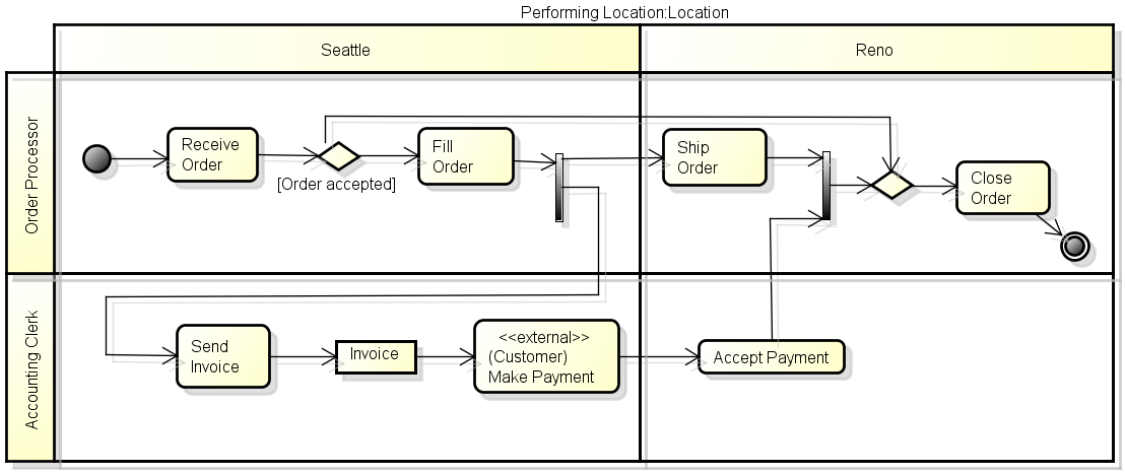
Select		Mode for basic operations in the Diagram Editor.
Partition [Vertical]		Add Vertical Partitions.
Partition [Horizontal]		Add Horizontal Partitions.
Initial Node		Add Initial Nodes.
Action		Add Action.
CallbehaviorAction		Add CallbehaviorAction.
Activity Final		Add Activity Finals.
Flow Final Node		Add Flow Final Nodes.
Control Flow/Object Flow		Add Control Flows/Object Flows.
Merge Node & Decision Node		Add Merge Nodes/Decision Nodes.
Fork Nodes		Add Fork Nodes.
Join Nodes		Add Join Nodes.

InputPin		Add InputPins
OutputPin		Add OutputPins
Object Node		Add Object Nodes.
Parameter Node		Add Parameter Node
SendSignalAction		Add SendSignalActions.
AcceptEventAction		Add AcceptEventActions.
AcceptTimeEventAction		Add AcceptTimeEventActions
Process		Add Processes.
Connector		Add Connectors.
Dependency		Add Dependencies.
Synchronization Bar - Independent Mode		Use this Mode to create Synchronization Bars independently from Partitions.
		See "Common Diagram Elements".

14. 4. 3. Partitions

a. Creating Partitions

To create a Partition, use or [Partitions] on the Tool Palette.



b. Editing Partitions

(a) Editing Partitions Names

Double-click the Name of Partition in the Diagram Editor and then edit its name directly, or go to Base tab of the Partition in the Property View.

14. 4. 4. Initial Nodes

a. Creating Initial Nodes

To create an Initial Node, use ● [Initial Node] on the Tool Palette.

14. 4. 5. Action

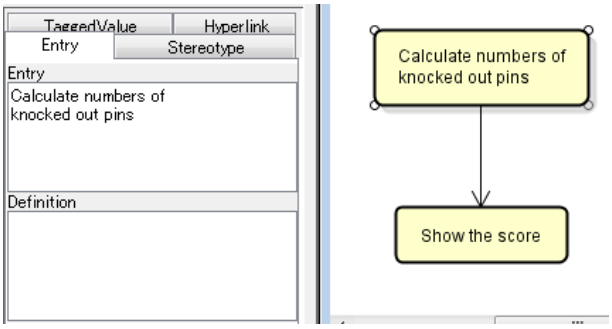
a. Creating Action

To create an Action, ▢ [Action] on the Tool Palette or double click on an Activity Diagram.

b. Editing Action

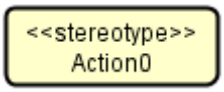
(a) Editing Action Names

Double-click the name of Action in the diagram and then edit its name directly, or go to Base tab of the Action in the Property View. To insert new lines in the Action name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.



(b) Adding Stereotypes

Right-click on the Action and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Stereotype of an Action can be selected from the Pop-up Menu.

(d) Reference from CRUD

To open the CRUD, right-click on the target Action and select [Reference from CRUD].

(e) Convert to CallBehaviorAction

(1) Select a target Action to convert to CallBehaviorAction.

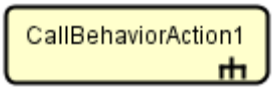
(2) Select [Convert to CallBehaviorAction] from its Pop-Up Menu.

14. 4. 6. CallBehaviorAction

a. Creating CallBehaviorAction

i) Using a Tool Bar

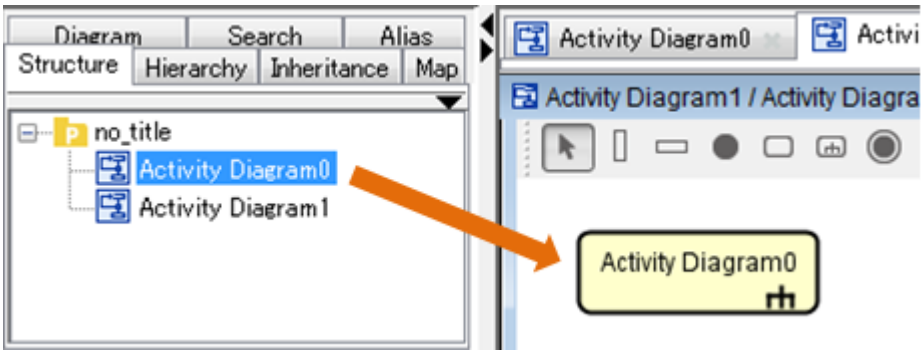
To create a CallBehaviorAction, use a [Call Behavior Action] on the Tool Palette.



ii) Drag the Activity Diagram from the Structure Tree and drop it onto another Activity Diagram on the Diagram Editor

(1) Select the Activity diagrams on the Structure Tree.

(2) Drag the Activity diagrams and drop them onto another Activity Diagram Editor.



b. Editing CallBehaviorAction

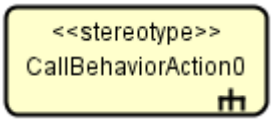
(a) Editing CallBehaviorAction Names

Double-click the name of CallBehaviorAction in the diagram and edit its name directly, or go to Base tab of the CallBehaviorAction in the Property View. To insert new lines in the CallBehaviorAction name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.

(b) Adding Stereotypes

Right-click on the CallBehaviorAction and select [Add Stereotype], or go to Stereotype

tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Stereotype of a CallBehaviorAction can be selected from the Pop-up Menu.

(d) Reference from CRUD

To open the CRUD, right-click on the target CallBehaviorAction and select [Reference from CRUD].

(e) Convert to Action

Select a target CallBehaviorAction and select [Convert to Action] Pop-Up Menu.

c. Open the nest diagram

Select a target CallBehaviorAction and select [Open Nested Diagram] Pop-Up Menu. Or, double-click the CallBehaviorAction on the Diagram Editor.

14. 4. 7. Activity Finals

a. Creating Activity Finals

To create an Activity Final, use [Activity Final] on the Tool Palette.

14. 4. 8. Flow Final Nodes

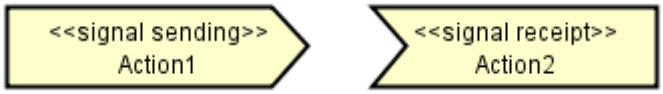
a. Creating Flow Final Nodes

To create a Flow Final Node, use [Flow Final Node] on the Tool Palette.

14. 4. 9. SendSignal Actions and AcceptEvent Actions

a. Creating Signals

To create a SendSignal Action, use [SendSignalAction] on the Tool Palette.
To create a ActionEvent Action, use [AcceptEventAction] on the Tool Palette.



b. Editing Signals

(a) Editing Signal Names

Double-click the name of the models and then edit its name directly, or go to Base tab of the Signal Action in the Property View.
To insert new lines in the Signal name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.

(b) Adding Stereotypes

Right-click on the Action and select [Add Stereotype], or go to Stereotype tab in the Property View.

(c) Stereotype Visibility

The display/non-display settings for a Stereotype of an Action can be selected from the Pop-up Menu.

(d) Reverse Signal

Select [Reverse Signal] to change the direction of the target Signal can be reversed.

14. 4. 10. AcceptTimeEventActions

a. Creating and Editing AcceptTimeEventActions

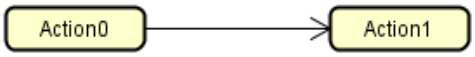
To create a AcceptTimeEventAction, use ⧖ [AcceptTimeEventAction] on the Tool Palette. To insert new lines in the AcceptTimeEventActions name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.

14. 4. 11. Control Flow/Object Flow

a. Creating Control Flows/Object Flows

To create a Control Flow/Object Flow, use → [Control Flow/Object Flow] on the Tool

Palette or draw suggest feature of State/Object Node.



b. Editing Control Flows/Object Flows

Actions can be set on Control Flows/Object Flows using Control Flows/Object Flows Properties. To insert new lines in the Control Flows/Object Flows name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.

14. 4. 12. Merge Nodes/Decision Nodes

a. Creating Merge Nodes & Decision Nodes

To create a Merge Nodes & Decision Nodes, use [Merge Nodes & Decision Nodes] on the Tool Palette.

14. 4. 13. Fork Nodes/Join Nodes

a. Creating Fork Nodes/Join Nodes

To create a Fork Node, use [Fork Node] on the Tool Palette.
To create a Join Node, use [Join Node] on the Tool Palette.
They are also called "Synchronization Bars".

Note) To create a Synchronization Bar independently from Partitions, use [Synchronization Bar - Independent Mode] on the Tool Palette.

14. 4. 14. InputPins/OutputPins

a. Creating InputPins/OutputPins

To create an InputPin, use [InputPin] on the Tool Palette.
To create an OutputPin, use [OutputPin] on the Tool Palette.

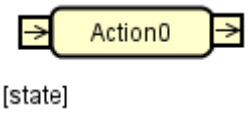
b. Editing InputPins/OutputPins

(a) Editing Pin Names

Double-click the name of the Pin in the diagram, or go to Base tab of the Pin in the Property View.

(b) Adding States

Right-click on the Pin and select [Add State], or go to Base tab of the Pin in the Property View.



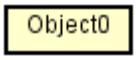
(c) Deleting States

Right-click on the target Pin and select [Remove State], or go to the Base tab of the Pin in the Property View.

14. 4. 15. Object Nodes

a. Creating Object Nodes

To create an Object Node, use ▭ [Object Node] on the Tool Palette.



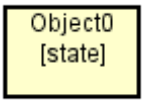
b. Editing Object Nodes

(a) Editing Object Node Names

Double-click the name of Object Node in the diagram, or go to Base tab of the Object Node in the Property View.

(b) Adding States

Right-click on the Object Node and select [Add State], or go to Base tab of the Object Node in the Property View.



(c) Deleting States

Right-click on the target Object Node and select [Remove State], or go to the Base tab of the Object Node in the Property View.

(d) Set Customized Icon for Object Nodes [P]

a. Select Stereotype and its Classifier in Property View of the Project, and select the customized icon. -> Please see the Customized Icons for detail.
b. Set the Stereotype for the Base Class of Object Node.
c. Select [Set Customized Icon] from the popup menu of the Object Node.

14. 4. 16. Processes

a. Creating Processes

To create a Process, use [Process] on the Tool Palette.

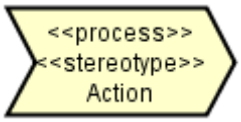
b. Editing Processes

(a) Editing Process Names

Double-click the name of Process in the diagram and then edit its name directly, or go to Base tab of the Process in the Property View. To insert new lines in the Process name, press SHIFT+ENTER, ALT+ENTER, CTRL+ENTER.

(b) Adding Stereotypes

Right-click on the Process and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Stereotype of a Process can be selected from the Pop-up Menu.

14. 4. 17. Connector

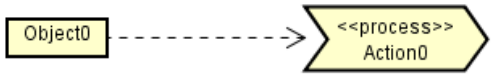
a. Creating Connectors

To create a Connector, use [Connector] on the Tool Palette.

14. 4. 18. Dependencies

a. Creating Dependencies

To create a Process, use [Dependency] on the Tool Palette.



14. 5. Sequence Diagrams

This section describes Sequence Diagrams and the Diagram Elements that they can contain.

14. 5. 1. Creating Sequence Diagrams

i) Using [Diagram]-[Sequence Diagram] in the Main Menu

ii) Using the [Structure Tree] in the "Project View" (by right-clicking)

14. 5. 2. Diagram Elements of Sequence Diagrams

Select		Mode for basic operations in the Diagram Editor.
Lifeline		Add Lifelines/Actors/Entities/BusinessEntityiesBoundaries/Controls/BusinewsWorkers.
Message		Add Synchronous Messages.
Asynchronous Message		Add Asynchronous Messages.
Create Message		Add "Create" Messages.
Destroy Message		Add "Destroy" Messages.
Reply Message		Add "Reply" Messages.
Stop		Add Stops.
Duration Constraint		Add Duration Constraint
Time Constraint		Add Time Constraint
Combined Fragment		Add Combined Fragments.
Interaction Use		Add Interaction Uses.
State Invariant		Add State Invariants.
Reply Message Automatic Mode		Create a Reply message for each message automatically.
		See "Common Diagram Elements".

14. 5. 3. Lifelines

a. Creating Lifelines

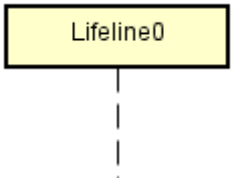
i) Using [Lifeline] on the Tool Palette.

Lifeline/Actor/BusinessActor/Entity/BusinessEntity/Boundary/Control/BusinessWorker can be created.

ii) Using the [Structure Tree] in the "Project View"

iii) Double-clicking in the Sequence Diagram

Drag the target Class in the Structure Tree and drop it onto a Sequence diagram. A Lifeline is created which has the target Class Model as its Base Class.



Ex : Inputting the Base class directly in the Diagram Editor

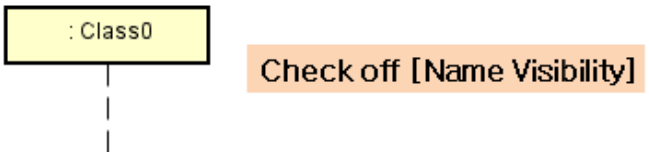
Type the base class in Lifeline in Sequence Diagram directly. If the typed Class does not exist in the Project file, the new class will be created.

b. Editing Lifelines

(a) Notation of Lifelines

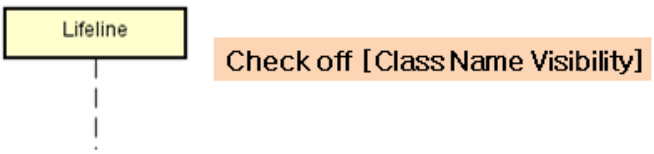
i) Name Visibility

The display/non-display settings for a Lifeline Name can be selected from the Pop-up Menu.



ii) Class Name Visibility

The display/non-display settings for a Class Name can be selected from the Pop-up Menu [Class Name Visibility].



iii) Adjust Lifeline Length

To adjust the Lifeline Length, use the Pop-up Menu [Adjust Lifeline Length].
For the plural Pop-up Menu and the Sequence diagram Pop-up Menu, use [Adjust Lifeline Length].

iv) Adjust Execution Specification Length

To adjust the Execution Specification Length, use the Pop-up Menu [Adjust Execution Specification Length].
For the plural Pop-up Menu and the Sequence diagram Pop-up Menu, use [Adjust Execution Specification Length].

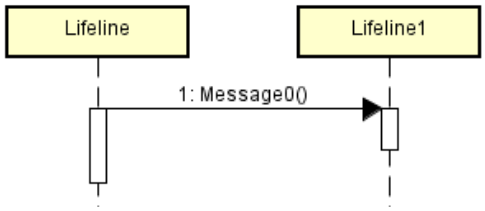
14. 5. 4. Synchronous Messages

a. Creating Synchronous Messages

i) Using Tool Palette

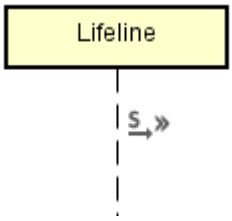
To create a Synchronous Message, use [Message] on the Tool Palette.

(1) Select [Message] from Tool palette
(2) Click the Lifeline that sends the Message.
(3) Click the Lifeline that receives the Message.



ii) Using Suggest Feature

(1) Put mouse over a lifeline, execution specification, InteractionUse or Frame.



(2) Icon button appears, click on it

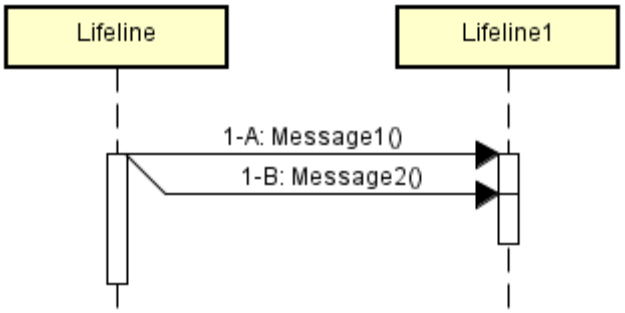
(3) Click the lifeline you want to draw the arrow to

b. Editing Synchronous Messages

(a) Creating Branch Messages

(1) Right-click on the target Message and select [Branch Message]

(2) Click the Lifeline that receives the Message (similar to creating Messages)



(b) Editing Synchronous Message Names

Double-click the name of Message in the diagram and then edit its name directly, or go to Base tab of the Synchronous Message in the Property View.

(c) Message Parameter / Message Parameter Type / Message Parameter Direction Kind / Return Value Variable / Return Value Visibility

The display/non-display settings for Message Parameters can be selected from the Pop-up Menu. These settings can be selected: [Message Parameter Visibility], [Message Parameter Type Visibility], [Message Parameter Direction Kind Visibility], [Message Return Value Variable Visibility] and [Message Return Value Visibility].

(d) Adding Stereotypes

Right-click on the target Message and select [Add Stereotype], or go to Stereotype tab in the Property View.

(e) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(f) Adding Constraints

Right-click on the target Message and select [Add Constraint], or go to Constraint tab in the Property View.

(g) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

(h) Moving Message

To move a Message, drag an Execution Specification of the Message to the lifeline of another Lifeline.

14. 5. 5. Asynchronous Messages

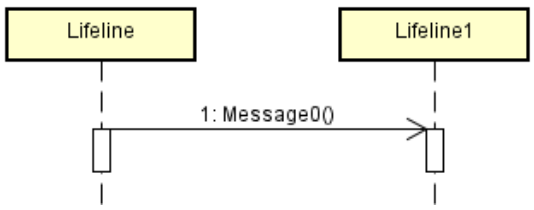
a. Creating Asynchronous Messages

i) Using Tool Palette

(1) Select [Asynchronous Message] on the Tool Palette

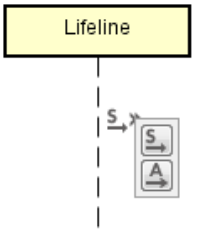
(2) Click the Lifeline that sends the Message

(3) Click the Lifeline that receives the Message



ii) Using Suggest Feature

(1) Put mouse over a lifeline, execution specification, InteractionUse or Frame



(2) Icon button appears, click on it

(3) Click the lifeline you want to draw the arrow to

b. Editing Asynchronous Messages

(a) Creating Branch Messages

Branch Messages can be created in the same way as Synchronous Messages as described in the Sequence Diagram - Synchronous Messages section.

(b) Editing Asynchronous Message Names

Double-click the name of the asynchronous message in the diagram and then edit the Name, or go to Base tab of the Asynchronous Message in the Property View.

(c) Message Parameter / Message Parameter Type / Return Value Variable / Return Value Visibility

Please refer to the Sequence Diagram - Synchronous Message section.

(d) Adding Stereotypes

Right-click on the target Asynchronous Message and select [Add Stereotype], or go to Stereotype tab in the Property View.

(e) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(f) Adding Constraints

Right-click on the target Asynchronous Message and select [Add Constraint], or go to Constraint tab in the Property View.

(g) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 5. 6. Found Messages

a. Creating Found Messages

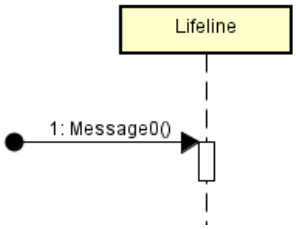
To create a Found Message, use [Message] or [Asynchronous Message] on the

Tool Palette.

(1) Select [Message] or [Asynchronous Message] on the Tool Palette

(2) Click on where this message origins in the diagram except on the lifeline

(3) Click the Lifeline that receives the Message



14. 5. 7. Lost Messages

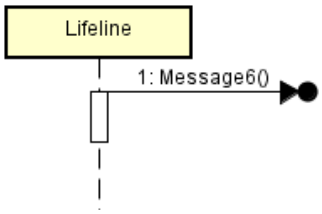
a. Creating Lost Messages

To create a Lost Message, use [Message] or [Asynchronous Message] on the Tool Palette.

(1) Select [Message] or [Asynchronous Message] on the Tool Palette

(2) Click the lifeline where the message origins

(3) Click on the where the message ends in the diagram except on the Lifeline



14. 5. 8. Gate

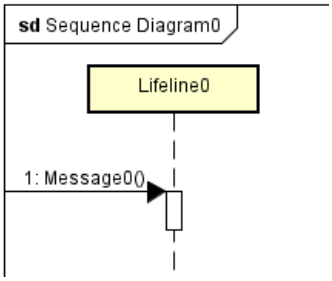
a. Creating Gate

To create a Gate, use [Message] or [Asynchronous Message] on the Tool Palette.

(1) Select [Message] or [Asynchronous Message] on the tool Palette

(2) Click the Frame where the message origins

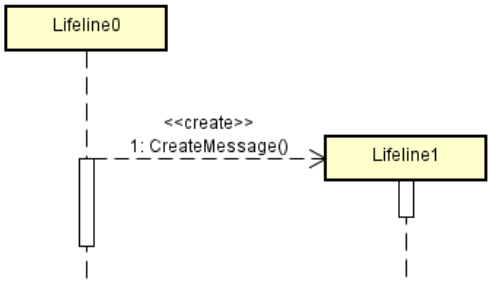
(3) Click the Lifeline that receives the Message



14. 5. 9. "Create" Messages

a. Creating "Create" Messages

To create a "Create" Message, use [Create Message] on the Tool Palette.



b. Editing "Create" Messages

(a) Creating Branch Messages

Branch Messages can be created in the same way as Synchronous Messages as described in the Sequence Diagram - Synchronous Messages section.

(b) Editing "Create" Message Names

Double-click the Name of the Diagram Element in the Diagram Editor and then edit the Name, or go to Base tab of the Create Message in the Property View.

(c) Message Parameter / Message Parameter Type / Return Value Variable / Return Value Visibility

Please refer to the Sequence Diagram - Synchronous Message section.

(d) Adding Stereotypes

Right-click on the target "Create" Message and select [Add Stereotype], or go to Stereotype tab in the Property View.

(e) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(f) Adding Constraints

Right-click on the target "Create" Message and select [Add Constraint], or go to

Constraint tab in the Property View.

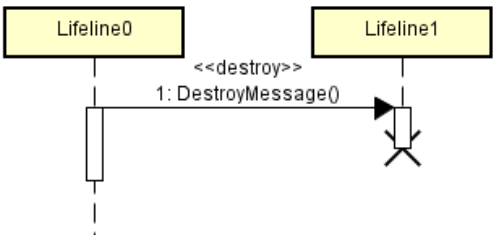
(g) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 5. 10. "Destroy" Messages

a. Creating "Destroy" Messages

To create a "Destroy" Message, use [Destroy Message] on the Tool Palette.



b. Editing "Destroy" Messages

(a) Creating Branch Messages

Branch Messages can be created in the same way as Synchronous Messages as described in the Sequence Diagram - Synchronous Messages section.

(b) Editing "Destroy" Message Names

Double-click the Name of the Diagram Element in the Diagram Editor and then edit the Name, or go to Base tab of the Destroy Message in the Property View.

(c) Message Parameter / Message Parameter Type / Return Value Variable / Return Value Visibility

Please refer to the Sequence Diagram - Synchronous Message section for more details.

(d) Adding Stereotypes

Right-click on the target "Destroy" Message and select [Add Stereotype], or go to Stereotype tab in the Property View.

(e) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(f) Adding Constraints

Right-click on the target "Create" Message and select [Add Constraint], or go to Constraint tab in the Property View.

(g) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 5. 11. "Reply" Messages

a. Creating "Reply" Messages

Click [Reply Message] on the Tool Palette and select the Execution Specification that sends the "Reply" Message. When the Execution Specifications are invisible, turn the visibility on in [Base] tab in Property View of the Execution Specification.
Or, use [Reply Message Automatic Mode] on the Tool Bar or select [Create Reply Message] from Message's Pop-up menu..

b. Editing "Reply" Messages

(a) Adding Stereotypes

Right-click on the target "Reply" Message and select [Add Stereotype], or go to Stereotype tab in the Property View.

(b) Stereotype Visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

(c) Adding Constraints

Right-click on the target "Reply" Message and select [Add Constraint], or go to Constraint tab in the Property View.

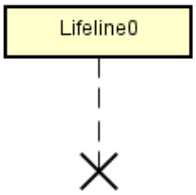
(d) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

14. 5. 12. Stop

a. Creating Stops

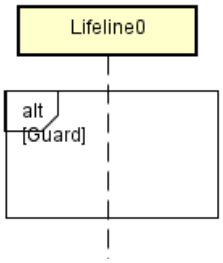
To create a Stop, use [Stop] on the Tool Palette.
(1) Select [Stop] on the Tool Palette
(2) Click the target Lifeline



14. 5. 13. Combined Fragment

a. Creating Combined Fragments

To create a Combined Fragment, use [Combined Fragment] on the Tool Palette.
(1) Select [Combined Fragment] on the Tool Palette
(2) Click on lifeline



b. Editing Combined Fragments

(a) Editing Combined Fragment Names

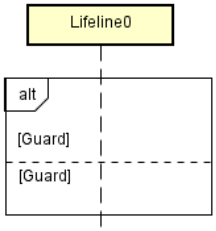
Double-click on the top left corner of the Combined Fragment then type the name directly, or go to Base tab of Combined Fragment in the Property View.

(b) Adding Operands

(a) Click the target Combined Fragment and select [Add Operand] Pop-Up Menu.

(b) Double-click on the inserted [Guard].

Or, go to Operand tab of Combined Fragment in the Property View.

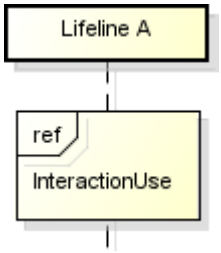


14. 5. 14. Interaction Use

a. Creating Interaction Uses

(1) Select [Interaction Use] on the Tool Palette

(2) Click on the Diagram Editor near the Lifeline



b. Editing Interaction Uses

(a) Editing Interaction Use Names

Double-click the Name of Interaction Use in the diagram and then edit its name directly, or go to the property view of Interaction Use.

c. Creating a Sequence Diagram

Right-click on an Interaction Use and select [Create Sequence Diagram], or double-click on the target Interaction Use. Also, use base tab of Interaction Use in the Property View.

d. Opening Sequence Diagram

Right-click on the target Interaction Use and select [Open Nested Diagram], or double-click on the target Interaction Use.

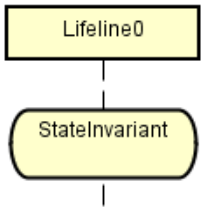
14. 5. 15. State Invariant

a. Creating State Invariants

To create a State Invariant, use [State Invariant] on the Tool Palette.

(1) Select [State Invariant] on the Tool Palette

(2) Click the target Lifeline



b. Editing State Invariants

(a) Editing State Invariant Names

Double-click the Name of State Invariant in the diagram and then edit its name directly, or go to the property view of State Invariant.

14. 6. Communication Diagrams

This section describes Communication Diagrams and the Diagram Elements that they can contain.

14. 6. 1. Creating Communication Diagrams

i) Using [Diagram]-[Communication Diagram] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 6. 2. Diagram Elements of Communication Diagrams

Select		Mode for basic operations in the Diagram Editor.
Lifeline		Add Lifelines/Actors/BusinessActors/Entities/BusinessEntities/ Boundaries/Controls/Business Workers.
Link		Add Links.
Message		Add Synchronous Messages.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.

		See "Common Diagram Elements".

14. 6. 3. Lifelines

a. Creating Lifelines

i) Using [Lifeline] on the Tool Palette.

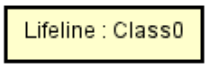
Lifeline/Actor/BusinessActor/Entity/BusinessEntity/Boundary/Control/BusinessWorker can be created.

ii) By dragging and dropping from the [Structure Tree] onto a Diagram

Drag a Class Model from the [Structure Tree] in the Project View and drop it onto a diagram.

A new Lifeline is created using the Class Model as its Base Class. The base class can be input and modified directly in the Diagram Editor.

ii) By double-clicking on a Communication Diagram

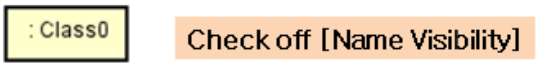


b. Editing Lifelines

(a) Notation of Lifelines

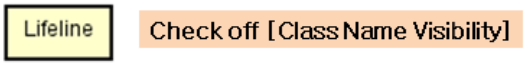
i) Name Visibility

The display/non-display settings for a Lifeline Name can be selected from the Pop-up Menu.



ii) Class Name Visibility

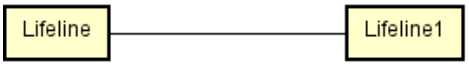
The display/non-display settings for the Base Class Name of Lifeline can be selected from the Pop-up Menu.



14. 6. 4. Links

a. Creating Links

To create a Link, use [Link] on the Tool Palette or draw suggest feature.



14. 6. 5. Messages

a. Creating Messages

i) Using Tool Palette

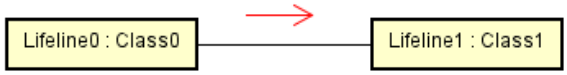
(1) Select [Message] on the Tool Palette

(2) Click on the Link

(3) Move the mouse pointer to the Lifeline that message towards

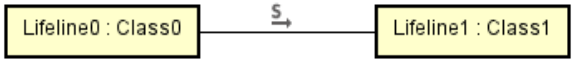
-> A red arrow appears

(4) Confirm that the direction of the arrow how you want and then click



ii) Using Suggest Feature

(1) Put mouse over a Link



(2) Icon button appears, click on it

b. Editing Messages

(a) Editing Message Names

Double-click the Name of the Message in the Diagram Editor and then edit its name directly, or go to Base tab of the Message in the Property View.

(b) Message Parameter / Message Parameter Type / Message Parameter Kind Direction / Return Value Variable / Return Value Visibility

The display/non-display settings for Message can be selected from the Pop-up Menu. These settings can be selected: [Message Parameter Visibility], [Message Parameter Type Visibility], [Message Parameter Kind Direction], [Message Return Value Variable Visibility] and [Message Return Value Visibility].

14. 7. Component Diagrams

This section describes Component Diagrams and the Diagram Elements that they can

contain.

14. 7. 1. Creating Component Diagrams

i) Using [Diagram]-[Component Diagram] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

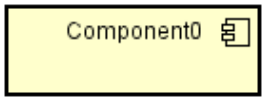
14. 7. 2. Diagram Elements of Component Diagrams

Select		Mode for basic operations in the Diagram Editor.
Component		Add Components.
Part		Add Parts.
External Part		Add External Parts.
Connector		Add Connectors
Port		Add Ports.
Interface		Add Interfaces with icon notation.
Interface (Normal)		Add Interface with normal notation.
Provided Interface		Add Provided Interfaces.
Required Interface		Add Required Interfaces.
Dependency		Add Dependencies.
Realization		Add Realizations.
Usage		Add Usages.
Classifier		Add Classifiers.
Artifact		Add Artifacts.
Nest		Add Nests.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.
		See "Common Diagram Elements".

14. 7. 3. Components

a. Creating Components

To create a Component, use [Component] on the Tool Palette or double-click on the Component Diagram.



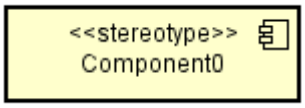
b. Editing Components

(a) Editing Component Names

Double-click the Name of the Component in the diagram and then edit its name directly, or go to Base tab of the Component in the Property View.

(b) Adding Stereotypes

Right-click on the Component and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

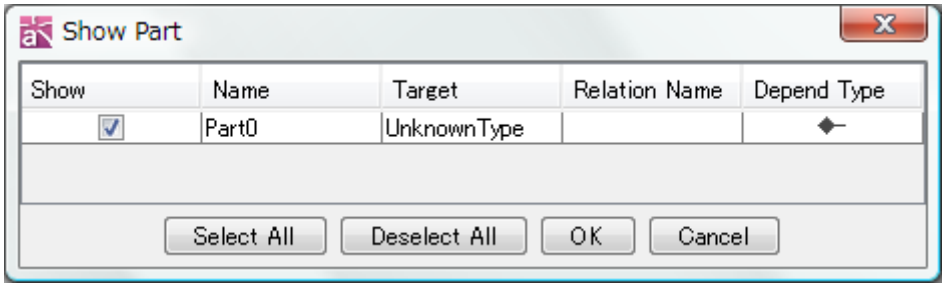
The display/non-display settings for a Stereotype of a Component can be selected from the Pop-up Menu.

(d) Show Part

The display/non-display settings for each Parts of Components can be selected from the Pop-up Menu.

1) Right-click on the Component and select [Show Part]

2) Check in the box of Parts and press [OK]

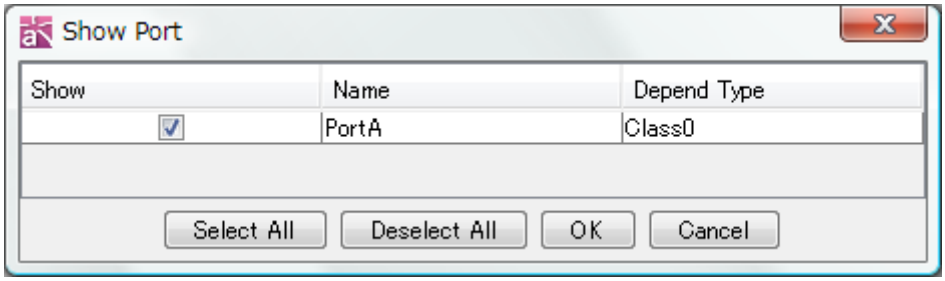


(e) Show Port

The display/non-display settings for each Ports of Component can be selected from the Pop-up Menu.

1) Right-click on the Component and select [Show Port]

2) Check in the box of Ports to display then press [OK]

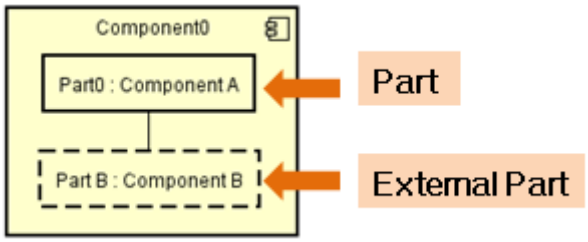


14. 7. 4. Part/External Part

a. Creating Part/External Part

To create a Part, use [Part] on the Tool Palette.

To create an External Part, use [External Part] on the Tool Palette.



b. Editing Parts/External Parts

(a) Editing Parts/External Parts Names

Double-click the name of the Part/External Part in the diagram and then edit its name, or go to Base tab of the Part/External Part in the Property View.

(b) Notation of Parts/External Parts

i) Name Visibility

The display/non-display settings for a Part/External Part Name can be selected from the Pop-up Menu [Name Visibility].

ii) Type Visibility

The display/non-display settings for a Type can be selected from the Pop-up Menu [Type Visibility].

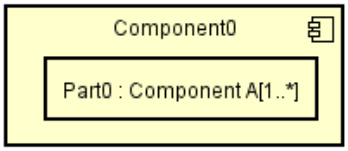
Check off [Type Visibility]

iii) Auto Resize function

When Auto Resize is selected, the width of a Part/External Part in a diagram is automatically increased or decreased according to the length of the Part/External Part Name.

(c) Set Multiplicity

(1) Right-click on the Part/External Part and select [Multiplicity]
(2) Select [1], [0..1], [0..*], [*], [1..*], or [Unspecified]



Or, go to Association End tab in the Property View.

14. 7. 5. Connector

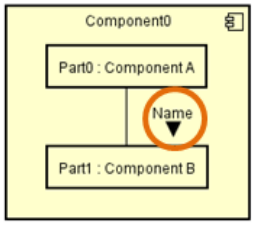
a. Creating Connectors

To create a Connector, use [Connector] on the Tool Palette or draw suggest feature.

b. Editing Connectors

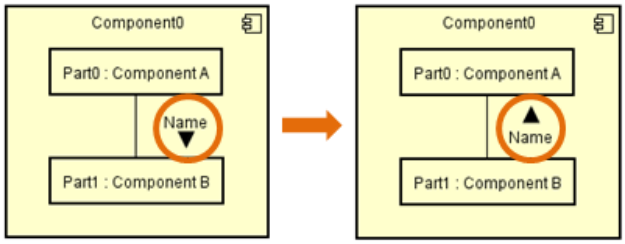
(a) Editing Connector Names

Right-click on the Connector and select [Set Name], or go to Connector Base tab in the Project View.



(b) Reverse Direction

(1) Right-click on the Connector and select [Name Direction] - [Reverse Direction].
To display the direction of Connector, the connecter name needs to be set.



(c) Constraint Visibility

The display/non-display settings for a Constraint can be selected from the Pop-up Menu.

(d) Multiplicity Visibility

The display/non-display settings for a Multiplicity can be selected from the Pop-up Menu.

(e) Role Name Visibility

The display/non-display settings for a Role Name can be selected from the Pop-up Menu.

(f) Name Visibility

The display/non-display settings for Connector Name can be selected from the Pop-up Menu.

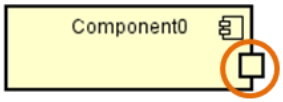
(g) Line Style

The Lines that connect Diagram Elements can have one of 4 Styles: “Line” or “Line (Right Angle), “Curve”, “Curve (Right Angle)”.

14. 7. 6. Port

a. Creating Ports

To create a Port, use [Port] on the Tool Palette.



b. Editing Ports

(a) Editing Port Names

Right-click on the Port and select [Set Name], or go to Base tab of the Port in the Property View.

(b) Set the Multiplicity

(1) Right-click on the Port and select [Multiplicity]
(2) Select [1], [0..1], [0..*], [*], [1..*], or [Unspecified]
Or, go to Association End tab in the Property View.

(c) Add Required Interfaces, Provided Interfaces

Right-click on the Port and select [Add Required Interfaces], [Provided Interfaces].
Or, go to Required Interface or Provided Interface tab of the Port in the Property View.

(d) Name Visibility

The display/non-display settings for Port Name can be selected from the Pop-up Menu.

(e) Type Visibility

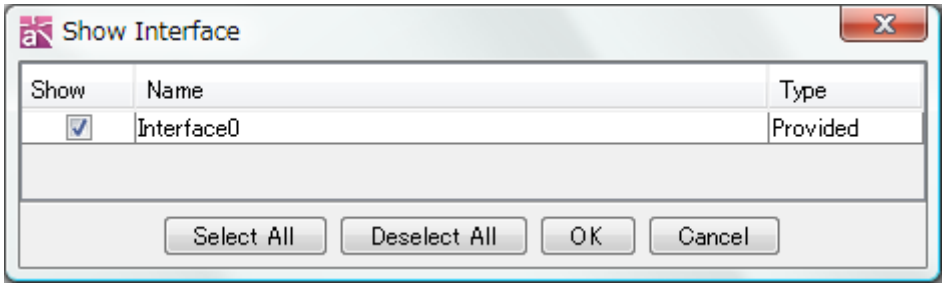
The display/non-display settings for a Type can be selected from the Pop-up Menu.

(f) Multiplicity Visibility

The display/non-display settings for a Multiplicity can be selected from the Pop-up Menu.

(g) Show Interface

The display/non-display settings for each Interfaces can be selected from the Pop-up Menu.
1) Right-click on the target Port and select [Show Interface].
2) Check in the box of Interfaces and press [OK].



14. 7. 7. Interface/Required Interface/Provided Interface

-> Please refer to the Interface/Required Interfacae/Provided Interface of Class Diagram.

14. 7. 8. Dependency

-> Please refer to the Dependency of Class Diagram.

14. 7. 9. Realization

-> Please refer to the Realization of Class Diagram.

14. 7. 10. Usage

-> Please refer to the Usage of Class Diagram.

14. 7. 11. Classifiers

a. Creating Classifiers

To create a Classifier, use [Classifier] on the Tool Palette.

b. Editing Classifiers

(a) Editing Classifier Names

Double-click the name of Classifier in the diagram and then edit its name directly, or go to Base tab of the Classifier in the Property View.

(b) Adding Stereotypes

Right-click on the Classifier and select [Add Stereotype], or go to Stereotype tab of Classifier's in the Property View.

(c) Stereotypes visibility

The display/non-display settings for a Stereotype can be selected from the Pop-up Menu.

14. 7. 12. Artifacts

a. Creating Artifacts

To create an Artifact, use [Artifact] on the Tool Palette.

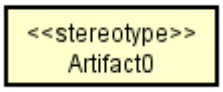
b. Editing Artifacts

(a) Editing Artifact Names

Double-click the name of the Artifact in the diagram and then edit its name directly, or go to Base tab of the Artifact in the Property View.

(b) Adding Stereotypes

Right-click on the target Artifact and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Stereotype of an Artifact can be selected from the Pop-up Menu.

14. 8. Deployment Diagrams

This section describes Deployment Diagrams and the Diagram Elements that they can contain.

14. 8. 1. Creating Deployment Diagrams

i) Using [Diagram] - [Deployment Diagram] in the Main Menu.
ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 8. 2. Diagram Elements of Deployment Diagrams

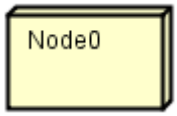
Select		Mode for basic operations in the Diagram Editor.
Node		Add Nodes.
NodeInstance		Add NodeInstances.
Component		Add Components.
ComponentInstance		Add ComponentInstances.
Association		Add Associations. (Unspecified Association to Unspecified Association)
Association		Add Associations. (Unspecified Association to Navigable Association)
Association		Add Associations. (Non-Navigable Association to Navigable Association)
Association		Add Associations. (Navigable to Navigable Association)
Aggregation		Add Aggregations. (Aggregation to Unspecified Association)
Aggregation		Add Aggregations. (Aggregation to Navigable Association)
Compositions		Add Compositions. (Composites to Unspecified Association)
Compositions		Add Compositions. (Compositions to Navigable Association)
Realization		Add Realizations.
Interface		Add Interfaces with icon notation.
Interface (Normal)		Add Interface with normal notation.
Dependency		Add Dependencies.
Instance Specification		Add Instance Specifications/Entities/BusinessEntities/Boundaries/Controls/BusinessWorkers.
Link		Add Links.
Set Relation End to the center of the		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.

item		
		See “Common Diagram Elements”.

14. 8. 3. Nodes

a. Creating Nodes

To create a Node, use [Node] on the Tool Palette or double click on the Deployment Diagram.



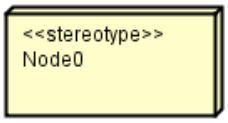
b. Editing Nodes

(a) Editing Node Names

Double-click the name of the Node in the diagram and then edit its name directly, or go to Base tab of the Node in the Property View.

(b) Add Stereotypes

Right-click on the target Node and select [Add Stereotype], or go to Stereotype tab in the Property View.



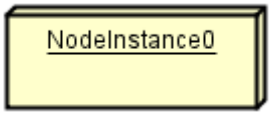
(c) Stereotype Visibility

The display/non-display settings for a Stereotype of a Node can be selected from the Pop-up Menu.

14. 8. 4. NodeInstances

a. Creating NodeInstances

To create NodeInstances, use [NodeInstance] on the Tool Palette.



b. Editing NodeInstances

(a) Editing NodeInstance Names

Double-click the Name of NodeInstance in the diagram and then edit its name directly, or go to Base tab of the NodeInstance in the Property View.

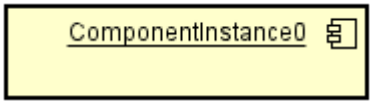
(b) Name/Node Type Visibility

The display/non-display settings for a Node Name and a Node Type can be selected from the Pop-up Menu using [Name Visibility] and [Node Type Visibility].

14. 8. 5. ComponentInstances

a. Creating ComponentInstances

To create a ComponentInstance, use [ComponentInstance] on the Tool Palette.



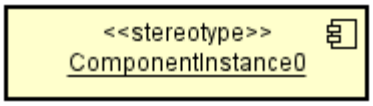
b. Editing ComponentInstances

(a) Editing ComponentInstance Names

Double-click the name of the ComponentInstance in the diagram and then edit its name directly, or go to Base tab of the ComponentInstance in the Property View.

(b) Add Stereotypes

Right-click on the target ComponentInstance and select [Add Stereotype], or go to Stereotype tab in the Property View.



(c) Stereotype Visibility

The display/non-display settings for a Stereotype of a ComponentInstance can be selected from the Pop-up Menu.

(d) Name/Component Visibility

The display/non-display settings for a ComponentInstance Name and a ComponentInstance Type can be selected from the Pop-up Menu using [Name Visibility] and [Component Visibility].

14. 9. Composite Structure Diagrams

This section describes Composite Structure Diagrams and the Diagram Elements that they can contain.

14. 9. 1. Creating Composite Structure Diagrams

i) Using [Diagram]-[Composite Structure Diagram] in the Main Menu.
ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 9. 2. Diagram Elements of Composite Structure Diagrams

Select		Mode for basic operations in the Diagram Editor.
Structured Class		Add Structured Classes.
Class		Add Classes.
Part		Add Parts.
External Part		Add External Parts.
Connector		Add Connectors
Port		Add Ports.
Interface		Add Interfaces with icon notation.
Interface (Normal)		Add Interface with normal notation.
Provided Interface		Add Provided Interfaces.
Required Interface		Add Required Interfaces.
Association		Add Associations. (Unspecified Association to Unspecified Association)
Association		Add Associations. (Unspecified Association to Navigable Association)
Association		Add Associations. (Non-navigable Association to Navigable Association)
Association		Add Associations. (Navigable Association to Navigable Association)
Aggregation		Add Aggregations.

		(Aggregation to Unspecified Association)
Aggregation		Add Aggregations. (Aggregation to Navigable Association)
Composition		Add Compositions. (Composition to Unspecified Association)
Composition		Add Compositions. (Composition to Navigable Association)
Generalization		Add Generalizations.
Dependency		Add Dependencies.
Template Binding		Add Template Bindings.
Realization		Add Realizations.
Usage Dependency		Add Usage Dependencies.
Nest		Add Nests.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.
		See "Common Diagram Elements".

14. 9. 3. Structured Class/ Class

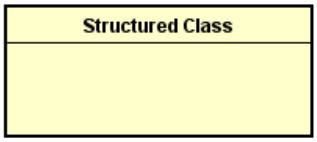
a. Creating Structured Classes/Classes

i) Using the Tool Palette.

To create a Structured Class, use [Structured Class] on the Tool Palette or double click on the Composite Structure Diagram. To create a Class, use [Class] on the Tool Palette.

(a) Using the [Structure Tree] in the "Project View".

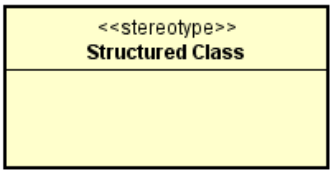
a. Drag a class from the Structure Tree in the Project View.
b. Drop it onto a Diagram in the Diagram Editor.
c. Select Structured Class or Class and press [OK] in the Class Notation dialog.



b. Editing Structured Classes

(a) Adding Stereotypes

Right-click on the target Structured Class and select [Add Stereotype], or go to Stereotype tab in the Property View.



(b) Editing Structured Class Names

Double-click the name of the Structured Class in the diagram and then edit its name directly, or go to Base tab of the Structured Class in the Property View.

(c) Notation of Classes/Structured Classes

i) Show as Class

Right-click on the target Structured Class and select [Show as Class].
In return, Right-clicking on a Class and selecting [Show as Structured Class] will change the class notation into a Structured Class.

ii) Show Related Elements

Right-click on the target Class / Structured Class and select [Show Related Elements].
All related classes with selected class appear including generalization, Realization, Dependency relationship.

iii) Showing Hidden Relationships

(1) Right-click on the target Class / Structure Class and select [Show Hidden Relationships]
(2) To show hidden relationships, select relationships (e.g. Generalization, Realization and Dependency) in Show Hidden Relationships dialog and click OK

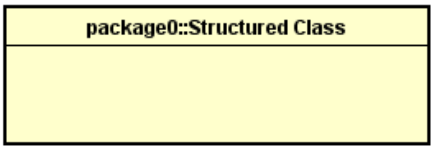
iv) Package Visibility

The Names of the Packages to which a Structured Class belongs can be displayed as part of the Class Name.

(1) Right-click on the Structured Class and select [Extended Visibility]-[Show/Hide Namespace]

(2) Select a display level

None	None of parent package names will appear.
Show Parent	A direct parent package name will appear.
Show All Parents	All the parent package names will appear.

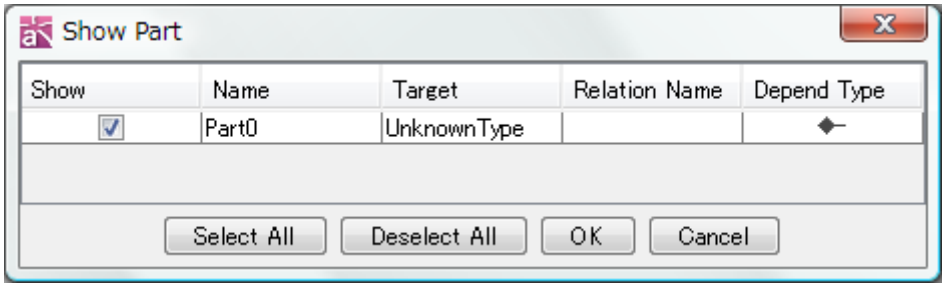


v) Show Part

The display/non-display settings for each Parts of a Class/Structured Class can be selected from the Pop-up Menu.

(1) Right-click on the target Class/Structured Class and select [Show Part]

(2) Check in the box of Parts to display then press [OK]

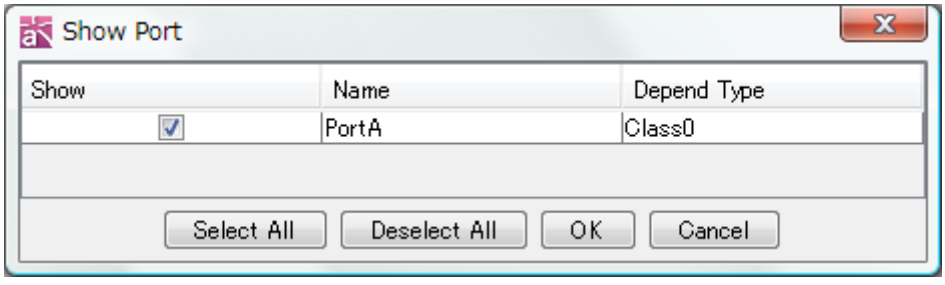


vi) Show Port

The display/non-display settings for each Ports of a Class/Structured Class can be selected from the Pop-up Menu.

(1) Right-click on the target Class/Structured Class and select [Show Port]

(2) Check in the box of Ports to display then press [OK]



vii) Stereotype Visibility

The display/non-display settings for a Class Stereotype can be selected from the Pop-up Menu.

14. 9. 4. Part/External Part

Please refer to the Part/External Part of Component Diagram.

14. 9. 5. Connector

Please refer to the Connector of Component Diagram.

14. 9. 6. Port

Please refer to the Port of Component Diagram.

14. 9. 7. Interface/Required Interface/Provided Interface

Please refer to the Interface/Required Interfacae/Provided Interface of Class Diagram.

14. 9. 8. Dependency

Please refer to the Dependency of Class Diagram.

14. 9. 9. Template Binding

Please refer to the Template Binding of Class Diagram.

14. 9. 10. Realization

Please refer to the Realization of Class Diagram.

14. 9. 11. Usage

Please refer to the Usage of Class Diagram.

14. 10. Flowchart [P]

14. 10. 1. Creating Flowcharts

a. Using [Diagram]-[Flowchart]-[New Flowchart] or [Template Flowchart] in the Main Menu.
b. Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 10. 2. Flowchart Templates

Creates Templates of Flowchart and reuse them.

14.Diagrams and Diagram Elements

a. Importing Flowchart Templates

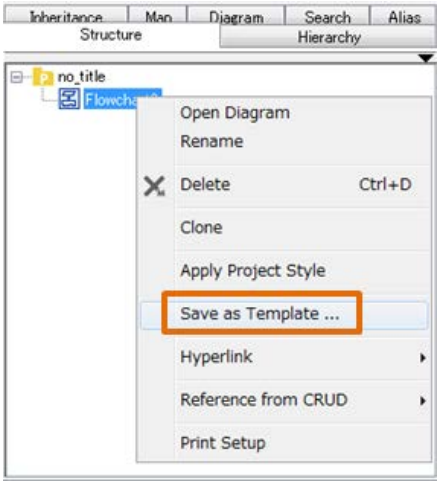
(1) Using [Diagram]-[Flowchart]-[Template Flowchart] in the Main Menu

(2) Using the [Structure Tree] in the "Project View" (by right-clicking)

b. Creating Flowchart Templates

(1) Select a Flowchart as a Template and select [Save as Template] from the Pop-Up Menu

(2) Select the folder and name the template



14. 10. 3. Diagram Elements of Flowcharts

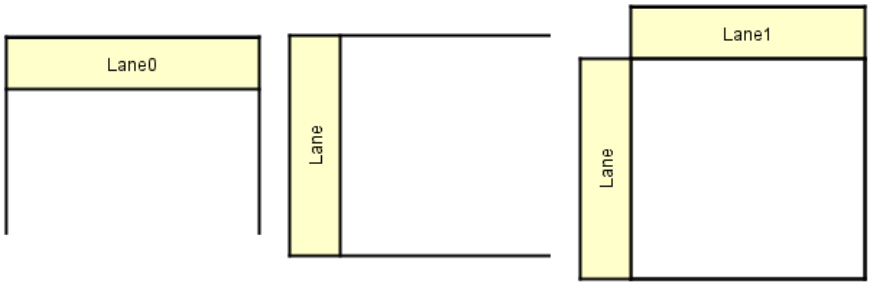
Select		Mode for basic operations in the Diagram Editor.
Transition (Solid Line)		Add Transitions (Solid, Arrow, and Double Arrow)
Transition (Dash Line 1)		Add Transitions (Solid, Arrow, and Double Arrow line)
Transition (Dash Line 2)		Add Transitions (Solid, Arrow, and Double Arrow line)
Transition (Railway)		Add Transitions (Railway)
Lane [Vertical]		Add Vertical Lanes.
Lane [Horizontal]		Add Horizontal Lanes.
Initial Node		Add Initial Nodes.
Final Node		Add Final Nodes.

Condition Judgement		Add Condition Judgements.
Fork		Add Fork.
Join		Add Joins.
Synchronization Bar - Independent Mode		Use this Mode to create Synchronization Bars independently from Partitions.
		See "Common Diagram Elements".

14. 10. 4. Lanes

a. Creating Lanes

To create a Partition, use [Lane] on the Tool Palette.



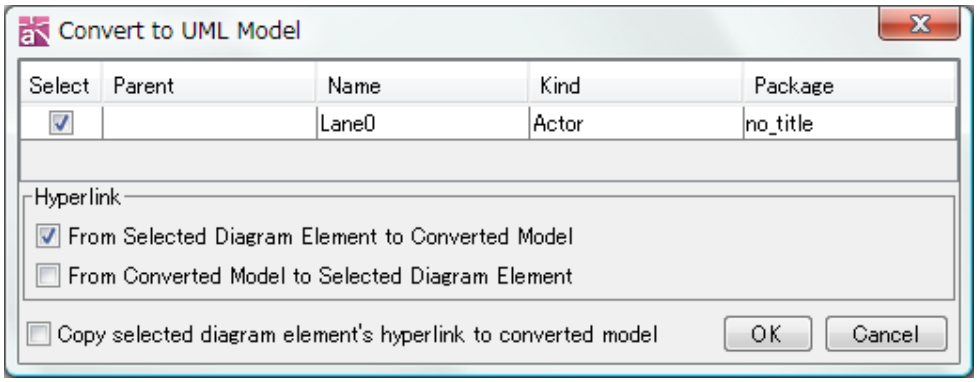
b. Editing Lanes

(a) Editing Lane Names

Double-click the Name of Lane in the diagram and then edit its name directly, or go to Base tab of the Lane in the Property View.

c. Convert to Actor

(1) Right-Click on Lane and select [Convert to Actor].
(2) Check options and click on [OK] in [Convert to UML Model] dialog.



14. 10. 5. Transition

a. Creating Transitions

To create Transitions, use [Transition] on the Tool Palette.

14. 10. 6. Initial Nodes

a. Creating Initial Nodes

To create an Initial Node, use [Initial Node] on the Tool Palette.

14. 10. 7. Final Nodes

a. Creating Final Nodes

To create a Final Node, use [Final Node] on the Tool Palette.

14. 10. 8. ConditionJudgement

a. Creating ConditionJudgement

To create a ConditionJudgement, use [ConditionJudgement] on the Tool Palette.

14. 10. 9. Fork/Join

a. Creating Fork /Join

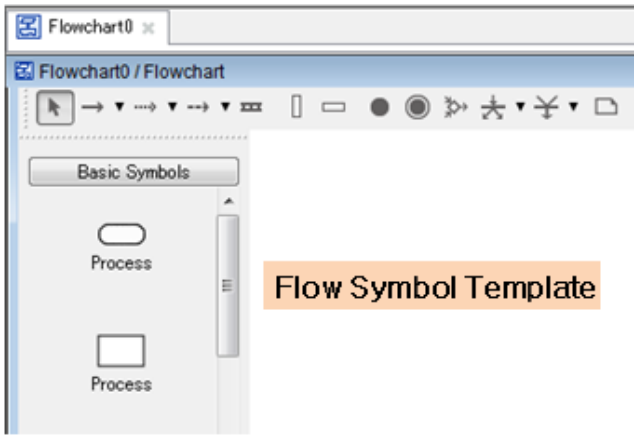
To create a Fork, use [Fork] on the Tool Palette.
To create a Join, use [Join] on the Tool Palette.
They are also called "Synchronization Bars".

Note) To create a Synchronization Bar independently from Partitions, use

[Synchronization Bar - Independent Mode] on the Tool Palette.

14. 10. 10. Flow Symbol Template

[Basic Symbols] and [Sanno Style] are default Flow Symbol Templates.



14. 10. 11. Flow Symbols

a. Draw Flow Symbols

Draw Flowchart using Flow Symbols in the diagram or double click on the Flowchart

(1) Select Flow Symbol from the Flow Symbol Palette

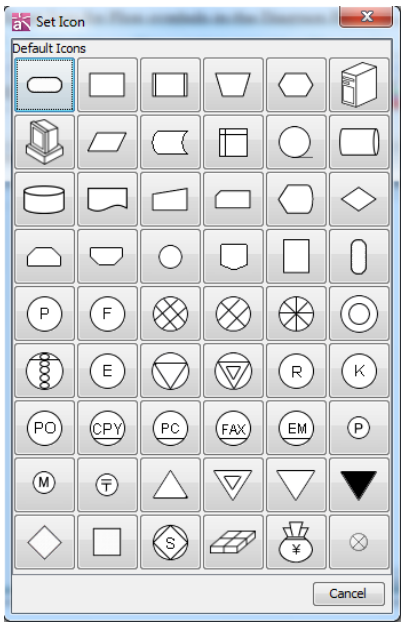
(2) Click on the Diagram Editor

b. Set Icon for Flow Symbols

To set Icon for Flow symbols in the Diagram Editor.

(1) Right-click on Flow symbol and select [Set Icon]

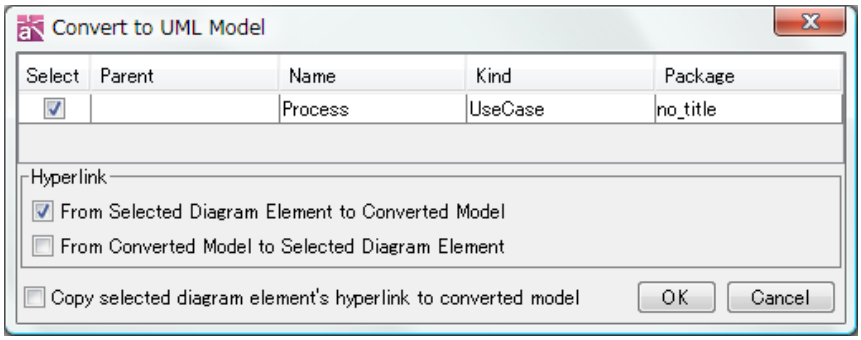
(2) Click on an icon in [Set Icon] dialog



c. Convert to UseCase

(1) Right-click on target Flow symbol then click [Convert to UseCase].

(2) Check options and click on [OK] in [Convert to UML Model] dialog.



14. 11. Data Flow Diagrams (DFD) [P]

14. 11. 1. Creating Data Flow Diagrams

i) Using [Diagram] - [Data Flow Diagram] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 11. 2. Notation of Data Flow Diagram

Data Flow Diagrams can be notated in two different notations, [DeMarco] or [Gane/Sarson].

i) Using the [Structure Tree]

(1) Open the Pop-Up Menu of the Data Flow Diagram to switch the Notation

(2) Select [Diagram Notation] and select [DeMarco] or [Gane/Sarson]

ii) Using the Pop-Up Menu in Diagram Editor

(1) Open the Data Flow Diagram then do right-clicking on the Diagram Editor

(2) Select [Diagram Notation] and select [DeMarco] or [Gane/Sarson]

iii) Using the [Property View]

14. 11. 3. Diagram Elements of Data Flow Diagrams

Select		Mode for basic operations in the Diagram Editor.
External Entity	/	Add External Entities.
Process Box	/	Add Process Boxes.
Data Store	/	Add Data Stores.
Anchor		Add Anchors.
Dataflow	/	Add Dataflow.
Dataflow (Both Direction)	/	Add Dataflow.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.
		See "Common Diagram Elements".

14. 11. 4. External Entity

a. Creating External Entity

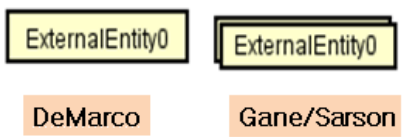
i) Using [ExternalEntity] on the Tool Palette.

To create an ExternalEntity, use / [ExternalEntity] on the Tool Palette.

ii) Using [Structure Tree].

(1) Select an External Entity in the Structure Tree in the [Project Views].

(2) Drag it and drop onto the Diagram Editor.



b. Editing External Entity

(a) Editing External Entity Names

Double-click the name of the External Entity in the diagram and then edit its name directly, or go to Base tab of the External entity in the Property View.

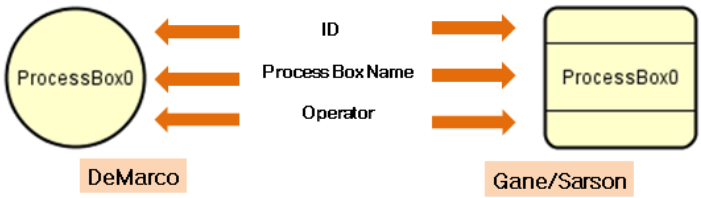
14. 11. 5. Process Box

a. Creating Process Box

i) Using [ProcessBox] on the Tool Palette

To create a Process Box, use ○ / ▤ [ProcessBox] on the Tool Palette.

ii) Double-clicking on Data Flow Diagram



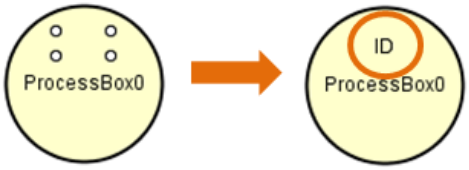
b. Editing Process Box

(a) Editing Process Box Names

Double-click the name of Process Box in the diagram and then edit its name directly, or go to Base tab of the Process Box in the Property View.

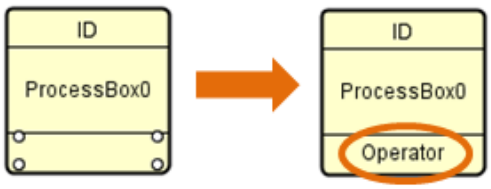
(b) Adding Process Box ID

Double-click on the top (ID area) of a Process Box. Or, input it from the Property View.



(c) Adding Process Box Operator

Double-click on the bottom (Operator area) of a Process Box. Or, input it from the Property View.



(d) ID Visibility

The display/non-display settings for the ID of a Process Box can be selected from the Pop-up Menu.

(e) Operator Visibility

The display/non-display settings for the Operator of a Process Box can be selected from the Pop-up Menu.

(f) Creating a sub Data Flow Diagram

Right-click on a Process Box and select [Create Data Flow Diagram], or double-click on the target Process Box. Also, use Data Flow Diagram tab of ProcessBox in the Property View.

(g) Opening sub Data Flow Diagram

Right-click on the target Process Box and select [Open Nested Diagram], or double-click on the target Process Box.

(h) Reference from CRUD

To open the CRUD, right-click on the target Process Box and select [Reference from CRUD].

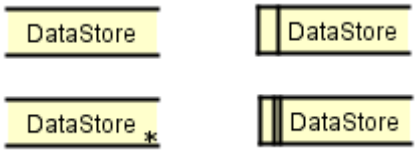
14. 11. 6. Data Store

a. Creating Data Store

i) Using [DataStore] on the Tool Palette.

To create a Data Store, use [DataStore] on the Tool Palette.

ii) Using [Structure Tree] in the "Project View"



b. Editing Data Store

(a) Editing Data Store Names

Double-click the Name of the DataStore in the diagram and then edit its name directly, or go to Base tab of the Data Store in the Property View.

(b) Adding Data Store ID

Double-click on left (ID area) of a Data Store. Or, input it from the Property View.

(c) ID Visibility

The display/non-display settings for the ID of a Data Store can be selected from the Pop-up Menu.

14. 11. 7. Anchor

An Anchor is a symbol to connect to a Process in another Data Flow Diagram.

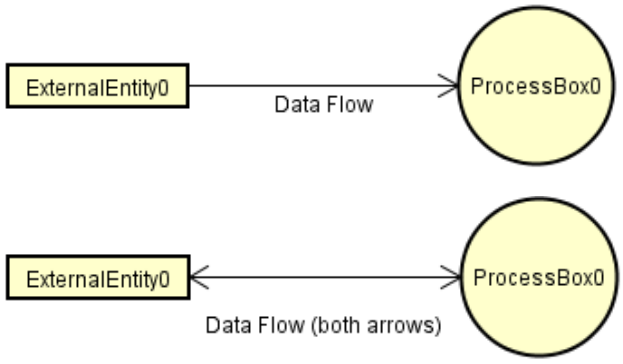
a. Creating Anchor

To create an Anchor, use ■ [Anchor] on the Tool Palette.

14. 11. 8. Data Flow

a. Creating Data Flow

To create a Data Flow, use → / ⇢ [DataFlow] on the Tool Palette.
To create a Data Flow(Both Direction), use ↔ / ⇿ [DataFlow (Both Direction)] on the Tool Palette.



14. 11. 9. Export DFD Hierarchy to Excel

Select [Export DFD Hierarchy to Excel] in the Data Flow Diagram Pop-up Menu on the Structure Tree.

	A	B	C	D	E
1	Data Flow Diagram0				
2		Hierarchy0		Hierarchy1	
3		ID	Name	ID	Name
4			ProcessBox0		ProcessBox0
5			ProcessBox1		

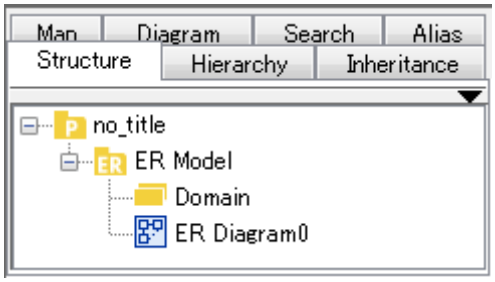
14. 12. ER Diagrams [P]

14. 12. 1. Creating ER Diagrams

i) Using [Diagram] - [ER Diagram] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View"

An ER Model and Domain will be created automatically after creating an ER Diagram..



14. 12. 2. Model Type of ER Diagrams

Select [Diagram Model Type]-[Logical Model] or [Physical Model] in the ER Diagram Pop-up Menu on the Structure Tree or on the Diagram Editor. Or, go to Base tab of the ER Diagram in the Property View.

14. 12. 3. Notation of ER Diagram

Select [Diagram Notation]-[IDEF1X] or [IE] in the ER Diagram Pop-up Menu on the Structure Tree or on the Diagram Editor. Or, go to Base tab of the ER Diagram in the Property View.

14. 12. 4. Diagram Elements of ER Diagrams

Select		Mode for basic operations in the Diagram Editor.

Entity		Add Entities. ER Entities specified in the [Default ER Entity Type Color] of [Project Property Setting] are included in the Dropdown list.
Identifying Relationship (IDF1X/IE)	/	Add Identifying Relationships.
Non-Identifying Relationship (IDF1X/IE)	/	Add Non-Identifying Relationships.
Many-to-many Relationship (IDF1X/IE)	/	Add Many-to-many Relationships.
Subtype (IDF1X/IE)	/	Add Subtypes.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.
		See "Common Diagram Elements".

14. 12. 5. Entity

a. Creating Entity

i) Using [Entity] on the Tool Palette

ii) Using [Structure Tree] in the "Project View"

iii) Double clicking on ER Diagram

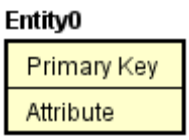
b. Editing Entity

(a) Adding Primary Keys/Attributes

i) Using the [Structure Tree] in the "Project View".

ii) Using the Pop-up Menu.

Right-click on the target Entity and select [Add Primary Key] or [Add Attribute] on the Diagram Editor. Or, go to Attribute tab of EREntity in the Property View.



Note) How to operate Primary keys/Attributes on Diagram Editor

- [Enter] to add continuously
- [Shift + Enter] to insert new one above selected one
- [Ctrl + Upward Arrow cursor] to move up
- [Ctrl + Downward Arrow cursor] to move down
- [Ctrl + C] to copy
- [Ctrl + V] to paste
- Transferable between Entities by drag & drop

(b) Deleting Primary Key / Attributes

i) Using the [Structure Tree] in the "Project View".

ii) Using the Pop-up Menu.

(1) Right-click on the target Entity and select [Delete Primary Key] or [Delete Attribute].

(2) Select Primary Key / Attribute.

Or, go to Attribute tab of the EREntity in the Property View.

(c) Editing Entity Names

Double-click name of the ER Entity in the diagram and then edit its name directly, or go to Base tab of ER Entity in the Property View.

(d) Showing Dependent Entities

To show dependent entities, right-click on the target Entity and select [Show Dependent Entities].

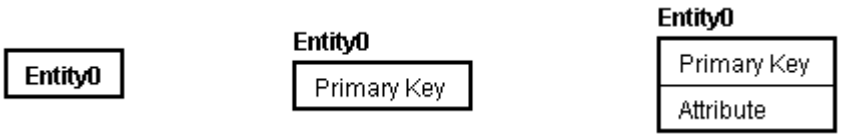
(e) Showing Hidden Relationships

(1) Right-click on the target Entity and select [Show Hidden Relationships]

(2) To show hidden relationships, select relationships in Show Hidden Relationships dialog and click OK

(f) Display Level

Select [Display Level] on Entity's Popup Menu and select [Entity], [Primary Key] or [Attribute].



Entity　　Primary Key　　Attribute

(g) Attribute Visibility

The display/non-display settings for each Attribute of an Entity can be selected from the Pop-up Menu.

(h) Extended Visibility

The following visibilities can be set.

- Type & Length
- Foreign Key Sign
- Alternate Key Sign
- Inversion Entry Sign
- Null Option

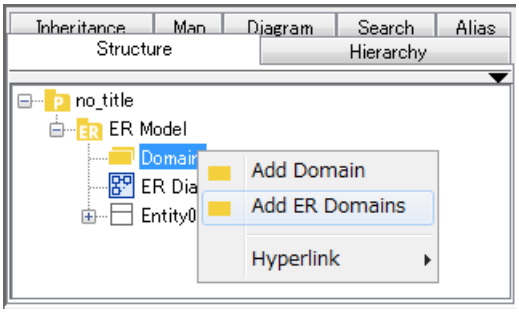
(i) Reference from CRUD

To open the CRUD, right-click on the target Entity and select [Reference from CRUD].

14. 12. 6. Domain

a. Creating Domain

To create Domain, select [Add Domain] from Domain Popup Menu in the Structure Tree. To add multiple domains, select [Add ER Domains].



b. Adding Domain to Entity

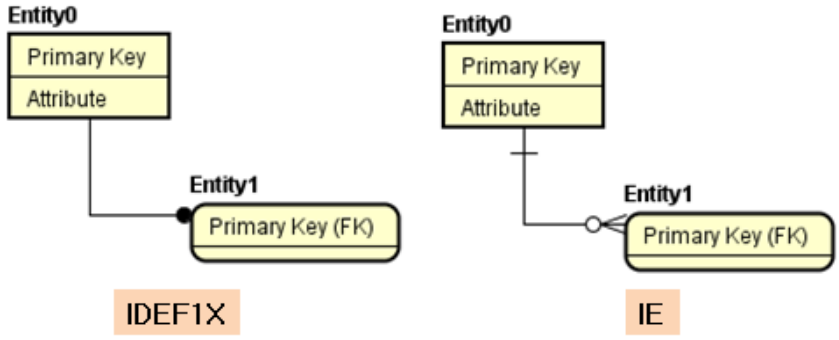
To add a Domain to Entity, drag a Domain from the Structure Tree and drop it onto the

top (as Primary Key) / bottom (as Attribute) part of the Entity in the Diagram Editor.

14. 12. 7. Identifying Relationship

a. Creating Identifying Relationship

To create an Identifying Relationship. Use (IDEF1X) / (IE) on the Tool Palette.



b. Editing Identifying Relationship

(a) Specify the Verb Phrase

Select a [Verb Phrase (Parent to Child)] or [Verb Phrase (Child to Parent)] on the Pop Up Menu of Identifying Relationship. Or, go to Base tab of the Relationship in the Property View.

(b) Verb Phrase Visibility

Verb Phrase Visibility can be set on the Pop-Up Menu of Relationship.

(c) Cardinality Visibility

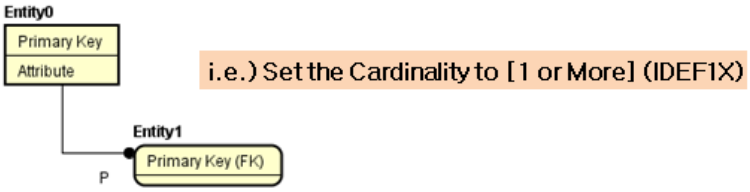
Cardinality Visibility can be set on the Pop-Up Menu of Relationship.

(d) Setting Type

Right-click on the target Relationship and select [Type] - [Identifying] or [Non-Identifying]. Or, go to Base tab of Relationship in the Property View.

(e) Set the Cardinality

Right-click on the target Relationship and select [Cardinality] - [0 or More], [1 or More], [0 or 1] or [Constant]. Or, go to Base tab of Relationship in the Property View.



(f) Line Style

-> Please refer to the Line Styles.

14. 12. 8. Non-Identifying Relationship

a. Creating Non-Identifying Relationship

To create a Non-Identifying Relationship, use (IDEF1X)/ (IE) on Tool Palette.

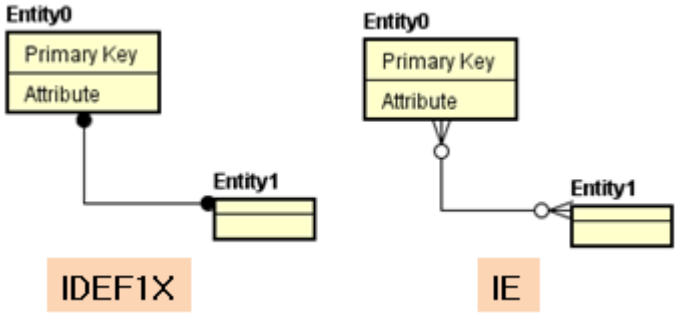
b. Editing Non-Identifying Relationship

-> Please refer to the Editing Identifying Relationship.

14. 12. 9. Many-to-many Relationship

a. Creating Many-to-many Relationship

To create a Many-to-many Relationship, use (IDEF1X)/ (IE) on the Tool Palette.



b. Editing Many-to-many Relationship

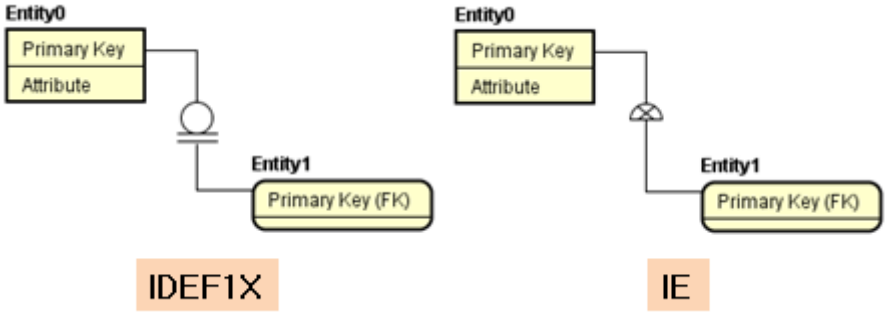
-> Please refer to the Editing Identifying Relationship.

14. 12. 10. Subtype

a. Creating Subtype

To create a Subtype, use (IDEF1X) / (IE) on the Tool Palette.

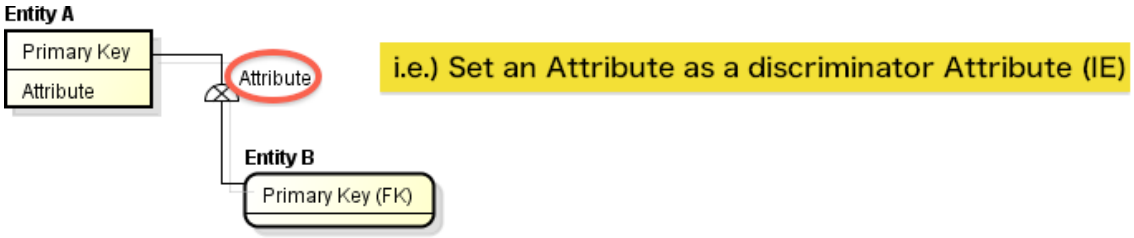
To use shared style, Please refer to [Generalization].



b. Editing Subtype

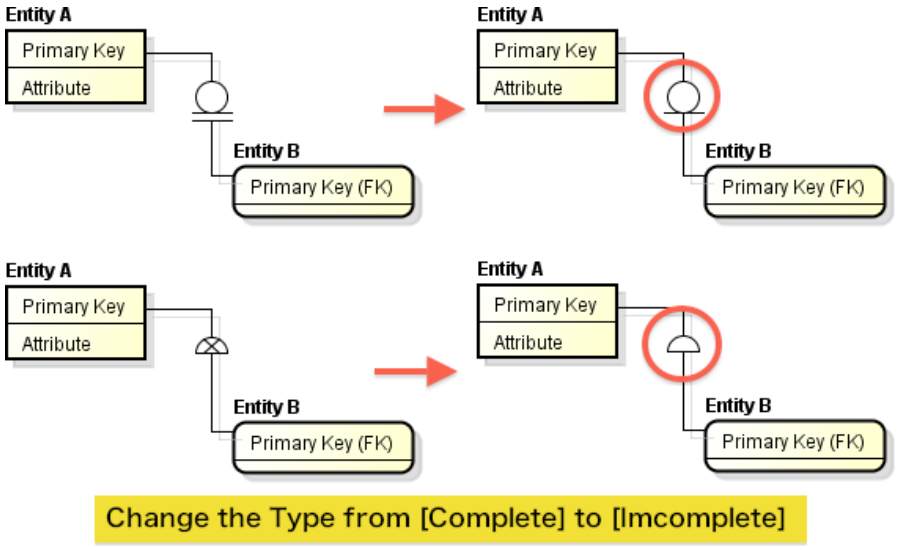
(a) Set the Discriminator Attribute

Right-click the target Subtype and select [Set Discriminator Attribute]. And select Attribute from the list. Or, go to Base tab of Subtype in the Property View.



(b) Set Type

Right-click on the target Subtype and select [Set Type] - [Complete] or [Incomplete]. Or, go to the Base tab of the Subtype in the Property View.

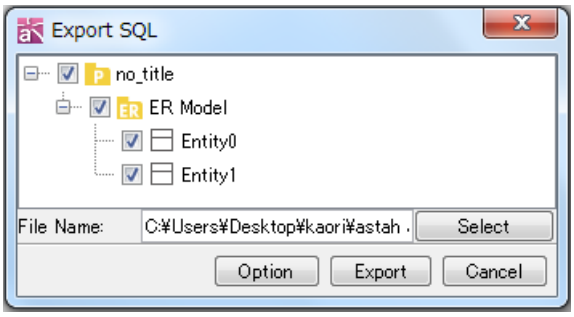


14. 12. 11. Exporting SQL

Export SQL based on the ER Diagram.

a. Setting for SQL Export

Select [Tool]-[ER Diagram]-[Export Sql] in the Main Menu.



1. Select Models in the Tree

Select models to export SQL in the Tree

2. Select a file

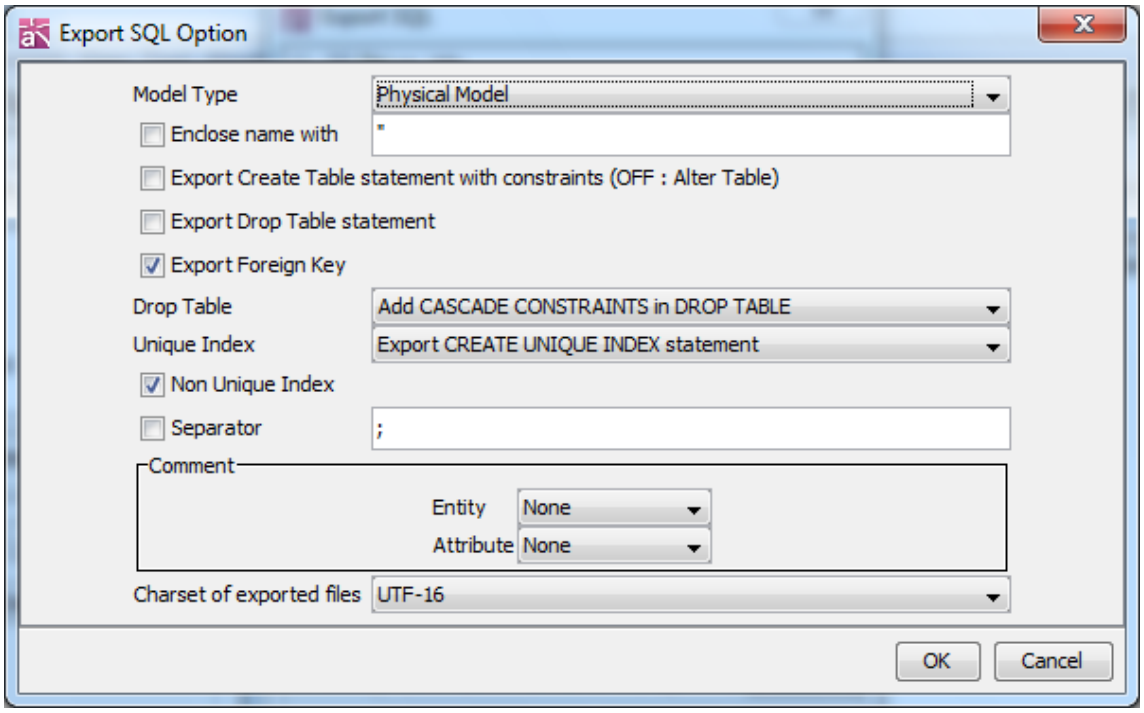
Select a file to export SQL

3. Option

Click the Option button to set detailed setting of the SQL

4. Export

Click the Export button to export SQL



(a) Model Type

Select which model type to export SQL.

Default [Physical Model]

(b) Enclose name with...

Specify what to use to enclose the name.

Default [OFF]

(c) Export Create Table statement with constraints (OFF : Alter Table)

Select if it exports the Create Table statement with constraints not.

Default [OFF]

(d) Export Drop Table statement

Select if it exports Drop Table Statement or not.

Default [OFF]

(e) Export Foreign Key

Select if it exports Foreign Key or not.

Default [ON]

(f) Drop Table

Select the Drop Table.

(g) Unique Index

Select the Unique Index.

(h) Non Unique Index

Select if it exports Non Unique Index or not.

(i) Separator

Select the separator.

(j) Comment － Entity/Attribute

Select how you want to export Comment.

Default [None]

(k) Charset of exported files

Select the charset to use on exporting SQL

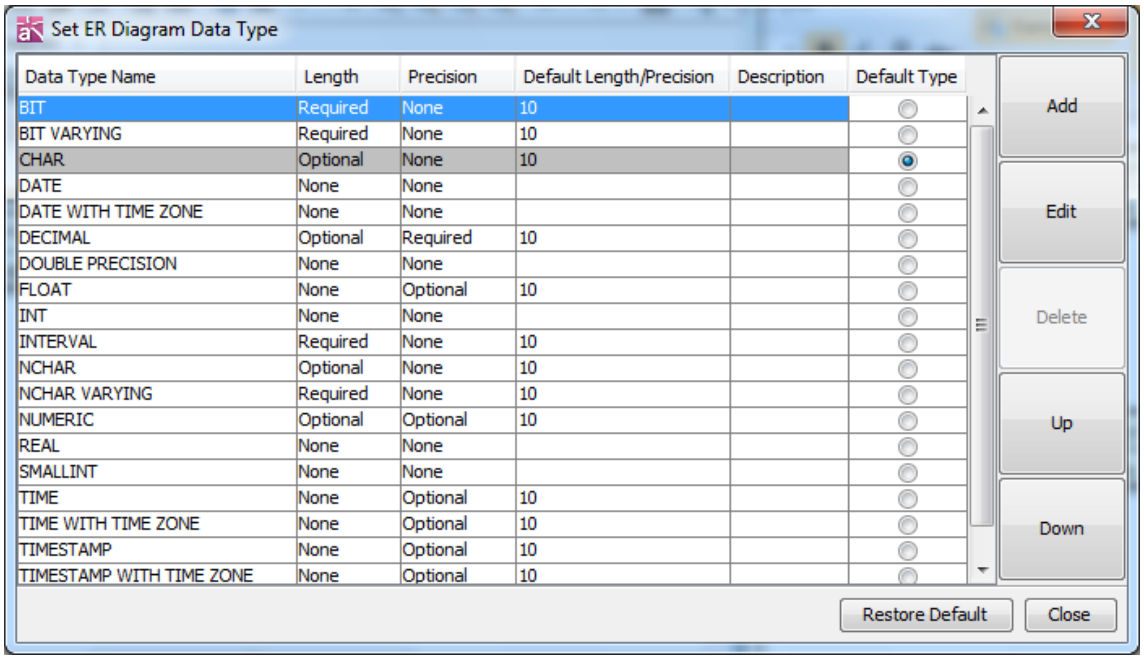
Default <Default>

14. 12. 12. Set ER Datatype

There are two ways to set ER Datatype.

i) Using [Tool]-[ER Diagram]-[Set ER Datatype] in Main Menu

ii) Using Pop Up Menu of ER Model in Structure Tree View



Items of ER Datatype

a. Data Type Name

b. Length

c. Precision

d. Default

e. Description

f. Default Type

a. Add ER Datatype

Click [Add] on [Set ER Diagram Datatype].

b. Edit ER Datatype

Select Datatype to edit, and then click [Edit] button.

c. Delete ER Datatype

Select Datatype to delete, and then click [Delete] button.

d. Sort ER Datatype

Select Datatype and then sort by using [Up][Down] button.

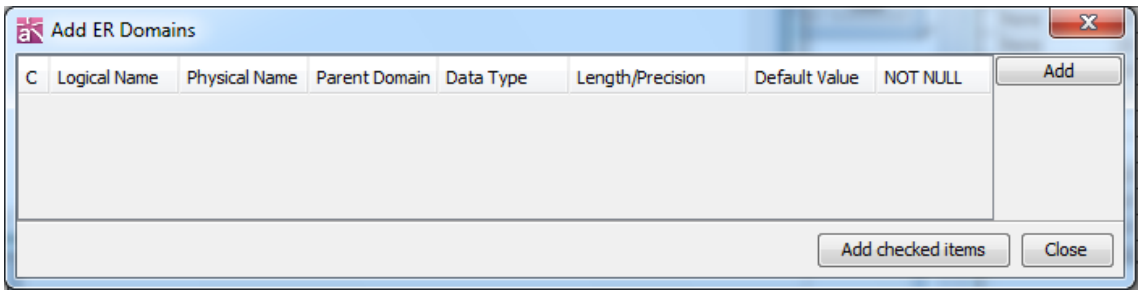
e. Set the Default Datatype

Open the [Set ER Diagram Datatype], and click on [Default Type] on the right lane.

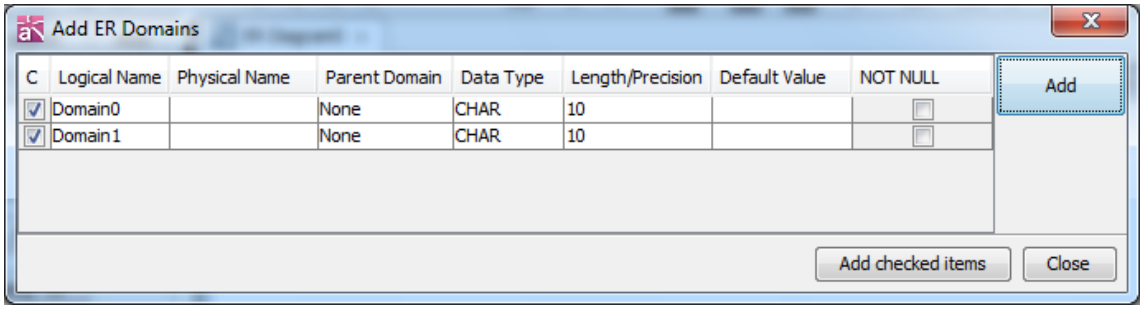
14. 12. 13. Add ER Domains

You are able to add multiple ER Domains at once. There are two ways to do so.
i) Go to [Tool] – [ER Diagram] – [Add ER Domains]
ii) Select [Add ER Domains] from Domain's Pop-up menu in the Structure Tree

1. [Add ER Domains] window opens, click [Add] button on the right



2. Specify the ER Domains



3.[Add checked items]

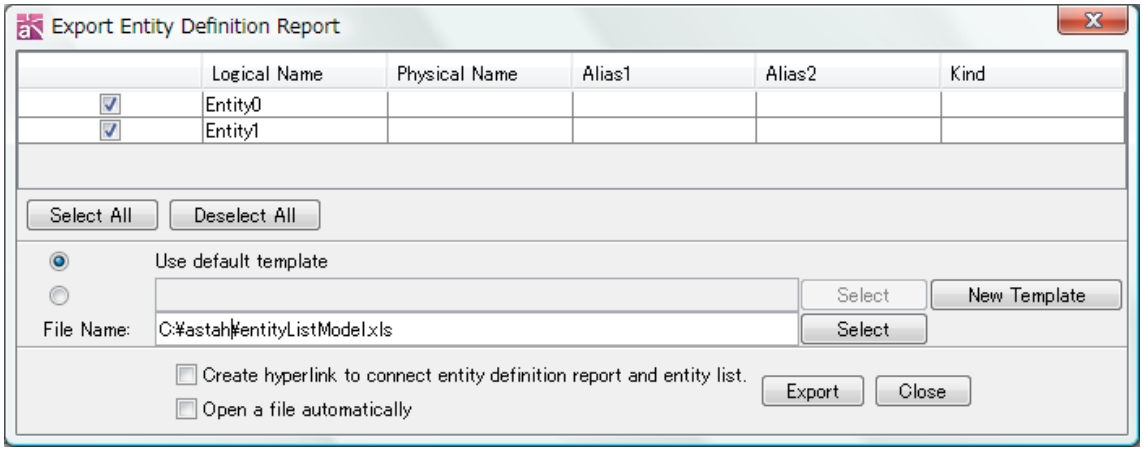
Select ER models you want to add to the project and then press [Add checked items] button.

14. 12. 14. Exporting Entity Definition Report

Export an Entity Definition Report from ER Diagrams.

a. Exporting Entity Definition Report

Select [Tool] - [ER Diagram] - [Export Entity Definition Report] in the Main Menu.



(a) Select Models

Select models to export. Click [Select All] to select them all.

(b) Select a Template

Select a format to export the Entity Definition Report.

(1) Use a default template

(2) Select a saved template

(3) Create a New Template

(c) Select a file

Select a file to export the Entity Definition Report.

(d) Create hyperlink connecting entity definition report and entity list

Check this option to add hyperlink between Entity Definition Report and Entity List.

(e) Open a file automatically

Check this option to open the Entity Definition Report automatically.

(f) Export

Click the Export button to export the Report.

Exporting Attribute on Entity List

- Logical Name of Attribute - $each.entity.each.attribute.logical_name
- Physical Name of Attribute - $each.entity.each.attribute.physical_name
- Domain Name of Attribute - $each.entity.each.attribute.domain
- Primary Key Flag of Attribute - $each.entity.each.attribute.pk
- Foreign Key Flag of Attribute - $each.entity.each.attribute.fk
- NotNull Flag of Attribute - $each.entity.each.attribute.notnull
- Reference of Attribute - $each.entity.each.attribute.ref
- Datatype of Attribute - $each.entity.each.attribute.type

・Length/Precision of Attribute - $each.entity.each.attribute.length_precision

・Initial Value of Attribute - $each.entity.each.attribute.initial_value

Exporting TaggedValue of Attribute on Entity List

・TaggedValue of Attribute - $each.entity.each.attribute.each.taggedvalue

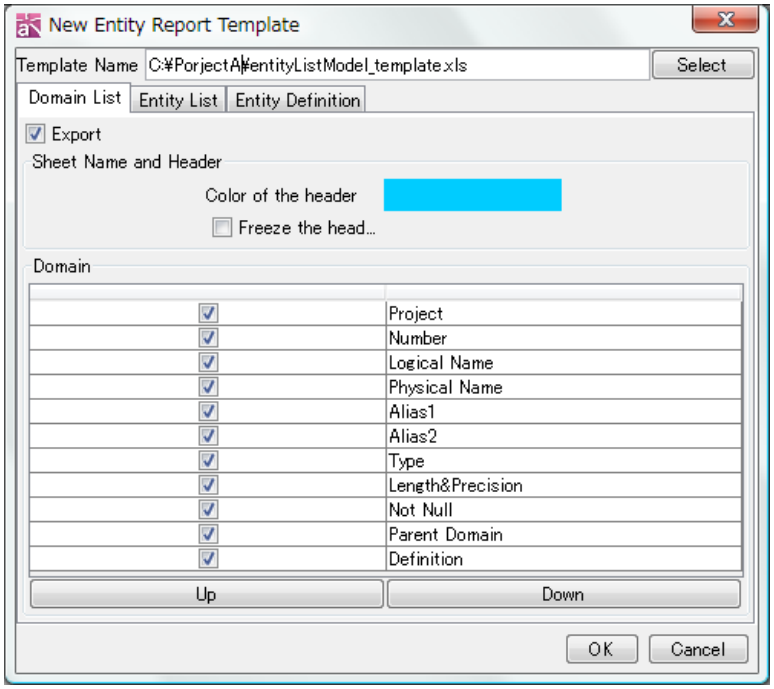
14. 12. 15. Creating New Template for Entity Definition Report

Select [Tool]-[ER Diagram]-[Export Entity Definition Report] in the Main menu, and select [New Template] button on dialog.

(a) Template Name

Set a template name to save the template file.

a. Domain List



(a) Export

Check this option to export the Domain List.

(b) Header setting

(1) Select the color of header from color box.

(2) Check [Freeze the header] option to lock up the Header.

(c) Domain

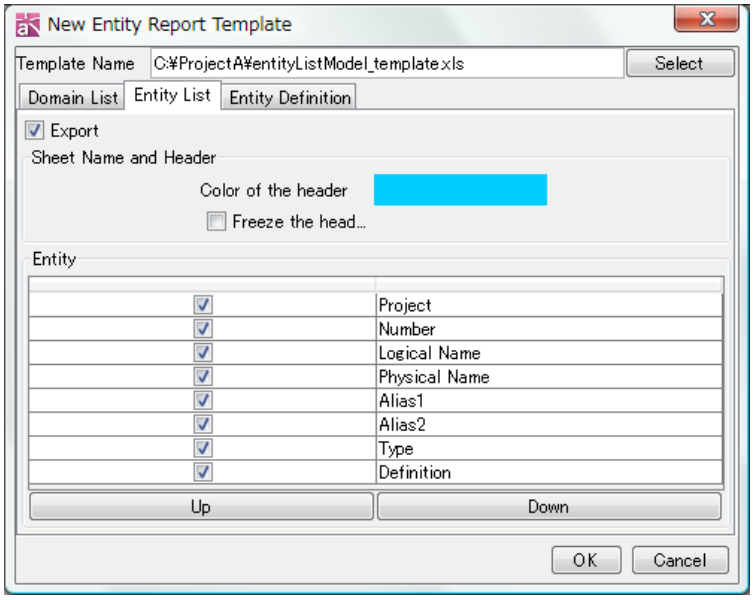
Check the option to export the following items:

- Project

- Number
- Logical Name
- Physical Name
- Alias1
- Alias2
- Type
- Length&Precision
- Not Null
- Parent Domain
- Definition

Note) The order of items can be changed by [Up]/[Down] button.

b. Entity List



(a) Export

Check this option to export the Entity List.

(b) Header setting

(1) Select the color of header from color box.

(2) Check [Freeze the header] option to lock up the Header.

(c) Entity

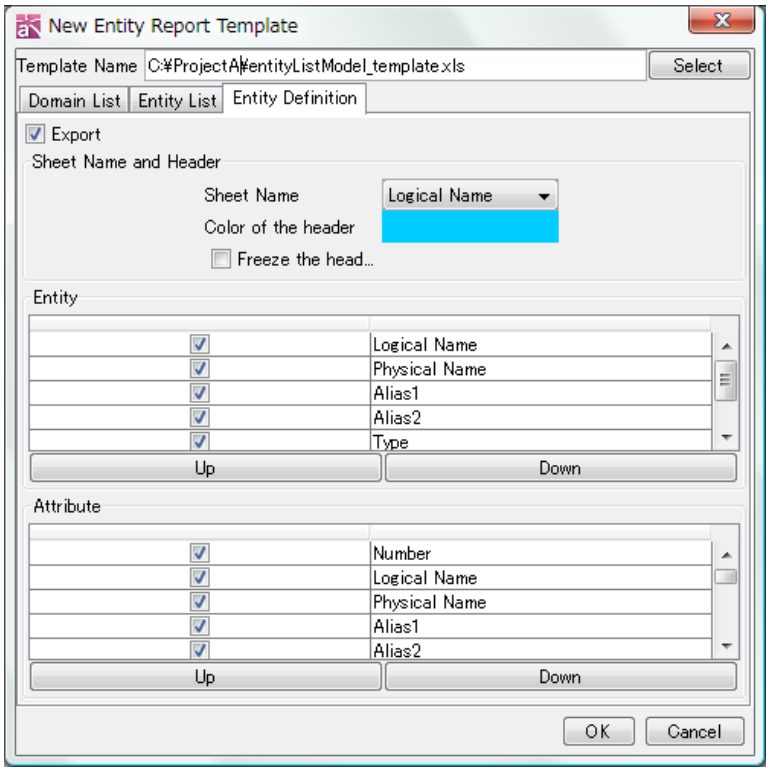
Check the option to export the following items:

- Project
- Number
- Logical Name

- Physical Name
- Alias1
- Alias2
- Type
- Definition

Note) The order of items can be changed by [Up]/[Down] button.

c. Entity Definition



(a) Export

Check this option to export the Domain List.

(b) Header setting

(1) Select Logical Name or Physical Name to display the sheet name.

(2) Select the color of header from color box.

(3) Check [Freeze the header] option to lock up the Header.

(c) Entity

Check the option to export the following items:

- Logical Name
- Physical Name
- Alias1
- Alias2

- Type
- Definition
- TaggedValue

Note) The order of items can be changed by [Up]/[Down] button.

(c) Attribute

Check the option to export the following items:

- Number
- Logical Name
- Physical Name
- Alias1
- Alias2
- Domain
- Primary Key
- Foreign Key
- Alternate Key
- Inversion Entry
- Not Null
- Attribute Reference
- DataType
- Length&Precision
-Initial Value
- Definition

Note) The order of items can be changed by [Up]/[Down] button.

14. 13. CRUD [P]

14. 13. 1. Creating CRUD

i) Using [Diagram] - [CRUD] in the Main Menu.

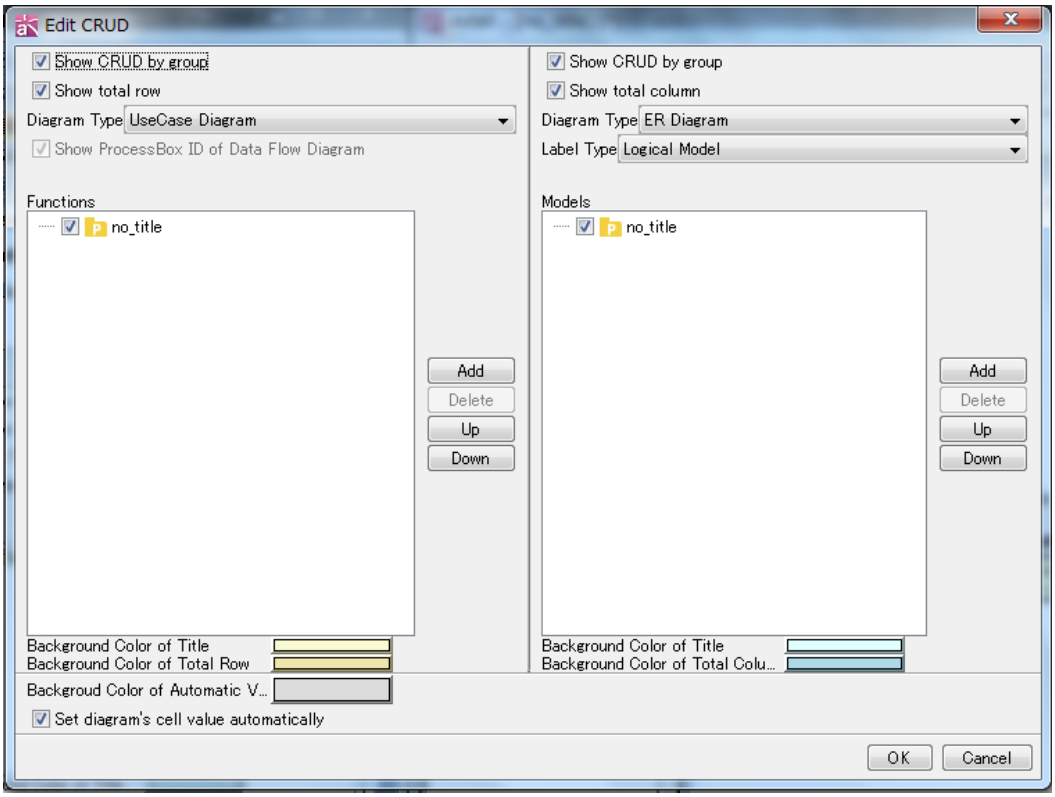
ii) Using the [Structure Tree] in the "Project View"

14. 13. 2. Setting CRUD

i) Right-click on the CRUD in the Structure Tree and select [Edit CRUD]

ii) Click [Edit CRUD] button on the CRUD Property View

On [Edit CRUD] dialog, edit the functions on the left, models in the right and common options at the bottom.



a. Set Functions

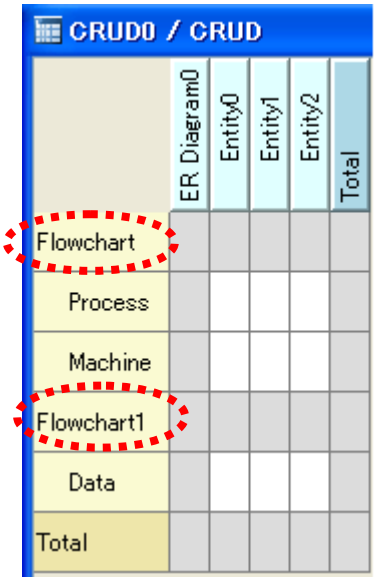
Set the following options of functions on the left of [Edit CRUD] dialog.

(a) Show CRUD by group

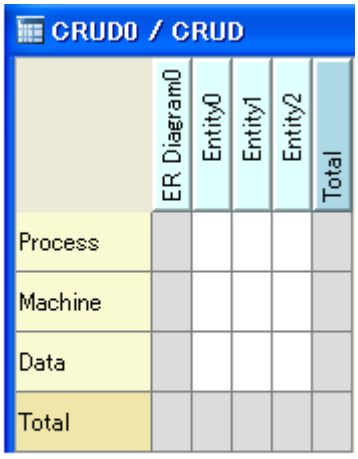
Show diagram names and group items by diagrams that they belong.

Default [ON]

[ON]



[OFF]



(b) Show total Row

Show the Total at the bottom.

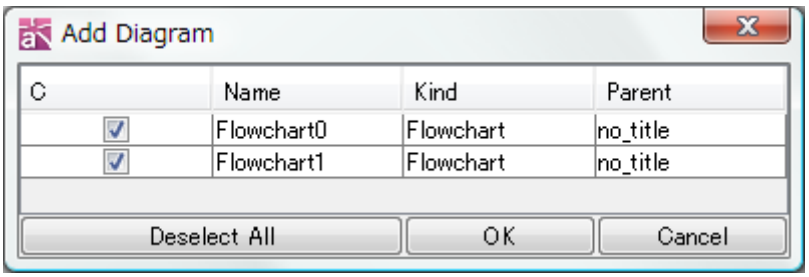
Default [ON]

(c) Select Diagram Type to show

Specify diagram type (UseCase Diagram, Activity Diagram, Data Flow Diagram or Flowchart) to show in CRUD. There is only one diagram type to add in one CRUD.

(d) Add Diagrams and Models

(1) Click [Add] button beside the function column.



(2) Click on the Diagram to show in CRUD then click [OK]. To select all, click on [Select All]. To deselect all, click on [Deselect All].

(3) Selected Diagrams and all items in selected diagrams are shown in the Functions Column in Tree. Check items to show in CRUD.

(e) Set order of Diagrams and Models

Select Diagram then sort the order by using UP/DOWN buttons on the right.

How to remove the Diagrams...

To remove diagrams from the functions, select diagram to remove then click [Delete]. [Delete] button is available for diagrams only.

(f) Set background color

Set background color of function table and the total row. Click on the color box at the bottom of [Edit CRUD] dialog, and select color in [Set color] dialog.

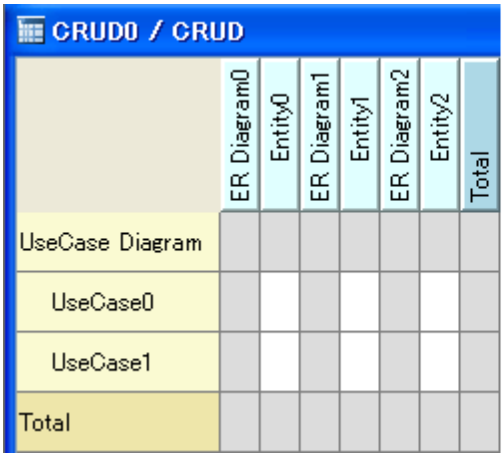
b. Set Models

Set following options of Models on the right of [Edit CRUD] dialog.

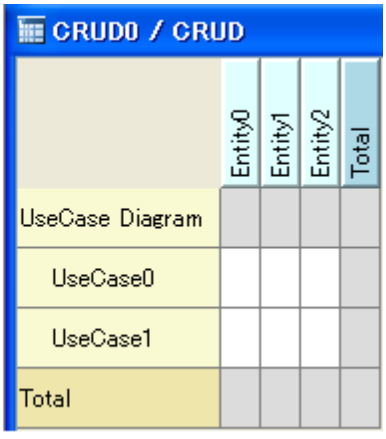
(a) Show items by grouping by diagrams

Show diagram names and items by grouping by diagrams that they belong.

Default [ON]



[ON]



[OFF]

(b) Show Total Column

Show the Total column at the right end.

Default [ON]

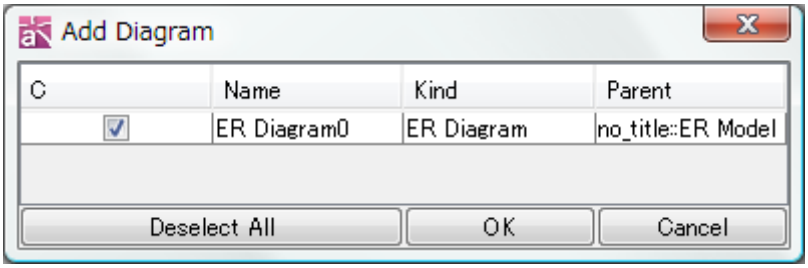
(c) Label Type (Logical Model/Physical Model)

Select the label type from the dropdown list.

Default [Logical Model]

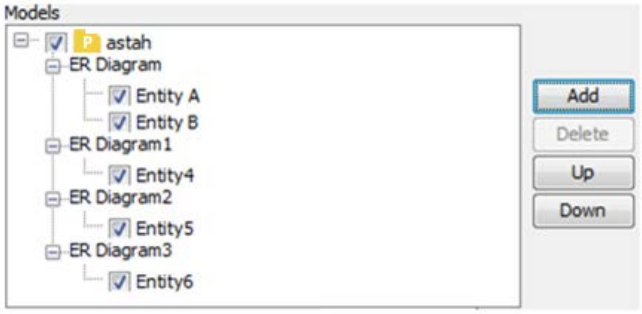
(d) Add Diagrams and Models

(1) Click [Add] button beside the Models column.



(2) Click on the diagram to show in CRUD then click [OK]. To select all, click on [Select All]. To deselect all, click on [Deselect All].

(3) Selected diagrams and all items in selected diagrams are shown in the Models Column in Tree. Check on the items to show in CRUD.



(e) Set order of Diagrams and Models

Select Diagram then sort the order by using UP/DOWN buttons on the right.

How to remove the Diagrams...

To remove diagrams from the Models, select diagram to remove then click [Delete]. [Delete] button is available for diagrams only.

(f) Set background color

Set background color of Model table and total column. Click on the color box at the bottom of [Edit CRUD] dialog on the right, and select color.

c. Set common options

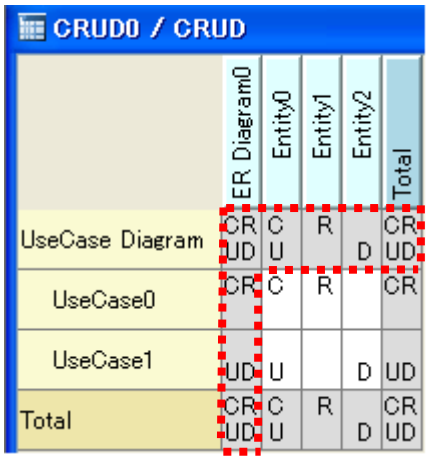
(a) Background color of Automatic Value

Click on the color box to open the color chooser box for the color of Automatic Value Cell.

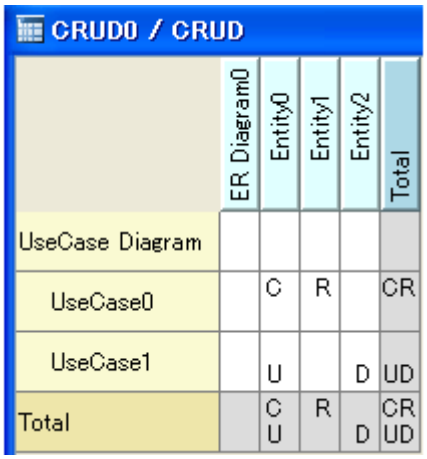
(b) Set diagram's cell value automatically.

It automatically inserts total values in Diagram row/column.

Default [ON]



[ON]



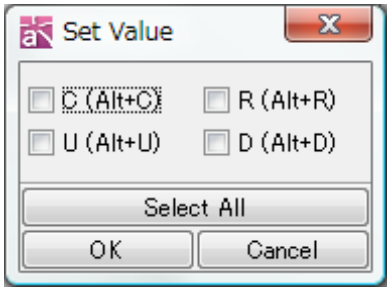
[OFF]

14. 13. 3. Setting CRUD Value

a. Setting Value

(1) Select cell then enter [C], [R], [U], and [D] keys to set CRUD value directly. Or double-click on the cell to insert value or right-click on the cell and select [Set CRUD Value].

(2) Check the value. To select all, click on [Select All] and to deselect all, click on [Deselect All].



Note) Pressing down [Delete] Key deletes the all values in selected cell.

b. Setting color for cell

Double-click on the cell to set the color or right-click on the cell and select [Set Color].

c. Showing in Structure Tree

Right-click on Diagrams or Models in CRUD, and select [Show in Structure Tree].

e. Opening Diagram

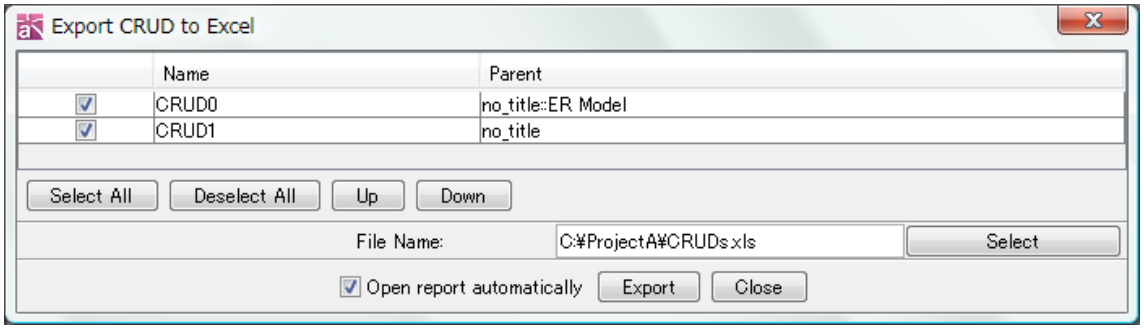
Right-click on Diagrams/Models in CRUD, and select [Open Diagram].

f. Adding Diagrams

Select the diagram to add in CRUD in the Structure Tree then drag and drop it onto the CRUD in the Diagram Editor. (UseCase Diagram, Activity Diagram, Flowcharts and ER Diagrams are available). Different type of Diagrams cannot be mixed in one CRUD.

14. 13. 4. Export CRUD to Excel

To export CRUD to Excel, go to [Tool] - [CRUD] - [Export CRUD to Excel] in the Main Menu.



a. Select CRUDS to export

Check on target CRUDS to export.

b. Sort the order of CRUD

Select CRUD then change the order by using [Up] [Down] button.

c. File Name

Select file name to export CRUD to.

d. Open report automatically

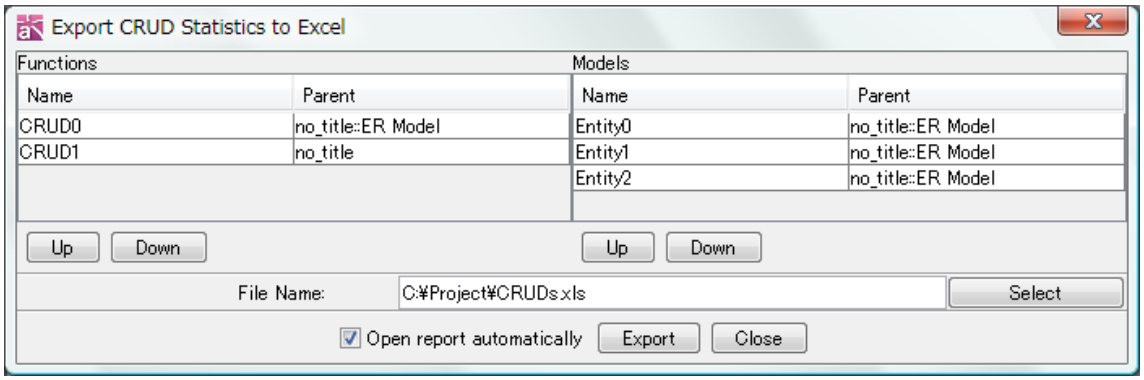
Check this option to open the exported CRUD automatically.

e. Export

Click the Export button to export CRUD.

14. 13. 5. Export CRUD Statistics to Excel

Select [Tool] - [CRUD] - [Export CRUD Statistics to Excel] from Main Menu to export all CRUD statistics in the project file to Excel.



a. Set order of items

Select models, and then change the order by using [Up] and [Down] buttons in each side (Functions and Models)

b. File Name

Select a file to export CRUD Statistics to.

c. Open report automatically

Check this option to open the CRUD Statistics automatically.

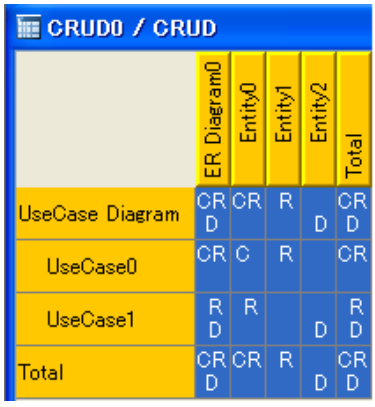
d. Export

Click the Export button to export CRUD Statistics.

14. 13. 6. Copying CRUD cells to Clipboard.

Select CRUD cells and right-click and select [Copy]. Copied contents can be pasted on Excel or text editors.

a. Select CRUD cells and copy.

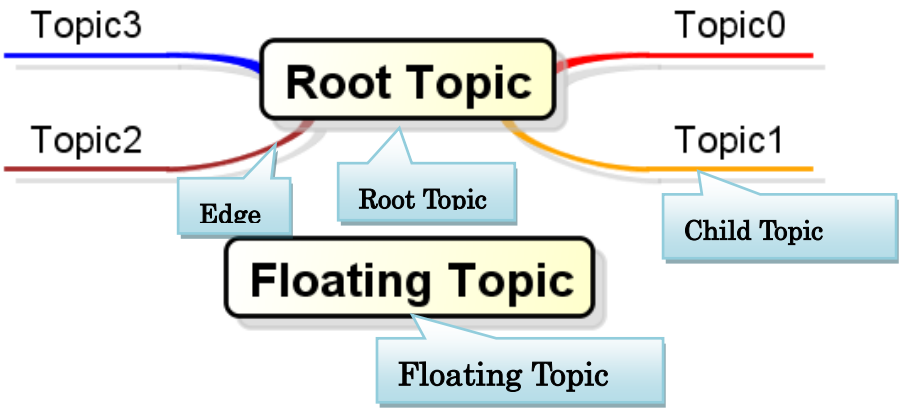


b. Paste to Excel.

	A	B	C	D	E
1	CRD	CR	R	D	CRD
2	CR	C	R		CR
3	RD	R		D	RD
4	CRD	CR	R	D	CRD
5					

14. 14. Mindmaps

This section describes Mindmaps and the Diagram Elements that they can contain.



a. Mindmap

Mindmap refers to a method of thinking and of visualizing thoughts suggested by Tony Buzan, U.K. Its free and inspiring conventions help to extend ideas.

b. Root Topic

When a Mindmap is created, a Root Topic is automatically created. The Root Topic is the root of all other Topics. Root Topics cannot be deleted.

c. Child Topic

Child Topics always have a Parent Topic.

d. Edge

When a Child Topic is created, an Edge is automatically created. Edges cannot be created, deleted, or copied by themselves.

e. Floating Topic

Independent Topic is a independent topic of a Root Topic.

14. 14. 1. Creating Mindmaps

i) Using [Diagram]-[Mindmap] in the Main Menu.

ii) Using the [Structure Tree] in the "Project View" (by right-clicking).

14. 14. 2. Diagram Elements of Mind Map

Select		Mode for basic operations in the Diagram Editor.
Topic		Add Topics.

Floating Topic		Add Floating Topics.
Link between Topics		Add Links between Topics.
Boundary		Add Boundaries.
Text / TextBox		Insert Text in Diagrams.
Rectangle		Draw Rectangles/Colored Rectangles in Diagrams. For example, Rectangle can be used to enclose a semantic collection of Model Elements.
Corner-Rounded Rectangle		Draw Rounded Rectangles/Colored Rounded Rectangles in Diagrams. For example, they can be used to enclose a semantic collection of Model Elements.
Oval		Draw Ovals /Colored Ovals in Diagrams. For example, they can be used to enclose a semantic collection of Model Elements.
Line		Draw Lines on Diagrams.
FreeHand		Draw Freehand lines on Diagrams.
Image		Paste Images.
Lock Selected Mode		Lock the selected mode on the Tool Palette.

14. 14. 3. Topics

a. Creating Topics

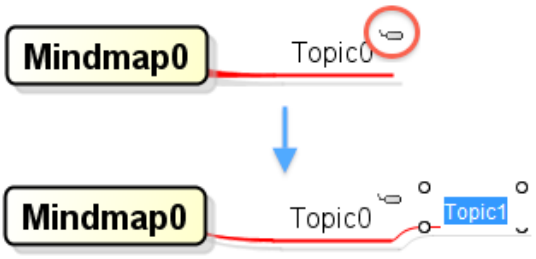
i) Creating a Child Topic using the Tool Palette.

To create a Topic, use

[Topic] on the Tool Palette.

ii) Creating a Child Topic using Suggest Feature.

Put a mouse over a Topic you want to create a Child Topic from. Click the icon that appears.

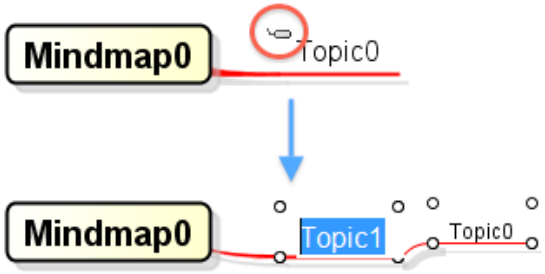


iii) Creating a Child Topic using the Pop-up Menu.

Right-click on the target Topic and select [Create Child Topic].

iv) Creating a Parent Topic using Suggest Feature

Put a mouse over a Topic you want to create a Parent Topic. Click the icon that appears.



v) Creating a Parent Topic using the Pop-up Menu.

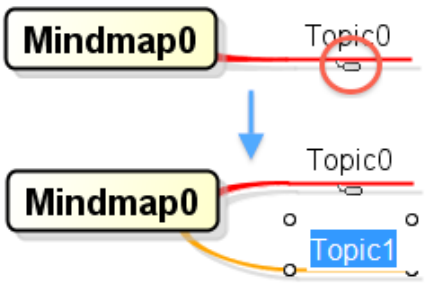
Windows: [Shift+Insert],[Shift+Ctrl+I],[Shift+TAB]

MacOS: [command+Shift+I],[Shift+TAB]

Right-click on the target Topic and select [Create Parent Topic].

vi) Creating a Brother Topic using Suggest Feature

Put a mouse over a Topic you want to create a Brother Topic. Click the icon that appears.



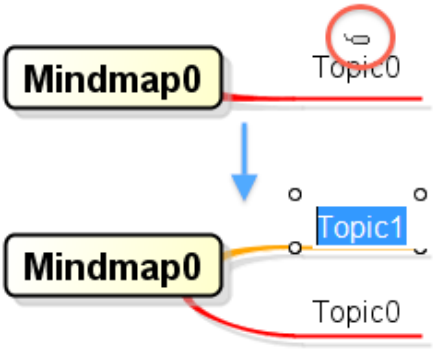
vii) Creating a Brother Topic using the Pop-up Menu.

Windows: [Enter] MacOS: [Enter]

Right-click on the target Topic and select [Create Brother Topic upward].

vii) Creating a Brother Topic upward using Suggest Feature

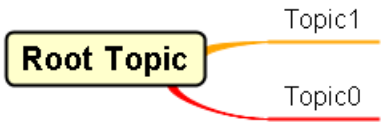
Put a mouse over a Topic you want to create a Brother Topic. Click the icon that appears.



ix) Creating a Brother Topic upward using the Pop-up Menu.

Windows: [Shift+Enter] MacOS: [Shift+Enter]

Right-click on the target Topic and select [Create Brother Topic upward].



b. Editing Topics

(a) Editing Topic Names

i) From the Topic Diagram Element.

Double-click the topic name in the Diagram Editor or press [Ctrl+E](Windows) / [command+E](MacOS) or [F2] key and then edit its name directly.

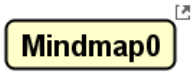
ii) Entering directly.

Select the target Topic and enter the Name. Then press the [Enter] key.

To insert a new line, press [Alt+Enter] or [Ctrl+Enter](Windows) / [command +Enter](MacOS) keys.

(b) Editing Hyperlinks

When a Hyperlink is added to a Topic, an icon is displayed.



i) Using the Pop-up Menu in the [Structure Tree].

Right-click on the target Topic in the Structure Tree and select [Hyperlink]-[Edit Hyperlink].

ii) Using the Pop-up Menu of the Diagram Element.

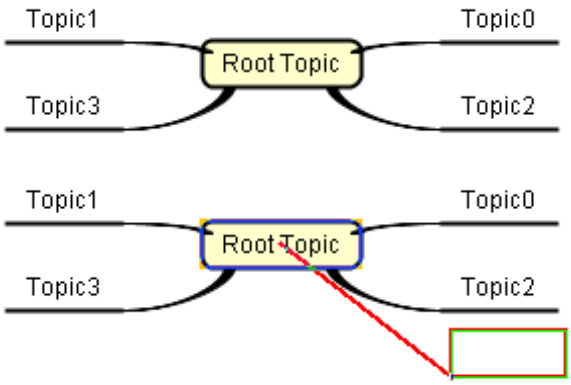
Right-click on the target Topic in the Diagram Editor and select [Hyperlink]-[Edit Hyperlink].

(c) Switching Topic Positions [for Direct Child Topics of the Root Topic]

The positions of the Child Topics of the Root Topic can be moved from the right-side to the left-side by dragging.

(c) Changing the order of Brother Topics by Drag & Drop

The order of Brother Topics can be changed by dragging.



(d) Changing the order of Brother Topics from Pop-Up

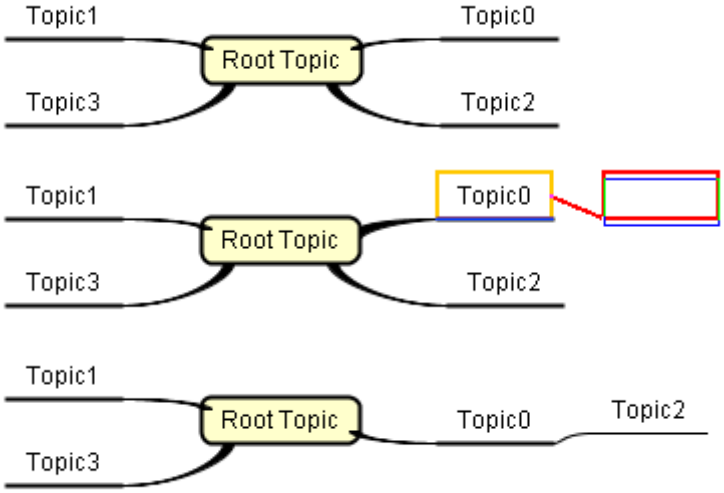
Right-click on the target Topic in the Topic Pop-Up menu and select [Change Topic Order] - [UP] (Windows:[Ctrl+Up]　MacOS: [command+Up]) or [Change Topic Order] - [DOWN] (Windows:[Ctrl+Down]　MacOS:[command+Down])

(e) Shifting Topic

The Topics can be shifted by [Ctrl+ Left] , [Ctrl+ Right](Windows) , [command+Left] , [command+Right] (MacOS).

(f) Changing the Parent Topic

The Parent Topic of a Topic can be changed by dragging.



(g) Delete from Diagram

Windows: [Delete]　MacOS: [Delete]

Topics can be deleted by [Delete from Diagram] in the Topic Pop-Up menu. This can delete its Child Topics.

(h) Delete Selected Topic

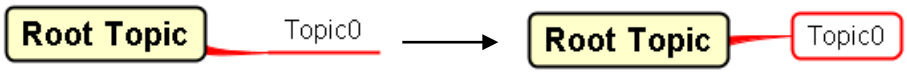
Selected Topics can be deleted by [Delete Selected Topic] in the Topic Pop-Up menu. This can delete only the selected Topic.

(i) [Root Topic] Re-layout

Re-layout can be performed by using the Root Topic Pop-Up menu.

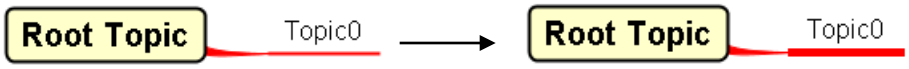
(j) Changing Topic Styles

Right-click on the target topic and select [Set Style] - [Topic Style]. Or, click [Fork] or [Bubble] on Tool Bar.



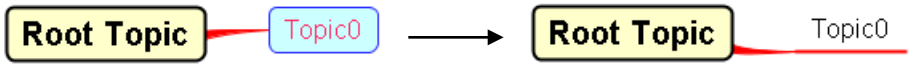
(k) Changing Line Width

Right-click on the target Topic and select [Set Style] - [Line Width].



(l) Restoring Default Styles

Topic Style, Background Color, Line Color, and Line Width can be restored to their default Styles. Right-click on the target Topic and select [Set Style] - [Restore Default Style].



(m) Changing Background Color

Right-click on the target Topic and select [Set Style] - [Set Background Color].

(n) Changing Line Color

Right-click on the target Topic and select [Set Style] - [Set Line Color].

(o) Changing Font Color

Right-click on the target Topic and select [Set Style] - [Set Font Color].

(p) Changing Font

Right-click on the target Topic and select [Set Style] - [Set Font].

(q) Boundary Visibility

Right-click on the target Topic and select [Boundary Visibility].

(r) Adding/Removing Mini Icons

Right-click on the target Topic and select [Add Mini Icon]/ [Remove Mini Icon].

Or, click [Add Mini Icon] on Tool bar in Main Menu then select Icon to add.

(s) Editing/Removing Mini Icons

Right-click on the target Topic and select [Edit Mini Icon]/ [Remove Mini Icon].

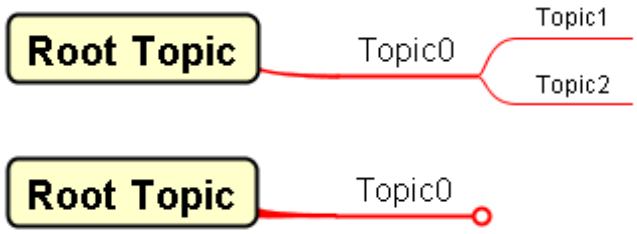
c. Expanding/Collapsing Topics

(a) Expanding/Collapsing Topics

Topics with Child Topics can be expanded or collapsed (display/non-display).

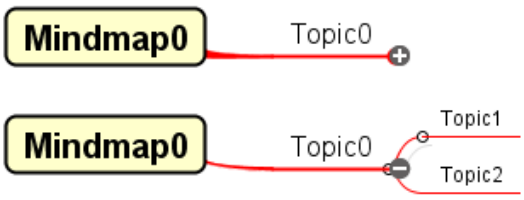
Right-click on the target Topic and select [Open or Close Topic] (Windows:[Alt+X] MacOS: [command+K]).

Double-click the connecter of the Topic.



(b) Using Draw suggest feature

+ or – icons appear when you have your mouse over edge of Mind Map Topics, click [+] to expand the child topics and [-] to close them.



d. Floating Topic

(a) Creating Floating Topic using the Tool Palette.

To create a Floating Topic, use [Floating Topic] on the Tool Palette.

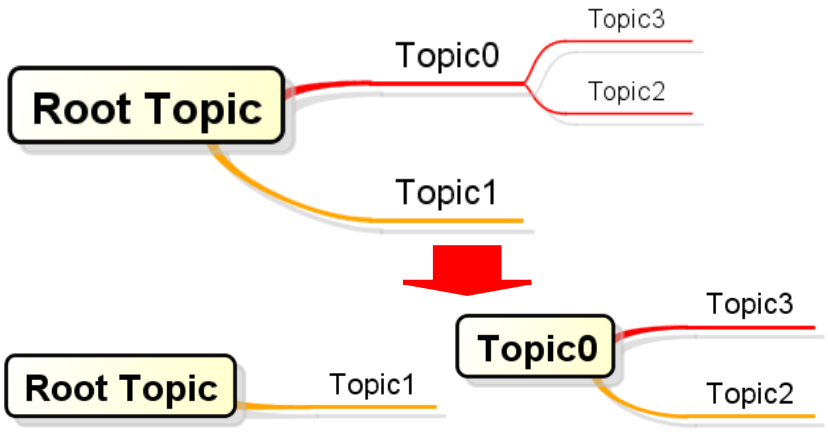
(b) Creating Floating Topic by double-click.

To create Floating Topic, double-Click on the in the Diagram Editor.

(c)Change to Floating Topic from Pop-Up

To change Child Topic to Floating Topic, Right-click on the target Topic in the Topic Pop-Up menu and select [Change to Floating].

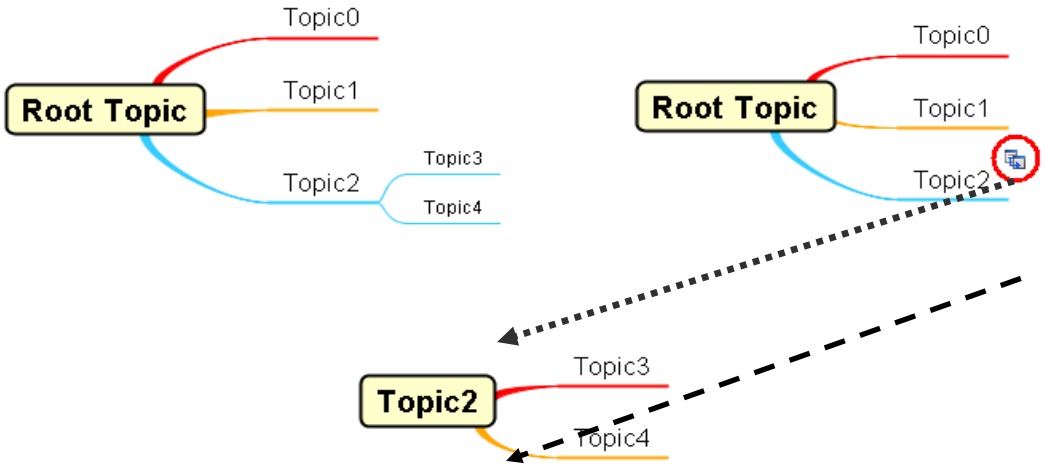
ex)Select "Topic0" and Click [Change to Floating] from the Pop-Up



e. Split Topics to a new Mind Map

Select [Split Topic to a new Mind Map] on a Pop-Up Menu of a Topic. All child topics of the selected topic will be extracted and a new Mind Map will be created. A hyperlink of the new Mind Map will be added on the selected Topic.

EX) Select [Split Topic to a new Mind Map] on Topic 2.



A new Mind Map will be created that has the Topic 2

f. Export PowerPoint

Select [Export PowerPoint] on a Pop-Up Menu of a Topic. All the child topics from the selected topic will be exported to PowerPoint.

g. Converting Topics

(a) Converting Topics to UML Models

i) By Pop-Up menu

Right-click on the target Topic and select [Convert to UML Model] on the Diagram Editor or on the Structure Tree. Topics can be converted to Classes, Interfaces, Actors, and UseCases.

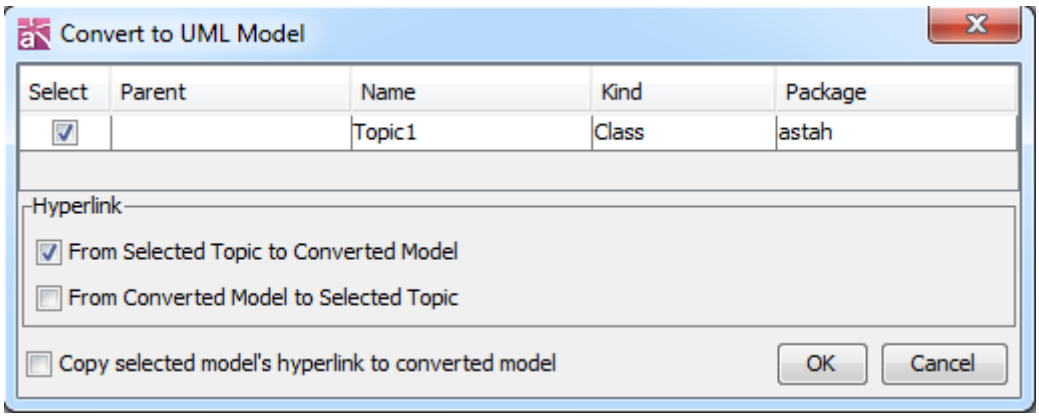
If other UML Models with the same name as the target Topics already exist in the Package, the Topics are not converted to UML Models.

Hyperlinks are added based to the options in the convert dialog.

(1) From the source Topic to the converted UML Models

(2) From the converted UML Models to the source Topic.

(3) Copy the source Topic's hyperlink to the converted UML Models



ii) By dragging and dropping.

Select the target Topics in the Structure Tree and drag them to another Diagram (except Mindmap). When the Topics are dropped in the Diagram Editor, [Convert UML Model Dialog] appears.

(1) Select

Topics that are checked in the [Select] column are converted.

(2) Parent

The Parent Topics of the target Topics are displayed in the [Parent] column.

(3) Name

The Names of the Target Topics are displayed in the [Name] column.

(4) Kind

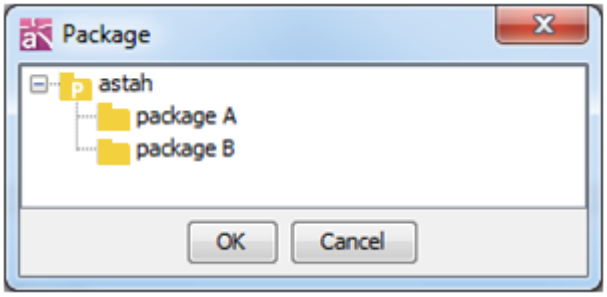
Select the UML Model Type to convert in the [Kind] column.

Class Diagram	Class, Interface, Package, Subsystem, Instance Specification, Note and Text
UseCase Diagram	UseCase, Actor, Package, Subsystem, Note and Text
Statemachine Diagram	State, Note and Text
Activity Diagram	Action, Note and Text
Sequence Diagram	Lifeline, Note and Text
Communication Diagram	Lifeline, Note and Text
Component Diagram	Component, Classifier, Artifact, Note and Text
Deployment Diagram	Node, Component, instance Specification, Note and Text
Composite	Structure Class, Class, Interface, Note and Text

Structure Diagram	
Flowchart	Flow Element, Note and Text
Data Flow Diagram	ProcessBox, Data Store, External Entity, Anchor, Note and Text
ER Diagram	ER Entity, Note and Text
Requirement Diagram	Requirement, TestCase, Note and Text

(5) Package

In the [Package] column, select the Package where the UML Models should be created. Double-click the item and set the Package.
The [Package] column cannot be set for some Model Types.



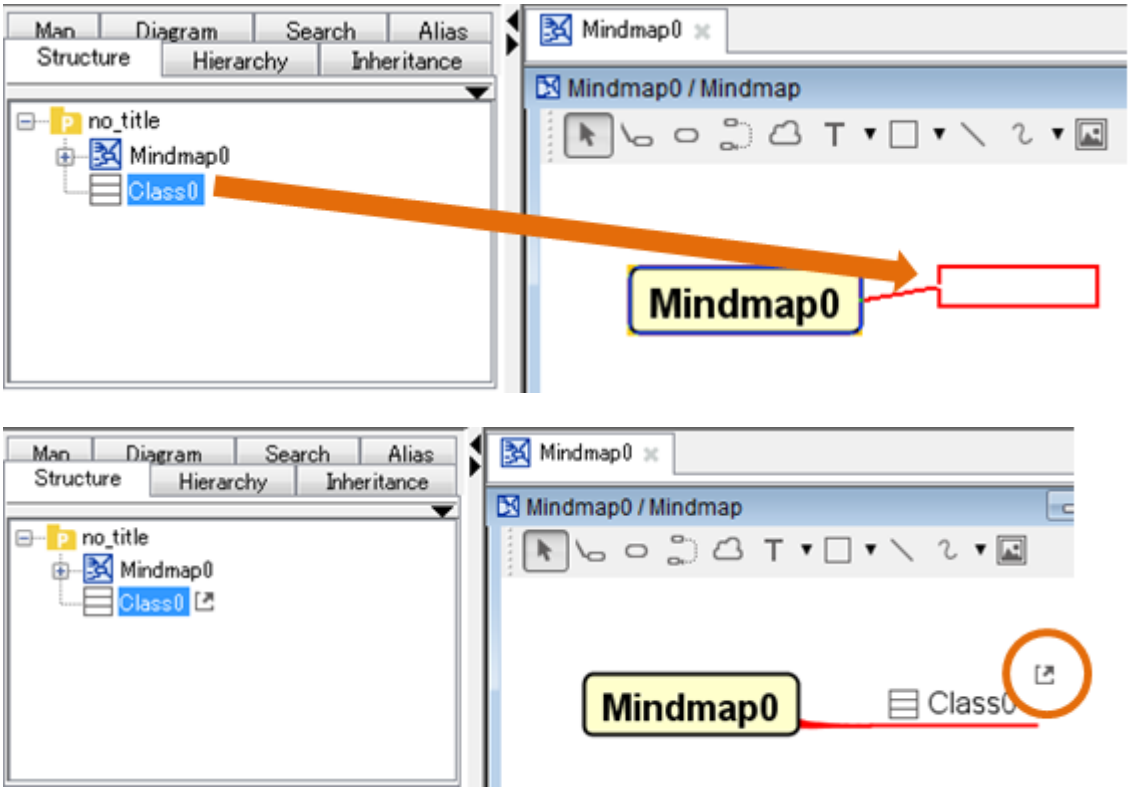
(6) Hyperlink Target

Select which type of Hyperlinks to add.
(1) From the source Topic to the converted UML Models.
(2) From the source Topic to the converted Diagram Elements.
(3) From the converted UML Models / Diagram Elements to the source Topic.
(4) Copy the source Topic's hyperlink to the converted UML Models.

(b) Converting UML Models to Topics

i) By dragging and dropping

Select the target Model on the Structure Tree, and then drag it onto Mind Map in the Diagram Editor.



Hyperlinks to the original Models are added to the converted Topics and hyperlinks to the converted Topics are added to the original Models.

f. Copying the Text of Topics and Pasting it into other Applications

Right-click on the Topic and select [Copy]. The Text of Topics in Mindmap can be copied and pasted into other applications as follows:

(1) Text

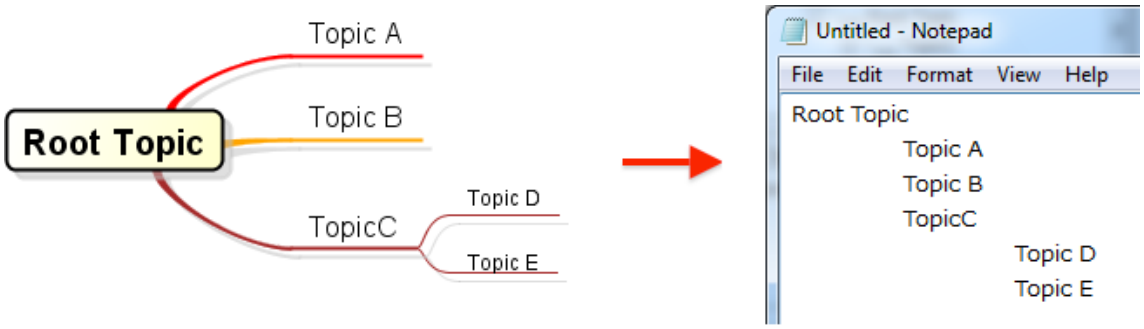
(2) Excel

(3) MindManager™

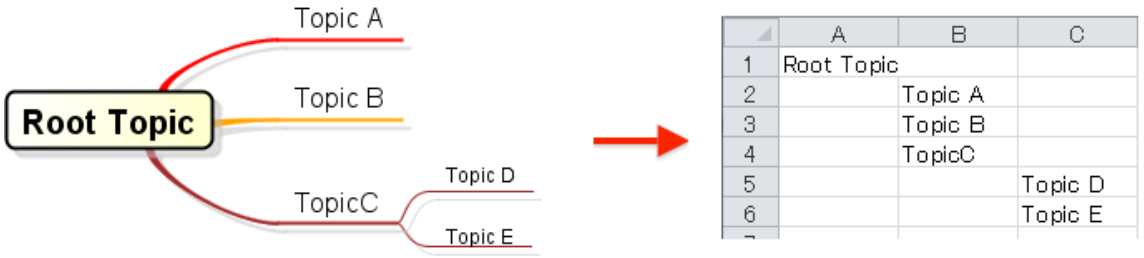
(4) Free Mind™

For (3) and (4), Styles such as Color or Form cannot be copied.

Topic Text can be pasted into a Text Editor.



Topic text can be pasted into Excel™.



14. 14. 4. Edges

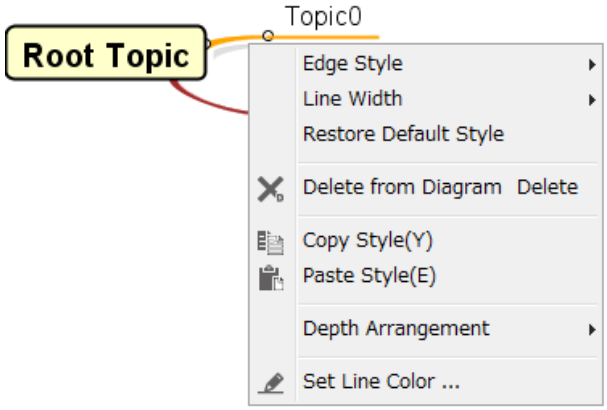
a. Creating Edges

Edges are automatically created when Child Topics are created. Edges cannot be created by themselves.

b. Editing Edges

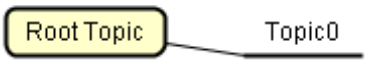
(a) Changing Styles

Right-click on the target Edge and select [Edge Style].



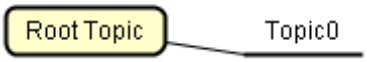
(b) Changing Line Width

Right-click on the target Edge and select [Line Width].



(c) Restoring Default Styles

Settings such as Edge Style, Line Color, and Line Width, can be restored to their default Styles. Right-click on the target Edge and select [Restore Default Style].



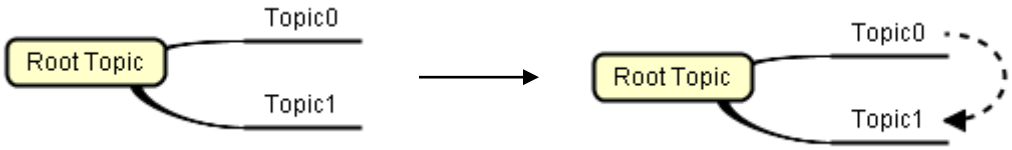
(d) Changing Line Colors

The Line Colors of Edges can be changed by using the Pop-up Menu. Right-click on the target Edge and select [Set Line Color].

14. 14. 5. Link between Topics

a. Creating Links between Topics

To create a Link between Topics, use [Link between Topics] on the Tool Palette.



b. Setting a name for Links between Topics

Right-click on the link line between topics then select [Set Name] and enter its name.
Note) To insert a new line in a topic line name, press the [Shift+Enter] or [Alt+Enter].

14. 14. 6. Boundary

a. Creating Boundaries

i) Creating a Boundary using the Pop-up Menu.

To create a Boundary, use [Boundary] on the Tool Palette.

ii) Showing/Hiding a Boundary using the Pop-up Menu.

Right-click on the target Topic and select [Boundary Visibility].

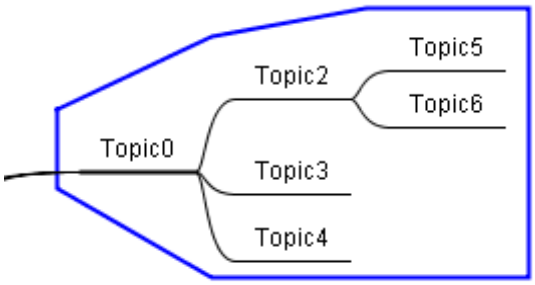
b. Editing Boundaries

(a) Changing Boundary Styles

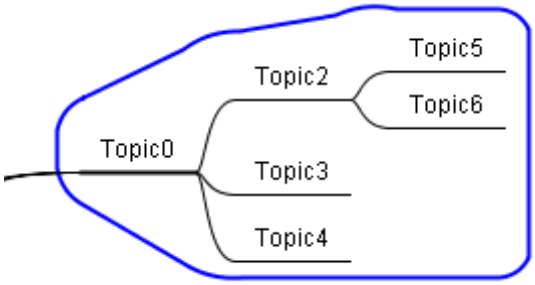
i) Using the Pop-up Menu.

Right-click on the target Topic on the Diagram Editor and select

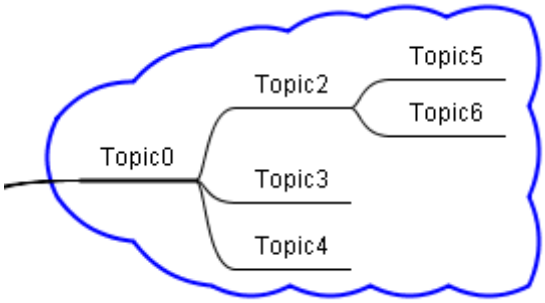
[Boundary Style].



[Straight Line]



[Rounded Line]



[Cloud]

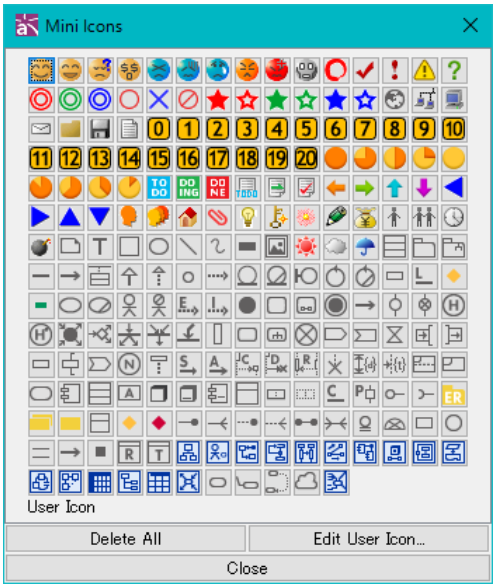
14. 14. 7. Using User Icons

Icons can be added into Mind Map Topics.

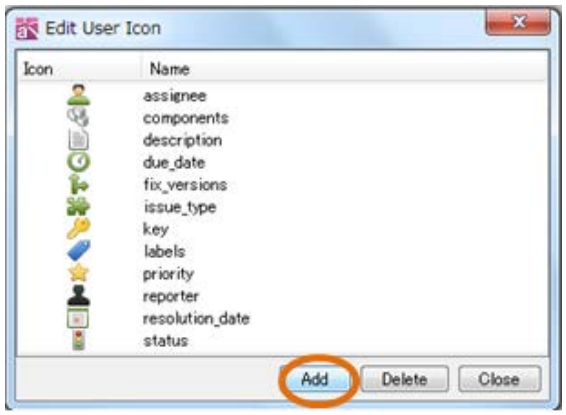
a. Adding User Icons

(1) Right-click on the target Topic and select [Add Mini Icon]-[From Mini Icon List].

(2) Click [Edit User Icon] button on [Add icon for Mind Map].



(3) Press [Add] button on the [Edit User Icon] dialog and select an image file. Name can be set.



b. Deleting User Icons

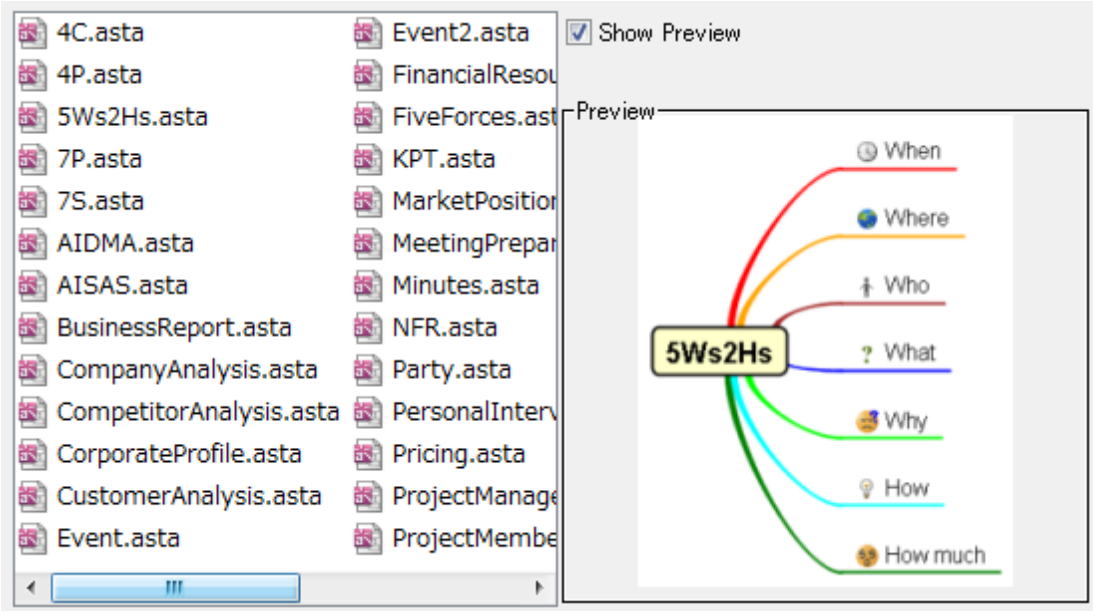
(1) Open the [Edit User Icon] dialog

(2) Select an User Icon and press [Delete]

14. 14. 8. Template Mindmap

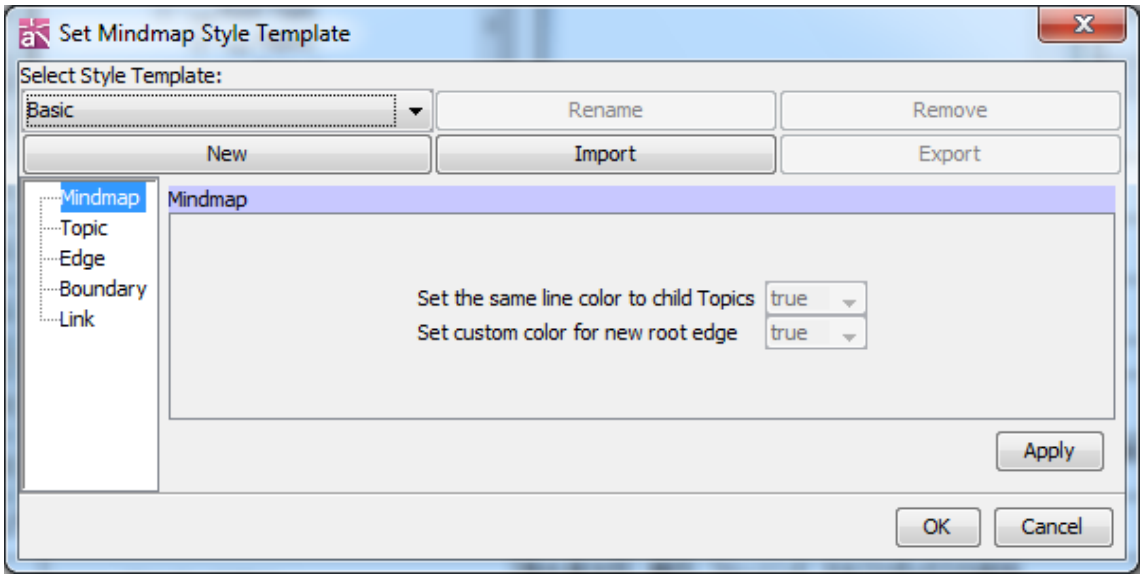
a. Template Mindmap

To open a template Mindmap, go to [Diagram]-[Mindmap]-[Template Mindmap]. It imports an existing Mindmap in a project.



14. 14. 9. Setting Mindmap Style Template

Mindmap style templates can be customized from [Tool] - [Set Template] - [Mindmap Style]. This Mindmap style template can be selected from the Mind map Pop-Up menu.

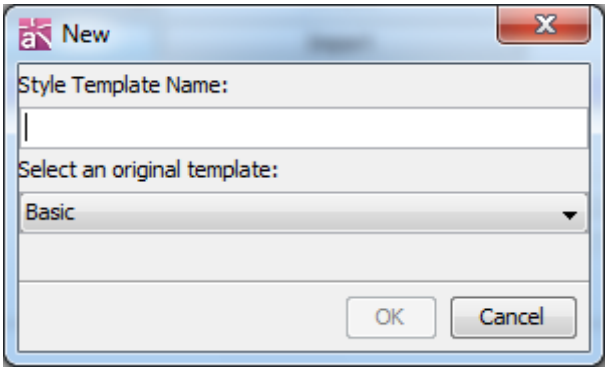


a. Selecting Style Template

Select default or added style templates.

b. Adding Style Template

Create a new style template.



(a) Style Template Name

Input a style template name.

(b) Select an original template

Select an original template.

c. Renaming Style Template

Rename style templates.

(a) Style Template Name

Input the new style template name.

d. Removing Style Template

Delete the style template selected in “Select Style Template” dropdown list. The default style templates cannot be removed.

e. Importing Style Templates

Import style templates (.properties) for Mind Map.

f. Exporting Style Template

Export style templates (.properties) for Mind Map.

g. Setting Mind Map Style

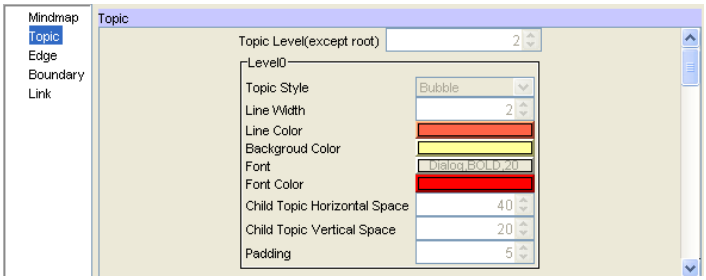
Set Mind Map style.

(a) Set the same line color to child Topics

To set the same line color to child Topics, select “True”.

Default [true]

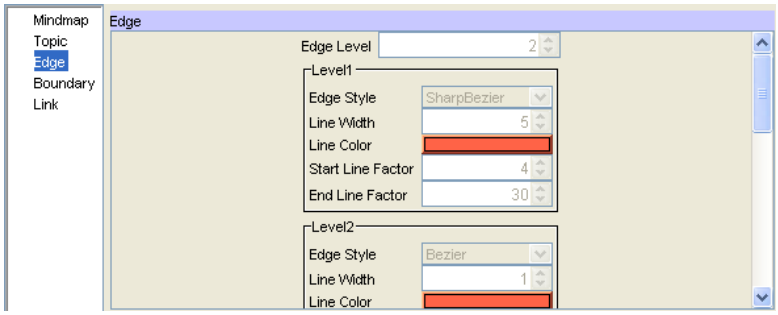
(b) Set custom color for new root edge



Default [true]

h. Topic

Set the Topic style.



(a) Topic Level (except root)

To set the Topic level, set the number of level.

Default [2]

Please select the following items for each Topic level.

(1) Topic Style

(2) Line Width

(3) Line Color

(4) Background Color

(5) Font

(6) Font Color

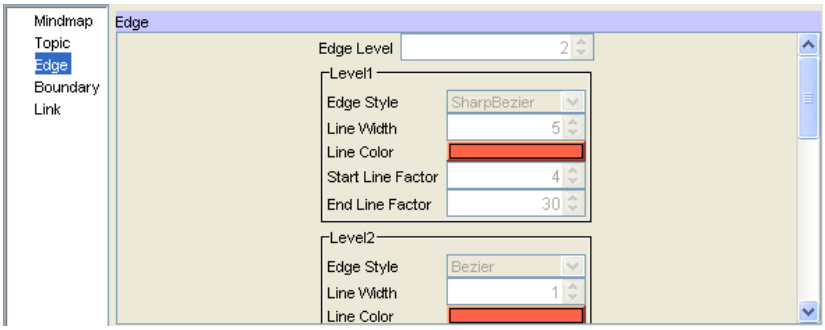
(7) Child Topic Horizontal Space

(8) Child Topic Vertical Space

(9) Padding

i. Edge

Set the Edge style.



(a) Edge Level

To set the Edge level, set the number of level.

Default [2]

Please set the following items for each edge.

(1) Edge Style

(2) Lind Width

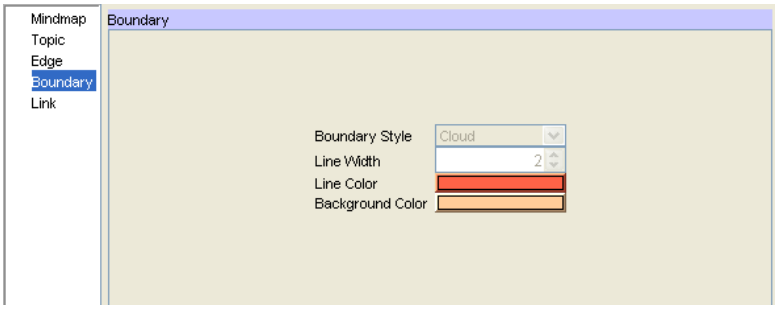
(3) Line Color

(4) Start Line Factor

(5) End Line Factor

j. Boundary

Set the Boundary style.



(a) Boundary Style

To set the Boundary Style, select from [Cloud]/ [Straight Line]/ [Rounded Line]

Default [Cloud]

(b) Line Width

To set the line width, set the number of width.

Default [2]

(c) Line Color

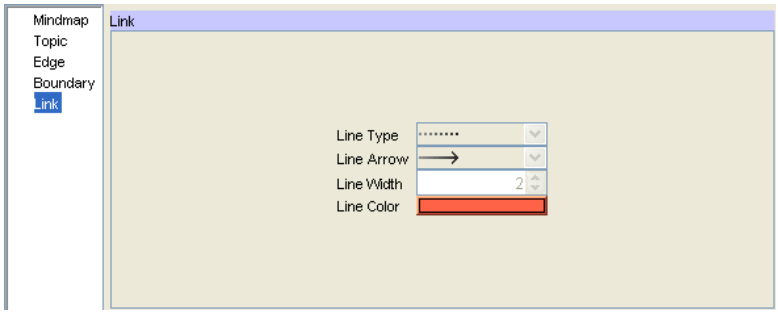
To set the Boundary line color, select the color.

(d) Background Color

To set the Boundary background color, select the color.

k. Link between Topics.

Set the Link between Topics.



(a) Line Type

Select the Line type.

(b) Line Arrow

Select the Line arrow.

(c) Line Width

Set the Link Line width.

Default [2]

(d) Line Color

Set the Line color.

14. 14. 10. Setting Mindmap Style

Set the Mind Map Style in the Mind Map property view or the Pop-Up Menu of the Mindmap in the Structure Tree.

This setting does not affect to the style contents that is changed manually on the Diagram Editor. Please see the Setting Mindmap Style Template for more detail.

14. 14. 11. Key operation

Feature	Operation(Windows)	Operation(MacOS)

14.Diagrams and Diagram Elements

Edit Mode	F2, Ctrl+E	F2, command+E
Move Topic	Ctrl+←/→/↑/↓	command+←/→/↑/↓
Create Child Topic	Insert, Ctrl+I, TAB	command+I, TAB
Create Parent Topic	Shift+Insert,Shift+TAB	command+Shift+I,Shift+TAB
Create Brother Topic	Enter	Enter
Create Brother Topic upward	Shift+Enter	Shift+Enter
Expand/Collapse Topics	Alt+X	command+K

14. 15. Requirement Diagram [P]

14. 15. 1. Creating Requirement Diagram

a. Using [Diagram]-[Requirement Diagram] in the Main Menu

b. Using the [Structure Tree] in the "Project View" (by right-clicking)

14. 15. 2. Diagram Elements of Requirement Diagrams

Select		Mode for basic operations in the Diagram Editor.
Requirement		Add Requirements
TestCase		Add TestCases
Package		Add Packages
Nest		Add Nests
Derive		Add Derives
Copy		Add Copies
Satisfy		Add Satisfy
Verify		Add Verify
Refine		Add Refines
Trace		Add Traces
Synchronization Bar - Independent Mode		Use this Mode to create Synchronization Bars independently from Partitions.
		See "Common Diagram Elements".

14. 15. 3. Requirement

a. Creating Requirements

(a) Using [Requirement] on the Tool Palette

(b) Using the [Structure Tree] in the "Project View"

(c) Double clicking on Requirement Diagram

b. Editing Requirements

Refer to Class Diagrams – b. Editing Classes

(a) Adding IDs

Right-click on the target Requirement and select [Add ID], or go to [Base] tab of Requirement property in the Property View.

(b) Adding Texts

i) Adding it directly in the Diagram Editor

Double-click on the text= of Requirement and insert the text directly.

ii) Using the "Property View" ([Base] tab of Requirement Property)

(c) Visibility of ID/Texts

You can choose whether you want to show IDs/Texts on Requirements or not from its Pop-up menu.

14. 15. 4. TestCase

a. Creating TestCases

(a) Using [TestCase] on the Tool Palette.
(b) Using the [Structure Tree] in the "Project View".

b. Editing TestCases

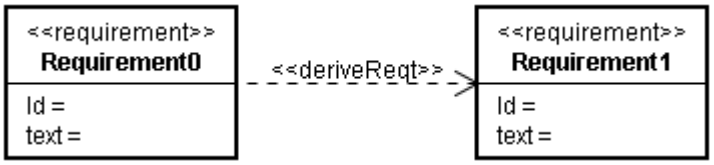
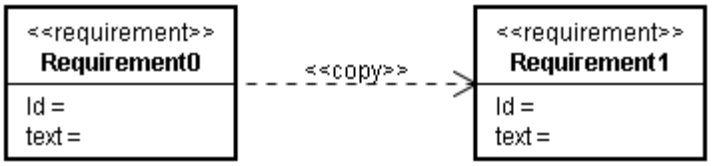
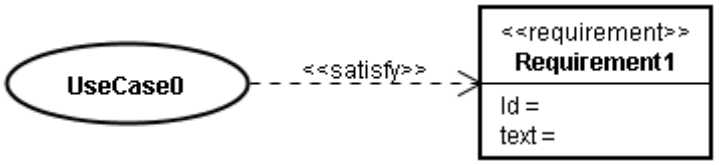
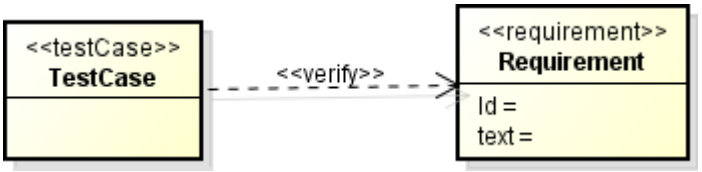
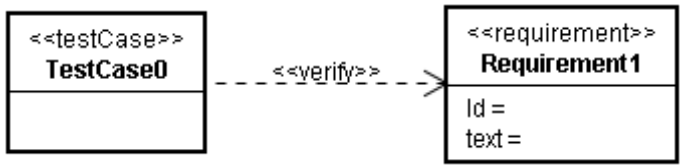
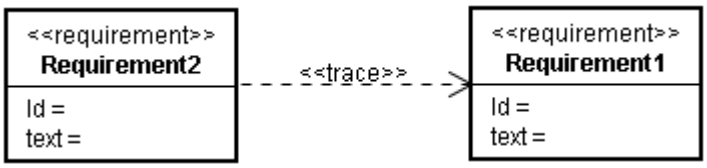
Refer to Class Diagrams – b. Editing Requirements

(a) Adding IDs

Go to [Base] tab of TestCase property in the Property View.

14. 15. 5. Derive, Copy, Satisfy, Verify, Refine and Trace

a. Creating Derive, Copy, Satisfy, Verify, Refine and Trace

	Tool Button	
Derive		
Copy		
Satisfy		
Verify		
Refine		
Trace		

14. 16. Requirement Table [P]

14. 16. 1. Creating Requirement Table

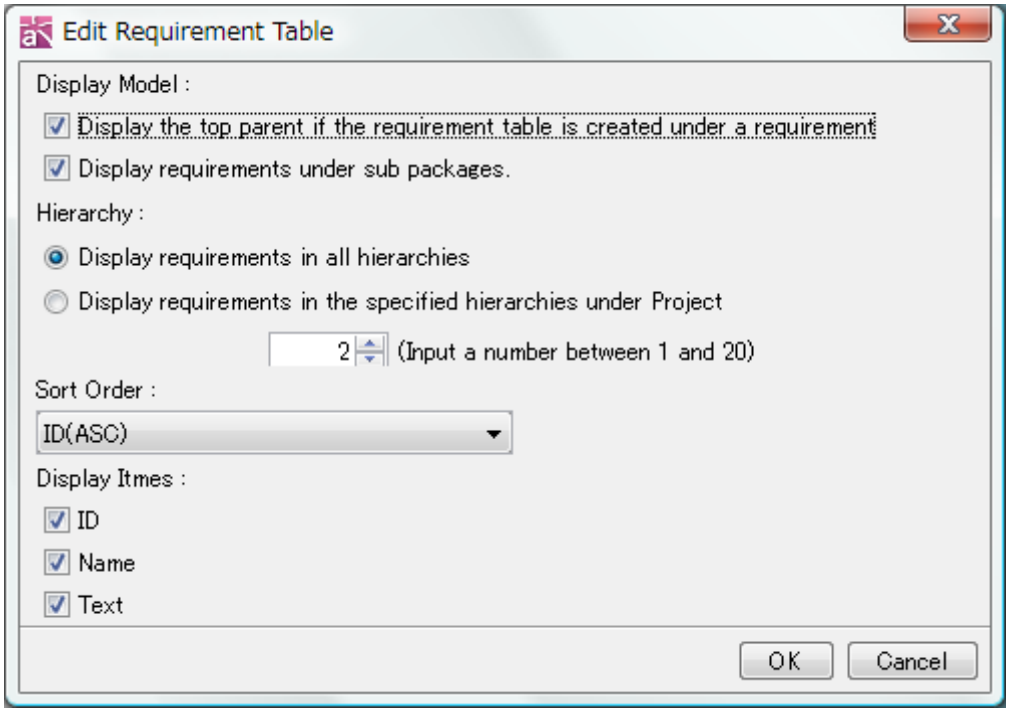
Requirement Table is a table to list Requirement ID, Name and Text.

One Requirement Table can be created to each Project, Package, Model, Subsystem and Requirement.

i) Using [Diagram] - [Requirement Table] in the Main Menu.
ii) Using the [Structure Tree] in the "Project View"

14. 16. 2. Setting Requirement Table

i) Right-click on the Requirement Table in the Structure Tree and select [Edit Requirement Table].
ii) Click [Edit Requirement Table] button on the Requirement Table Property View.



a. Display Model

(a) Display the top parent if the requirement table is created under a requirement

Show the top parent if the Requirement is created under a Requirement.

Default [ON]

(b) Display requirements under sub packages.

Show the requirements under sub packages.

Default [ON]

b. Hierarchy

(a) Display requirements in all hierarchies

Show Requirements in all hierarchies under the parent.

Default [ON]

(b) Display requirements in the specified hierarchies under Project

Show Requirements from the parent of the Requirement Table to the specified hierarchy. Models under the Project are counted as the first hierarchy. Set from 1 to 20 in the combo box.

Default [OFF]

c. Sort Order

Set the sort order of Requirements.

ID (ASC) / ID (DESC) / Name (ASC) / Name (DESC) / Text (ASC) / Text (DESC)

Default [ID (ASC)]

d. Display Items

Set the visibility of ID / Name / Text in the Requirement Table.

Default [ON]

14. 16. 3. Editing Requirement Table

a. Editing Value

Double-click on the ID / Name / Text cell on the Requirement Table. Text cell can be input with multiple lines.

b. Sorting

Click on the header of the Requirement Table. ID / Name / Text can be sorted in the ascending / descending order.

c. Adding Requirement

Right-click on the Requirement Table if there are no records on it. And, select [Add Requirement].

d. Adding Child Requirement

Right-click on a Requirement on the Requirement Table and select [Add Child Requirement]. A child Requirement is created under the selected Requirement.

e. Adding Brother Requirement

Right-click on a Requirement on the Requirement Table and select [Add Brother Requirement]. A brother Requirement is created to the selected Requirement.

f. Editing Client

Right-click on the Requirement on the Requirement Table and select [Edit Client].
Please refer to the Requirement Table - Client section.

g. Editing Supplier

Right-click on the Requirement on the Requirement Table and select [Edit Supplier].
Please refer to the Requirement Table - Supplier section.

h. Converting to UseCase

Right-click on the requirement on the Requirement Table and select [Convert to UseCase].

i. Deleting Requirement

Right-click on the Requirement on the Requirement Table and select [Delete from Model].

j. Reference from Requirement Table

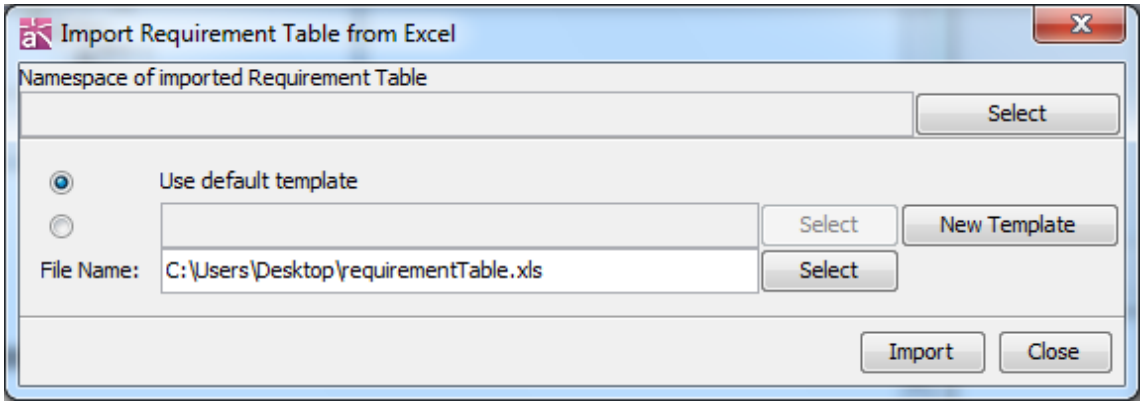
To open a Requirement Table which refers to the selected Requirement, right-click on the Requirement on the Requirement Table and select [Reference from Requirement Table].

k. Showing in Structure Tree

Right-click on the Requirement on the Requirement Table and select [Show in Structure Tree].

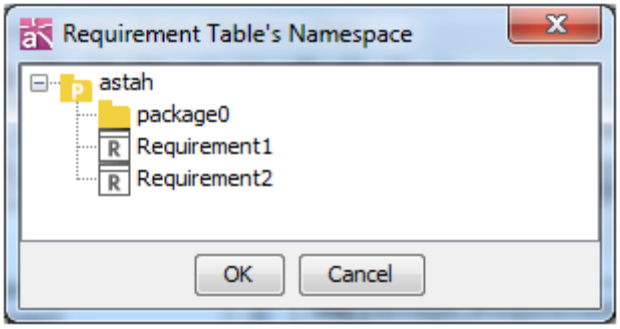
14. 16. 4. Import Requirement Table from Excel

To import a Requirement Table from Excel, go to [Tool] - [Requirement] - [Import Requirement Table from Excel] in the Main Menu.



a. Requirement Table

Click on the Select button and specify a Namespace.



b. Select Template

- Use default template.
- Select an existing template.
- Create a new template.

Please refer to the Requirement Table Template section.

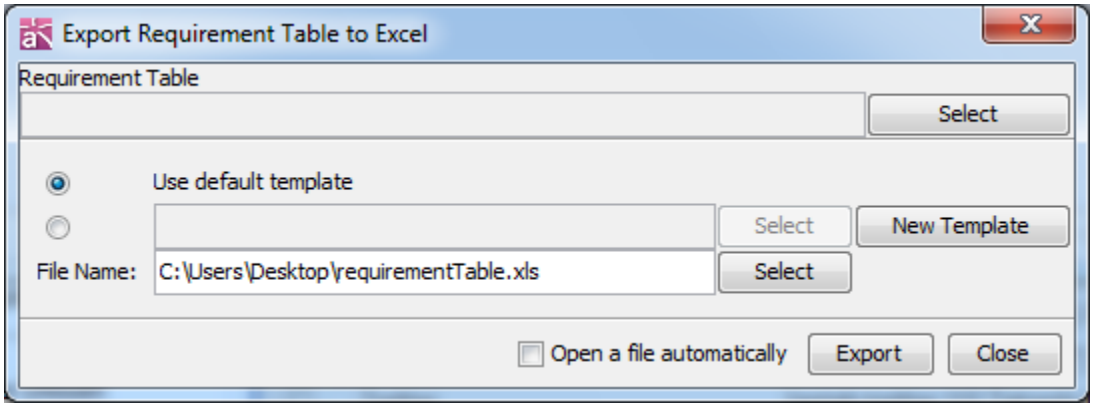
c. Import

Click the Import button to import Requirement Table.

If there are conflicts between the working project and the imported Requirement Table, the latter Requirement Table has priority over the working Requirement Table.

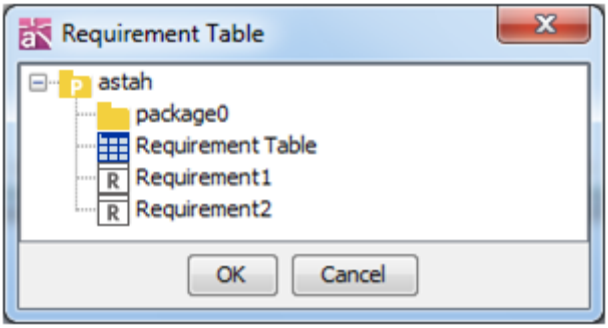
14. 16. 5. Export Requirement Table to Excel

To export a Requirement Table, go to [Tool]-[Requirement]-[Export Requirement Table to Excel] in the Main Menu.



a. Requirement Table

Click on the Select button and specify a Requirement Table.



b. Select Template

Select a Template:

- Use default template
- Select an existing template
- Create a new template

Please refer to the Requirement Table Template section.

c. Open report automatically

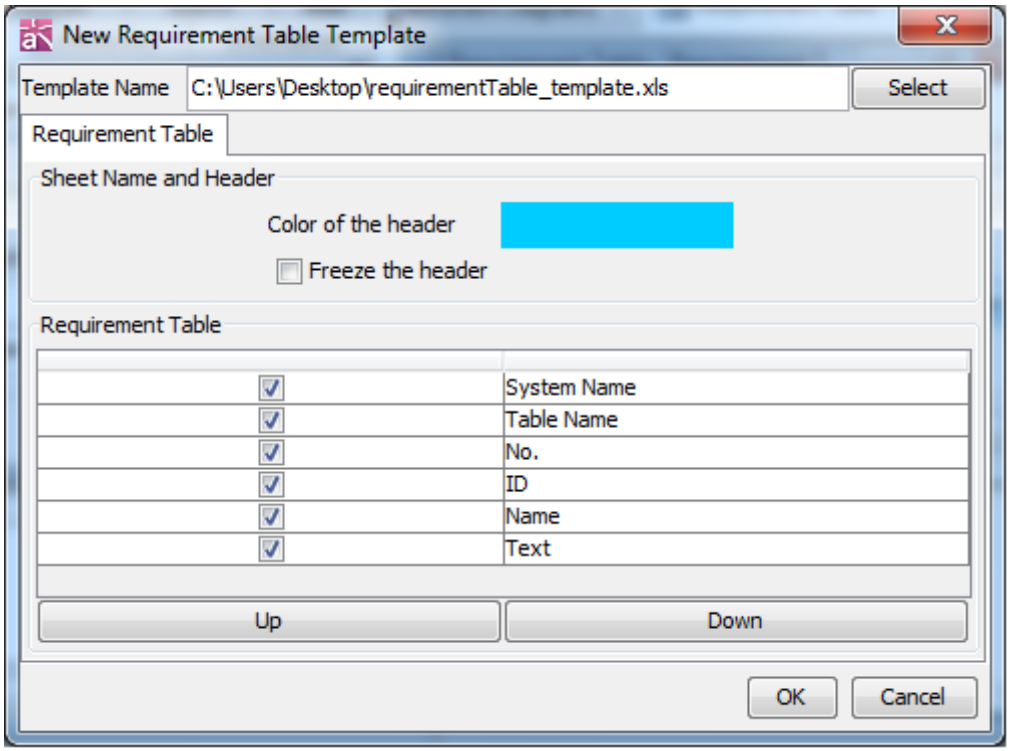
Check this option to open the exported Requirement Table automatically.

d. Export

Click the Export button to export Requirement Table.

14. 16. 6. Requirement Table Template

To create a Requirement Table template, go to [Tool]-[Requirement]-[Import Requirement Table from Excel / Export Requirement Table to Excel] in the Main Menu and click on the [New Template] button.



a. Template Name

Set the template name.

b. Requirement Table

(a) Header Color Specify the header color.

(b) Freeze the header Freeze the header position.

(c) Requirement Table The following items can be set in a template.

System Name, Table Name, No., ID, Name, Text

(d) Up/Down Up and Down items order.

Output Items of Requirement Table

```
ID - $each.requirement.id
Name - $each.requirement.name
Text - $each.requirement.text
```

Note) Header, footer and other items can be set to a template file (Excel) of a Requirement Table.

14. 16. 7. Copying Requirement Table cells to Clipboard.

Select Requirement Table cells and right-click and select [Copy]. Copied contents can be pasted on Excel or text editors.

a. Select Requirement table and copy

Requirement Table01 / Requirement Table

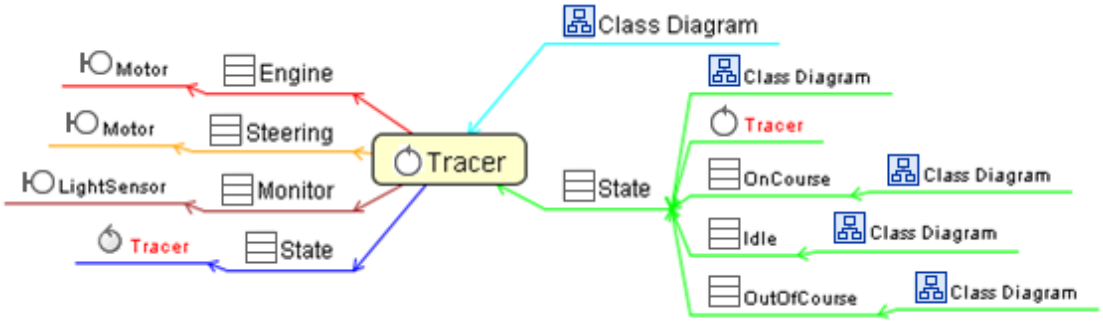
ID	Name	Text
A-1	Requirement1	AAA
A-1-1	Requirement1-1	
A-1-2	Requirement1-2	
B-1	Requirement1	BBB

b. Paste to Excel

	A	B	C
1	A-1	Requirement1	AAA
2	A-1-1	Requirement1-1	
3	A-1-2	Requirement1-2	
4	B-1	Requirement1	BBB

14. 17. Traceability Map [P]

Traceability Map shows the relationships between models with Mind Map format.



14. 17. 1. Creating Traceability Maps

a. Models for Traceability Map

Traceability Map can be created under the following models:
Package, Model, Subsystem, Class, UseCase, Component, Artifact, Node, External Entity, Data Store, ER Entity, Requirement and TestCase

b. Relationships for Traceability Map

(a) Related Models

The following relationships can be displayed in the Traceability Map:
Association, AssociationClass, Generalization, Realization, Dependency, Usage, Template Binding, Extend, Include, Identifying Relationship, Non-Identifying Relationship and Many-to-Many Relationship and Subtype

(b) Related Reference

- Type Reference

(Attribute Type, Operation Return Value, Base Class of Instance Specification, Lifeline, Object Node, Component Instance, Node Incetance)

- Dependencies of Requirements and TestCases
- Diagrams displayed the diagram elements of the models

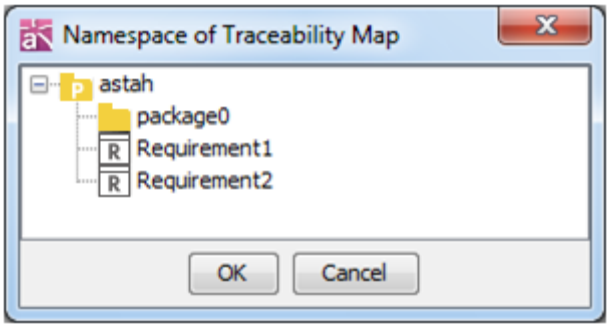
c. Creating Traceability Maps

i) Using the [Structure Tree] in the "Project View"

Select [Open Traceability Map] in the target model on the Structure Tree. If the Traceability Map exists, it is updated and opened.

ii) Using [Open Traceability Map] in the Main Menu

Select [Tool] - [Traceability Map] - [Open Traceability Map] in the Main Menu and select the target model in [Namespace of Traceability Map] dialog. If the Traceability Map exists, it is updated and opened.



14. 17. 2. Operating on Traceability Maps

a. Relationships and Types

To get information about relationships between the models, click on the edge of the connection lines.

b. Open Diagram

To open a diagram from a Traceability Map, select [Open Diagram] of Pop-up menu on the Traceability Map.

c. Open Traceability Map

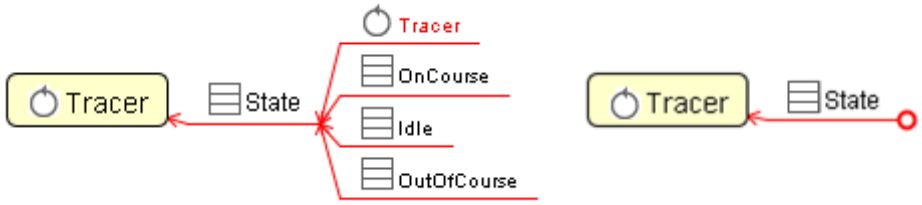
To open a Traceability Map, select [Open Traceability Map] of Pop-up menu on the Traceability Map.

d. Showing in Structure Tree

Right-click on Diagrams or Models in Traceability Map, and select [Show in Structure Tree].

e. Expanding /Collapsing Topics

Topics with Child Topics can be expanded or collapsed (display/non-display).
Right-click on the target Topic and select [Open or Close Topic] ([Alt+X]).
Double-click the connector of the Topic.



14. 17. 3. Updating Traceability Maps

To update the Traceability Map, the following operations are required.

a. Updating Traceability Maps

i) Updating a Traceability View using the Tool Palette.

To update a Traceability Map, use [Update] on the Tool Palette.

ii). Using the [Structure Tree] in the "Project View"

Right-click on the target Traceability Map in the Structure Tree and select [Update Traceability Map].

b. Updating All Traceability Maps

i) Using the [Structure Tree] in the "Project View"

Right-click on the project in the Structure Tree and select [Update All Traceability Maps].

ii). Using the [Update All Traceability Maps] in the Main Menu.

Select [Tool] - [Traceability Map] - [Update All Traceability Maps] in the Main Menu.

14. 17. 4. Deleting Traceability Maps

a. Deleting Traceability Maps

i). Using the [Structure Tree] in the "Project View"

Right-click on the target Traceability Map in the Structure Tree and select [Delete]..

b. Updating All Traceability Maps

i) Using the [Structure Tree] in the "Project View"

Right-click on the project in the Structure Tree and select [Update All Traceability Maps].

ii). Using the [Delete All Traceability Maps] in the Main Menu.

Select [Tool] - [Traceability Map] - [Delete All Traceability Maps] in the Main Menu.

14. 18. Converting Models (UML Models, DFD Models, Flowchart, ER Models) [P]

14. 18. 1. Converting Models

UML Models, DFD Models, Flowchart elements and ER Models can be converted in Astah.

a. Convert from UML Models to ER Models

Model	Source	Target	Pop-Up Menu on Structure Tree	Drag & Drop from Tree to Diagram	Pop-Up Menu on Diagram Editor
UML Diagram / UML Model	Class Diagram	ER Diagram	OK	OK	-
	Class	ER Entity	OK	OK	-
	Interface	ER Entity	OK	OK	-
	Entity	ER Entity	OK	OK	-
	Boundary	ER Entity	OK	OK	-
	Control	ER Entity	OK	OK	-
	Actor	ER Entity	OK	OK	-
	Association Class	ER Entity	OK	OK	-

b. Convert from UML Models to DFD Models

Model	Source	Target	Pop-Up Menu on Structure Tree	Drag & Drop from Tree to Diagram	Pop-Up Menu on Diagram Editor
UML Model	Actor	External Entity	OK	OK	-
	UseCase	Process Box	-	OK	-

c. Convert From DFD Models to UML Models and ER Models

Model	Source	Target	Pop-Up Menu on Structure Tree	Drag & Drop from Tree to Diagram	Pop-Up Menu on Diagram Editor
DFD Model	Process Box	UseCase	-	-	OK
	External Entity	Actor	OK	OK	-
	Data Store	ER Entity	OK	OK	-
	Dataflow	ER Entity	-	-	OK

d. Convert From Flowchart Elements to UML Models

Model	Source	Target	Pop-Up Menu on Structure Tree	Drag & Drop from Tree to Diagram	Pop-Up Menu on Diagram Editor
Flowchart	Flowchart Element	UseCase	-	-	OK
	Lane	Actor	-	-	OK

e. Convert From ER Models to UML Models and DFD Models.

Model	Source	Target	Pop-Up Menu on Structure Tree	Drag & Drop from Tree to Diagram	Pop-Up Menu on Diagram Editor
ER Model	ER Entity	Class	OK	OK	-
	ER Entity	Data Store	OK	OK	-

i) Using the [Structure Tree]

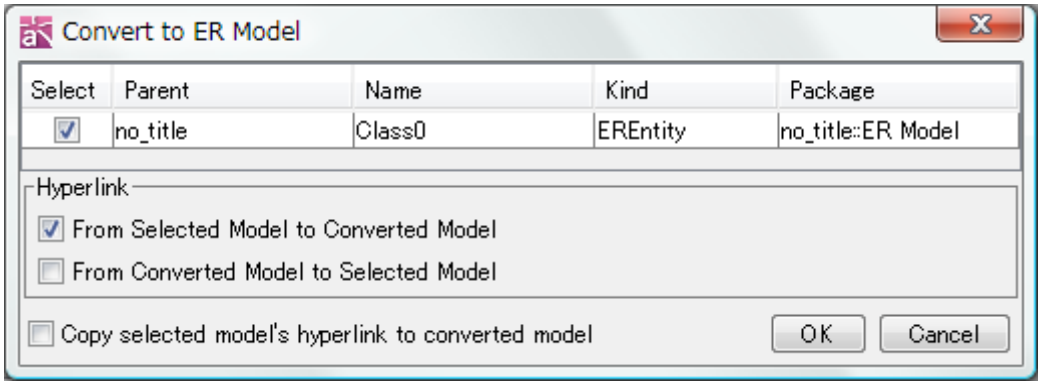
Right-click the source model and select [Convert] in the Structure Tree.

Hyperlinks are added based to the options in the convert dialog.

(1) From the source Model to the converted Model.

(2) From the converted Model to the source Model.

(3) Copy the source Model's hyperlink to the converted Model.



ii) By dragging and dropping.

(1) Select the source Models to convert in the Structure Tree.

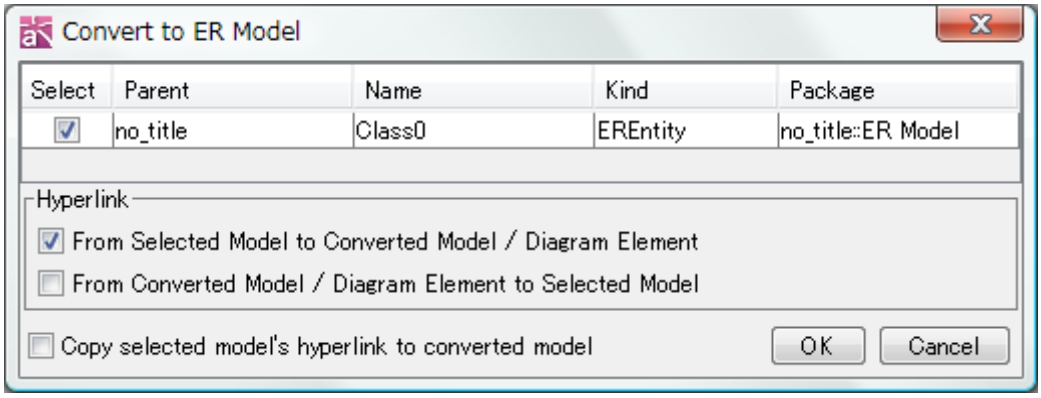
(2) Drag and drop them onto the target Diagram who is currently open in the Diagram Editor.

Hyperlinks are added based to the options in the convert dialog.

(1) From the source Models to the converted Models / Diagram Elements.

(2) From the converted Models / Diagram Elements to the source Models.

(3) Copy the source Model's hyperlink to the converted Model.



iii) Using the Pop-Up Menu in Diagram Editor

(1) Open the Diagram then do right-clicking the source Diagram Element on the Diagram Editor.

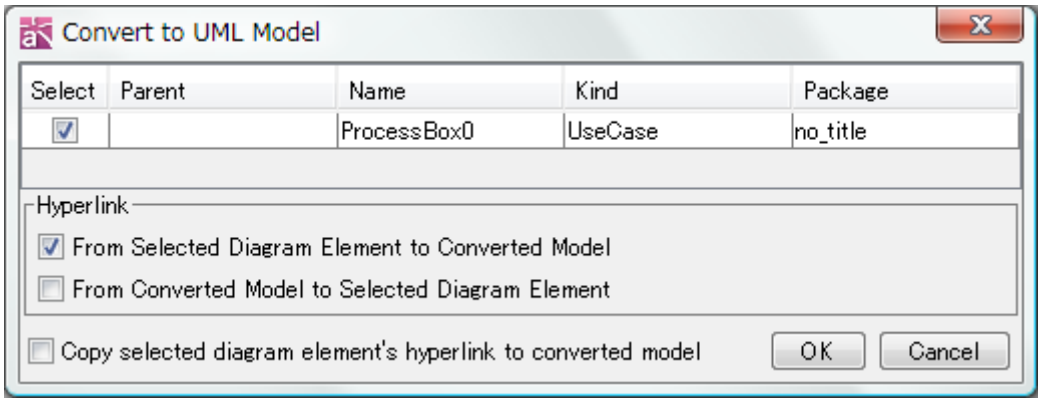
(2) Select [Convert] in the Pop Up Menu.

Hyperlinks are added based to the options in the convert dialog.

(1) From the source Diagram Element to the converted Model.

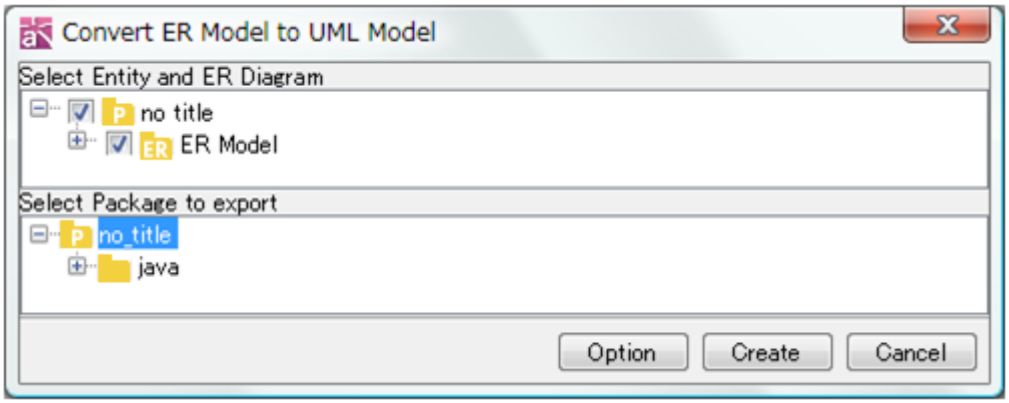
(2) From the converted Model to the source Diagram Element.

(3) Copy the source Diagram Element's hyperlink to the converted Model.



14. 18. 2. Converting ER Model to UML Model

i) Select [Tool] - [ER Diagram] - [Convert ER Model to UML Model]



1. Select Models

Select ER models to convert into UML Model from the top tree.

2. Select a Package

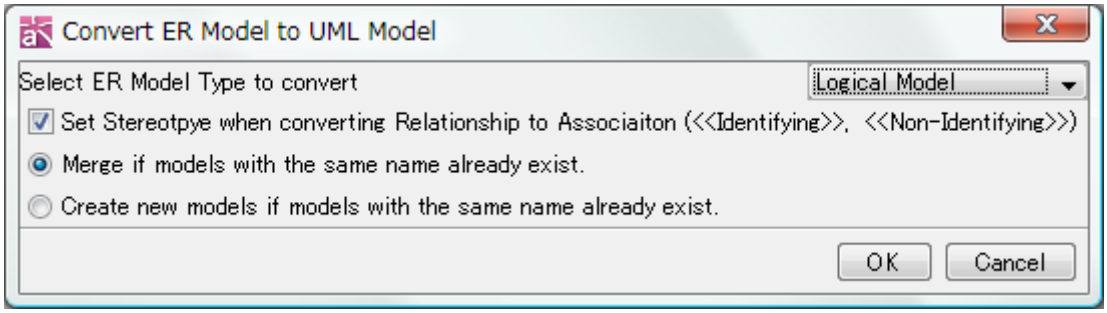
Select a package to export converted Models into.

3. Option

(1) ER Model Type (Physical Model or Logical Model)

(2) Check the box to set Stereotype of <<Identifying>> or <<Non-Identifying>> to the Association to converted models

(3) Merge or create new models if models with the same name already exist.



4. Create

Convert the selected ER Model to UML Model.

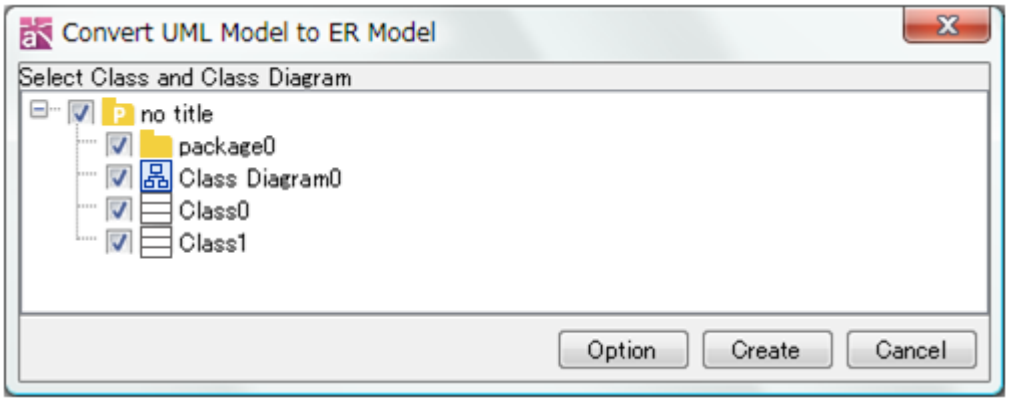
i) Using the Pop-Up Menu in the Structure Tree.

(1) Select ER Entity in the Structure Tree then select [Convert to Class] on its Pop-Up Menu.

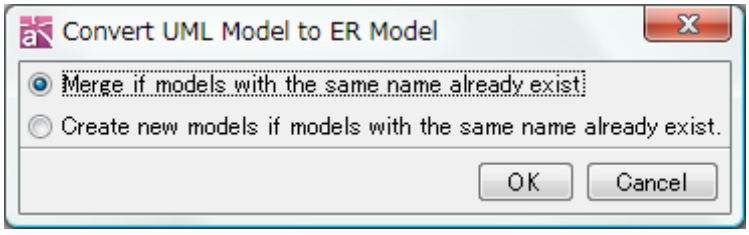
(2) Select ER Diagram in the Structure Tree then select [Convert to Class Diagram] on its Pop-Up Menu.

ii) Drag ER Entities from the Structure Tree and drop them onto Class Diagram in the Diagram Editor.

14. 18. 3. Converting UML Model to ER Model



i) Select [Tool] -[ER Diagram] - [Convert UML Model to ER Model]



Options:

- Merge if models with the same name already exist.

- Create new models if models with the same name already exist.

ii) Using the Pop-Up Menu in the Structure Tree.

(1) Select Class in the Structure Tree, and select [Convert to ER Entity] on its Pop-Up Menu.

(2) Select Class Diagram in the Structure Tree, and select [Convert to ER Diagram] on its Pop-Up Menu.

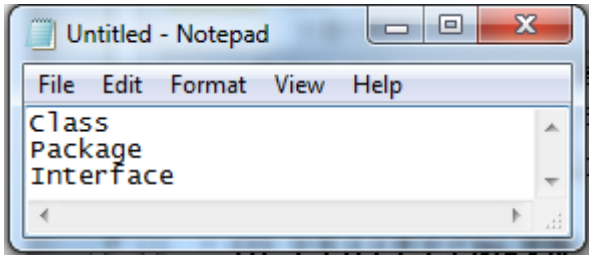
14. 18. 4. Converting Text to Model

Text in Clipboard can be converted to Models. Text with new lines are converted multiple Models.

Diagram	Converted Model (*) Default
Class Diagram	Class (*), Interface, Package, Subsystem, Instance Specification, Note, Text
UseCase Diagram	UseCase (*), Actor, Package, Subsystem, Note, Text
Statemachine Diagram	State (*), Note, Text
Activity Diagram	Action (*), Note, Text
Sequence Diagram	Lifeline (*), Note, Text
Communication Diagram	Lifeline (*), Note, Text
Component Diagram	Component (*), Classifier, Artifact, Note, Text
Deployment Diagram	Node (*), Component, Instance Specification, Note, Text
Composite Structure Diagram	Structured Class (*), Class, Interface, Note, Text
Flowcart[P]	Flow Element (*), Note, Text
Data Flow Diagram[P]	Process (*), Data Store, External Entity, Anchor, Note, Text
ER Diagram[P]	ER Entity (*), Note, Text
Mindmap	Topic (*), Text
Requirement Diagram[P]	Requirement (*), TestCase, Note, Text

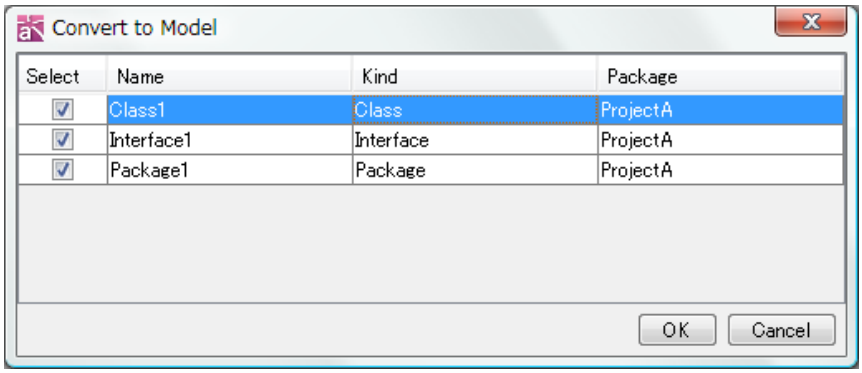
i) Convert Text to Model

(1) Copy Text into Clipboard.



(2) Open a diagram and select [Paste] Pop-Up Menu.

(3) Set options in Convert to Model dialog and click OK.

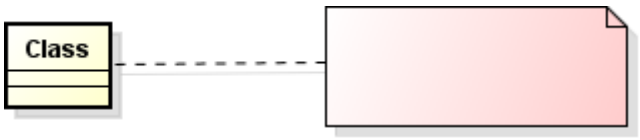


14. 19. Common Diagram Elements for All Diagram Types

Note		Add comments to Model Elements.
Note Anchor		Anchor Notes to related Model Elements.
Text / TextBox		Insert Text / TextBox.
Rectangle		Draw Rectangles/Colored Rectangles in Diagrams. For example, Rectangle can be used to enclose a semantic collection of Model Elements.
Corner-Rounded Rectangle		Draw Rounded Rectangles/Colored Rounded Rectangles in Diagrams. For example, they can be used to enclose a semantic collection of Model Elements.
Oval		Draw Ovals /Colored Ovals in Diagrams. For example, they can be used to enclose a semantic collection of Model Elements.
Line		Draw Lines on Diagrams.
FreeHand		Draw Freehand lines on Diagrams.
Highlighter		Draw Highlighter on Diagrams.
Image		Paste Images.
Gap Expander		Slide the existing models away to make space
Gap Remover		Slide and clean up the unnecessary space
Lock Selected Mode		Lock the selected mode on the Tool Palette.
Set Relation End to the center of the item		Place the ends of lines (Associations, Generalizations, or Dependencies) at the center of Model Elements.
Line Mode		Set the Line Mode (Line, Line (Right Angle), Curve, Curve (Right Angle)) to draw lines (e.g. Association) between Model Elements.
Draw Suggest		Switch On/Off the Draw Suggest Feature.

14. 19. 1. Notes and Note Anchors

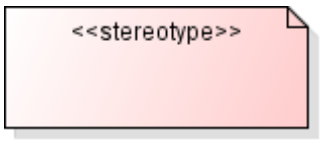
Notes can be used to add comments to Model Elements. Note Anchors bind Notes to Model Elements. Press [Enter] to fix the Text. To insert a new line in a Note, press the [Shift+Enter] or [Alt+Enter] keys.



a. Editing Notes

(a) Adding Stereotypes

Right-click on the target Note and select [Add Stereotype], or go to Stereotype tab of Note in the Property View.

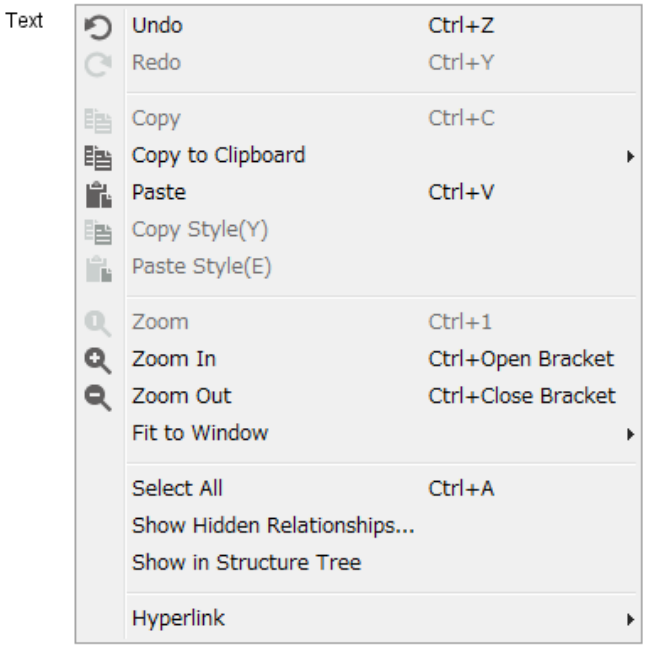


(b) Stereotype Visibility

The display/non-display settings for a Note Stereotype can be selected from the Pop-up Menu.

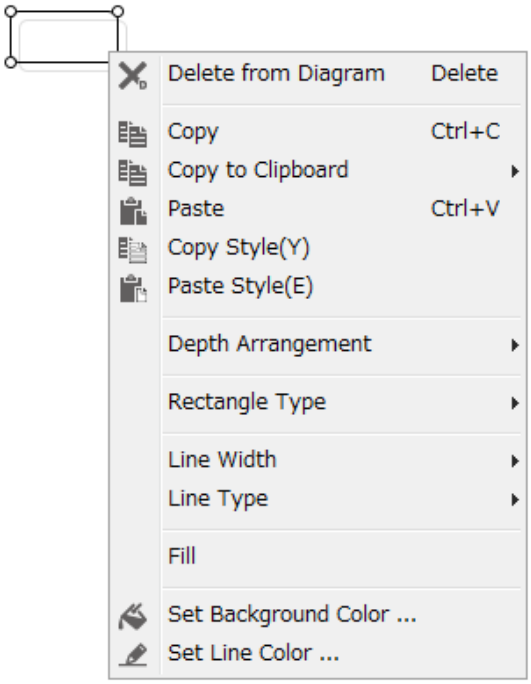
14. 19. 2. Text / Text Box

Press [Enter] to add or modify Text. To insert a new line, press the [Shift+Enter] or [Alt+Enter] keys. You can add the frame, Background color, font color etc. from its Pop-up menu.



14. 19. 3. Rectangles/Rounded Rectangles/Ovals

Rectangles, Rounded Rectangles and ovals can be created in diagrams.

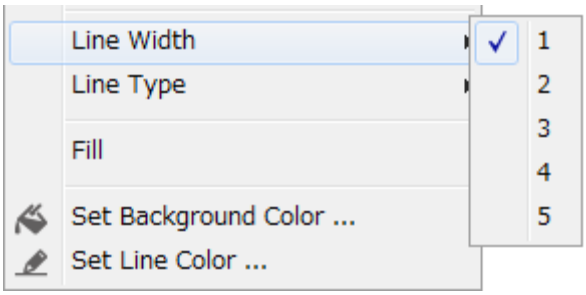


14. 19. 4. Lines

Lines can be created in diagrams.

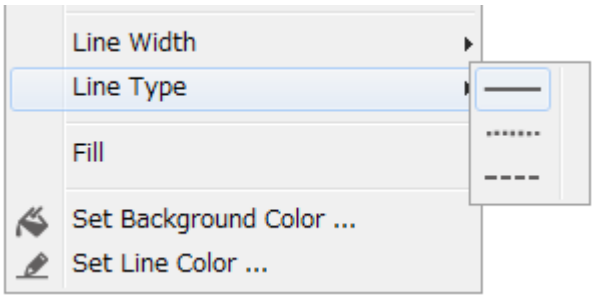
Changing the Line Width

To change a Line Width, right-click on the target Line and select [Line Width].



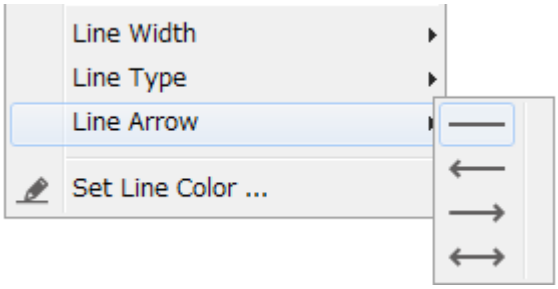
Changing the Line Type

To change a Line Type, right-click on the target Line and select [Line Type].



Changing a Line to an Arrow

To change a Line to an arrow, right-click on the target Line and select [Line Arrow].

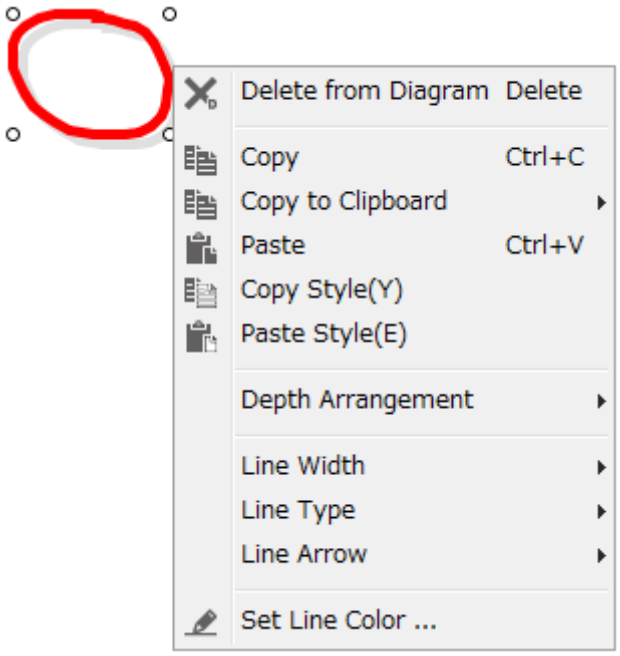


Drawing horizontal/vertical Lines

To draw a horizontal or a vertical Line, press the [Shift] key while creating the Line.

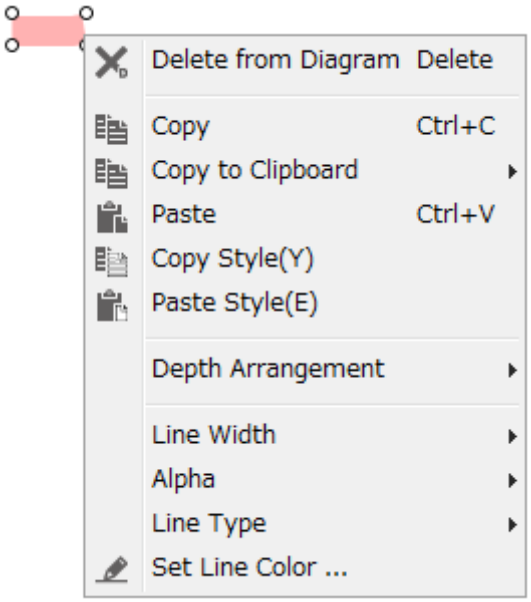
14. 19. 5. FreeHand

To draw as free hand, select [Freehand] on the Tool Palette and drag mouse on the diagram. The width, type of lines can be changed from its Pop-up menu.



14. 19. 6. Highlighter

To draw highlighter, select [Highlighter] on the Tool Palette and drag mouse on the diagram. The line width, alpha, line type can be changed from its Pop-up menu.

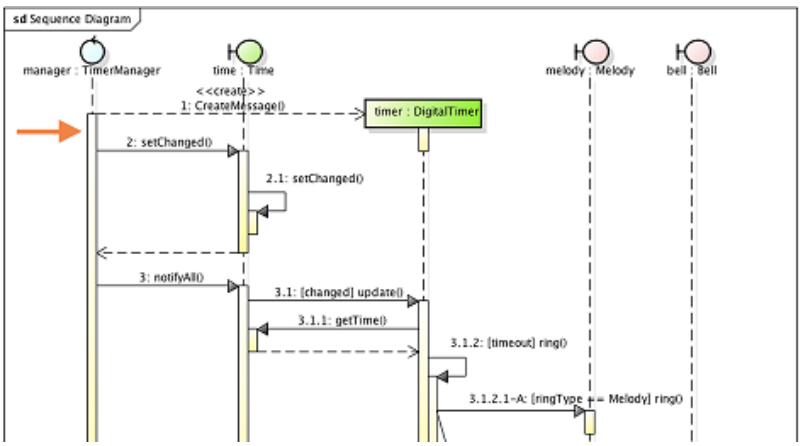


14. 19. 7. Imag

(1) Select [Image] on the Tool Palette and click on the Diagram
-> The Selection Dialog appears.
(2) Select the Image to insert and click [Open]

14. 19. 8. Gap Expander

You are able to use this feature in the Class diagram, Sequence diagram, Activity diagram and Flow Chart【P】.
The Gap Expander is a tool to expand gap horizontally or vertically between elements by dragging the mouse on the diagram and additional elements can be created between them.(1) Select [Gap Expander] on the Tool Palette.
(2) Click the point to expand the gap.



(4) Drag the mouse downward.

14. 19. 9. Gap Remover

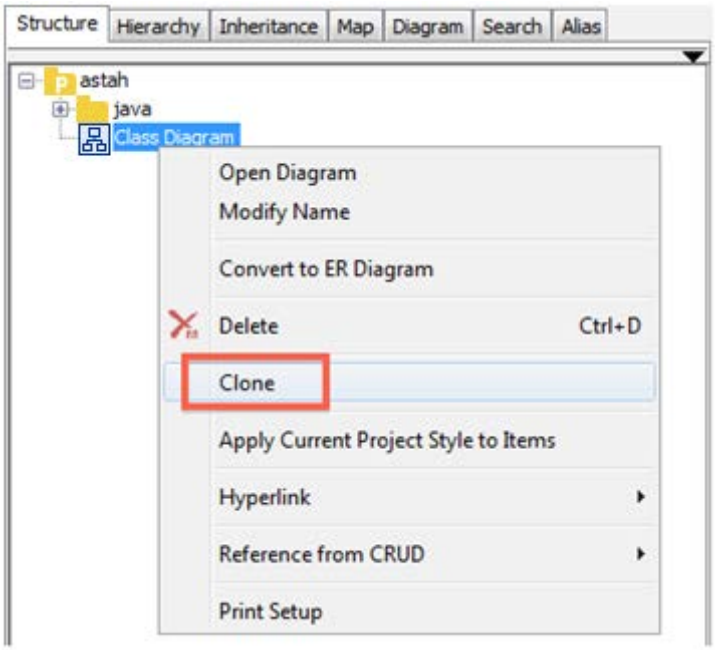
The Gap Remover is a tool to remove unnecessary gap horizontally or vertically between elements by dragging the mouse on the diagram and it can be removed between them.

(1) Select [Gap Remover] on the Tool Palette.

(2) Click the point where you want to remove the gap of, then drag to the direction.

15. Cloning Diagrams

To clone diagrams, right-click on the target diagram in the Structure Tree and select [Clone]. The result is the same as selecting all, copying, and pasting.
When cloning Classes or UseCases, models are shared with the original diagram.



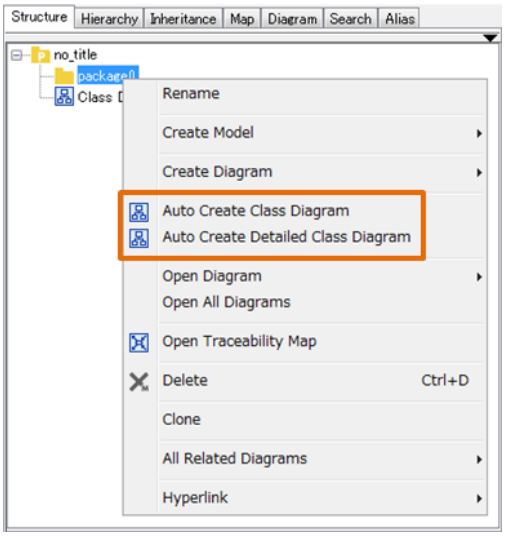
16. Generating Diagrams

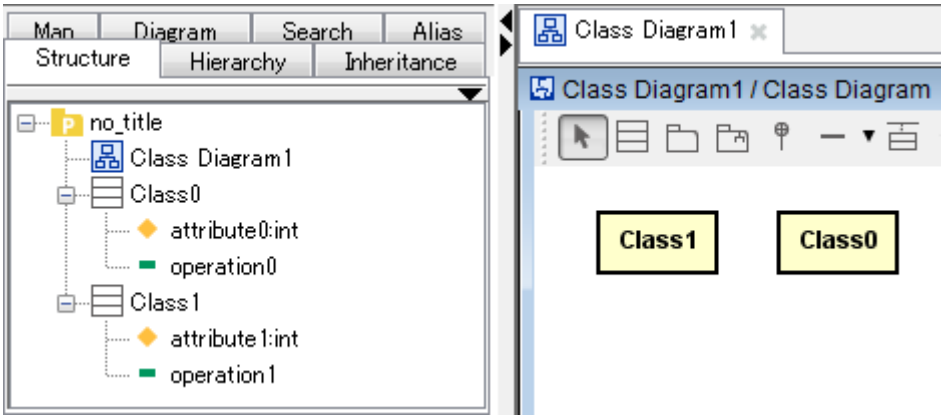
This section describes generating functions for Class Diagrams.

16. 1. Generating Class Diagrams

Right-click on the target Package (Model or Subsystem) in the Structure Tree in the "Project View" and select [Auto Create Class Diagram]. The Class Diagram for the Package (Model, Subsystem) is generated and opened in the Diagram Editor.

Note) An Attribute partition and an Operation partition are not displayed for the generated Classes.



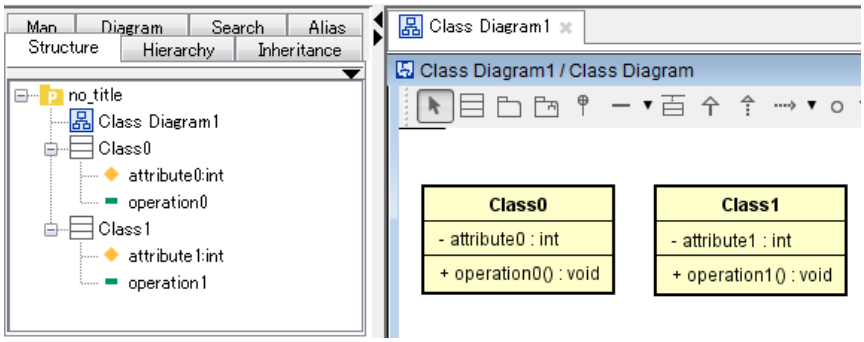


16. 2. Generating Detailed Class Diagrams

Right-click on the target Package (Model or Subsystem) in the Structure Tree in the "Project View" and select [Auto Create Detailed Class Diagram]. The Detailed Class Diagram for the Package (Model, Subsystem) is generated and opened in the Diagram Editor.

Note)

- Partitions of attributes and operations appear for generated classes.
- The display/non-display settings of Partitions of attributes and operations can be changed in System Properties.



16. 3. Generating ER Diagrams [P]

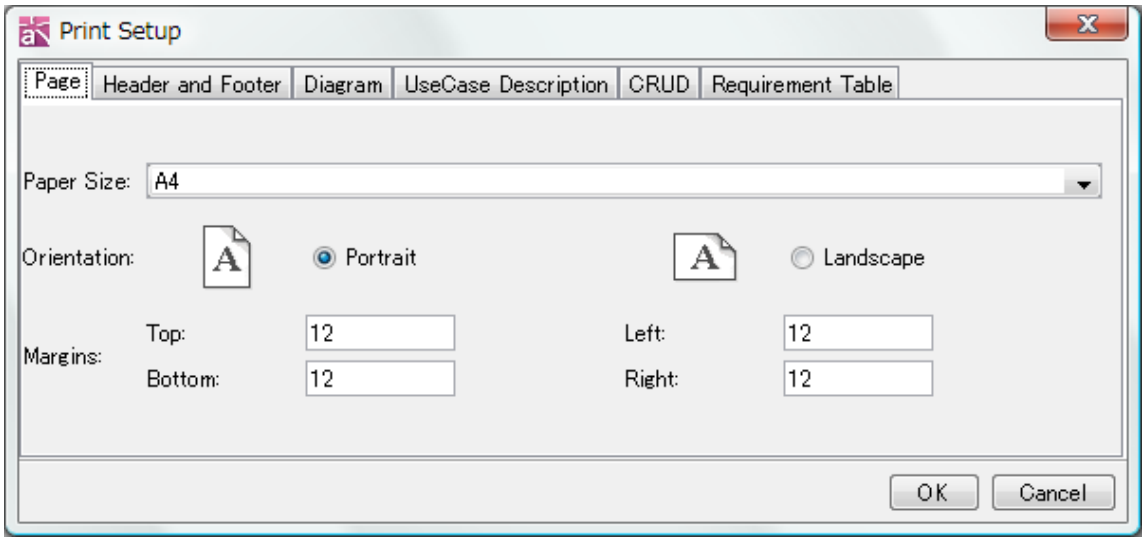
Right-click on the target ER Model in the Structure Tree in the “Project View” and select [Auto Create ER Diagram]. The ER Diagram is generated and opened in the Diagram Editor.

17. Printing

17. 1. Print Setup (Project)

This setting is used to set the Printing options of diagrams, UseCase Descriptions, CRUDs [P], Requirement Tables [P], pages, Headers and Footers. The configuration will be saved per project file.

17. 1. 1. Page

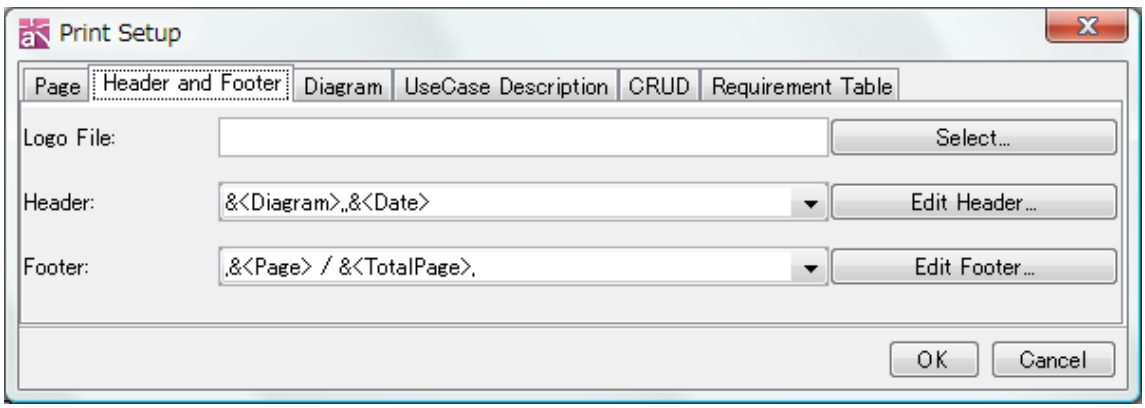


a. Page Size Set a Page size of printed documents

b. Orientation Select an Orientation

c. Margins Set Margins (Top/Bottom/Left/Right)

17. 1. 2. Header and Footer



17.Printing

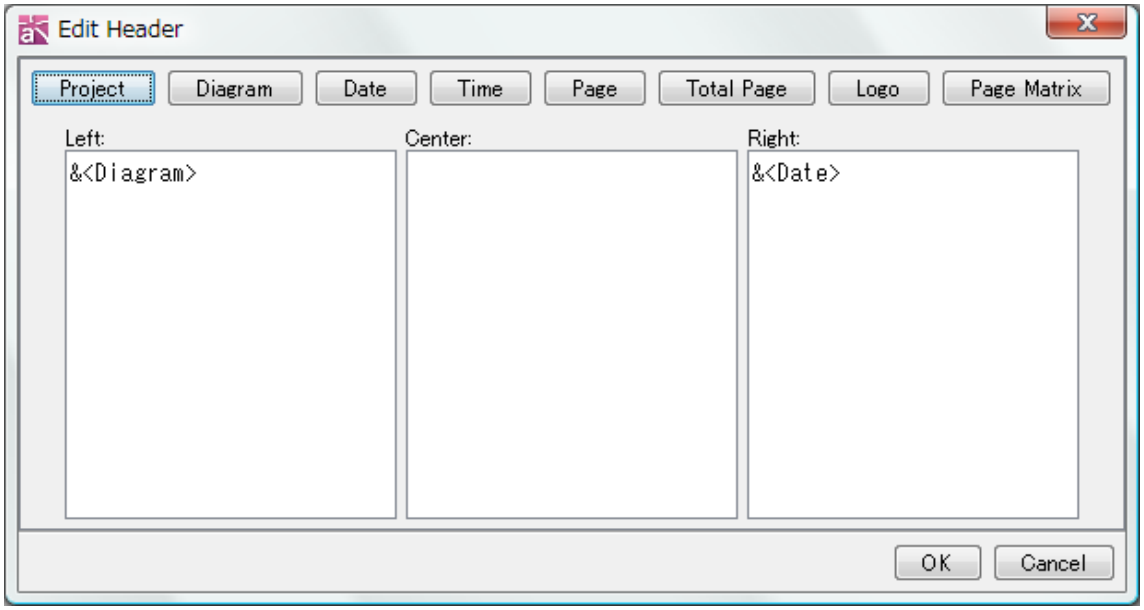
Options for Header/Footer of printouts can be selected. In Header/Footer, a Logo file, Project Name, diagram name, date, time, page number, total page number, and printing position (left, center, or right) can be configured.

a. Logo File

Click on [Select…] to select a file to be used for the Logo. JPG, GIF, and PNG format images are supported.

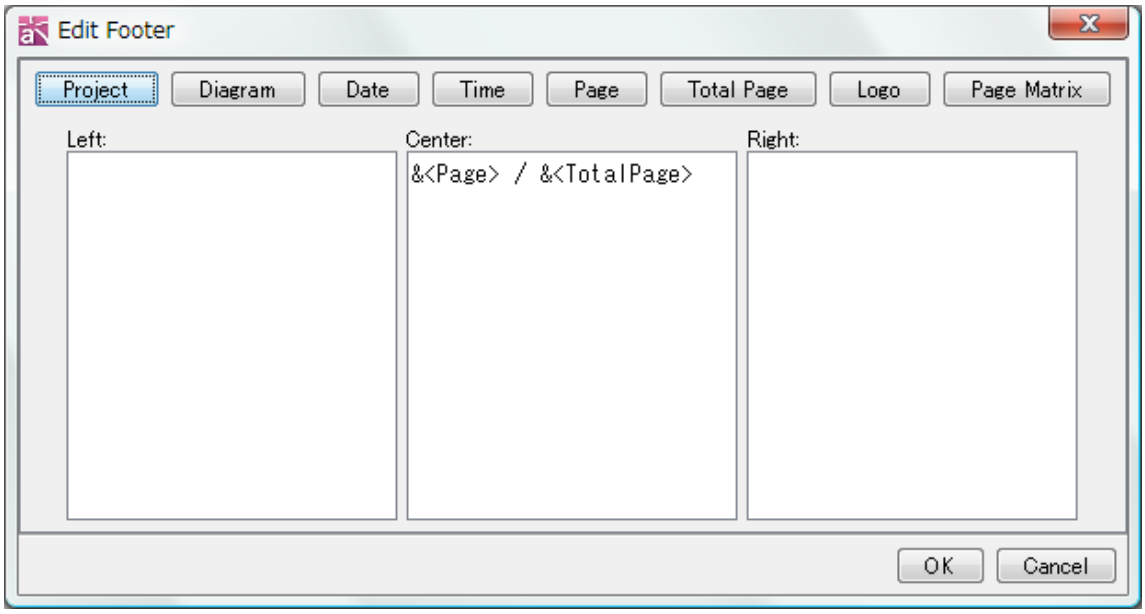
b. Header

Select the target information to be printed from the drop down list. Alternatively, click on [Edit Header…] and edit the target information to be printed in the Header.

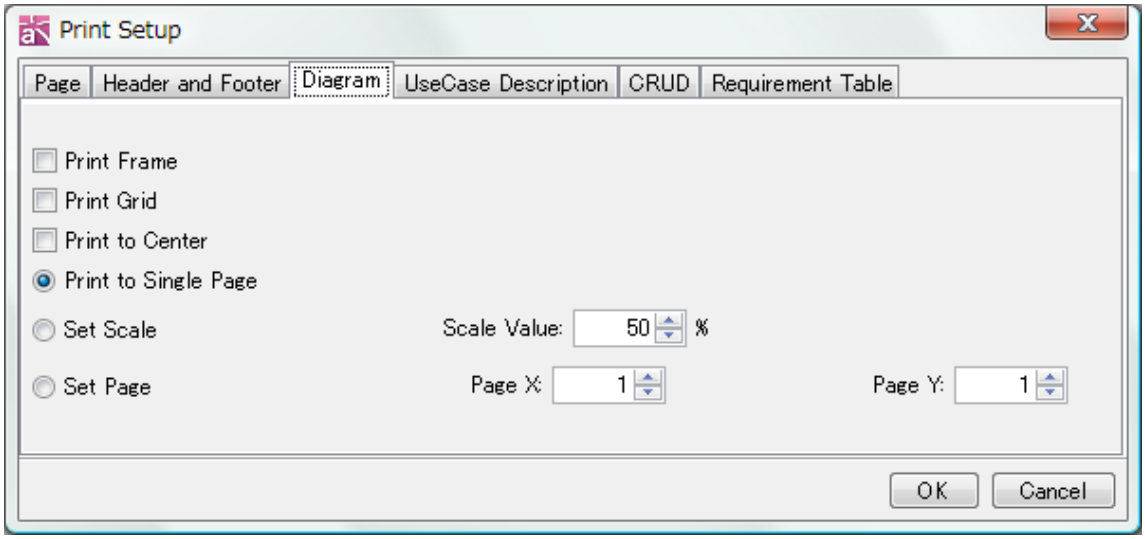


c. Footer

Select the target information to be printed from the drop down list. Alternatively, click on [Edit Footer…] and edit the target information to be printed in the Footer.



17. 1. 3. Diagram



a. Print Frame

Check this option to print with a frame.

b. Print Grid

Check this option to print with Grid Lines.

c. Print to Center

Check this option to print placing the diagram in center.

d. Print to Single-Page

Select this option to adjust the scale when printing, so that the Diagram fits onto one

page.

e. Set Scale

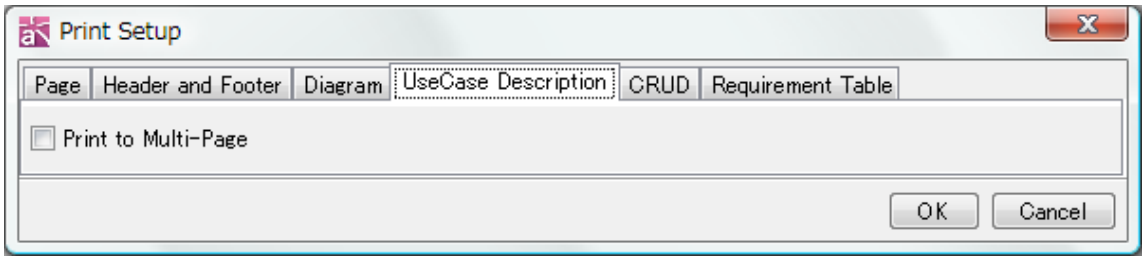
Use this option to specify the scale of Diagrams when printing.

f. Set Page

A Diagram can be separated over a number of pages when printing. This option can be used to choose how the diagram is divided, horizontally and vertically, between the pages. Page X specifies the maximum number of times that a diagram can be divided horizontally. Page Y specifies the maximum number of times that a Diagram can be divided vertically.

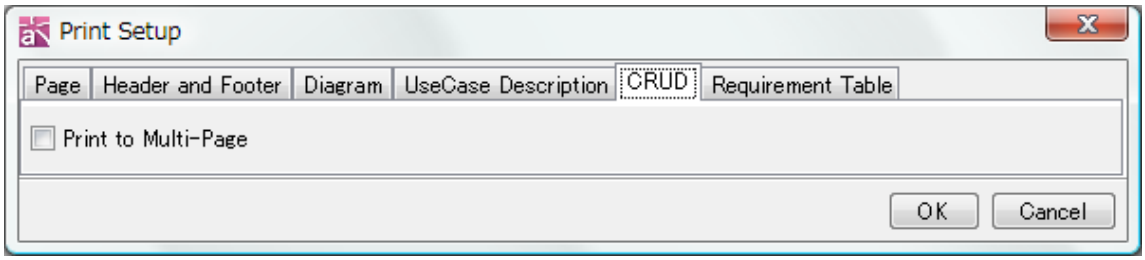
17. 1. 4. UseCase Description

Check this option to print UseCase Descriptions on multiple pages. If this is unchecked, UseCase Descriptions are printed on one printout with the scale adjusted accordingly.



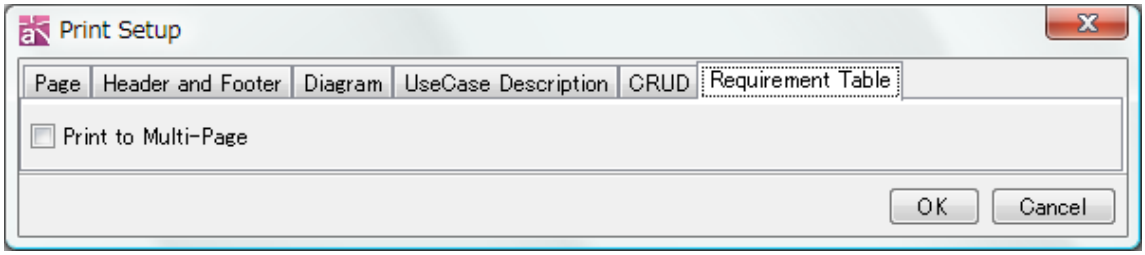
17. 1. 5. CRUD Description [P]

Check this option to print CRUD on multiple pages. If this is unchecked, CRUDs are printed on one printout with the scale adjusted accordingly.



17. 1. 6. Requirement Table [P]

Check this option to print Requirement Table on multiple pages. If this is unchecked, Requirement Tables are printed on one printout with the scale adjusted accordingly.



17. 2. Print Setup (Diagram)

This setting is used to set the printing options for Page, Headers, Footers and Diagram (or UseCase Description). This configuration will be saved per Diagrams. To print in the same setting, check on **[Print by using the print setting for the project]**.

17. 3. Printing Diagrams [Ctrl+P]

The Diagram that is currently opened in the Diagram Editor is printed.

17. 4. Print Multi

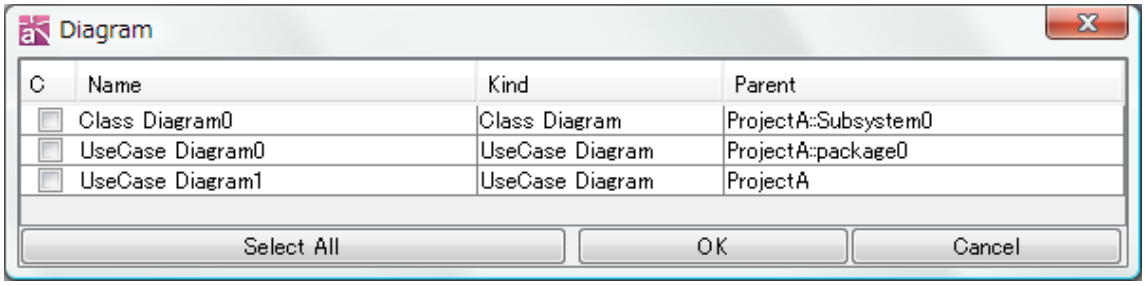
Multiple diagrams in the Project can be printed using this function.

a. Select the target diagrams to print using the diagram dialog.

b. Click [Select All] / [Deselect All] to select/deselect target diagrams.

The Order of Printing

Diagrams would be printed in the order as listed in the diagram dialog. To change the order, click on [Name], [Kind], or [Parent] respectively.

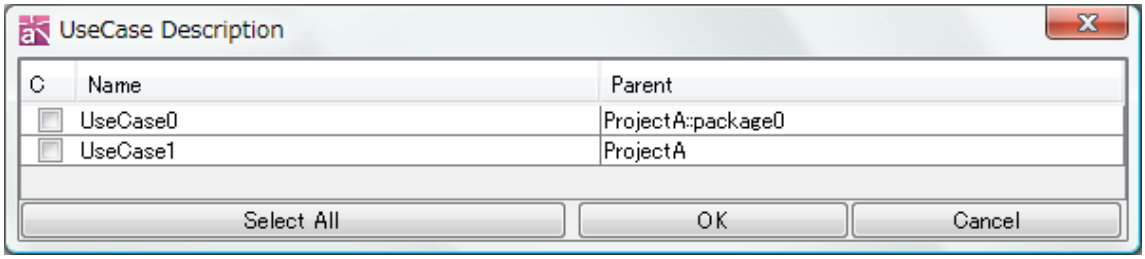


17. 5. Print Multiple UseCase Descriptions

Multiple “UseCase Descriptions” in the Project can be printed using this function.

a. Select the target UseCase Descriptions to print using the UseCase Description Dialog.

b. b. Click [Select All] / [Deselect All] to select/deselect target UseCase Descriptions.

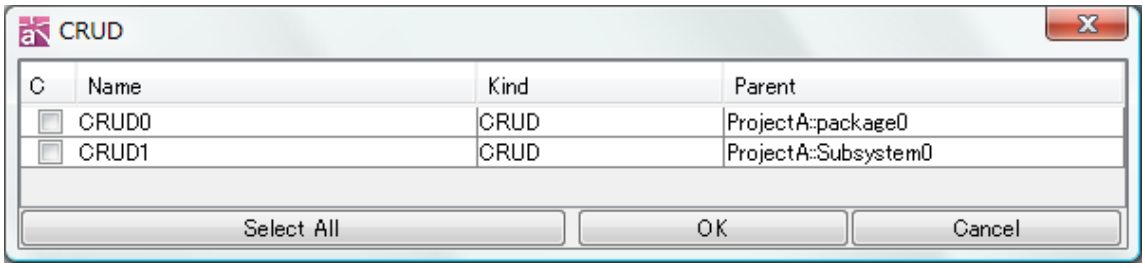


17. 6. Print Multiple CRUDs [P]

Multiple “CRUDs” in the Project can be printed using this function.

a. Select the target CRUDs to print using the CRUD Dialog.

b. Click [Select All] / [Deselect All] to select/deselect target CRUDs.

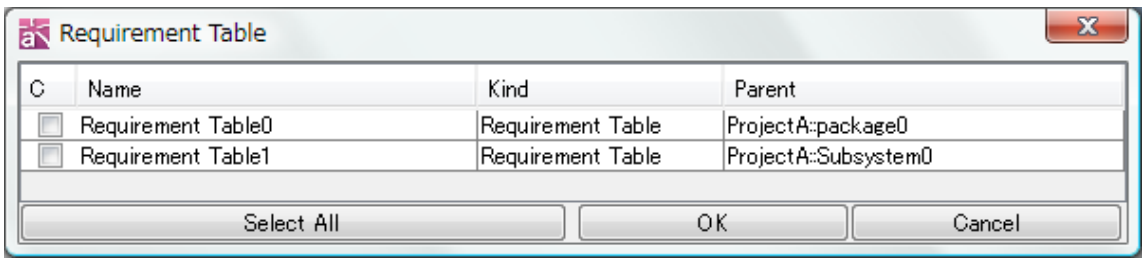


17. 7. Print Multiple Requirement Table [P]

Multiple “Requirement Tables” in the Project can be printed using this function.

a. Select the target Requirement Tables to print using the Requirement Tables Dialog.

b. Click [Select All] / [Deselect All] to select/deselect target Requirement Tables.



18. Print Preview

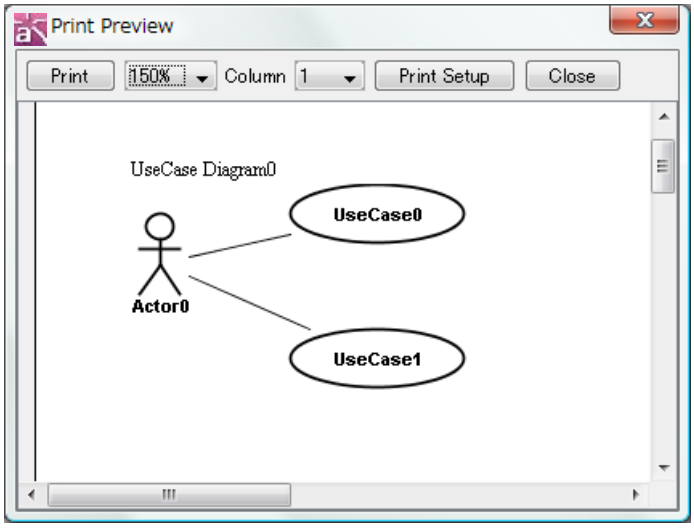
Print Preview is used to view the Print Previews of diagrams, UseCase Descriptions, CRUDs and Requirement Tables.

18. 1. Print Preview

The Diagram that is displayed in the Diagram Editor is viewed by Print Preview.

a. Print

Click [Print] to begin printing.



b. Display Size

Use this option to change the scale of the display.

c. Column

Use this option to change the number of columns.

d. Print Setup

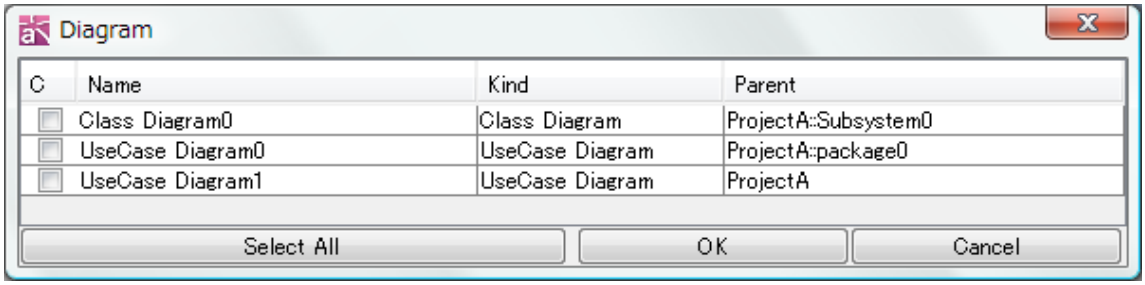
-> Please refer to the Print section for more details.

18. 2. Preview Multi

"Preview Multi" is used to view the Print Previews of multiple diagrams in the Project.

a. Select diagrams to preview in the diagram dialog.

b. Click [Select All] / [Deselect All] to select/deselect target diagrams.



Print Preview Order

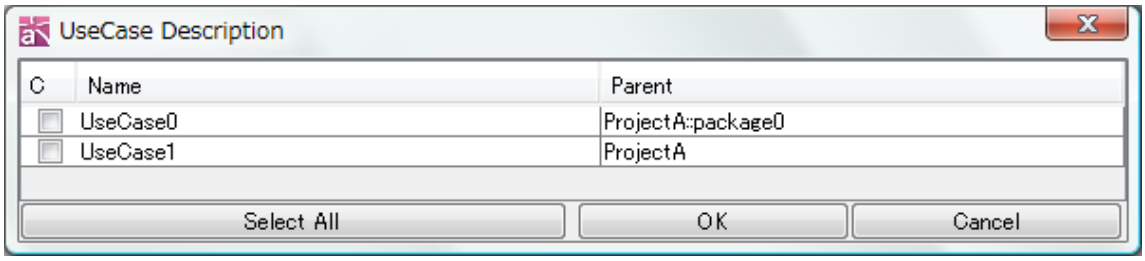
Diagrams would appear in the order in which they are listed in the diagram dialog. To change the order, click on [Name], [Kind], or [Parent], respectively.

18. 3. Print Preview Multi-UseCase Description

This function is used to view the Print Previews of multiple UseCase Descriptions, CRUD, Requirement Tables in the Project.

a. Select the UseCase Descriptions to Preview in the UseCase Description Dialog.

b. Click [Select All] / [Deselect All] to select/deselect target UseCase Description.

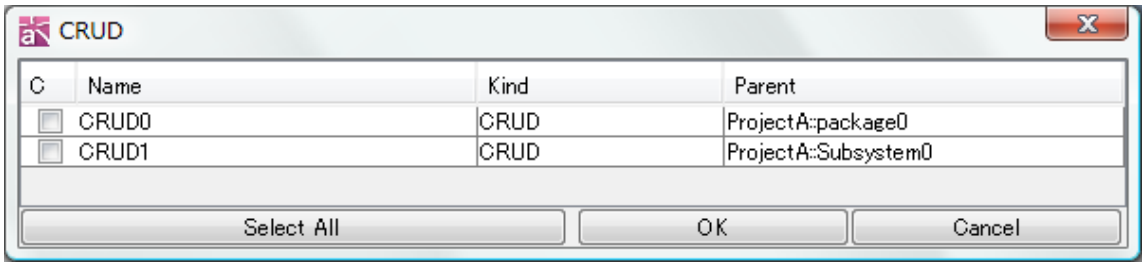


18. 4. Print Preview Multi-CRUD

This function is used to view the Print Previews of multiple “CRUDs” in the Project.

a. Select CRUDs to Preview in the CRUD Dialog.

b. Click [Select All] / [Deselect All] to select/deselect target CRUDs.

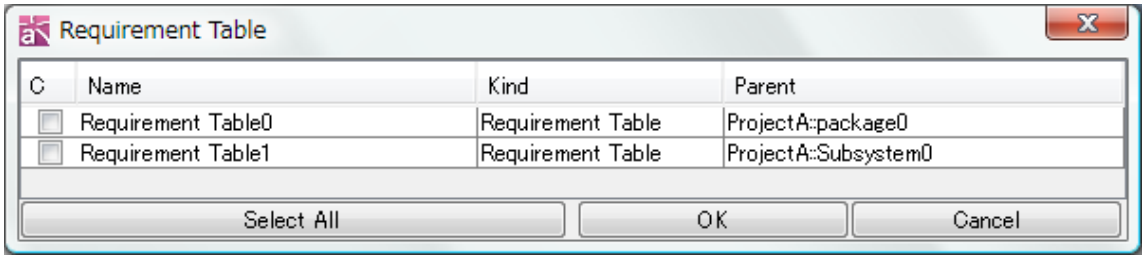


18. 5. Print Preview Multi-Requirement Table

This function is used to view the Print Previews of multiple “Requirement Tables” in the Project.

a. Select Requirement Tables to Preview in the Requirement Table Dialog.

b. Click [Select All] / [Deselect All] to select/deselect target Requirement Tables.



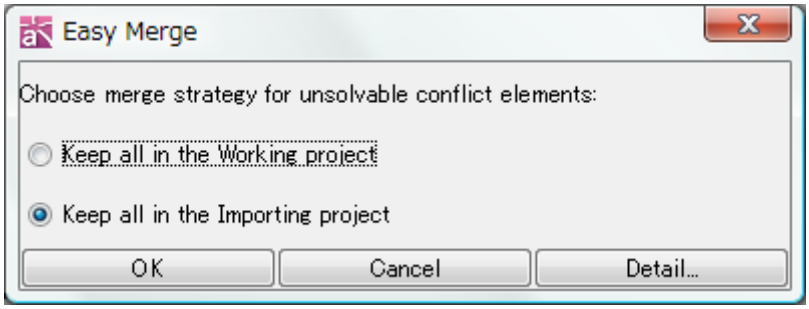
19. Merging Projects

Projects can be merged into the working Project as follows:

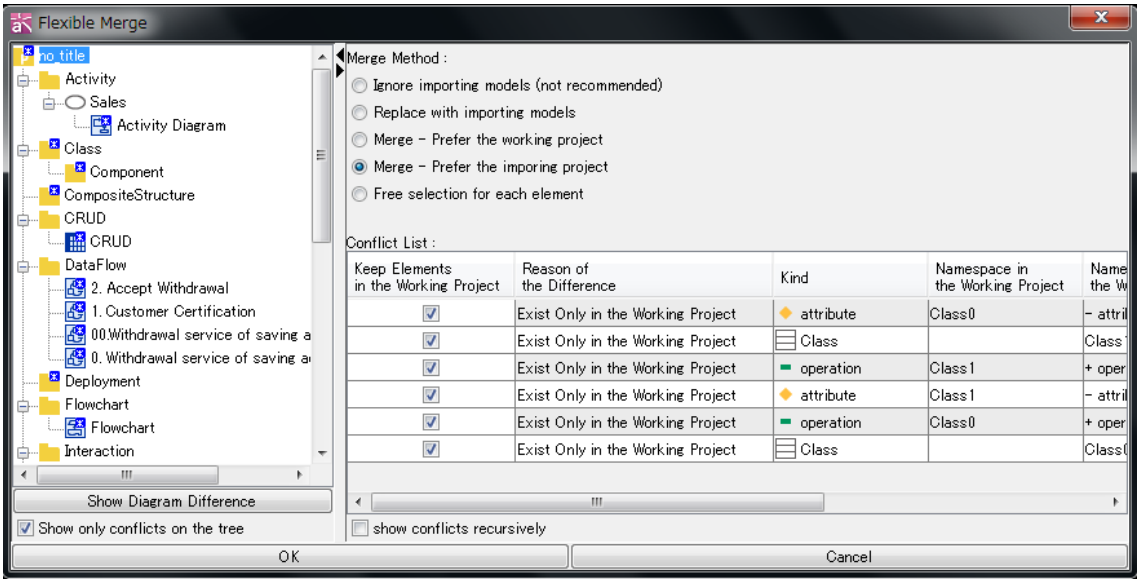
1. Click on [File]-[Merge Project].
2. Select the target Project and click on [Open].
3. The “Easy Merge” dialog is displayed.
4. Click [Detail] on the “Easy Merge” dialog to display the “Flexible Merge” dialog.

19. 1. Easy Merge Dialog

Using the “Easy Merge” dialog, Elements that only exist in either the working Project or the importing Project can be merged. For conflicted elements from the working Project or the importing Project can be prioritized.



19. 2. Flexible Merge



19. 2. 1. Conflict Tree

The differences between the working Project and the importing Project are displayed in the Conflict Tree.

Icons	Description
	Models that exist only in the working Project
	Models that exist only in the compared Project
	Models that exist both Projects

a. Show Diagram Difference [P]

To compare diagrams between the working Project and the importing Project, double-click the selected diagram in the Conflict Tree, or click [Show Diagram Difference] button.

-> Please refer to the Compare Diagram section.

b. Show Only Conflicts in the Conflict Tree

Check this option to display only the conflicts in the Conflict Tree.

Default [ON]

19. 2. 2. Setting the Target Range

a. Show Conflicts Recursively

Check this option to display the conflicts of Elements that are selected in the Conflict Tree, in the Conflict List. Elements in the subdirectory are included.

Default [OFF]

19. 2. 3. Merge Method

Merge Methods can be chosen for each Model selected in the Tree.
If multiple Models, whose Merge Method options differ, are selected in the Conflict Tree, all the options are displayed.

a. Ignore importing Models

If this option is selected, importing models are not included in the merged Project.

b. Replacing with importing Models

If the importing Project is empty, the merged Models will be deleted.
After merging, Models are replaced with those in the merged Project. If the importing project is empty, all Models will be deleted

c. Merge - Prefer the Working Project

Using this option, Elements that exist only in either the working Project or the

importing Project are merged.
For other Elements, the working Project is prioritized.

d. Merge - Prefer the Importing Project

Using this option, Elements that exist only in either the working Project or the importing Project are merged.
For other Elements, the importing Project is prioritized.

e. Free Selection for each Element

Using this option, Elements are merged according to the selection in the checkbox [Keep Elements in the Working] in the Conflict List.

19. 2. 4. Conflict List

The Conflict List displays a list of the conflicts and details of selected Elements.
The prioritized Model (working or importing) for conflicts can be selected for each Element.

a. Working Project

Check this option to prioritize the working Elements.

b. Reason

In this column, the Types of conflicts between the working Project and the importing Project are displayed.

(a) Exist Only in the Working Project

The Element exists only in the working Project but not in the importing Project.

(b) Exist Only in the Importing Project

The Element exists only in the importing Project but not in the working Project.

(c) Different Namespaces

The Element exists in both the working Project and the importing Project, but their Namespaces are different.

(d) Different Attributes

The Element exists in both the working Project and the importing Project, but their Attributes (e.g., the visibility) are different.

(e) Different Association Ends

The Element exists in both the working Project and the importing Project, but either one or both Ends of the Elements (Association or Link) are different.

(f) Different Diagram IDs

This reason is always given when Statemachine, Activity, Sequence, and Communication Diagrams are drawn, so that they can be selected from the working

Project or the importing Project.

(g) Same Name but Different Models

This reason is given when a user creates the same Models with the same name in the same Namespace.

c. Type

In this column, Element Types are displayed.

d. Namespace in the Working Project/Namespace in the Importing Project

In this column, the Namespaces of Elements are displayed. The Namespace of the topmost Element is empty.

e. Name in the Working Project／Name in the Importing Project

In this column, the Names of Elements are displayed. If the Element has no Name, the column is empty.

19. 3. Restrictions

- It is not possible to merge the contents of Sequence Diagrams, Communication Diagrams, Statemachine Diagrams, Activity Diagrams, Flowcharts, Data Flow Diagrams, CRUDs and Mindmaps. Please select either the working Diagram or the importing Diagram.
- Sequence Diagrams, Communication Diagrams, Statemachine Diagrams, Activity Diagrams, Flowcharts, Data Flow Diagrams, CRUDs and Mindmaps are always displayed in the Conflict Dialog even if there is no change.

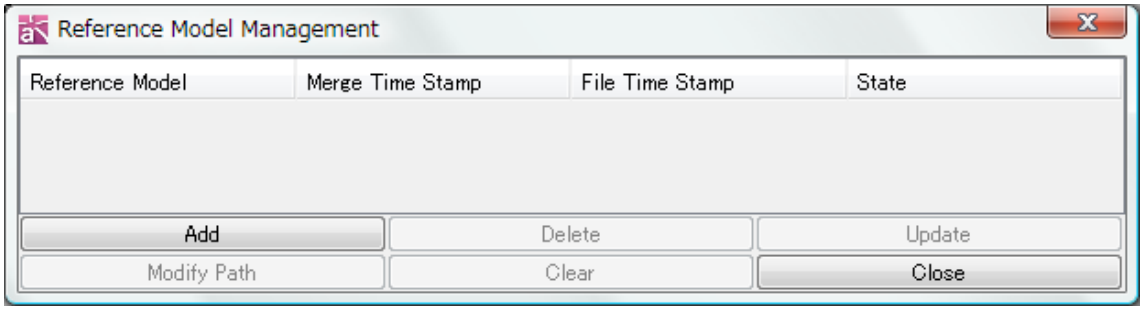
20. Reference Model Management [P]

Projects can be imported into current Project as read-only. This option is very useful for a team development to work on shared projects.

20. 1. Adding Reference Model

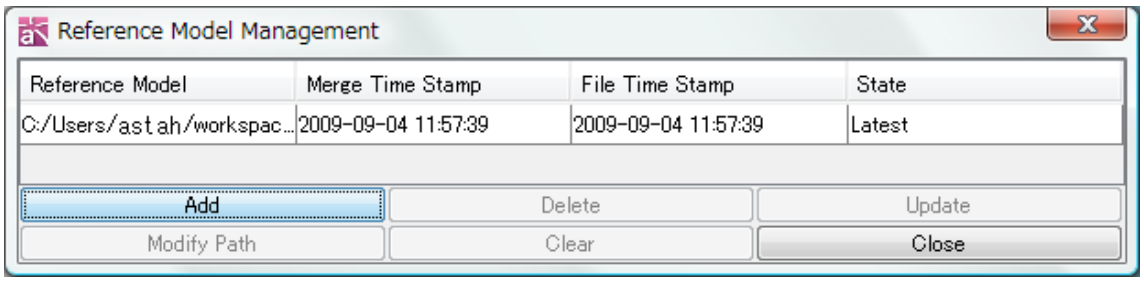
(1) Select [File]-[Reference Model Management] from Main Menu.

(2) [Reference Model Management] dialog comes up, click [Add].

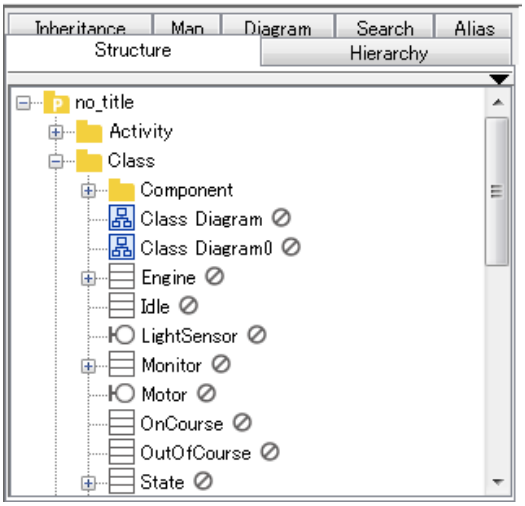


(3) Select the Path Type (Absolute Path or Relative Path) then select the project file to import.

(4) It adds the project file.



Reference models have an Icon in the Structure Tree view and cannot be edited.



20. 2. Updating Reference Model

(1) Select the Reference Model to update then click [Update] button.
(2) Once update of the reference model completes, both [Merge Time Stamp] and [File Time Stamp] fields are updated to the latest information.

Updating Reference Models is available from Command Line.

21. Compare Projects [P]

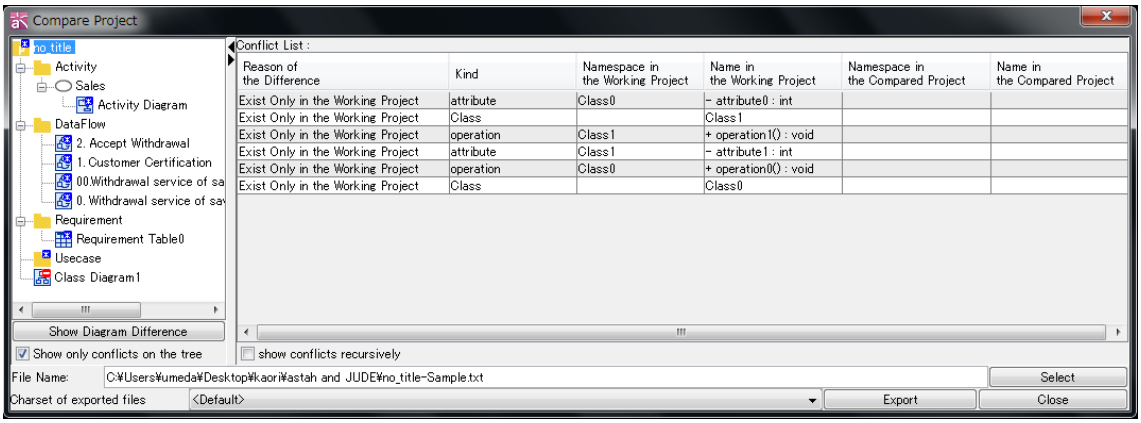
A Project can be compared with the working Project as follows:

a. Click on [File]-[Compare Project].

b. Select the target Project and click on [Open].

c. The “Compare Project” dialog is displayed.

21. 1. Compare Project



21. 1. 1. Conflict Tree

The differences between the working Project and the compared Project are displayed in the Conflict Tree.

Icons	Description
	Models that exist only in the working Project
	Models that exist only in the compared Project
	Models that exist both Projects

a. Show Only Conflicts in the Tree

Check this option to display only the conflicts in the Conflict Tree.

Default [ON]

21. 1. 2. Setting the Target Range

a. Show Conflicts Recursively

Check this option to display the conflicts of Elements that are selected in the Conflict Tree, in the Conflict List. Elements in the subdirectory are included.

Default [OFF]

21. 1. 3. Conflict List

The Conflict list displays a list of the conflicts and details of selected elements.
The prioritized Model (working or importing) for conflicts can be selected for each element.

a. Reason of the Difference

In this column, types of conflicts between the working Project and the importing Project are displayed.

(a) Exist Only in the Working Project
The element exists only in the working Project but not in the compared Project.

(b) Exist Only in the Importing Project
The element exists only in the compared Project but not in the working Project.

(c) Different Namespaces
The element exists in both the working Project and the compared Project, but their namespaces are different.

(d) Different Diagram
The diagram exists in both the working Project and the compared Project, but models drawn in the diagram are different.

(e) Different Relation
The element exists in both the working Project and the compared Project, but either one or both Ends of the elements (Association or Link) are different.

(f) Same Diagram
This reason is given when Statemachine, Activity, Sequence, and Communication Diagrams, Flowcharts, Data Flow Diagrams, CRUDs, Mindmaps are drawn.

(g) Same Name but Different Models
This reason is given when a user creates the same Models with the same name in the same Namespace.

b. Type

In this column, Element Types are displayed.

c. Namespace in the Working Project/Namespace in the Compared Project

In this column, the Namespaces of Elements are displayed. The Namespace of the topmost Element is empty.

d. Name in the Working Project／Name in the Compared Project

In this column, the Names of Elements are displayed. If the Element has no Name, the column is empty.

21. 1. 4. Export Result of Comparison

The result of the project comparison can be exported into a text file.

a. Click [Select] in the Compare Project dialog, and specify the exported file.

b. Click [Export] to export the result of the project comparison.

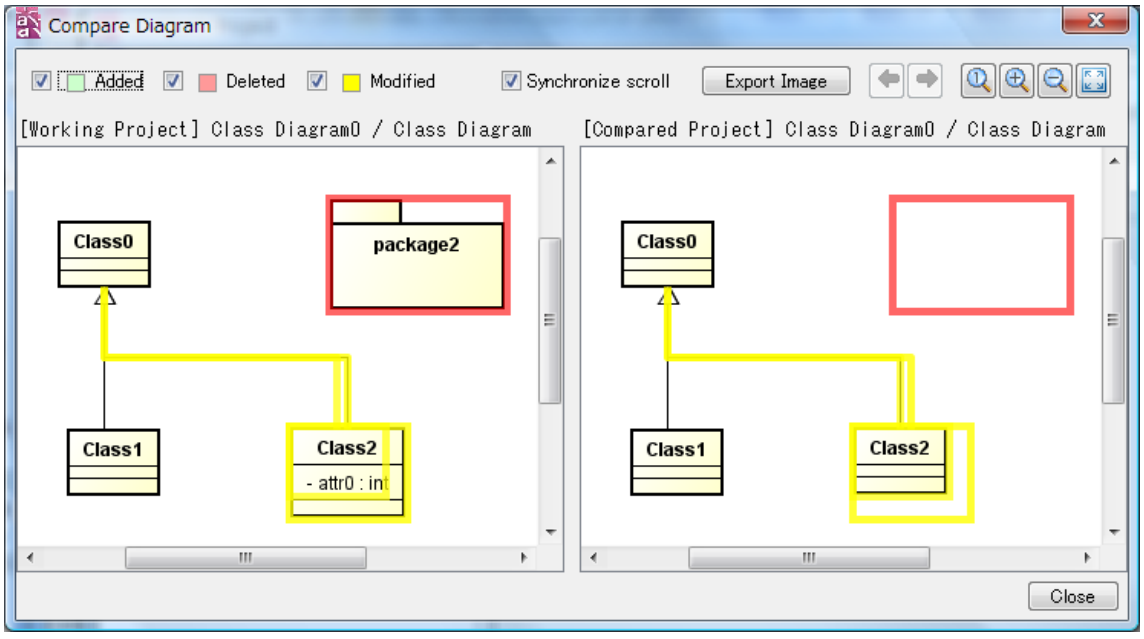
Output Items	Description
Result	-: Models that exist only in the working Project +: Models that exist only in the compared Project *: Models exist in the both Projects.
Model Type	Type of Diagrams and Models
Namespace and Name of Model	Model's Namespace and Name

Diagrams: All Diagrams

Models: Package, Model, SubSystem, Class, Interface, Control, Boundary, Entity, Actor, UseCase, Component, Node, External Entity, Data Store, ER Model, ER Domain, ER Datatype, ER Entity, Requirement and TestCase

21. 1. 5. Compare Diagram

Compare diagram elements between the working Project and the compared Project. Double-Click the selected diagram in the conflict tree of the Compare Project Dialog or the Flexible Merge Dialog. Or, select the diagram in the conflict tree and click [Show Diagram Difference] button.



21.Compare Projects [P]

Output Items	Description
Result	-: Models that exist only in the working Project +: Models that exist only in the compared Project *: Models exist in the both Projects.
Model Type	Type of Diagrams and Models
Namespace and Name of Model	Model's Namespace and Name

Diagrams: All Diagrams except CRUD
Models : All Diagram Elements

(a) Added
Display green frames over diagram elements which exist in the compared diagram only.

(b) Deleted
Display red frames over diagram elements which exist in the working diagram elements.

(c) Modified
Display yellow frames over diagram elements which exist in the both diagrams and are modified.

(d) Export Image
Export the compared result into a PNG/JPG image file.
Right, left or both diagrams can be selected to export.

(e) Previous Diagram Difference
Display the previous diagram to compare.

(f) Next Diagram Difference
Display the next diagram to compare.

(g) Zoom to Default Display the compared result with 100%.

(h) Zoom In Zoom in the compared result.

(i) Zoom Out Zoom out the compared result.

(j) Fit in Window Display the overview of the compared result.

(k) Synchronize Scroll
Synchronize scroll of the working Project and the compared Project.

Comparing projects is also available from Command Line.

22. Drag & Drop of Files

Options can be selected by drag and drop of image files (png, jpeg, jpg) or other files onto Astah.

(1) Insert the image file

Insert as an image by drag and drop of image files onto Diagram Editor.

(2) Create a hyperlink of the file for the diagram

Create a hyperlink of the file by drag and drop of image files or other files onto Diagram Editor.

(3) Create a new text hyperlink of the file in the Diagram

Create a new text with hyperlink by drag and drop of image files or other files onto Diagram Editor.

(4) Insert the image file in a new topic (Mind Map Only)

Create a new topic with the image file by drag and drop of image files onto Diagram Editor.

(5) Create a hyperlink of the file for a new topic (Mind Map Only)

Create a new topic and add a hyperlink of the file by drag and drop of image files or other files onto Diagram Editor.

(6) Create a hyperlink for a topic (Mind Map Only)

Add a hyperlink of the file to the selected topic by drag and drop of image files or other files onto a topic.

(7) Add or replace an image in the topic

Add as a topic image or replace the image for the topic by drag and drop of image files on topics.

(8) Insert the Clipboard image

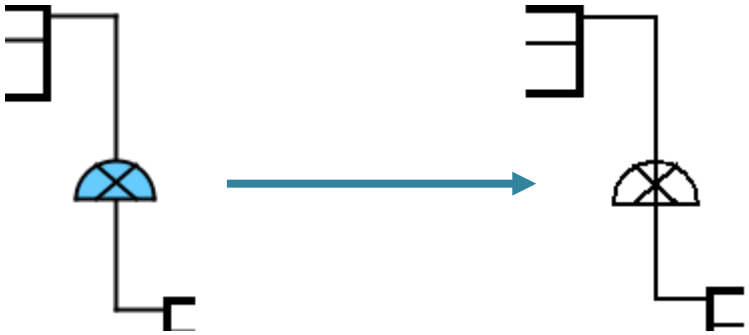
Insert as image to paste Clipboard images on Diagram Editor.

23. EMF (Enhanced Meta File) [Not in Mac]

Elements in diagrams can be pasted to Excel and Word files in EMF format as follows:
a. Select the target elements in the Diagram and copy to the Clipboard using the popup menu ([Copy to Clipboard] - [EMF]) of the elements.
b. Open an Excel or a Word file and paste the Elements.

Note) Problems may occur after pasting elements to Excel or Word are ungrouped. Our technical support won't cover these issues.

By pasting Subtypes (ER Diagrams) as EMF format onto Excel or Word, it will lose the color, also the relationship line will be appear over the Subsystem Icon.

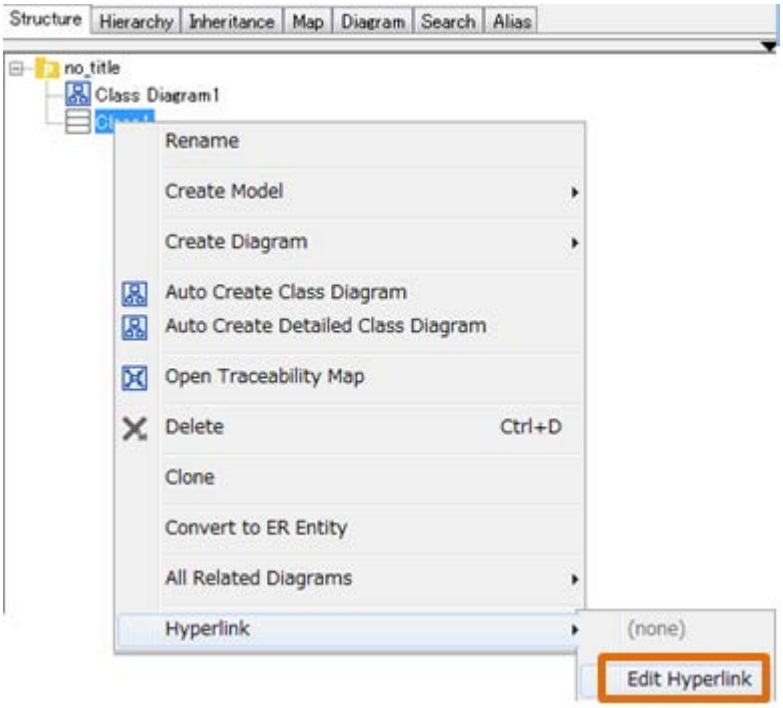


24. Hyperlinks

24. 1. Editing Hyperlinks

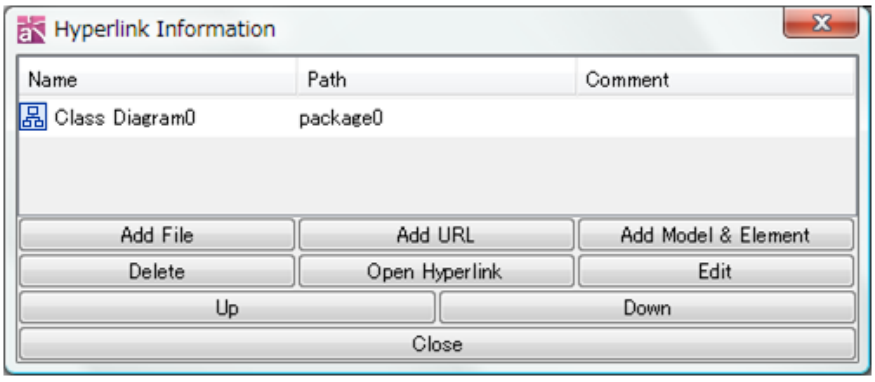
i) Using the Pop-up Menu in the Project View.

Right-click on the target model and select [Hyperlink]-[Edit Hyperlink] in the [Structure Tree].



ii) Using the Pop-up Menu of Diagram Elements.

Right-click on the target diagram element and select [Hyperlink]-[Edit Hyperlink].

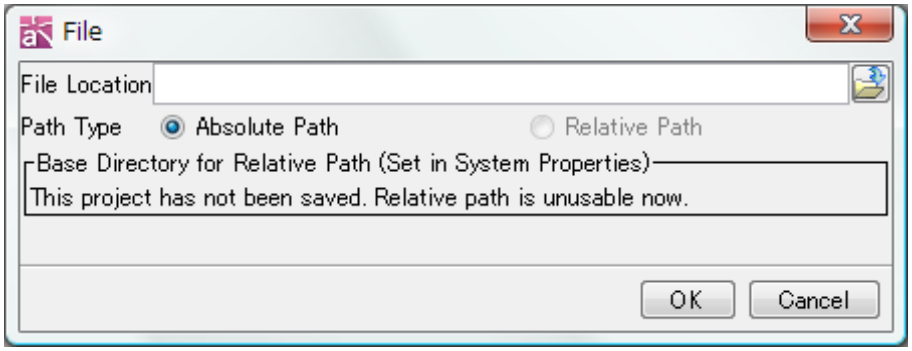


iii) Using the Property View

24. 1. 1. Add File

a. To add a file, click [Add File] in the Hyperlink Information Dialog.

b. Select either Relative Path or Absolute Path and select the file in the File Dialog.

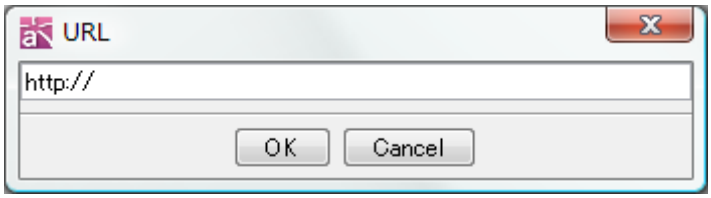


c. When [Set Relative Path based on the project directory] in [System Properties]-[Hyperlink] is checked, Relative Path cannot be selected if the Project is not stored. -> Please refer to the System Properties - File section.

24. 1. 2. Add URL

a. Click [Add URL] in the Hyperlink Information Dialog.

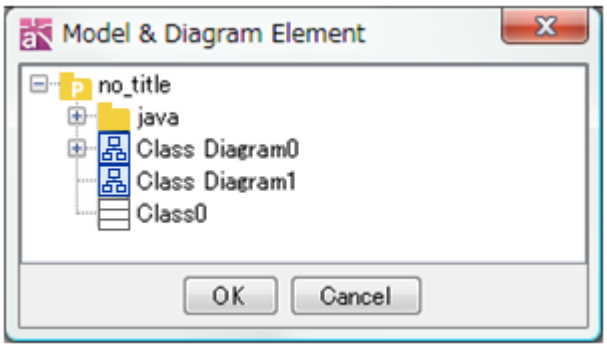
b. Input the URL in the URL Dialog.



24. 1. 3. Add Model & Element

a. Click [Add Model& Element] in the Hyperlink Information Dialog.

b. Select the target Diagram Element or Model in the Model & Diagram Element Dialog.



24. 1. 4. Delete

Select the target Hyperlinks in the Hyperlink Information Dialog and click [Delete].

24. 1. 5. Open Hyperlink

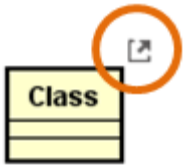
Select the target Hyperlink in the Hyperlink Information Dialog and click [Open Hyperlink].

24. 1. 6. Up, Down

Select the target Hyperlink in the Hyperlink Information Dialog and click [Up] or [Down].

24. 2. Opening Hyperlinks

i) Using the hyperlink icon on the Diagram Editor.



Double-click the hyperlink icon on the Diagram Editor.

ii) Using the Pop-up Menu in the Project View.

Select [Hyperlink] from the Pop-up Menu.

iii) Using the Pop-up Menu of Diagram Elements.

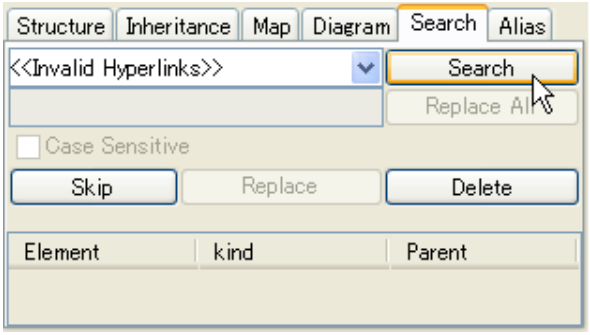
Select [Hyperlink] from the Pop-up Menu.

24. 3. Search Invalid Hyperlinks

It searches for invalid Hyperlinks to files. Hyperlinks to URL, Model Elements and Models will not be included.

(1) Open the [Search] Tab in the Project View.

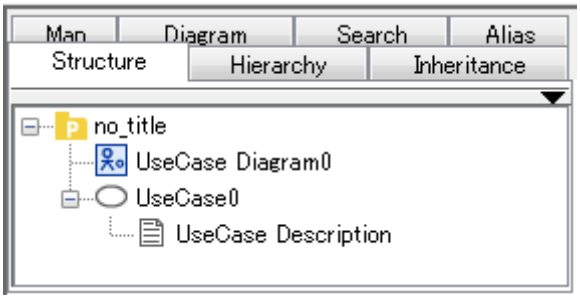
(2) Select [<<Invalid Hyperlinks>>] then press [Search].



(3) Results appear on the List.

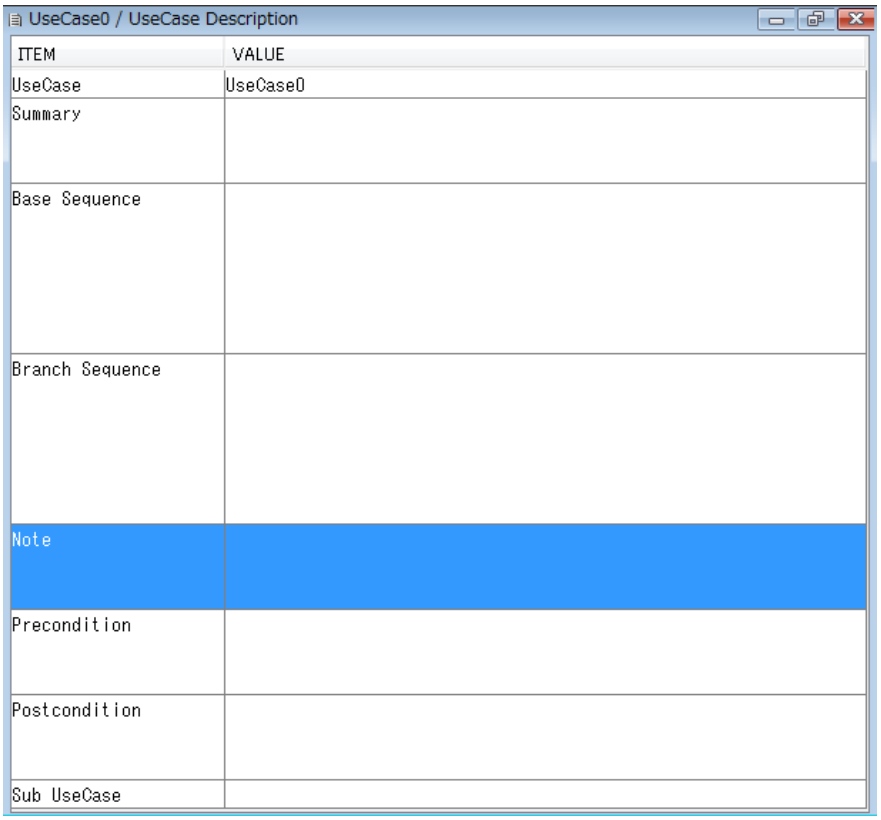
25. UseCase Description

This View is used to write UseCase Descriptions. A single “UseCase Description” can be created for each UseCase. UseCase Descriptions are displayed under UseCase in the Structure Tree when they are created.



25. 1. Opening UseCase Description

To open a UseCase Description, press [Open UseCase Description] in the [Structure Tree] in the [Project View], or right-click on the target UseCase and select [Open UseCase Description].



25. 2. UseCase Description Items

The default UseCase Description Items are listed below.

Item	Function	Edit
UseCase	Display the Name of the UseCase.	Auto-Display
Summary	Input Remarks.	Editable
Actor	Display Associated Actors or Extended UseCases.	Auto-Display
Precondition	Input Preconditions.	Editable
Postcondition	Input Postconditions.	Editable
Base sequence	Input Base Sequences.	Editable
Branch sequence	Input Branch Sequences.	Editable
Exception sequence	Input Exception Sequences.	Editable
Sub UseCase	Display the included UseCases.	Auto-Display
Note	Input Notes.	Editable

Note) UseCase Description Items can be edited, added and deleted by using UseCase Description Template.

26. Exporting Image

Diagram images can be exported to image files. The diagram name is set to the file name. To use the export image function by command line, please refer to Astah Commandline tool.

26. 1. Save Diagram as PNG

Save the diagram in the Diagram Editor by PNG format.

26. 2. Save Multiple Diagrams as PNG

Save the selected diagrams in the Multi Diagram Chooser by PNG format.

26. 3. Save Diagram as JPEG

Save the diagram in the Diagram Editor by JPEG format.

26. 4. Save Multiple Diagrams as JPEG

Save the selected diagrams in the Multi Diagram Chooser by JPEG format.

26. 5. Save Diagram as EMF

Save the diagram in the Diagram Editor by EMF format.

26. 6. Save Multiple Diagrams as EMF

Save the selected diagrams in the Multi Diagram Chooser by EMF format.

26. 7. Save Diagram as SVG

Save the diagram in the Diagram Editor by SVG format.

26. 8. Save Multiple Diagrams as SVG

Save the selected diagrams in the Multi Diagram Chooser by SVG format

27. Command Line Tool

Command Line Tool which is included in Astah install folder enables you to export images, update reference models and compare projects from Command Line.

27. 1. Exporting image files

By using 'image' action with astah-commandw.exe (for Windows) or astah-command.sh (For Mac or Linux), you can export diagram images as PNG, JPEG or EMF. If you do not specify the image format, it exports in PNG format automatically.

E.g.)

Windows

Export all the diagrams in the C:¥input¥hoge.asta.file to C:¥output in PNG

```
astah-commandw.exe -image all -f C:¥input¥hoge.asta -o C:¥output
```

Mac / Linux

Export all the diagrams in ~/input/hoge.asta file to ~/output in JPEG

```
astah-command.sh -image all -f ~/input/hoge.asta -o ~/output -t jpg
```

Option	Description	Kind	Note
-image	Export Action	all	All diagrams
		cl	Class Diagram
		uc	UseCase Diagram
		ucd	UseCase Description
		sc	Statemachine Diagram
		act	Activity Diagram
		seq	Sequence Diagram
		com	Communication Diagram
		cmp	Component Diagram
		dep	Deployment Diagram
		cs	Composite Structure Diagram
		fc	Flowchart
		dfd	DataFlow Diagram
		er	ER Diagram
		crud	CRUD
		mm	Mind Map

		rqd	Requirement Diagram
		rqt	Requirement Table
		tm	Traceability Map
		ignore -ref	Exclude reference projects
-dpi,--dpi *[image dpi]*	Resolution (dpi)	-	- Specify the dpi of image Default is 96 in the System Properties. dpi 72 is the same size as it is displayed in the Diagram Editor.
-f,--file *[target file]*	Target file		
-id,--dgm_id *[ids for target diagrams]*	Set ID		- Specify Diagram's IDs with a space between them. If you specify the ID, file names will be the ID's instead of diagram names.
-o,--output *[output]*	Base folder where this image is exported to	-	Folder where the image is exported to is "base folder and project file name
-t,--type *[image type]*	Format of images	png	PNG
		jpg	JPEG
		emf	EMF(Enhanced Metafile)

27. 2. Total Merge Utility

It updates Reference models by using Command line, astah-runw,exe for Windows and astah-run.sh for Mac and Linux.

27. 2. 1. Updates Certain Reference Models based on Time Stamp

By using "update-all" with specified directory, you are able to update all the .asta files which are stored in the specified directory and are not updated yet in Astah. The command line tool checks whether they needed to be updated or not by the time stamp that the file contains. However by using "use-builtin-timestamp" or "ubt", you can find .asta files to be updated based on the timestamp which the project has.

Examples:

Windows: updating based on file timestamp

astah-runw.exe "C:¥workspace¥astah" update-all

Mac/ Linux: updating based on project's time stamp

astah-run.sh "~/workspace/astah" update-all use-builtin-timestamp

astah-run.sh “~/workspace/astah” update-all ubt

Note)

- It exports log files as yyyyMMdd_HHmm_astah_convert_command.log in the directory

27. 2. 2. Update all Reference Models

Use following commands to update all the reference models in all *.asta files inside the selected directory.

For Windows

astah-runw.exe “C:¥workspace¥astah” update-all-force

Note)

- It exports log files as yyyyMMdd_HHmm_astah_convert_command.log in the directory

27. 3. Compare Projects [P]

You can compare two different files by using astah-commandw.exe for Windows, astah-command.sh for Mac/Linux from Command Line. Use –diff and give two .asta files that you’d like to compare.

Examples:

Windows:

astah-commandw.exe -diff base.asta ref.asta

Mac/ Linux: updating based on project’s time stamp

astah-command.sh -diff base.asta ref.asta

27. 4. System Requirements

Running this command line tool requires you to have an environment that runs Astah. If you use a large size of project, you may need to adjust the JavaVM memory option. Please set the stack size in [Tool] - [System Properties] - [File] - [Stack size when creating/importing a project file (1 to 64MB)], and the initial/maximum heap size in the following files as below.

For Windows:

To change the property of astah-commandw.exe, edit astah-commandw.l4j.ini, to change the property of astah-runw.exe, edit astah-runw.l4j.ini.

Initial Heap size: - Xms16m

* This means the initial heap size is 16Mbytes, so change the 16.

Maximum Heap Size: - Xmx384M

* This means the maximum heap size is 384Mbytes. So change the 384.

For Mac/Linux:

Modify the following in astah-command.sh or astah-run.sh.

Initial Heap size: INITIAL_HEAP_SIZE = 64m

* This means the initial heap size is 64Mbytes, so change the 64.

Maximum Heap Size: MAXIMUM_HEAP_SIZE=1024m

* This means the maximum heap size is 1024Mbytes. So change the 1024.

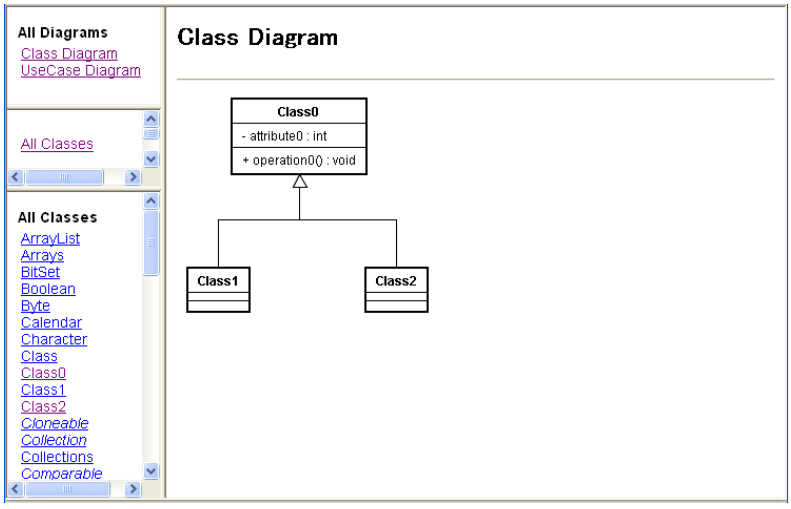
28. Exporting HTML

API Documentation (javadoc) of the opened Project can be generated in HTML format as follows:

a. Click [Tool]-[Export Html] in the Main Menu.

b. Select the target folder and click on [Select].

To display a diagram, click a link to the diagram. The detailed information can be displayed by clicking Classes.



29. XML Input & Output [P]

Projects can be input and output to and from XML files in XMI1.1 format for UML 1.4 models. This function is designed mainly to extract certain UML models created with Astah and tally them up through XML.

The XML input/output is available between Astah professional and other tools described on Astah Reference manual. Technical support is not provided for any issues occurred using XML created by any other tools.

An Astah-specific format is used for diagram information, Mind Maps and UML 2.x models and the information about the Astah-specific format is currently not available to the public.

About encoding rules:
Strings are encoded using java.net.URLEncoder partially. In order to decode them, use java.net.URLDecoder. Particularly the names of elements, labels of presentations, 2-byte characters in item definitions are encoded. Also the values of TaggedValue are encoded if TaggedValue's value includes information, in order to prevent from misreading.

29. 1. Inputting XML Project Files

Using this function, Project files in XML format can be opened and original Astah expressions in Diagrams can be restored. To use this function, go to [Tool] - [XML Input & Output] - [Open XML Project]

Limitations

- *XMI files that are exported by JUDE/Professional 3.0 or earlier versions cannot be inputted into the later versions.*
- *To export XMI files from files generated in JUDE/Professional 3.0 or earlier versions, load .jude files into Astah professional and export them as XMI files.*

29. 2. Outputting XML Project Files

Using this function, Project Information can be stored in XML format. The output file includes the original Astah expressions in Diagrams. To use this function, go to [Tool] - [XML Input & Output] - [Save as XML Project]

30. Exporting RTF

To export RTF, go to [Tool]-[Export RTF]

30. 1. RTF

1. Package List
2. Use Case List
3. Classifier List
4. Data Flow Diagram Model List
5. Requirement List
6. TestCase List
7. Diagrams
8. Use Case Description
9. Classes, Attributes, Operations etc.
10. Hierarchy structure of Activity Diagram
11. Property of Actions (Definition, TaggedValues etc.)

[Package List]

Overview

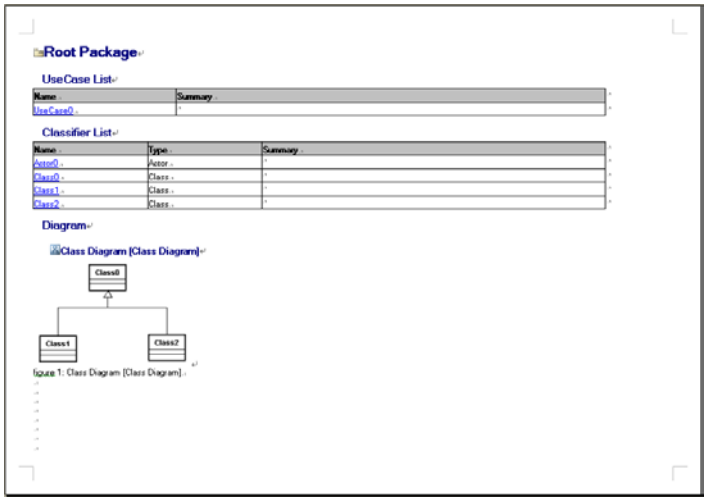
This file is a specification of the model created by UML definition.

Package List

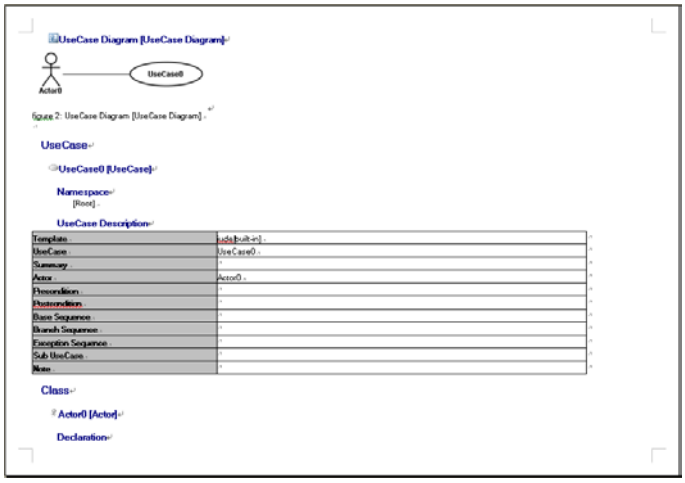
Full Name	Summary
Activity	
Class	
Class::Component	
CompositeStructure	
DataFlow	
Deployment	
Interaction	
Interaction::UML2.0 Notation::UserAccess	
Interaction::UML2.0 Notation::example	
MindMap	
State	
Usecase	

[Use Case List, Class List, Class Diagram]

30.Exporting RTF



[Use Case Diagram/Use Case Description]

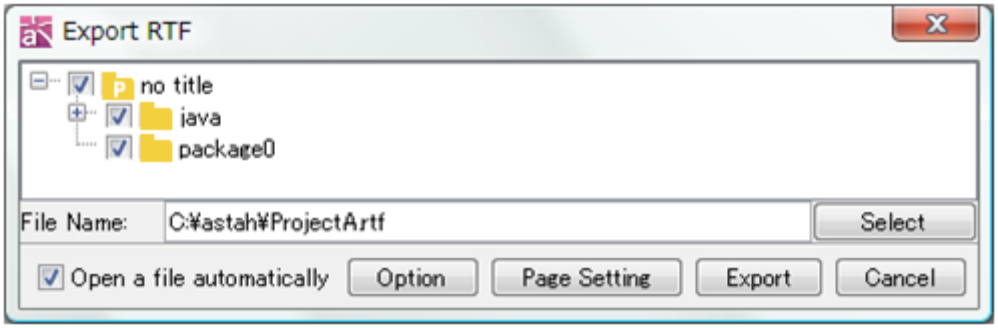


[Class]

30. 2. Export RTF

Set RTF in the Export RTF dialog.

30.Exporting RTF



1) Select Models in the Tree : Select Models to export into RTF in the Tree.

2) Select a file : Select a file to export the RTF.

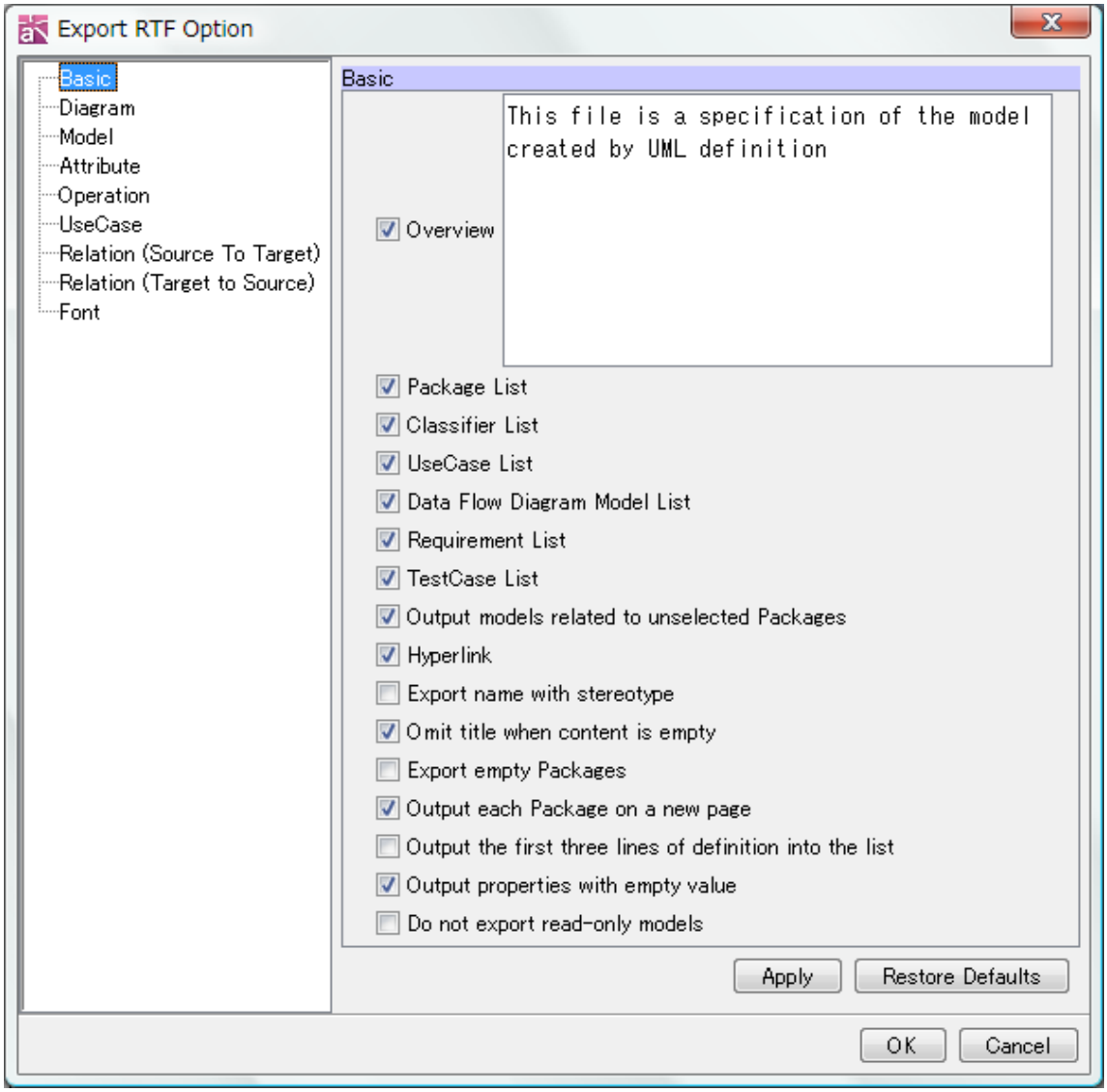
3) Open a file automatically : Check this option to open the RTF automatically.

4) Option : Click the Option button to set detailed setting of the RTF.

5) Page Setting : Click the Page Setting button to set the page setting.

6) Export : Click the Export button to export the RTF.

30. 3. Basic



1) Overview

This option can be used to output an overview.

Default [ON]

2) Package List

This option can be used to output a Package List.

Default [ON]

3) Classifier List

This option can be used to output Classifier Lists for each Package.

Default [ON]

4) Use Case Lists

This option can be used to output UseCase Lists for each Package.

Default [ON]

5) Data Flow Diagram Model List

This option can be used to output Data Flow Diagram List.

Default [ON]

6) Requirement List

This option can be used to output Requirement List.

Default [ON]

7) TestCase List

This option can be used to output TestCase List.

Default [ON]

8) Output Models related with unselected Packages

This option can be used to output Models related with unselected Packages.

Default [ON]

9) Hyperlink

This option can be used to output Hyperlinks.

Default [ON]

10) Export name with stereotype

This option can be used to output names with stereotype in the lists.

Default [OFF]

11) Omit title when content is empty

This option can be used not to output titles if the contents of the items are empty.

Default [ON]

12) Export empty package

This option can be used to output empty Packages.

Default [OFF]

13) Output each Package on new page

This option can be used to output a new page for each Package.

Default [ON]

14) Output the first three lines of definition into the list

This option can be used to output the first three lines of definition in the list.

Default [OFF]

15) Output properties with empty value

This option can be used to output properties with empty value.

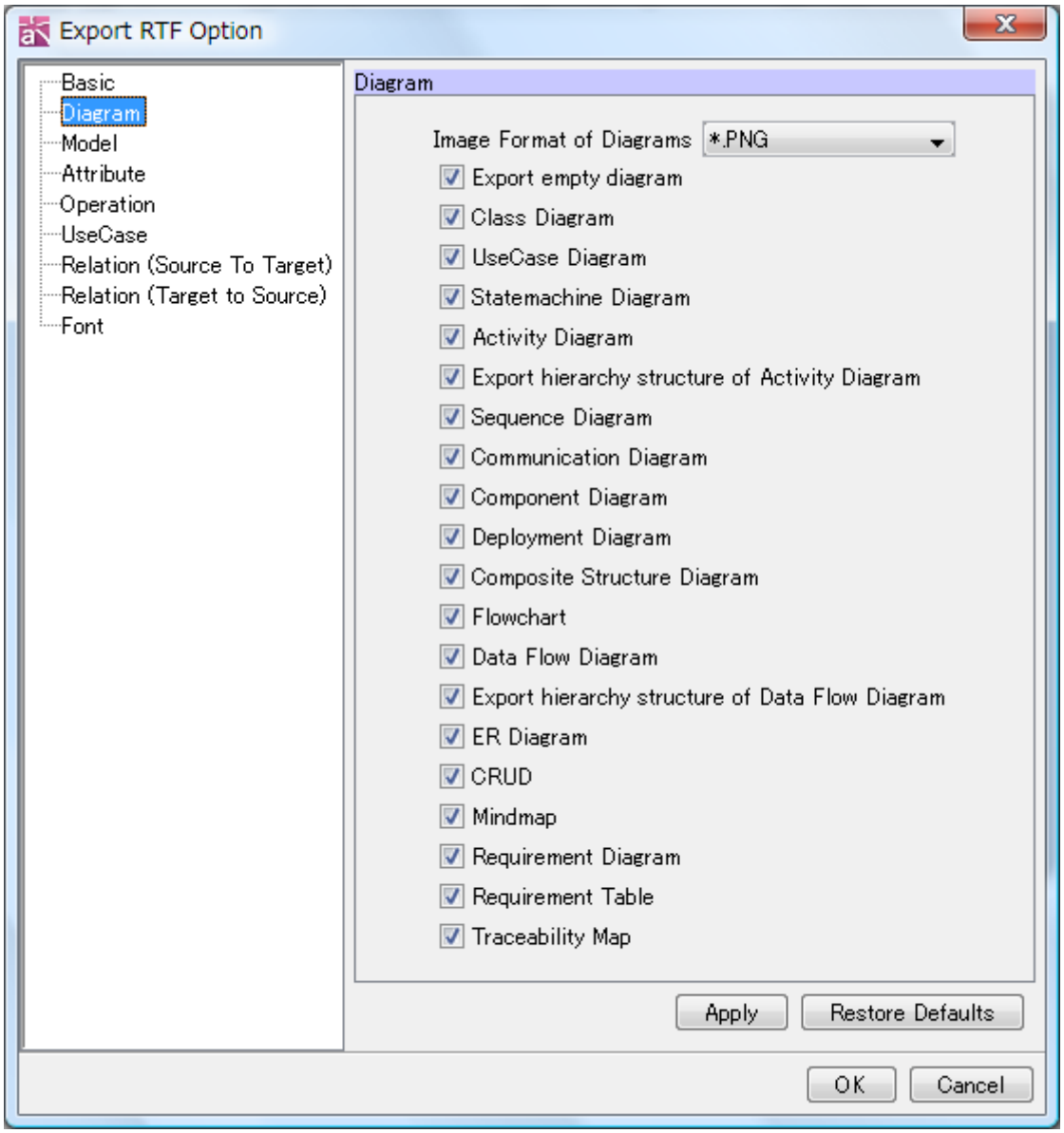
Default [ON]

16) Do not export read-only models

This option can be used to export RTF including read-only reference models.

Default [OFF]

30. 4. Diagram



1) **Image Format of Diagrams**

   Specify the format of diagram images.

2) **Export empty diagram**

   This option can be used to output empty diagrams. Default [ON]

3) **Class Diagram**

4) **UseCase Diagram**

5) **Statemachine Diagram**

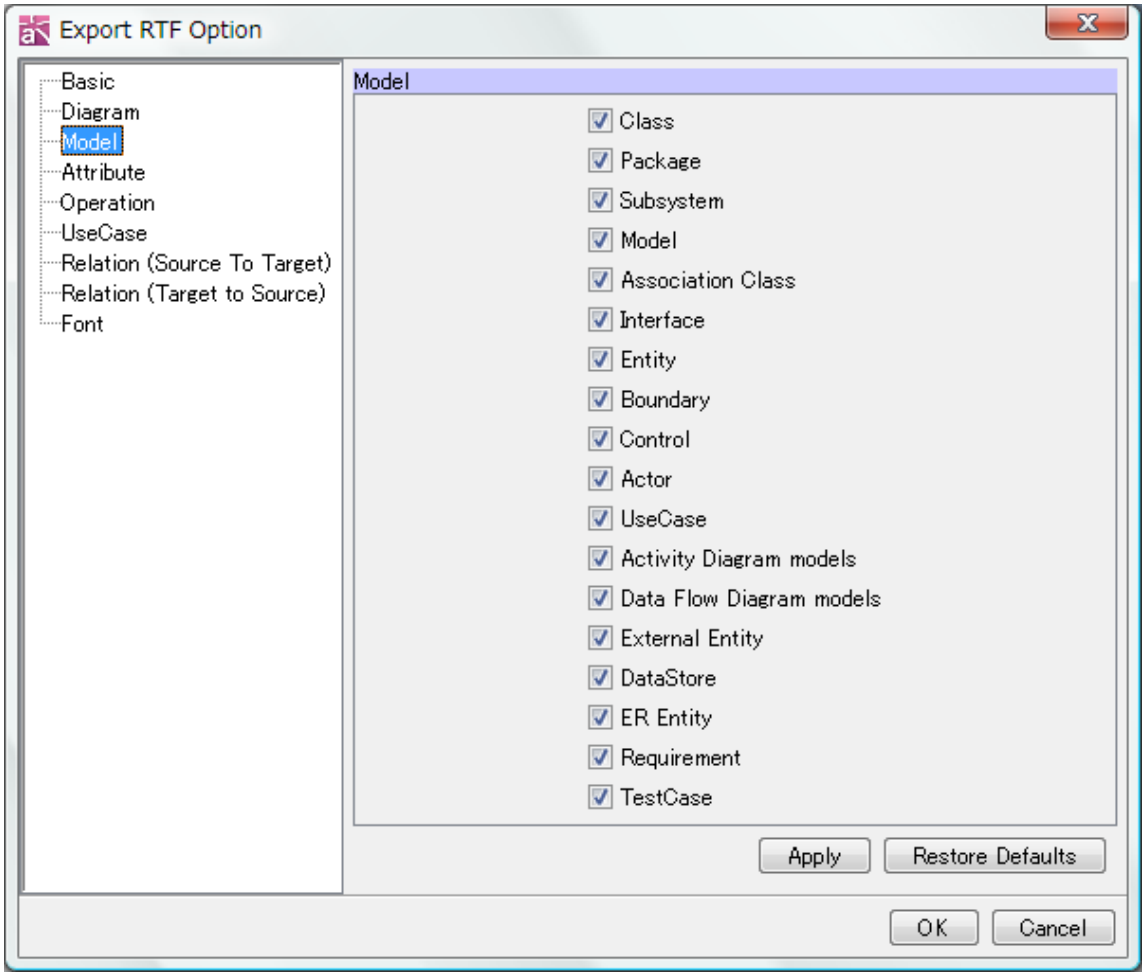
6) **Activity Diagram**

30.Exporting RTF

7) Export hierarchy structure of Activity Diagram
8) Sequence Diagram
9) Communication Diagram
10) Component Diagram
11) Deployment Diagram
12) Composite Structure Diagram
13) Flowchart
14) Data Flow Diagram (DFD)
15) Export hierarchy structure of Data Flow Diagram
16) ER Diagram
17) CRUD
18) Mindmap
19) Requirement Diagram
20) Requirement Table
21) Traceability Map

Default [ON]

30. 5. Model



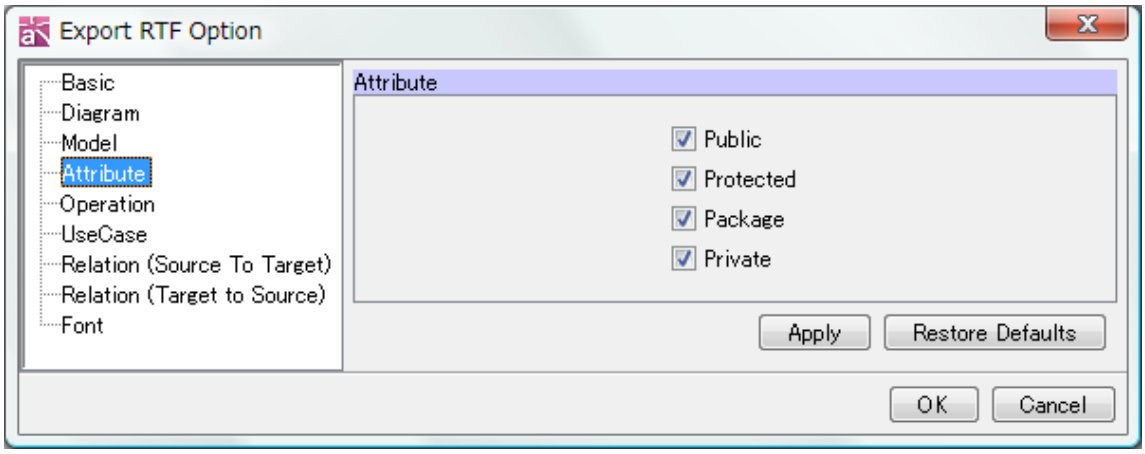
These options can be used to output Models. The following Models can be output.

Default [ON]

1) Class
2) Package
3) Subsystem
4) Model
5) Association Class
6) Interface
7) Entity
8) Boundary
9) Control
10) Actor
11) UseCase
12) Activity Diagram models

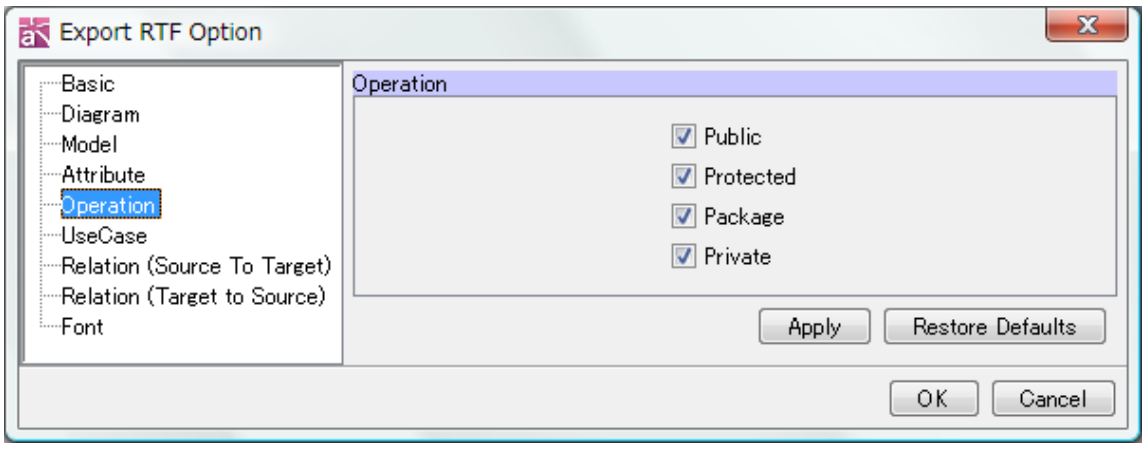
13) Data Flow Diagram models
14) External Entity
15) Data Store
16) ER Entity
17) Requirement
18) TestCase

30. 6. Attribute



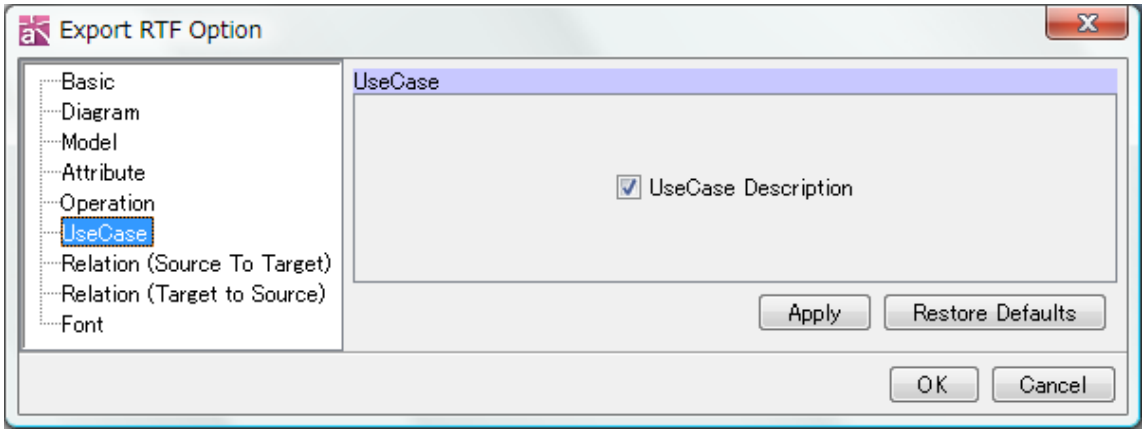
These options can be used to select Attribute visibilities. Default [ON]
Public, Protected, Package, Private

30. 7. Operation



This option can be used to select Operation visibilities. Default [ON]
Public, Protected, Package, Private

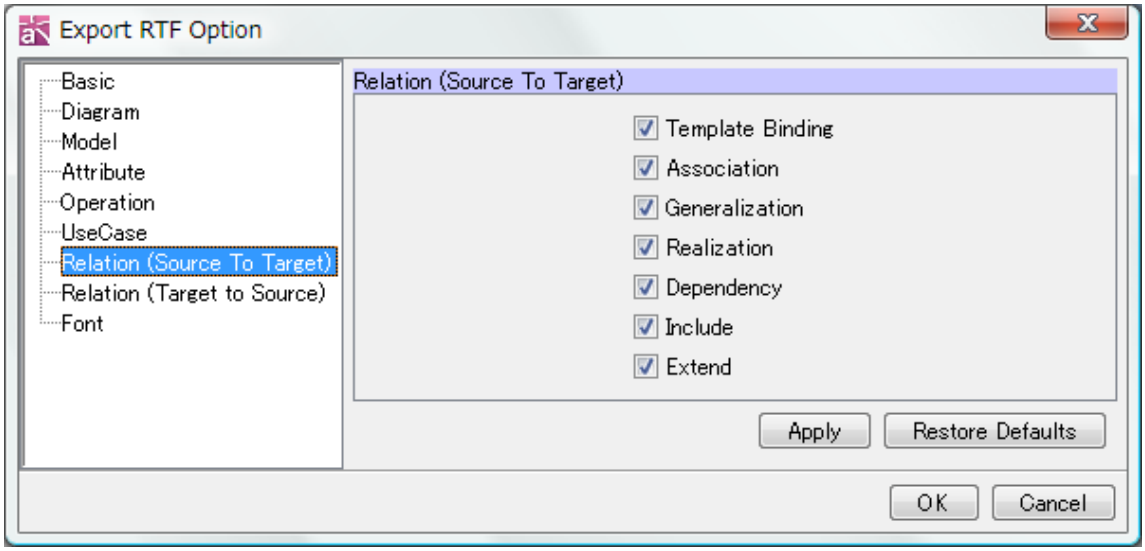
30. 8. UseCase



This option can be used to output UseCase Descriptions.

Default [ON]

30. 9. Relation (Source to Target)

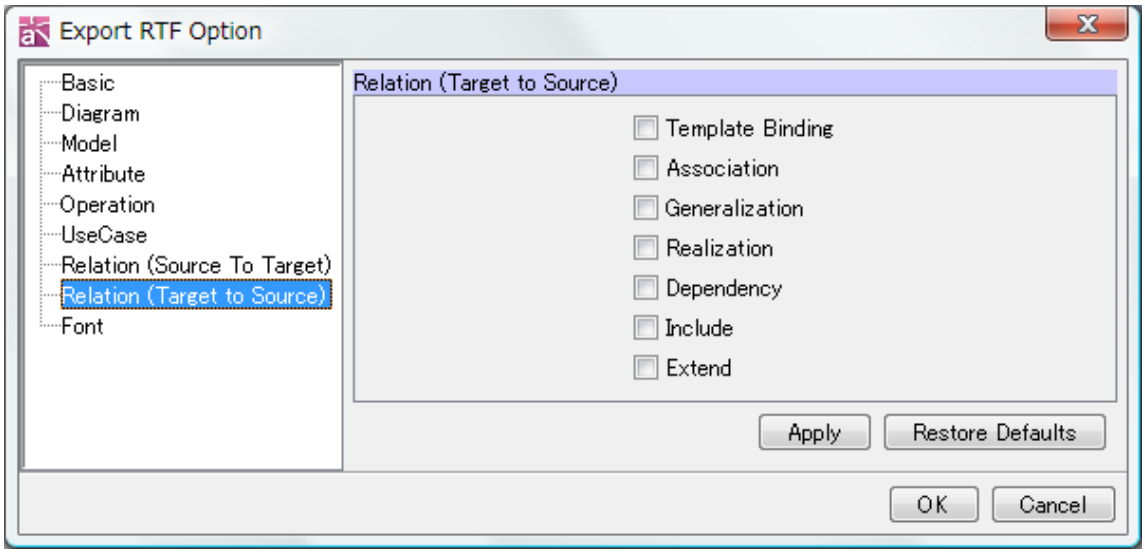


These options can be used to output relations from source to target.

Default [ON]

1) Template Binding
2) Association
3) Generalization
4) Realization
5) Dependency
6) Include
7) Extend

30. 10. Relations (Target to Source)

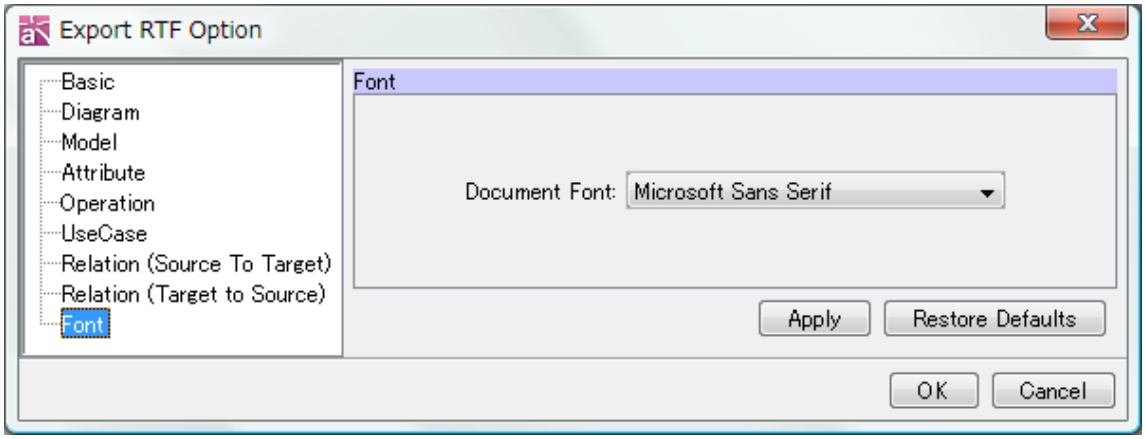


These options can be used to output relations from target to source.

Default [OFF]

1) Template Binding
2) Association
3) Generalization
4) Realization
5) Dependency
6) Include
7) Extend

30. 11. Font



This option is used to select a font to output a document.

31. Exporting Documents for Mind Map/Traceability Map

Export RTF for Mind Map/Traceability Map and export PowerPoint for Mind Map.
[P] Traceability Map is supported in Astah professional.

31. 1. Export RTF for Mind Map/Traceability Map

To export RTF of Mind Map/Traceability Map, go to the Main Menu.
Mindmap : [Tool]-[Mindmap]-[Export RTF]
Traceability Map : [Tool]-[Traceability Map]-[Export RTF]
[Example]

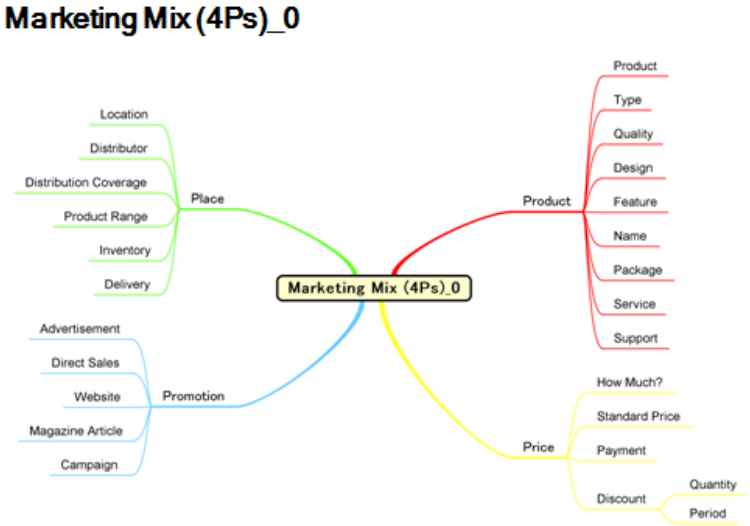


figure 1 : Marketing Mix (4Ps)0[Mindmap]

Product

Product

Type

Quality

Design

Feature

Name

Package

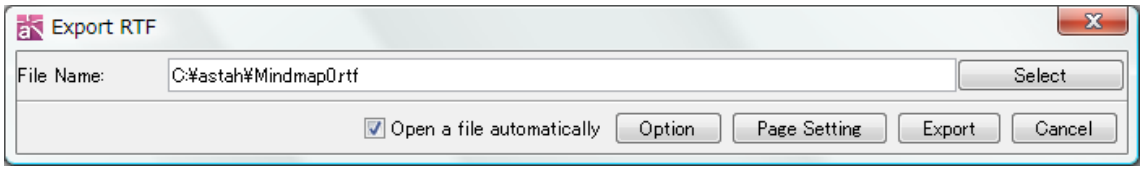
Service

Support

31.Exporting Documents for Mind Map/Traceability Map

31. 1. 1. Export RTF

Set Document Format in the Export RTF dialog.



1) Select a file

Select a file to export the RTF.

2) Open a file automatically

Check this option to open the RTF automatically.

3) Option

Click the Option button to set detailed setting of the RTF.

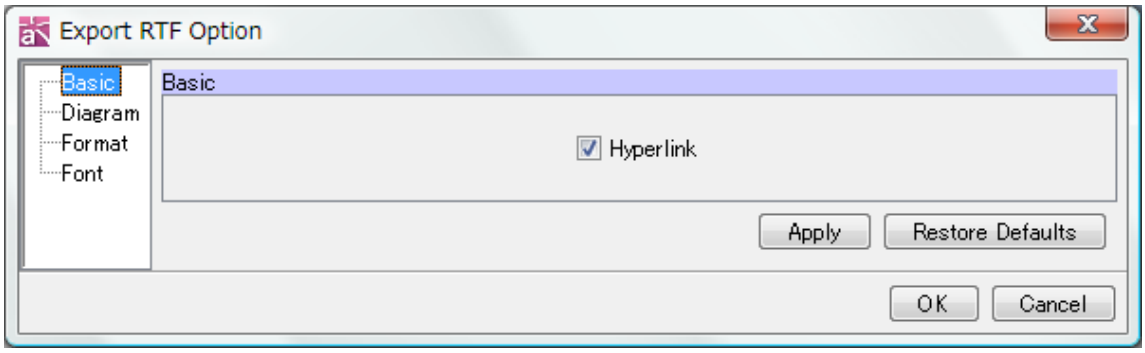
4) Page Setting

Click the Page Setting button to set the page setting.

5) Export

Click the Export button to export the RTF.

31. 1. 2. Basic

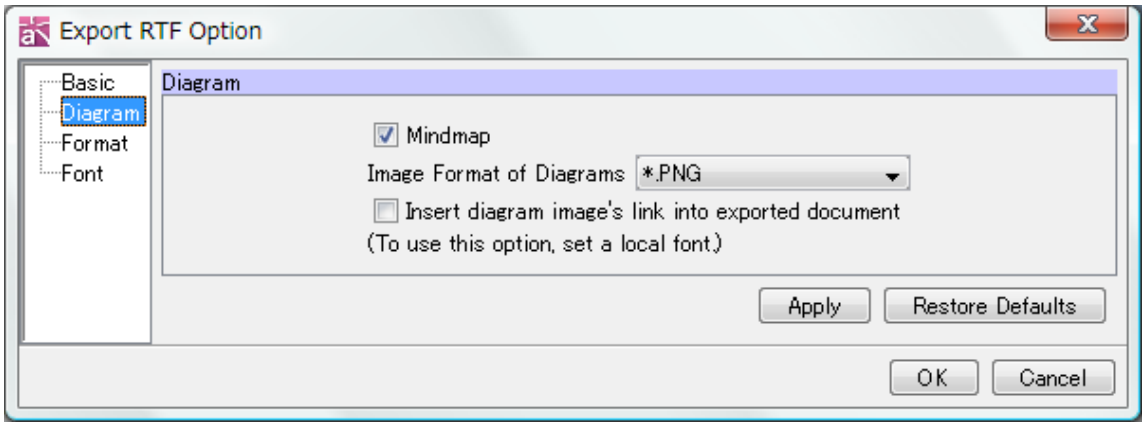


1) Hyperlink

Check this option on to include Hyperlink to exported Mind Map.

Default [ON]

31. 1. 3. Diagram



1) Mindmap

Check this option on to include Images of Mindmaps to exported RTF.

Default [ON]

2) Image Format of Diagrams

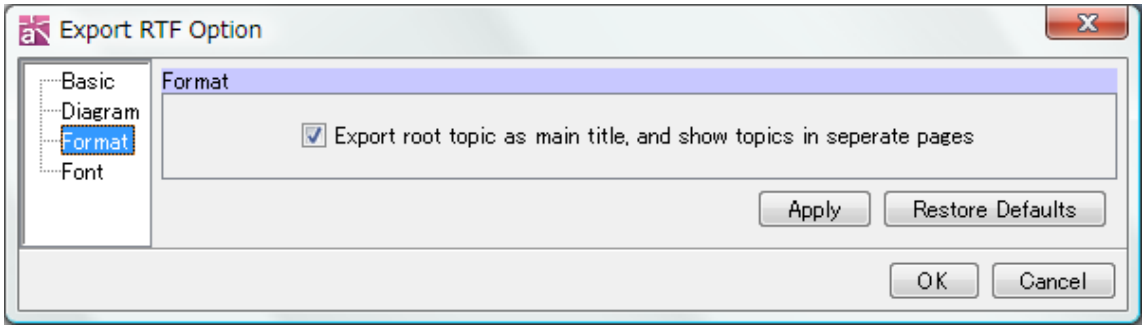
This option can be used to select an image format of Diagrams.

3) Insert diagram image's link in exported document (To use this option, seta local font)

Export the image of Mindmap to separate another file and the link of the file will be included in exported document.

Default [OFF]

31. 1. 4. Format

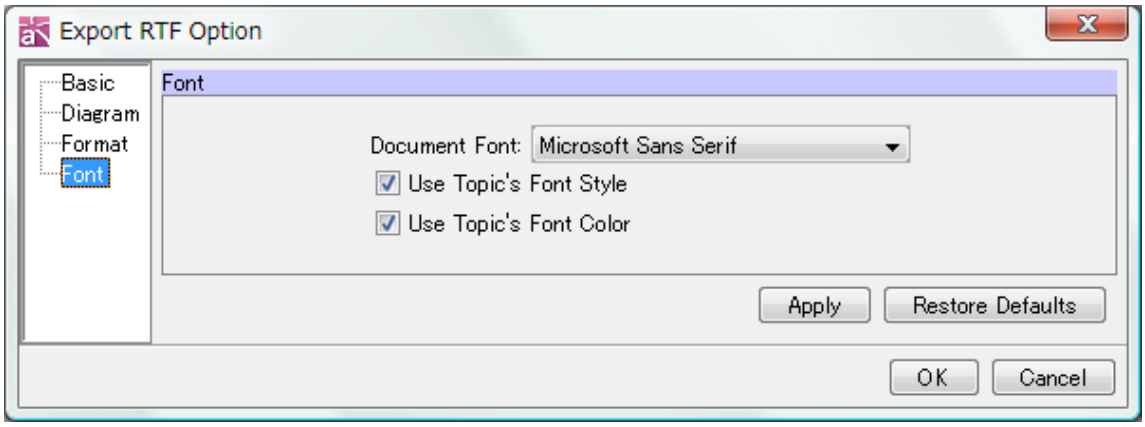


1) Export root topics as main title, and show topics in separate pages.

Check this option on to export root topic as main title, and then they will be shown as topics in separate pages on Microsoft PowerPoint.

Default [ON]

31. 1. 5. Font



1) Document Font Set the Font type for exported RTF.

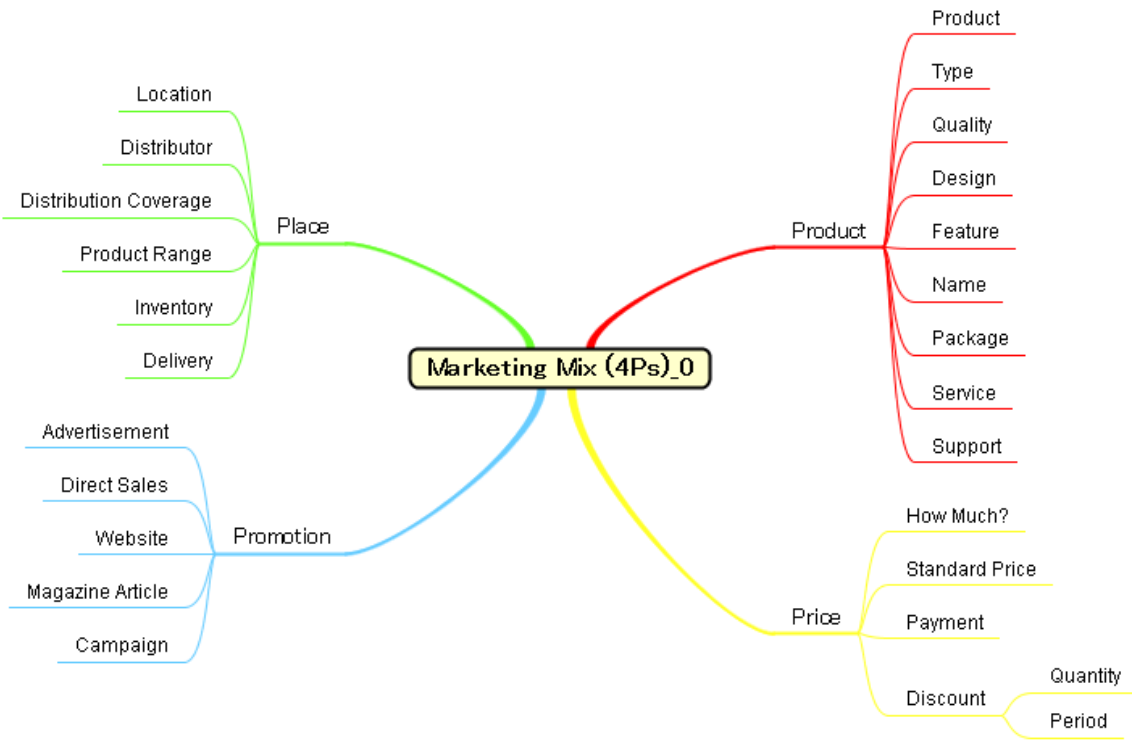
2) Use Topic's Font Style Export in Topic's font style. Default [ON]

3) Use Topic's Font Color Export using Topic's font color. Default [ON]

31. 2. Export PowerPoint for Mind Map

To export PowerPoint of Mind Map, go to [Tool] – [Mindmap] - [Export PowerPoint] in the Main Menu.

[Example]

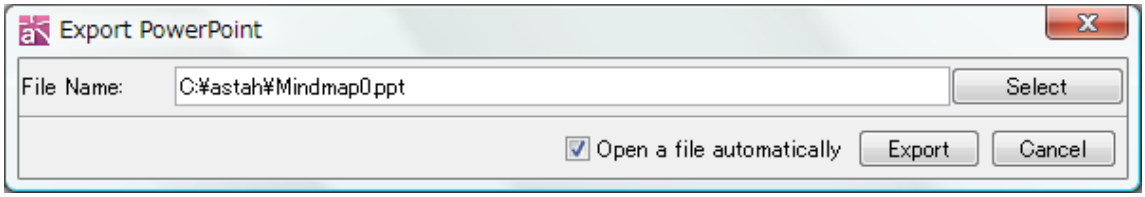


31.Exporting Documents for Mind Map/Traceability Map

[Export Mind Map to PowerPoint]

31. 2. 1. Export PowerPoint

Set Document Format in the Export PowerPoint dialog.



1) Select a file

Select a file to export the PowerPoint.

2) Open a file automatically

Check this option to open the PowerPoint automatically.

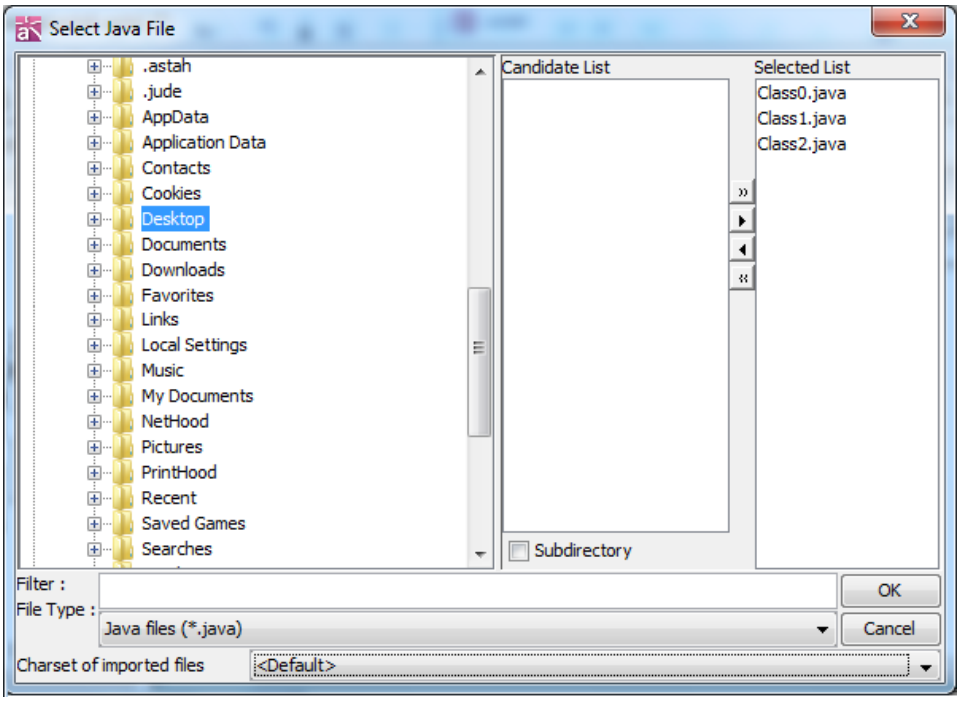
3) Export

Click the Export button to export the PowerPoint.

32. Importing Java Source Code

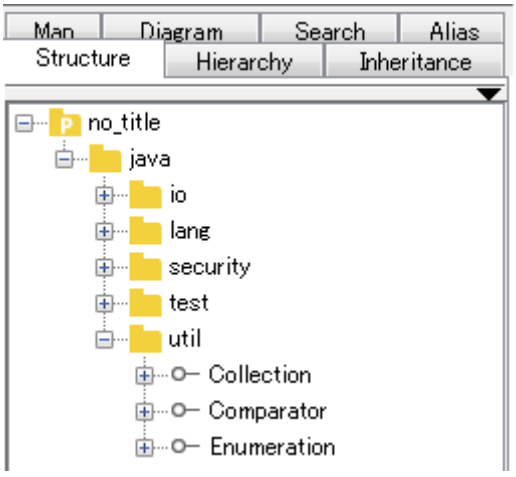
"Import Java" is used to import Classes and their parent Packages from .java files into the current Project. If the target .java file does not specify a Package, the Class (Model Element) is generated under a Package called "no-title".

To import .java files, select [Tool]-[Java]-[Import Java] to open the [Select Java File] Dialog.



Charset of imported files

Specify the charset to use upon on importing .java files. Default <Default>



Note) Diagrams cannot be generated by "Import Java". However, using the "Generate Class Diagrams" function, Class Diagrams can be created for the imported Packages.

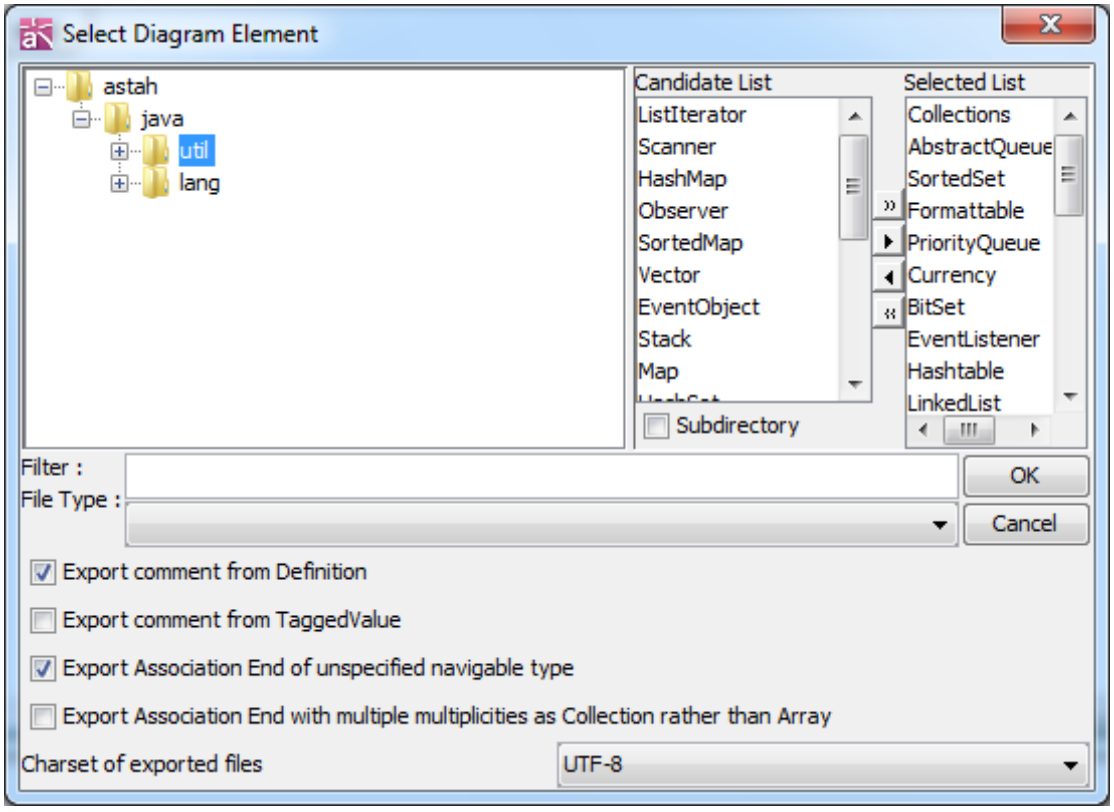
33. Exporting Java

"Export Java" is used to generate Java Skeleton Code from selected Diagram Elements. The Definitions of Classes and Operations are exported as Documentation Comments.

a. Select [Tool]-[Java]-[Export Java] in the Main Menu to open the "Select" Dialog.

b. Select the target folder in the "Select" Dialog.

c. Select the target Model, from which .java files are to be generated, in the "Select Diagram Element" Dialog.



d. Specify the comment options.

Export comment from Definition / Export comment from TaggedValue

e. Specify the way to export Association Ends

Export Association End of unspecified navigable type / Export Association End with multiple multiplicities as Collection rather than Array

f. Charset of exported files

Specify the charset to use upon on exporting .java files.

Default <UTF-8>

g. Click [OK] to export the .java files.

Note) If a .java file with the same name already exists, it will be overwritten.

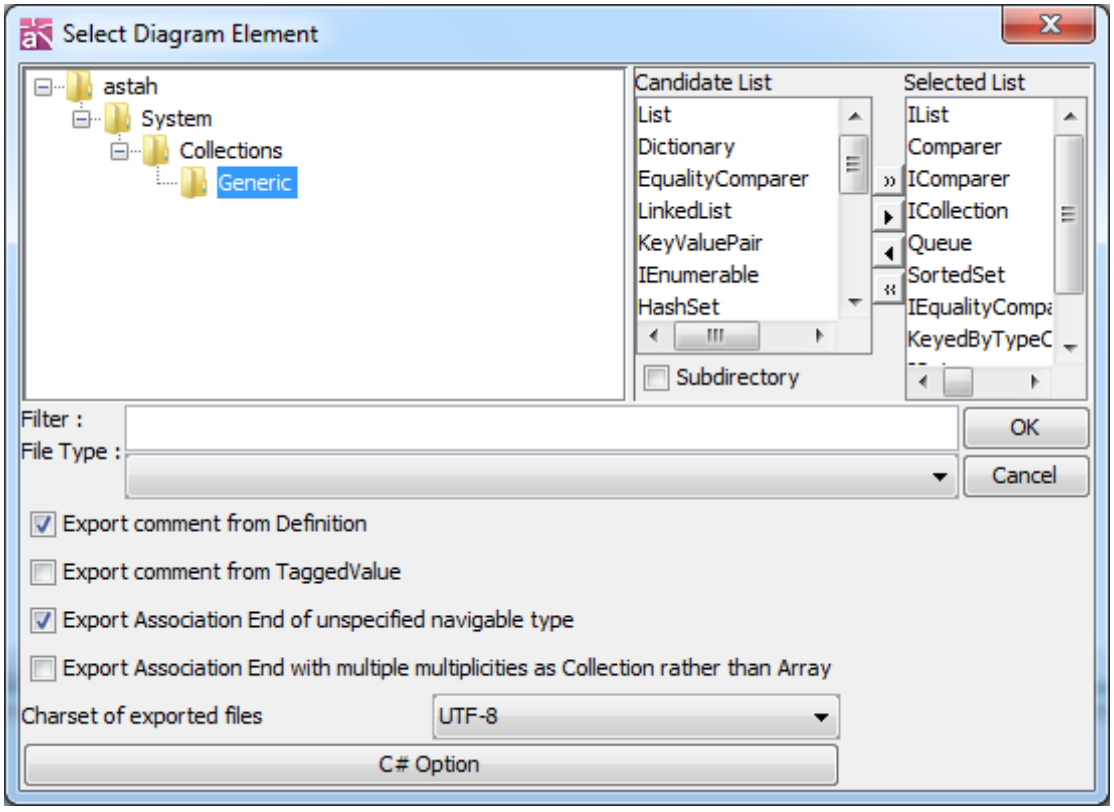
34. Exporting C#

"Export C#" is used to generate C# Skeleton Code from selected Diagram Elements. The Definitions of Classes and Operations are exported as Documentation Comments.

a. Select [Tool]-[C#]-[Export C#] in the Main Menu to open the "Select" Dialog.

b. Select the target folder in the "Select" Dialog.

c. Select the target Model, from which .cs files are to be generated, in the "Select Diagram Element" Dialog.



d. Specify the comment options.

Export comment from Definition / Export comment from TaggedValue

e. Specify the way to export Association Ends

Export Association End of unspecified navigable type / Export Association End with multiple multiplicities as Collection rather than Array

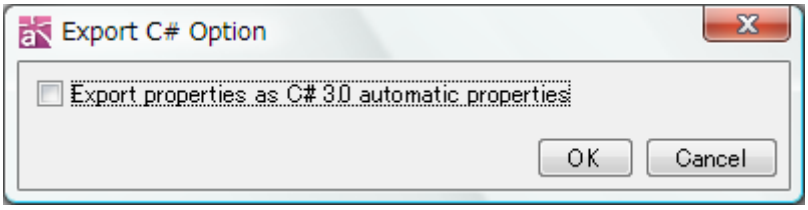
f. Charset of exported files

Specify the charset to use upon on exporting C#.

Default <UTF-8>

g. Check this option to export properties as C# automatic properties.

34.Exporting C#



g. Click on [Approve] to export the .cs files.

Note) If a .cs file with the same name already exists, it will be overwritten.

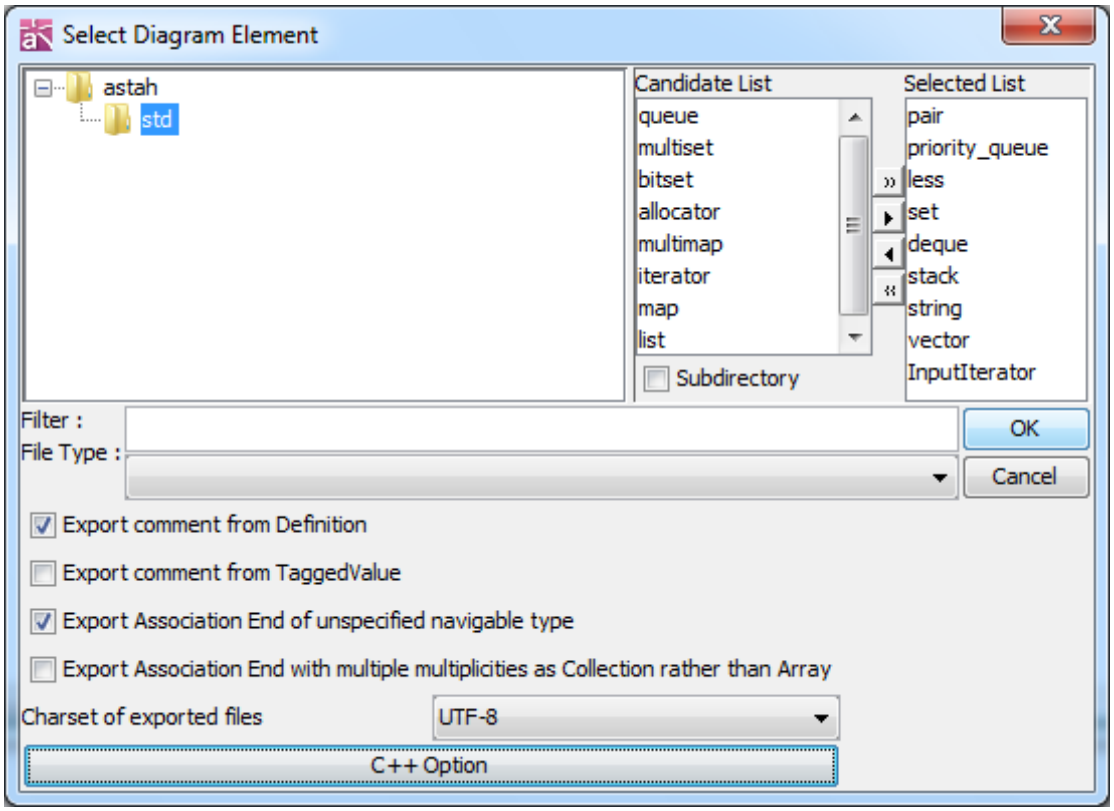
35. Exporting C++

"Export C++" is used to generate C++ Skeleton Code from selected Diagram Elements. The Definitions of Classes and Operations are exported as Documentation Comments.

a. Select [Tool]-[C++]-[Export C++] in the Main Menu to open the "Select" Dialog.

b. Select the target folder in the "Select" Dialog.

c. Select the target Model in the "Select Diagram Element" Dialog.



d. Specify the comment options.

Export comment from Definition / Export comment from TaggedValue

e. Specify the way to export Association Ends

Export Association End of unspecified navigable type / Export Association End with multiple multiplicities as Collection rather than Array

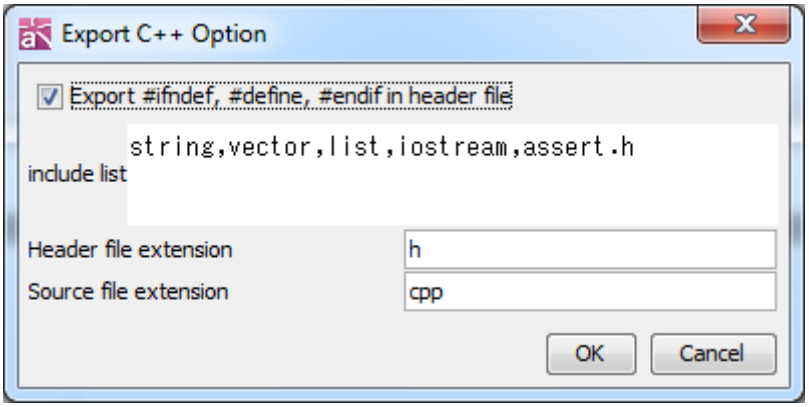
f. Charset of exported files

Specify the charset to use upon on exporting C++.

Default <UTF-8>

g. Click on [C++ Option] to set options.

35.Exporting C++



Export #ifndef, #define, #endif in header file :

Export #ifndef, #define and #endif to a header file.

Include list :

Export a list divided by , (comma) to a header file and a resource file

Header file extension : Specify the header file extensiton (h, hxx)

Source file extension : Specify the source file extension (cpp, cxx)

h. Click on [Approve] to export the files.

Note) If a file with the same name already exists, it will be overwritten.

36. UseCase Description Template

This sets a UseCase Description Template.

36. 1. Property File of UseCase Description Template

These templates are created in USERHOME/.astah/professional(uml) directory: "UCDescripriontProp.properties"

The UseCase Description Templates are not included in the Astah Project file. To use the Project file on multiple computers, the UseCase Description Templates have to be copied onto each computer.

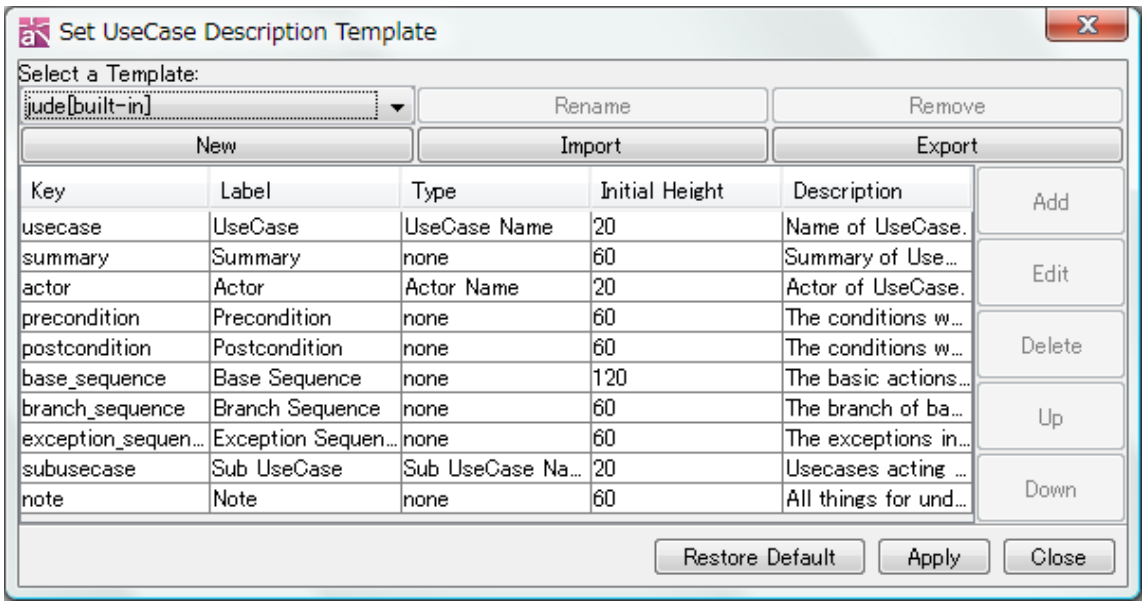
36. 2. UseCase Description Template Set-up

To set up a UseCase Description Template click [Tool] - [Set Template] - [UseCase Description Template] and select the option in the Main Menu.

36. 2. 1. Default Templates

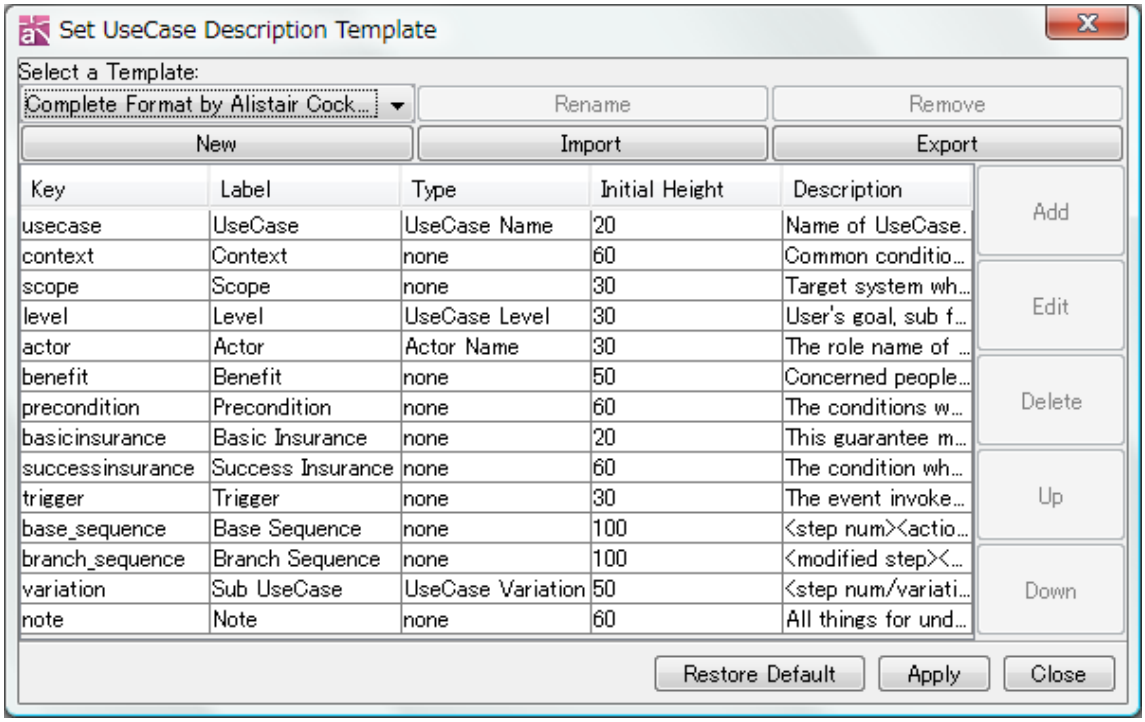
There are three default UseCase Description Templates.

a) Built-in Template

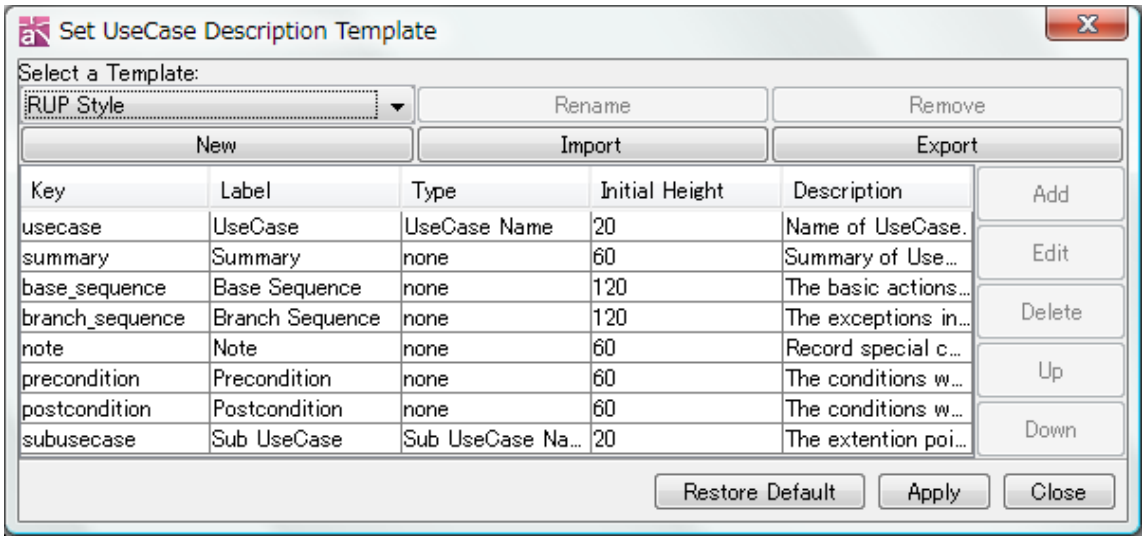


b) Complete Format by Alistair Cockburn

36.UseCase Description Template



c) RUP Style



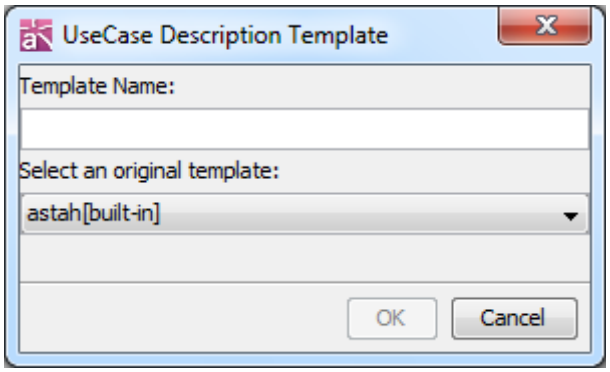
36. 2. 2. Items in Template

Key	Unique key for UseCase Description (Alphanumeric inputs only).	
Label	Name of UseCase Description. (Leaving the field blank is not permitted)	
Type	None	Edit in any formats
	UseCase Name	Display UseCase Name (Not editable)
	Actor Name	Display Actor Name (Not Editable)
	Sub UseCase Name	Display included UseCase Name (Not editable)
	UseCase Level	Select levels. a. High Requirement Level b. Requirement Level c. User Goal Level d. Sub Function Level e. Low Level
Initial Height	Initial height pixel range 20-10000	
Description	Explain the items in UseCase Description (Tooltip).	

36. 2. 3. Creating Templates

a. Creating New Templates

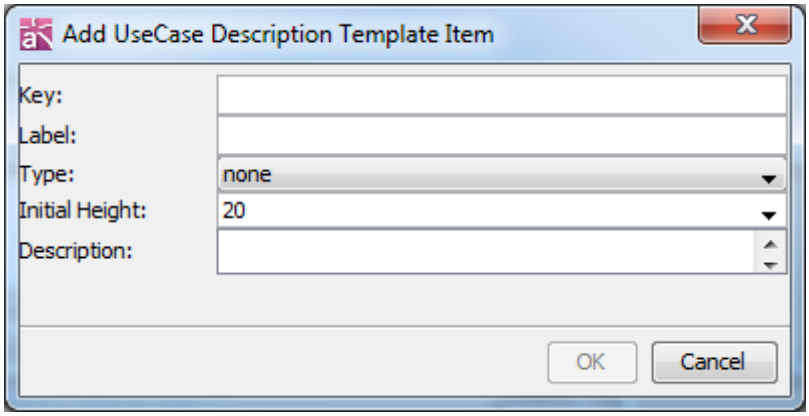
1. Click the “New” button in the UseCase Description Template



2. Input the Template Name (The Template Name must be unique.)
3. Select an original template
4. Click [OK] to create a new Template

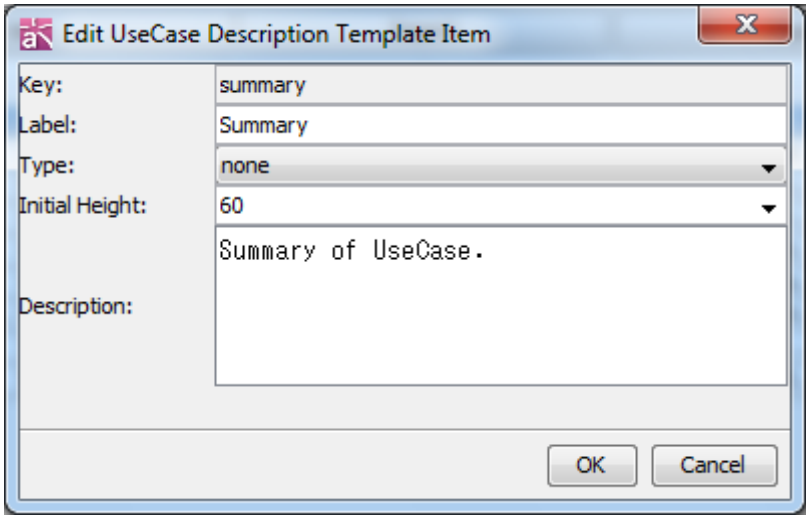
b. Creating Keys

Select a Key and then click [Add] in the UseCase Description Template dialog. The Add UseCase Description Template Item Dialog will come up (see below).



c. Editing Keys

Select a Key, and then click [Edit] in the UseCase Description Template dialog. The Edit UseCase Description Template Item Dialog will come up (see below).



d. Deleting Keys

Select a Key, and then click [Delete] in the UseCase Description Template dialog.

e. Changing Order of Keys

Select a Key, and then click [↑][↓] to change the order of Keys.

36. 2. 4. Renaming Template

Click [Edit] in the UseCase Description Template dialog to rename the template.

36. 2. 5. Removing Template

Click [Remove] in the UseCase Description Template dialog to remove the template.

36. 2. 6. Importing Templates

To import the templates, click [Import] in the Use Case Description Template dialog. Then, select the template file (*.properties) to be imported.

36. 2. 7. Exporting Templates

To export or share templates, click [Export] in the UseCase Description Template dialog; Then input a file name and save it.

37. Flow Symbol Template [P]

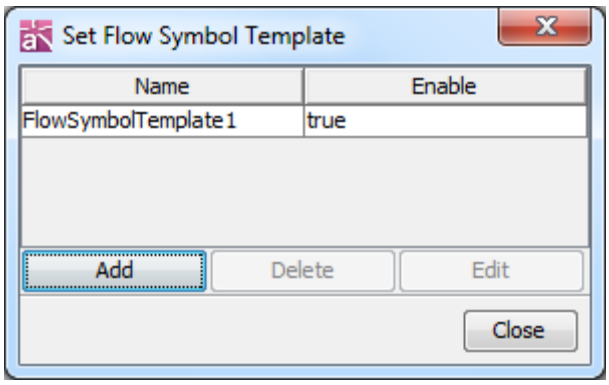
This sets a Flow Symbol Template to use in Flowchart.

37. 1. Property File of Flow Symbol Template

These templates are created in USERHOME /.astah/professional(uml).

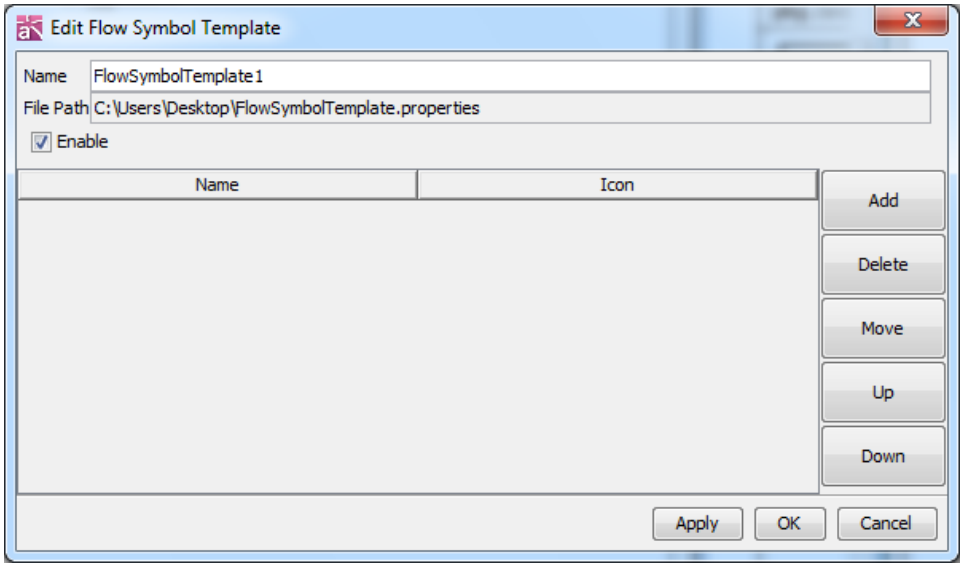
To use the Project file on multiple computers, the property file of Flow Symbol Templates have to be copied to each computer.

37. 2. Creating Flow Symbol Templates



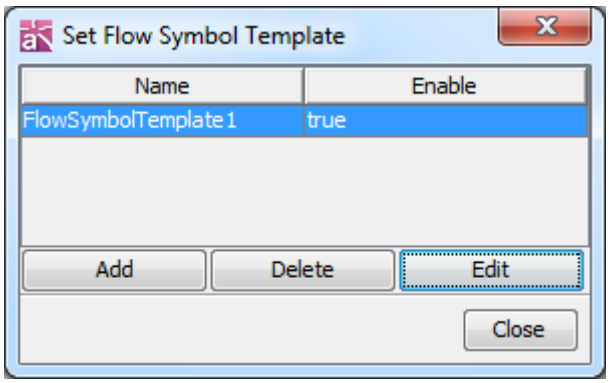
1. Select [Tool] - [Set Template] - [Flow Symbol] from Main Menu and select [Add]
2. Save the property file. (The Template Name must be unique.)
3. Select the added template and click [Edit]
4. Input the Template Name in Name field then click [Apply] - [OK].

   Check [Enable] box to show this Flow Symbol Template on the Flow Symbol Palette in the Diagram Editor.



5. Added Template appear on the Flow Symbol Palette

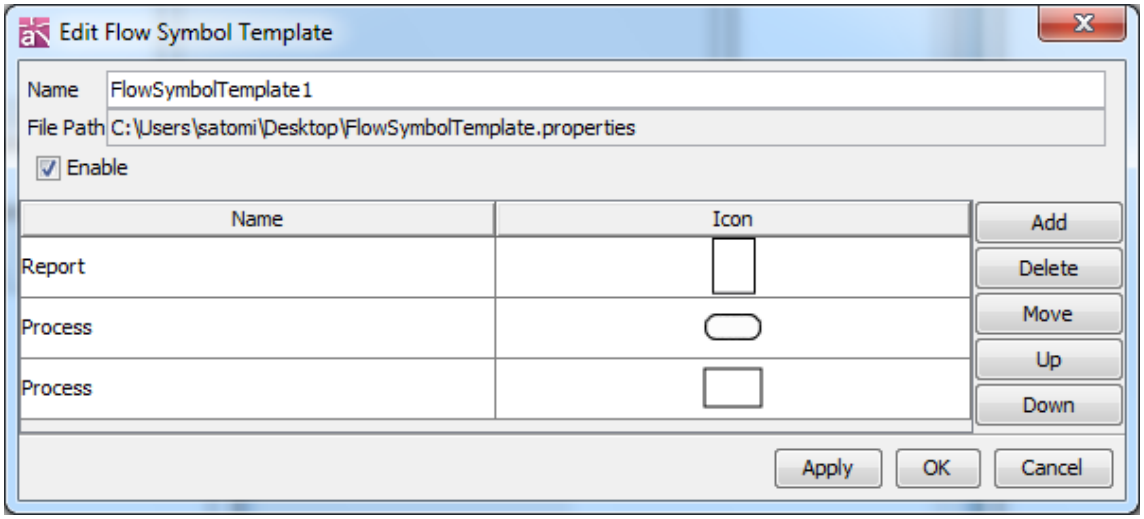
37. 3. Editing Flow Symbol Template



1. Select [Tool] - [Set Template] - [Flow Symbol] from Main Menu.

3. Select a template and click [Edit]

All the Flow Symbols included in the selected Template will be shown.



- Add・・・Add new flow symbols. Select image files and name it
- Delete・・Delete selected Flow Symbol
- Move・・・Transfer the selected Flow Symbol to other Templates
- Up/Down・・・Sort the order

37. 4. Adding Flow Symbols to Flow Symbol Template

Select [Add to Template] from Flow Symbols Pop-Up Menu (by right-clicking) on the Diagram Editor, and then select Template. Or, use [Edit Flow Symbol Template].

37. 5. Deleting Flow Symbol Templates

Select a template on the [Set Flow Symbol Template] dialog then click [Delete]

38. Import User Defined TaggedValue [P]

Import User Defined TaggedValues.

38. 1. Define TaggedValue

1. Create [astah_customproperty_def.properties] file.
2. Save this file in USERHOME/.astah/professional directory.

38. 1. 1. TaggedValue Format

TaggedValue name, Target Models types, Target Stereotype, Default Value and definition can be set by using the format below.

a. Name

key : tag.xxx.name

b. Target Model

key : tag.xxx.target

Note) Target model is required

Note) Allow to set multiple Target Models

Note) Cannot import properly if it contains invalid strings

Model Names	String to set for "tag.xxx.target"
Model	Model
Subsystem	Subsystem
Package	Package
Class Diagram	ClassDiagram
Class	Class
Attribute	Attribute
Operation	Method
Association	Association
Association Role	AssociationRole
Association Class	AssociationClass
Generalization	Generalization
Interface	Interface
Dependency	Dependency
Entity	Entity
Boundary	Boundary

38.Import User Defined TaggedValue [P]

Control	Control
Instance Specificaation	Object
Link(Object/ Communication Diagram)	Link
UseCase Diagram	UseCaseDiagram
Actor	Actor
UseCase	UseCase
Extend	Extend
Include	Include
Statemachine Diagram	StatemachineDiagram
State	State
Submachine State	SubmachineState
Stub State	StubState
Activity Diagram	ActivityDiagram
Partition	Partition
Action	Action
CallBehavior Action	CallBehaviorAction
Transition	Transition
Object Node	ObjectNode
Sequence Diagram	SequenceDiagram
Lifeline (Sequence, Communication Diagram)	LifeLine
Message (Sequence Diagram)	Message
Create Message	CreateMessage
Destroy Message	DestroyMessage
Reply Message	ReturnMessage
Combined Fragment	CombinedFragment
Interaction Use	InteractionUse
StateInvariant	StateInvariant
Communication Diagram	CommunicationDiagram
Message(Communication Diagram)	MessageCL
Component Diagram	ComponentDiagram
Component	Component
Artifact	Artifact
Deployment Diagram	DeploymentDiagram
Node	Node
Node Instance	NodeInstance

38.Import User Defined TaggedValue [P]

Component Instance	ComponentInstance
Note	Comment
Flowchart	Flowchart
Flow Element	FlowElement
Data Flow Diagram (DFD)	DataFlowDiagram
Eternal Entity	ExternalEntity
Data Store	DataStore
Dataflow	DataFlow
Anchor	Anchor
ER Diagram	ERDiagram
ER Entity	EREntity
ER Attribute	ERAttribute
Domain	Domain
Relationship	ERRelationship
Many to Many Relationship	ManyToManyRelationship
Subtype	Subtype
CRUD	CRUD
Requirement Diagram	RequirementDiagram
Requirement Table	RequirementTable
Requirement	Requirement
TestCase	TestCase
Traceability Map	TraceabilityMap

c. Target Stereotype

Key : tag.xxx.stereotype

- Only one stereotype can be set
- Optional

d. Default Value

Key : tag.xxx.defaultvalue

- Optional

e. Definition

Key : tag.xxx.definition

- Optional

38.Import User Defined TaggedValue [P]

```
tag.id_001.name=creator1
tag.id_001.target=Class
tag.id_001.stereotype=stereotype0
tag.id_001.defaultvalue=Dendy
tag.id_001.definition=The creator of a model



tag.id_002.name=creator2
tag.id_002.target=UseCase,Package
tag.id_002.stereotype=stereotype1
tag.id_002.defaultvalue=Tony
tag.id_002.definition=The creator of a model
```

38. 2. Import User Defined TaggedValue

(1) Select [Tool] - [Import User Defined TaggedValue]
TaggedValues are added to Models that match with property file.

(2) If some TaggedValues had same Tagged Name and the TaggedValue was changed, the changed TaggedValue will be imported.

(3) Once the project file has imported User Defined TaggeValue, the TaggeValue will be added automatically when creating new models.

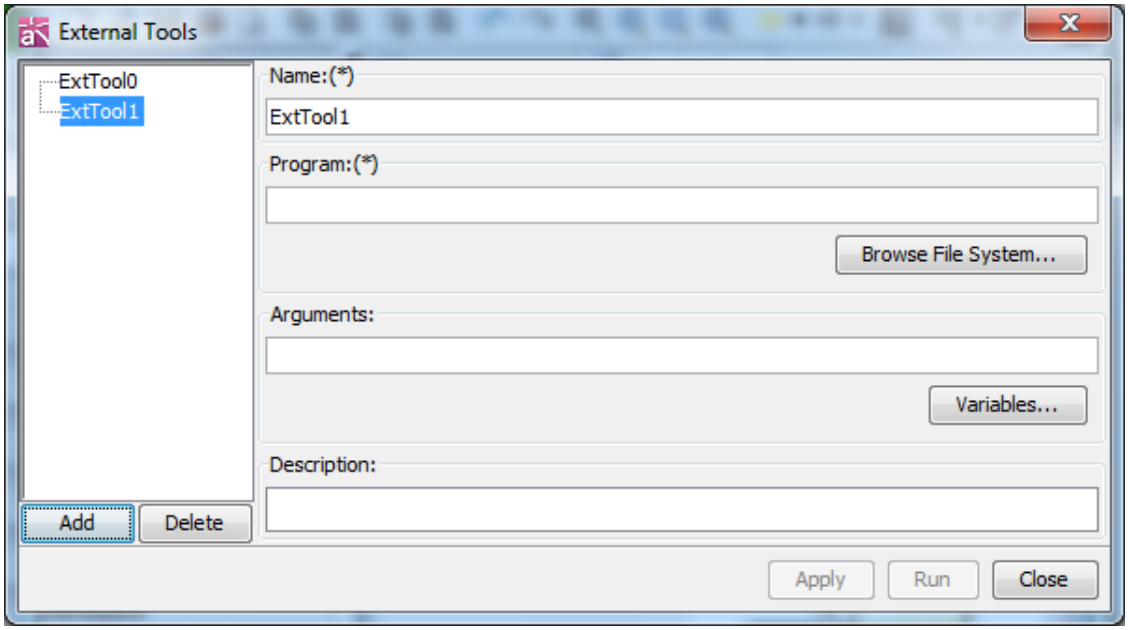
39. External Tool [P]

Run external tools (programs) on Astah.

39. 1. Adding External Tool

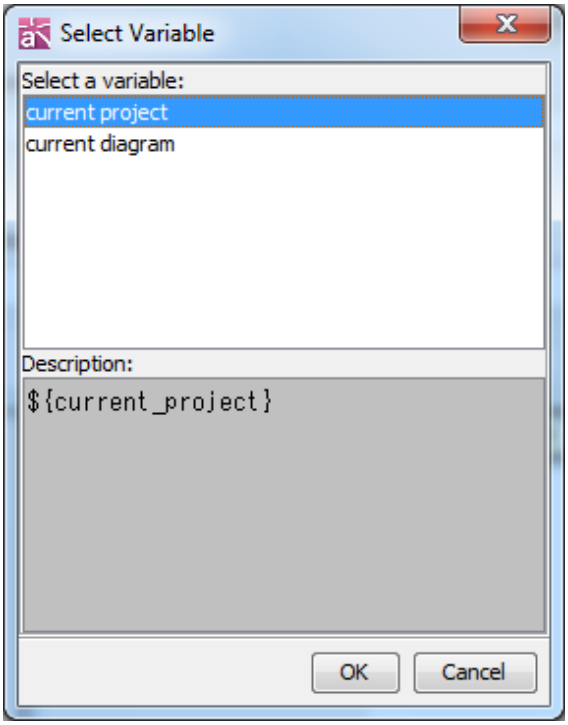
(1) Select [Tool] - [External Tool] - [Customize External Tool] in Main Menu.

(2) Select [Add] button on [External Tools] dialog then put the name in.



(3) Click [Browse File System] then select an external tool.

(4) Click [Variables] then set the Variables.



39.External Tool [P]

Current Project

Absolute path for the current .asta file will be set. It would be empty if there is no project open.

Current Diagram

ID of current Diagram will be set. This ID will be used on the Program with Astah API. It would be empty if there is no project open.

- Add Descriptions for External Tools in Description field.
- Press [Apply] button to save the setting. Press [Run] to save and run the program.

39. 2. Running External Tools

Select an External Tool from the left on [External Tools] dialog then press [Run].

39. 3. Deleting External Tools

Select an External Tool from the left on [External Tools] dialog then press [Delete].

40. Keybinds File

You are able to customize shortcut keys to use in Astah as you like.

[How to change the Shortcut keys]

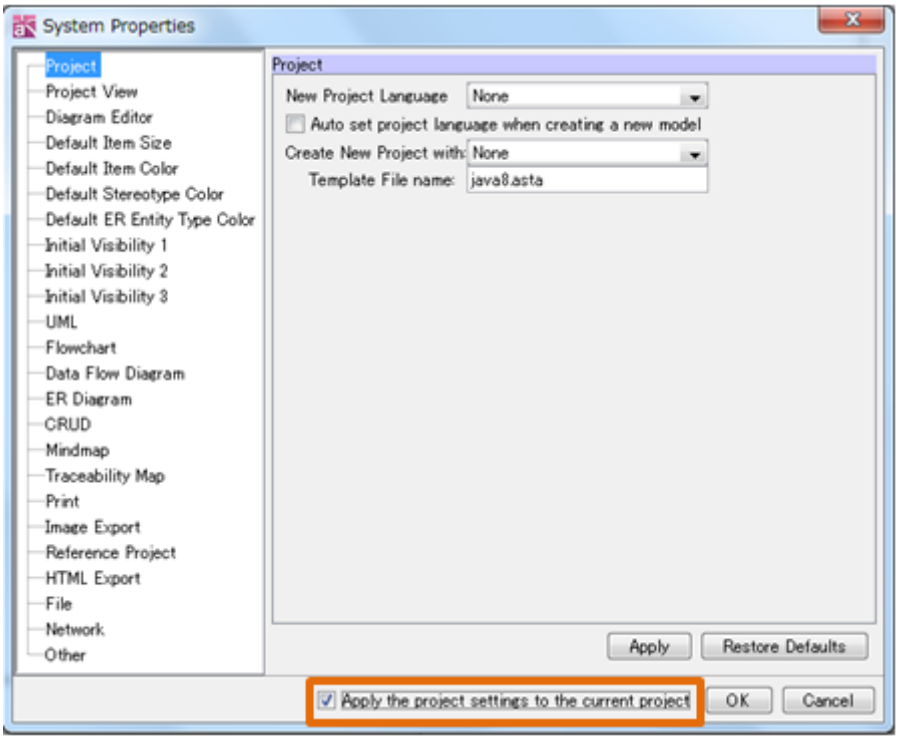
1. Close Astah
2. [If you are using Astah UML]
   Copy the “astah-key.properties_org” in Astah install folder to
   Userhome¥.astah¥uml and save it as “astah-key.properties”
   [If you are using Astah Professional]
   Copy the”astah-key.properties_org” in Astah install folder to
   Userhome¥.astah¥professional and save it as “astah-key.properties”
3. Open “astah-key.properties” and remove “#” from the line of Shortcut key you want to change and set the key vaue (xxx.key)
4. Save the “astah-key.properties” and then restart Astah

[Note]

1. Do not make duplicated keys
2. By default, some different operations share the same Shortcut key (xxx.key), if you want to change one of them, make sure to change them all.
3. If you re-install Astah such as doing version up etc, please adjust the difference between the new “astah-key.properties_org” and your customized “astah-key.properties” file

41. System Properties

The System Properties of Astah can be set up using [Tool]-[System Properties] in the Main menu.



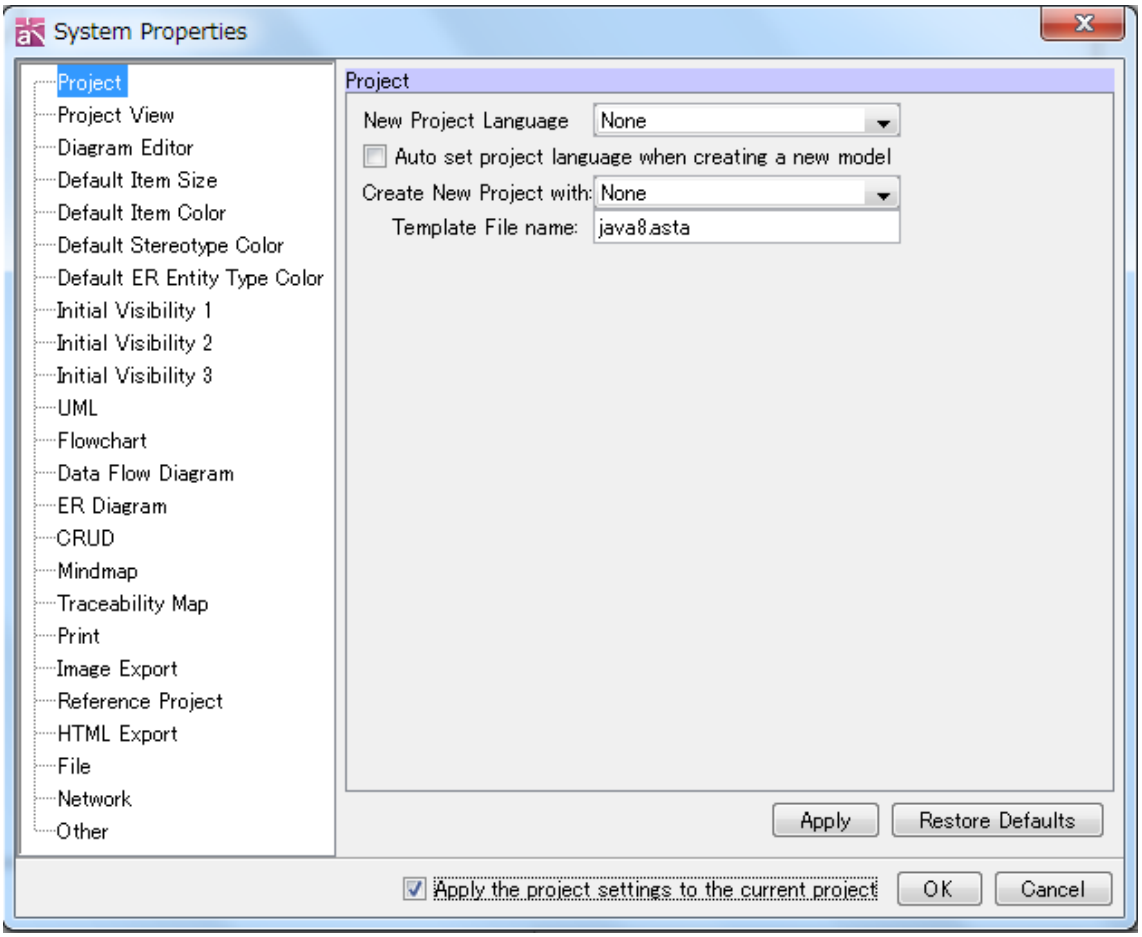
Apply the project settings to the current project

Check this option to apply settings to the current project.

Default [OFF]

41.System Properties

41. 1. Project



a. New Project Language

Select this option to specify the programming language for the project. The project language is set with this option and the language setting of a template file.

None / Java / C# / C++

Default [None]

b. Auto set project language when creating a new model.

Select this option to set the language setting to Classes, Attributes and Operations.

Default [OFF]

c. Create New Project with:

Select this option to specify the template file to create a new project.

None / User Template / Astah Built-in Template

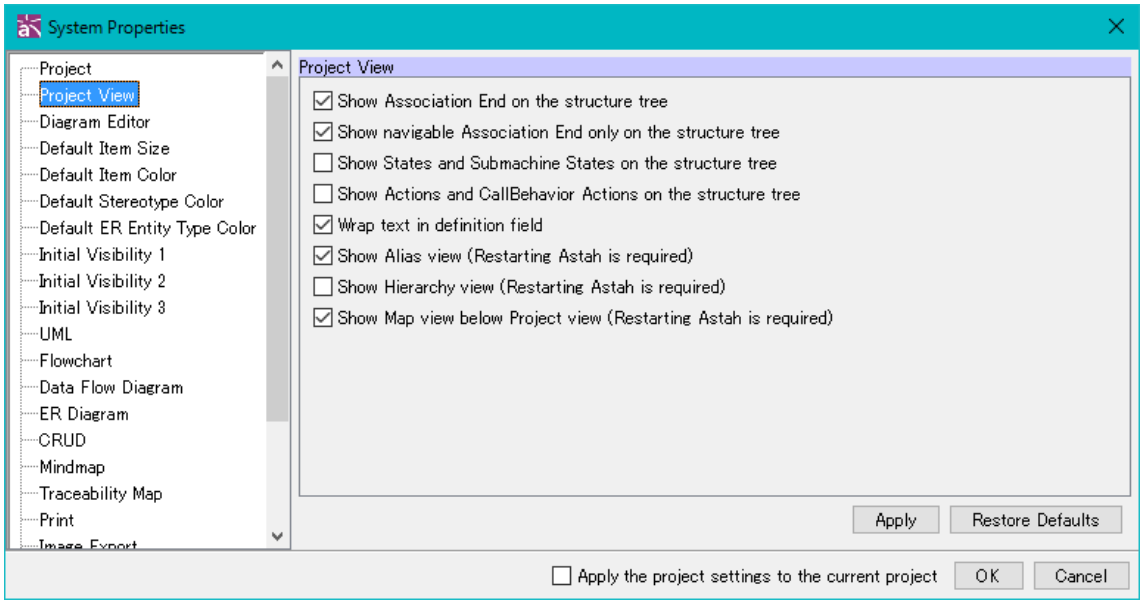
Default [Astah Built-in Template]

d. Template File:

Input the default template file name.

Default [java8.asta]

41. 2. Project View



a. Show Association End on the structure tree

Default [ON]

b. Show navigable Association End only on the structure tree

Check this option to show Internal Part as Association End (Role) on the structure tree.
Default [ON]

c. Show States and Submachine States on the structure tree

Check this option to show states and submachine states on the structure tree.
Default [OFF]

d. Show Actions and CallBehavior Actions on the structure tree

Check this option to show actions and CallbehaviorActions on the structure tree.
Default [OFF]

e. Wrap text in definition field

Check this option to wrap the contents of definition field of Property View.
Default [ON]

f. Show Alias view (Restarting Astah is required)

Default [ON]

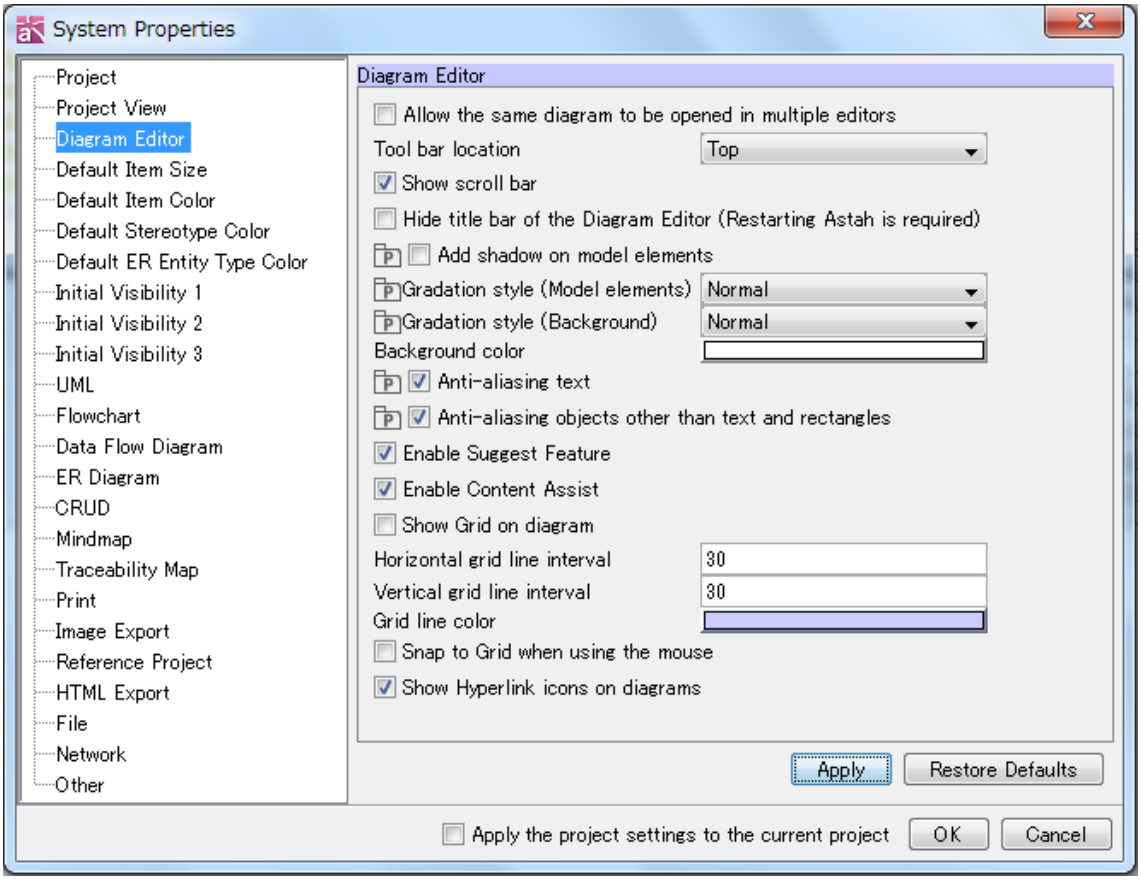
g. Show Hierarchy view (Restarting Astah is required)

Default [OFF]

h. Show Map view below Project view (Restarting Astah is required)

Default [OFF]

41. 3. Diagram Editor



a. Allow the same diagram to be opened in multiple editors

Check this option to allow one diagram to be opened in multiple Editors. When the diagram is altered, the changes are reflected in all other editors.

Default [OFF]

b. Tool bar location

Choose where you want to have the Tool Palette.

Default [top]

c. Show scroll bar

Check this option to display Scroll Bars.
Default [ON]

d. Hide title bar of the Diagram Editor (Restarting Astah is required)

Check this option to hide the title bar of editor frame. Restarting Astah is required.
Default [OFF]

e. Add shadow on model elements

Default [OFF]

f. Gradation style (Model elements)

Default [Normal]

g. Gradation style (Background)

Default [Normal]

h. Background color

Select color of background of Diagram Editor.
Default [White]

i. Anti-aliasing text

Default [ON]

j. Anti-antialiasing objects other than text and rectangles

Default [ON]

k. Enable Suggest Feature

Check this option to enable the draw suggest feature.
Default [ON]

l. Enable Content Assist

Check this option to enable the content assist feature.
Default [ON]

m. Show Grid on diagram

Click this option to display the Grid on the Diagram Editor.
Default [OFF]

n. Horizontal grid line interval

Set gird horizontal interval.

o. Vertical grid line interval

Set gird vertical interval.

p. Set line color

Set gird color.

q. Snap to Grid when using the mouse

Click this option to snap to Grid when using the mouse.
Default [OFF]

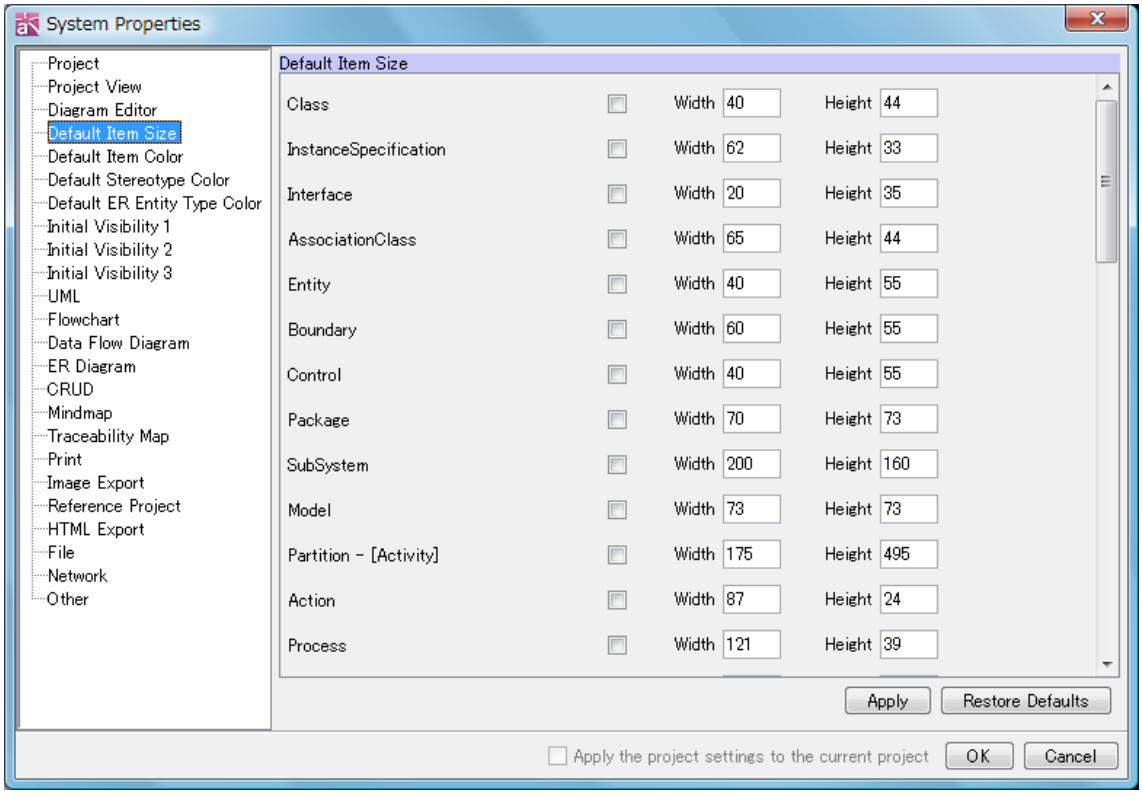
r. Show Hyperlink icons on diagrams

Check this option to show the Hyperlink icon on the Diagram Editor.
Default [ON]

41. 4. Default Item Size

The Initial item size for each model elements can be set in this segment. To apply the size you input, please check the box. “Maximum size of image on diagram” limits the maximum size of images on diagrams when the box of “Image” is unchecked.

41.System Properties



※Some models may appear in different size despite the size you specify depending on the length of its name etc

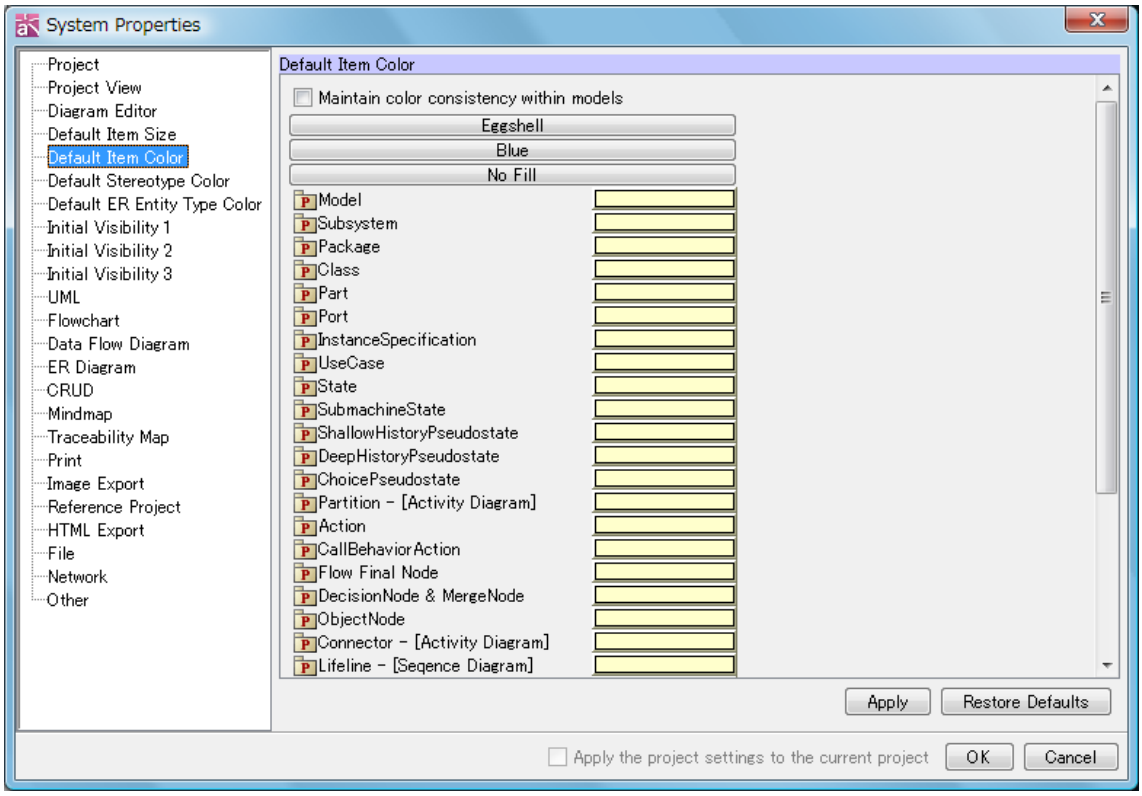
※Default size should be from 1 to 1000

No.	Model	Width	Height
1	**Class**	40	44
2	**InstanceSpecification**	62	33
3	**Interface**	20	35
4	**AssociationClass**	65	44
5	**Entity**	40	55
6	**Boundary**	60	55
7	**Control**	40	55
8	**Package**	70	73
9	**SubSystem**	200	160
10	**Model**	73	73
11	**Partition – Activity Diagram**	175	495
12	**Action**	87	24
13	**Process**	121	39

14	SendSignalAction	158	39
15	AcceptEventAction	150	39
16	CallBehaviorAction	130	31
17	InitialNode – Activity Diagram		20
18	ActivityFinal – Activity Diagram		20
19	Decision Node & Merge Node – Activity Diagram	30	20
20	ObjectNode	30	20
21	Lane – Flowchart	175	495
22	InitialNode – Flowchart		20
23	FinalNode – Flowchart		20
24	ConditionJudgement – Flowchart	30	20
25	Actor	40	70
26	UseCase	120	40
27	InitialPseudostate – Statemachine Diagram		20
28	State	55	50
29	FinalState – Statemachine Diagram		20
30	ShallowHistoryPseudostate		20
31	DeepHistoryPseudostate		20
32	JunctionPseudostate		15
33	ChoisePseudostate		15
34	SubmachineState	150	60
35	Lifeline	110	30
36	StateInvariant	60	36
37	Component	112	47
38	Artifact	63	30
39	Node	77	47
40	NodeInstance	124	47
41	ComponentInstance	159	45
42	StructuredClass	139	83
43	Part	136	35
44	ER Entity[P]	58	43
45	ExternalEntity[P]	110	23
46	ProcessBox [P]		87
47	Datastore[P]	92	23
48	Anchor[P]		10

49	**Requirement[P]**	115	77
50	**TestCase[P]**	105	58
51	**Frame**	640	480
52	**Note**	150	60
53	**Text**	44	25
54	**Image**	44	25
55	**Maximum size of image on diagram**	500	500

41. 5. Default Item Color



a. Reuse the color when creating the same kind of item

Check this option to create a Diagram Element using the same color that was used for the previous Diagram Element of the same Type.
Default [OFF]

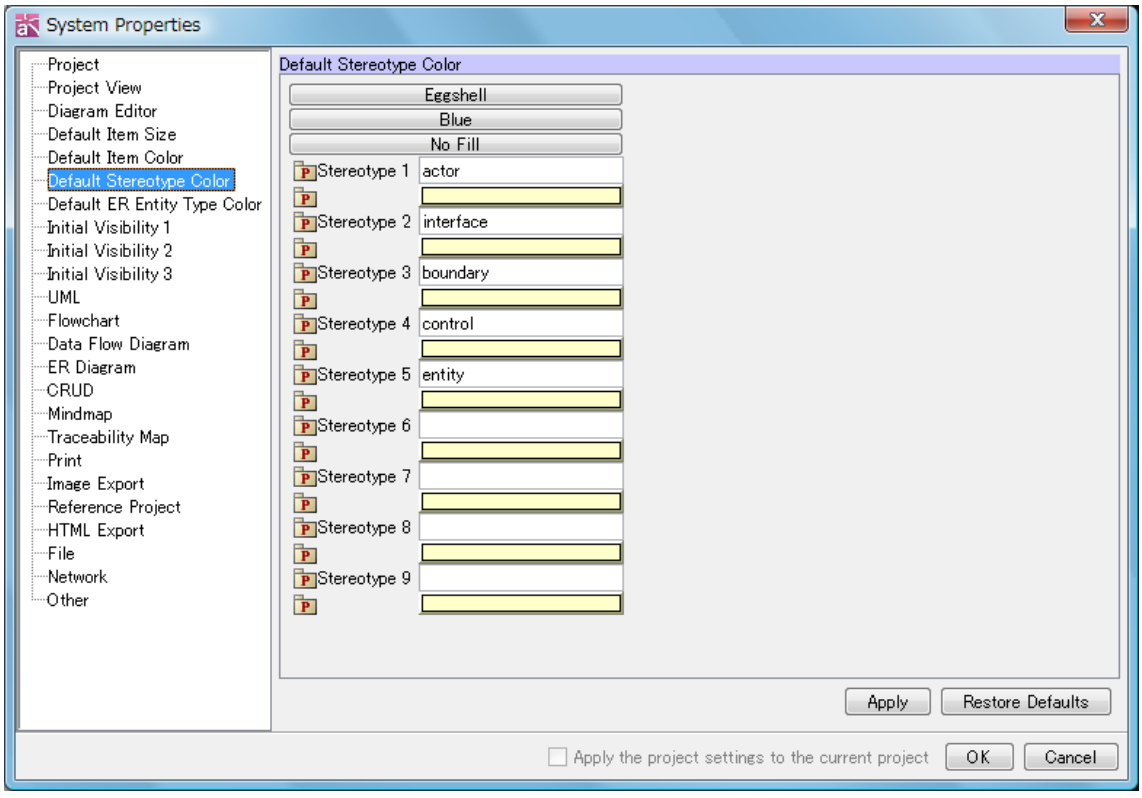
The colors of newly created Diagram Elements can be set in this segment.
Default [OFF]

Button	Description
Eggshell	Applies preset 1 – eggshell based color
Blue	Applies preset 2 – blue based color
No Fill	No color

1. Click on the setting box of the target model elements, then Color Chooser appears
2. Select a color or create a new color and click [OK]
3. The specified color is applied to newly created model elements

※What do Project icons beside each model mean?
They mean that the color setting in this System Properties will be saved in the project file. To synchronize the setting with System Properties and one that is saved in the project can be done by [Project Setting] tab or Project's property.

41. 6. Default Stereotype Color



The initial color for each Stereotype can be set in this segment. The settings are not applied to existing Diagram Elements. Colors can be set for up to 9 Stereotypes.

[Default]

Stereotype 1: actor

Stereotype 2: interface

Stereotype 3: boundary

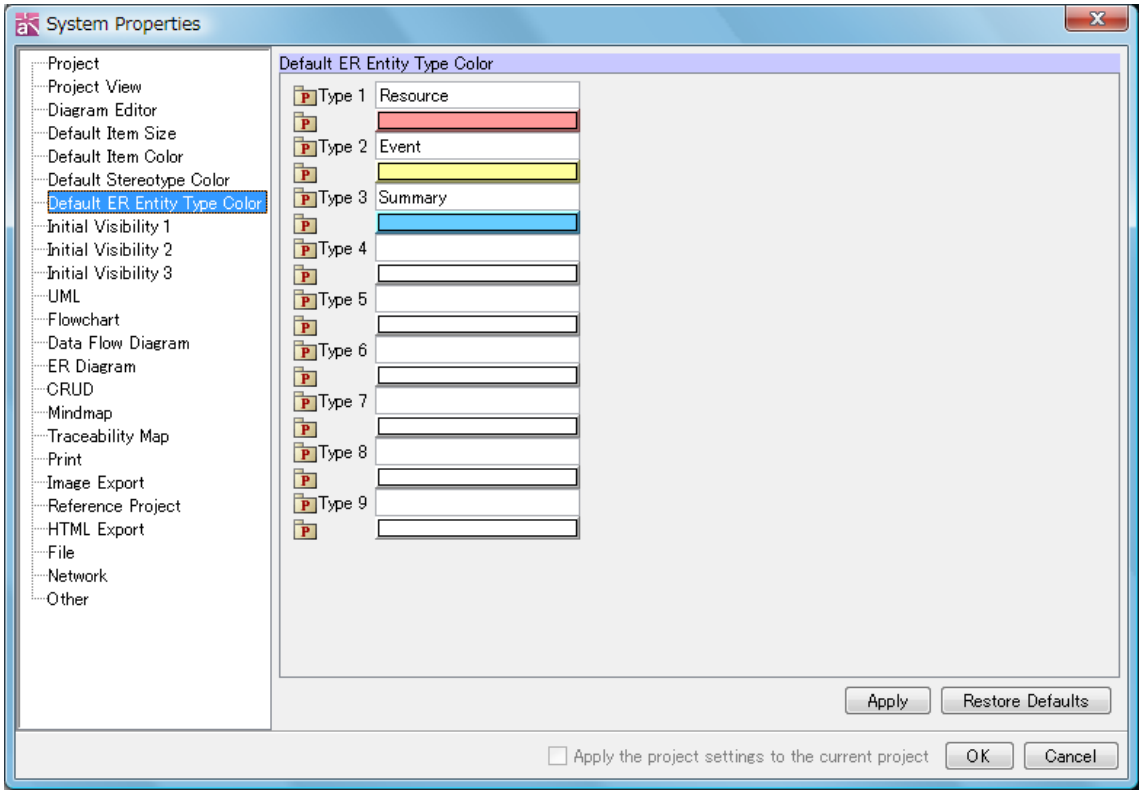
Stereotype 4: control

Stereotype 5: entity

※What do Project icons beside each model mean?
They mean that the color setting in this System Properties will be saved in the project file. To synchronize the setting with System Properties and one that is saved in the project can be done by [Project Setting] tab or Project's property.

	Button	Description
1	Eggshell	Applies preset 1 – eggshell based color
2	Blue	Applies preset 2 – blue based color
3	No Fill	No color

41. 7. Default ER Entity Type Color



The color of ER Entity Type can be set in this segment.

[Default]

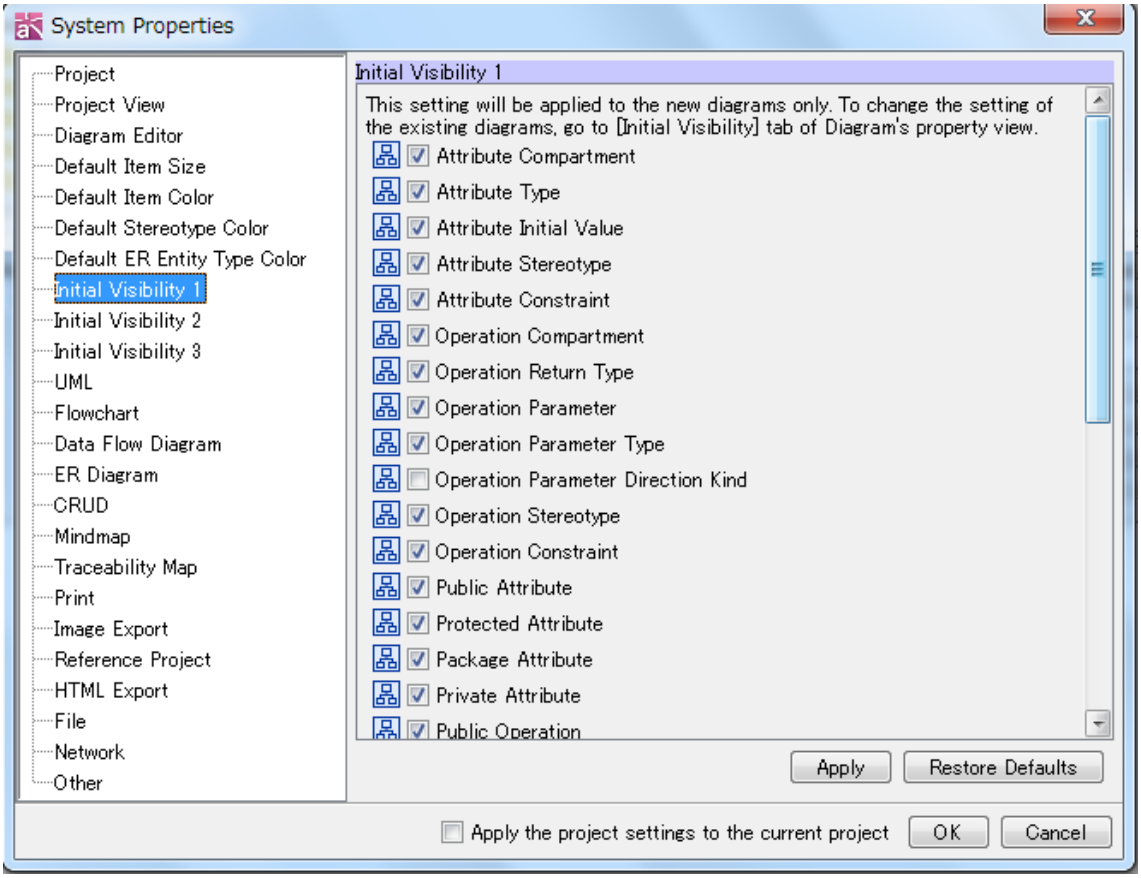
Type 1: "Resource"

Type 2: "Event"

Type 3: "Summary"

※What do Project icons beside each model mean?
They mean that the color setting in this System Properties will be saved in the project file. To synchronize the setting with System Properties and one that is saved in the project can be done by [Project Setting] tab or Project's property.

41. 8. Initial Visibility 1



	Models	Description	Default
1	**Attribute Compartment**	Show Attributes of Classes	ON
2	**Attribute Type**	Show Attribute Types of Classes	ON
3	**Attribute Initial Value**	Show Attribute Initial Values of Classes	ON
4	**Attribute Stereotype**	Show Attribute Stereotypes of Classes	ON
5	**Attribute Constraint**	Show Attribute Constraints of Classes	ON
6	**Operation Compartment**	Show Operations of Classes	ON

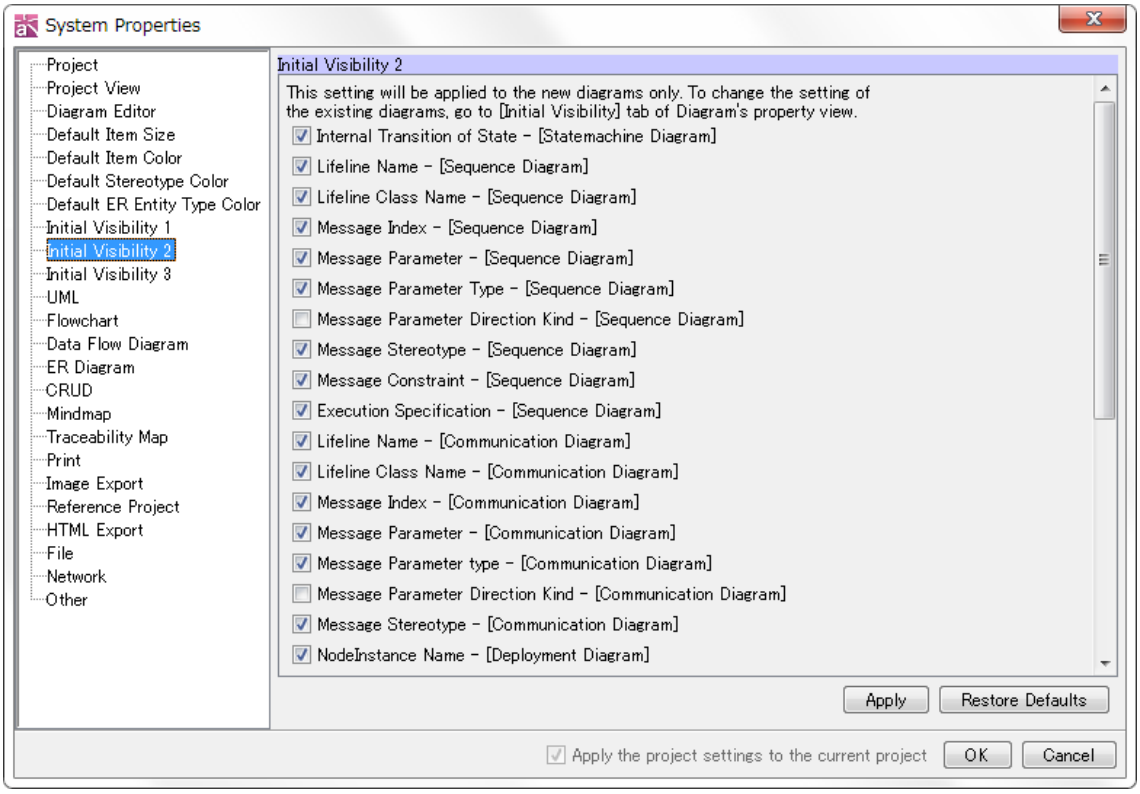
41.System Properties

7	**Operation Return Type**	Show Operation Return types of Classes	ON
8	**Operation Parameter**	Show Operation Parameters of Classes	ON
9	**Operation Parameter Type**	Show Operation Parameter types of Classes	ON
10	**Operation Parameter Direction Kind**	Show Operation Parameter's Direction Kind of Classes	OFF
11	**Operation Stereotype**	Show Operation Stereotype of Classes	ON
12	**Operation Constraint**	Show Operation Constraints of Classes	ON
13	**Public Attribute**	Show Public Attribute	ON
14	**Protected Attribute**	Show Protected Attribute	ON
15	**Package Attribute**	Show Package Attribute	ON
16	**Private Attribute**	Show Private Attribute	ON
17	**Public Operation**	Show Public Operation	ON
18	**Protected Operation**	Show Protected Operation	ON
19	**Package Operation**	Show Package Operation	ON
20	**Private Operation**	Show Private Operation	ON
21	**Subsystem Detail**	Show Specification Elements and Realization Elements on Subsystems	OFF
22	**Association Name**	Show the models on the Diagram	ON
23	**Association Name Direction**	Show Association Name Direction	ON
24	**Association Constraint**	Show Association Constraint	ON
25	**Association Stereotype**	Show Association Stereotype	ON
26	**Attribute and Operation Visibility Kind**	Show Attribute and Operation Visibility Kind	ON
27	**Association End Visibility Kind**	Show Association End Visibility Kind	ON
28	**Instance SpecificationName – [Class]**	Show Instance Specification Names in Object Diagrams	ON
29	**InstanceSpecification Class Name – [Class]**	Show InstanceSpecificaton Class Names in Object Diagrams	ON
30	**InstanceSpecification Slot – [Class]**	Show InstanceSpecification Slot in Object Diagrams	ON
31	**InstanceSpecification**	Show InstanceSpecification Slot Value in	ON

	Slot Value – [Class]	Object Diagrams	
32	**InstanceSpecification Slot without Value – [Class]**	Show InstanceSpecification Slot without Value in Object Diagrams	ON
33	**Template Parameter Name in Bound Class – [Class]**	Show Template Parameter Name in Bound Class in Class Diagrams	ON

41. 9. Initial Visibility 2

The display/non-display settings for each item can be set in this segment.



	Models	Description / Diagram	Default
1	**Internal Transition of State**	Show entry/do/exit and details in the Internal Transitions in the Statemachine Diagram	ON
2	**Lifeline Name**	**Show the model in Sequence Diagram**	ON

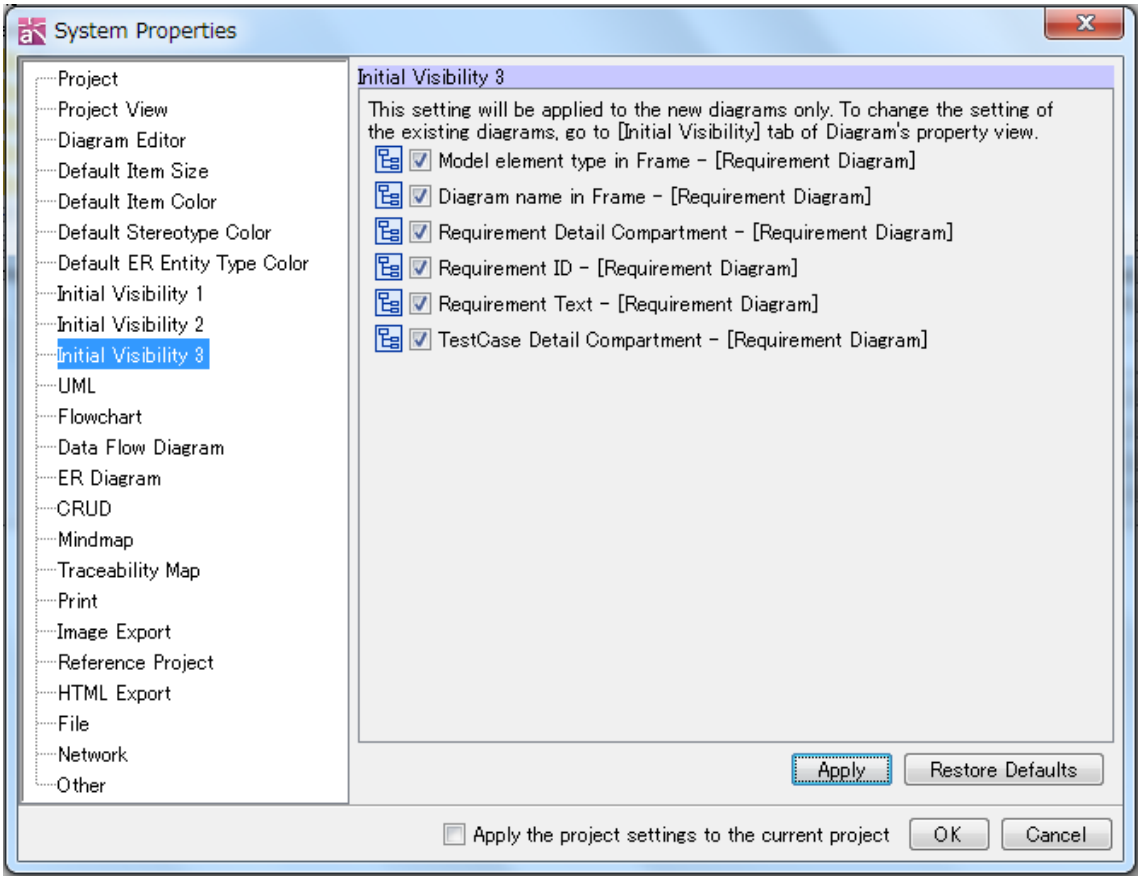
41.System Properties

3	**Lifeline Class Name**	Show the base class name of lifeline in Sequence Diagram	ON
4	**Message Index**	**Show the model in Sequence Diagram**	ON
5	**Message Parameter**		
6	**Message Parameter Type**		
7	**Message Parameter Direction Kind**		OFF
8	**Message Stereotype**		ON
9	**Message Constraint**		
10	**Execution Specification**		
11	**Lifeline Name**	**Show the model in Communication Diagram**	
12	**Lifeline Class Name**	Show the base class name of lifeline in Communication Diagram	ON
13	**Message Index**	Show the model in Communication Diagram	
14	**Message Parameter**		
15	**Message Parameter Type**		
16	**Message Parameter Direction Kind**		OFF
17	**Message Stereotype**		ON
18	**NodeInstance Name**	Show the model in Deployment Diagram	ON
19	**NodeInstance Type**		
20	**ComponentInstanceNam e**		
21	**ComponentInstance Type**		
22	**Port Name**	Show the model in Composite Structure Diagram	ON
23	**Port Type**		
24	**Port Multiplicity**		
25	**Part Name**		
26	**Part Type**		
27	**Connector Name**		
28	**Connector Name**		

	Direction		
29	Connector Constraint		
30	Connector Stereotype		
31	Connector Multiplicity		
32	Connector Role Name		

41. 10. Initial Visibility 3

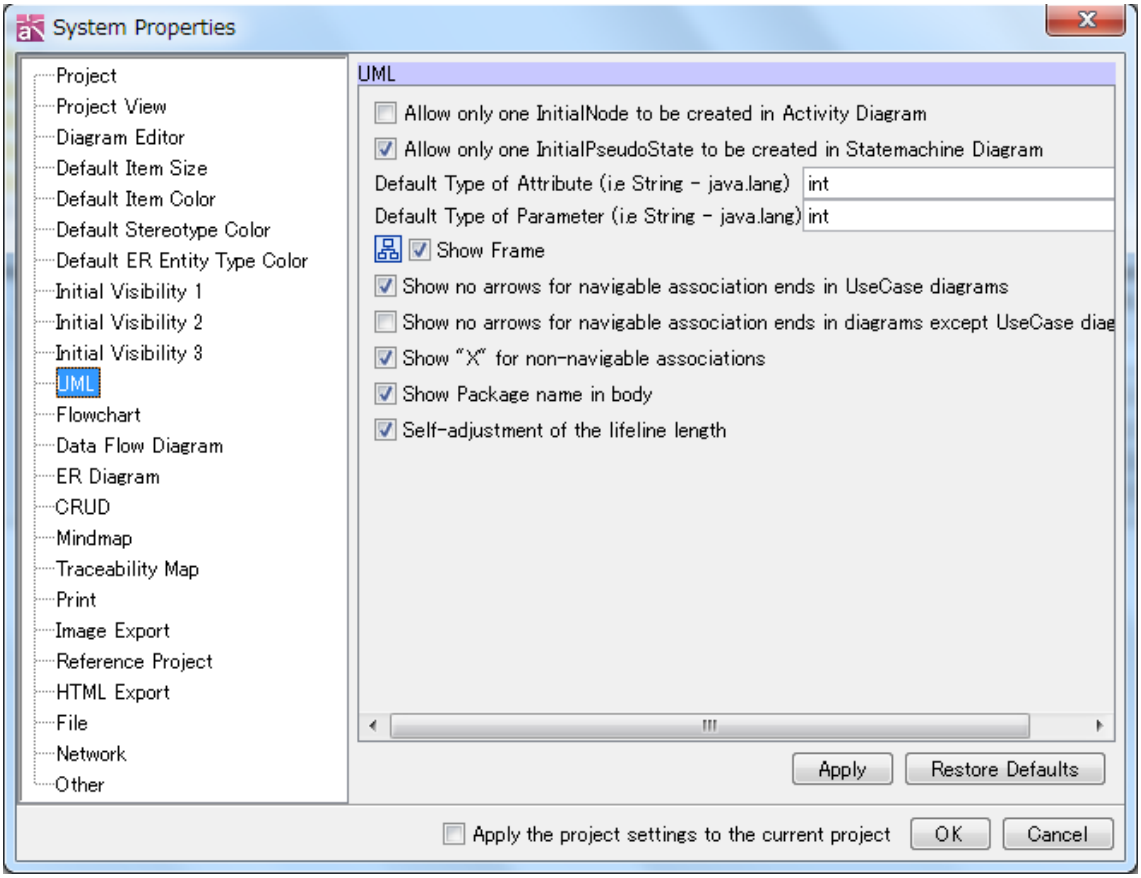
The display/non-display settings for each item can be set in this segment.



Model	Diagrams	Default
Frame Model Element Type	Show the model in Requirement Diagram	ON
Frame Diagram Name		

Requirement Detail Compartment		
Requirement ID		
Requirement Text		
TestCase Detail Compartment		

41. 11. UML



a. Allow only one InitialNode to be created in Activity Diagram

Check this option to allow only one InitialNode to be created in Activity Diagram.

Default [OFF]

b. Allow only one InitialPseudoState to be created in Statemachine Diagram

Check this option to allow only one InitialPseudoState to be created in Statemachine Diagram.

Default [ON]

b. Default Type of Attribute (i.e. String - java.lang)

Default [int]

c. Default Type of Parameter (i.e. String - java.lang)

Default [int]

d. Show Frame

Check this option to show a frame in the Diagram Editor.
This can be switched on/off in Property View.

Default [ON]

e. Show no arrows for navigable association ends in UseCase diagrams

Check this option to show no arrows if association ends are navigable in UseCase diagram.

Default [ON]

f. Show no arrows for navigable association ends in diagrams except UseCase diagrams

Check this option to show no arrows if association ends are navigable in diagrams except UseCase diagram.

Default [OFF]

g. Show "X" for non-navigable associations

Check this option to show "X" for non-navigable association.

Default [ON]

h. Show Package name in body

Check this option to show the Package name in the body.

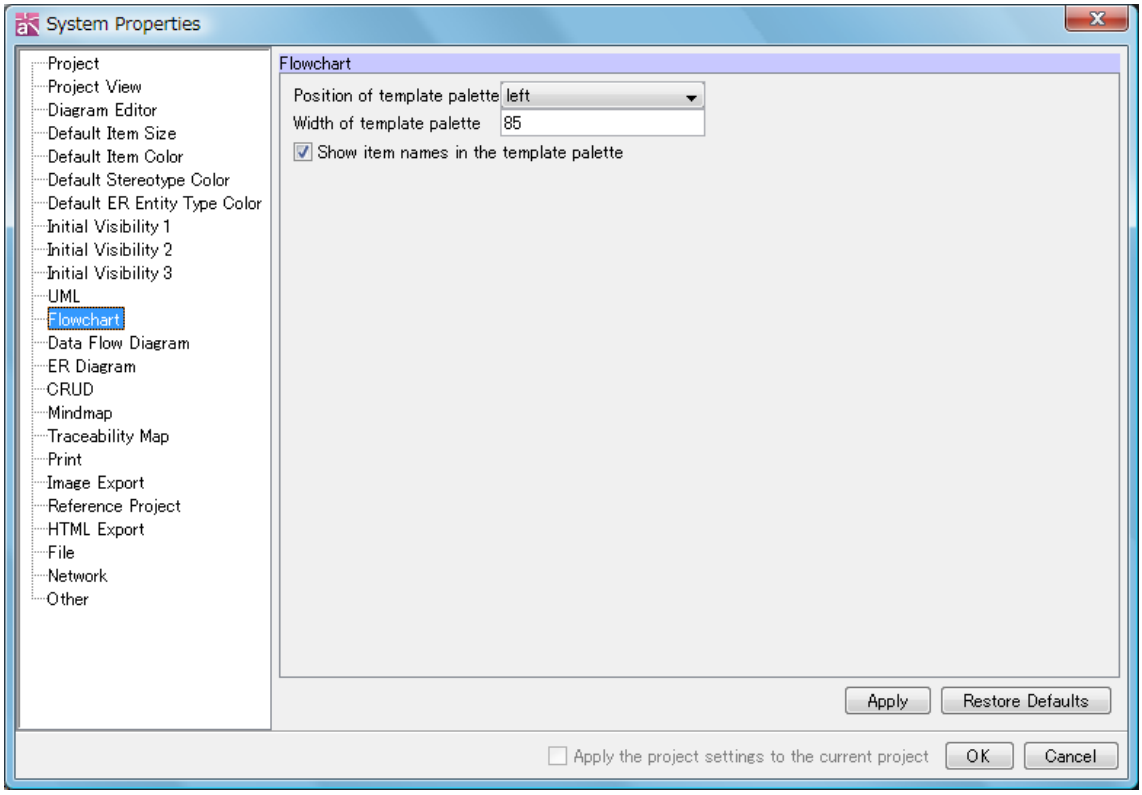
Default [ON]

g. Self-adjustment of the lifeline length

Check this option to self-adjust the lifeline length.

Default [ON]

41. 12. Flowchart [P]



a. Position of template palette

The position of the Flow Symbol Template Palette can be selected using this option.

Default [left]

b. Width of template palette

The width of the Flow Symbol Template Palette can be set using this option.

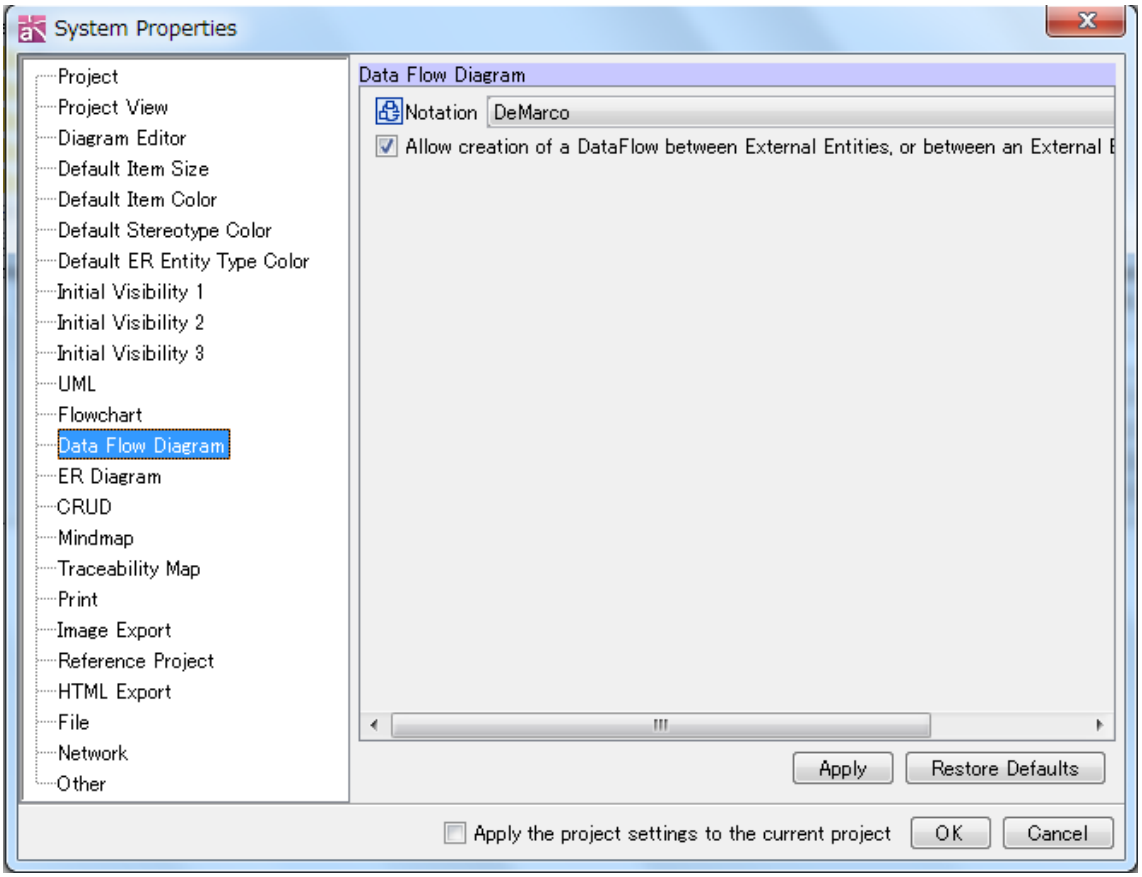
Default [85]

c. Show item names in the template palette

Check this option on to display all Flow symbol Names.

Default [ON]

41. 13. Data Flow Diagram [P]



The setting of Data Flow Diagram can be set in this segment.

a. Notation

Set the notation of Data Flow Diagram (DeMarco / Gane/Sarson).

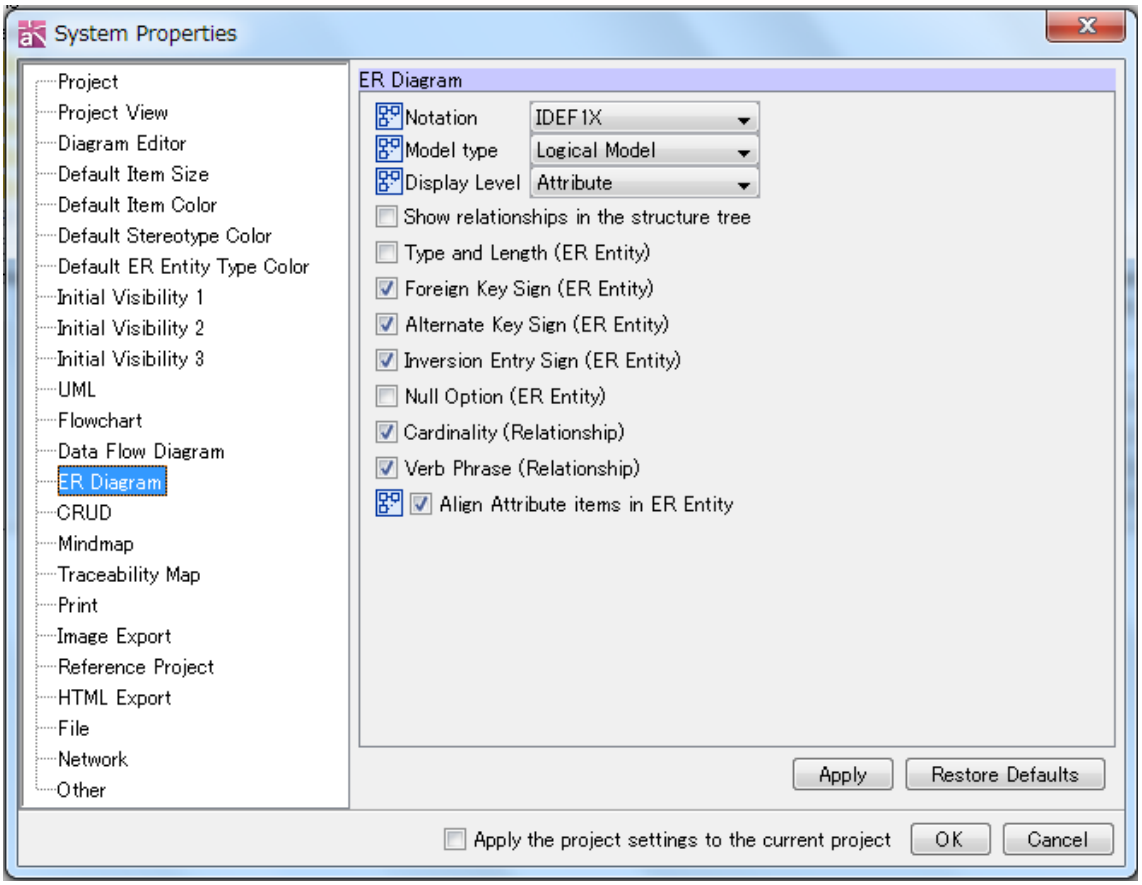
Default [DeMarco]

b. Allow created of a DataFlow between External Entities or between on External Entity and Datastore

Check this option to enable you to create a DataFlow between External Entities and between External Entity and Datastore.

Default [ON]

41. 14. ER Diagram [P]



a. Notation

Set the notation of ER Diagram.

Default [IDEF1X]

b. Model type

Set the Model type of ER Diagram.

Default [Logical Model]

c. Display Level

Set the Display level of Entity for ER Diagram.

Default [Attribute]

d. Show relationship in the structure tree

Check this option to display the Relationship on the Structure Tree.

Default [OFF]

e. Type and Length (ER Entity)

Check this option to show Type and Length (ER Entity).

Default [OFF]

f. Foreign Key Sign (ER Entity)

Check this option to show Foreign Key Sign (ER Entity).

Default [ON]

g. Alternate Key Sign (ER Entity)

Check this option to show Alternate Key Sign (ER Entity).

Default [ON]

h. Inversion Entry Sign (ER Entity)

Check this option to show Inversion Entry Key Sign (ER Entity).

Default [ON]

I. NULL Option (ER Entity)

Check this option to show NULL Option (ER Entity).

Default [OFF]

J. Cardinality (Relationship)

Check this option to show Cardinality (Relationship).

Default [ON]

k. Verb Phrase (Relationship)

Check this option to show Verb Phrase (Relationship).

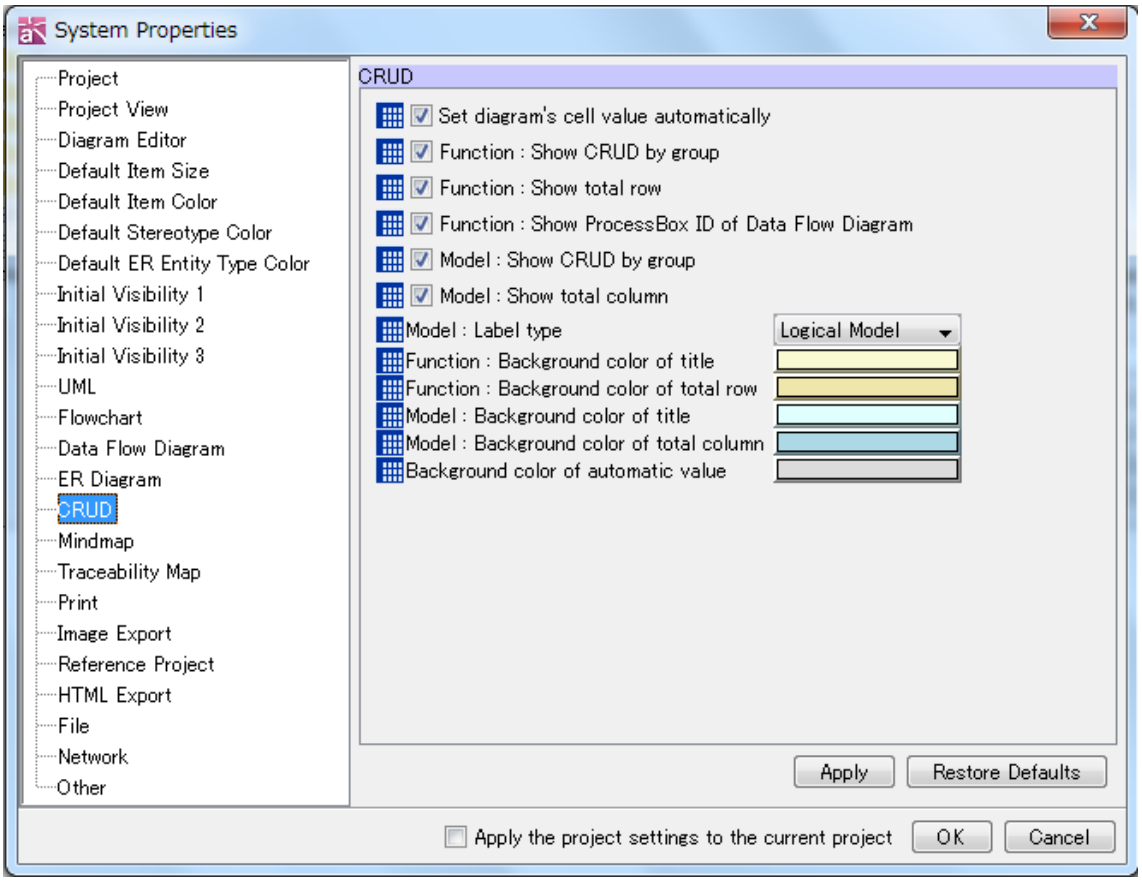
Default [ON]

l. Align Attribute items in ER Entity

Check this option to align the display of Attribute items in ER Entity.

Default [ON]

41. 15. CRUD [P]



a. Set diagram's cell value automatically

Check this option to set diagram's cell value automatically.

Default [ON]

b. Function : Show CRUD by group

Check this option to show items by group.

Default [ON]

c. Function : Show total row

Check this option to show the total row at the bottom.

Default [ON]

d. Function : Show ProcessBox ID of Data Flow Diagram

Check this option to show ProcessBox ID in Data Flow Diagram.

Default [ON]

e. Model : Show CRUD by group

Check this option to show items by group.

Default [ON]

f. Model : Show total column

Check this option to show the total column at the bottom right.

Default [ON]

g. Model : Label Type

Choose Logical Name or Physical Name for label in CRUD.

Default [Logical Model]

h. Function : Background color of title

Set the background color of titles in the function column.

i. Function : Background color of total row

Set the background color of total rows in the function column.

j. Model : Background color of title

Set the background color of titles in the model column.

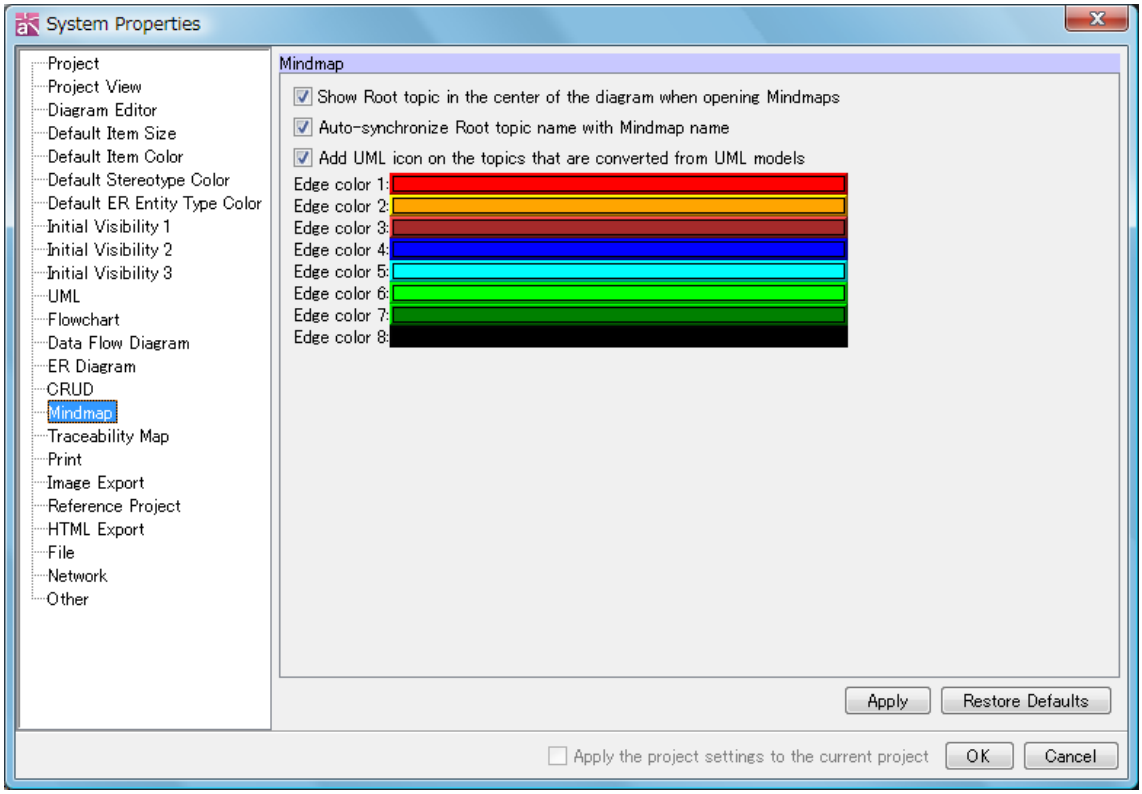
k. Model : Background color of total column

Set the background color of total columns in the function column.

l. Background color of automatic value

Set the background color of automatic values.

41. 16. Mindmap



a. Show Root topic in the center of the diagram when opening Mindmaps

Check this option to place Root topic at the center

Default [ON]

b. Auto-synchronize Root topic name with Mindmap name

Check this option to synchronize Root Topic name with Mind map name.

Default [ON]

c. Add UML icon on the topics that are converted from UML models

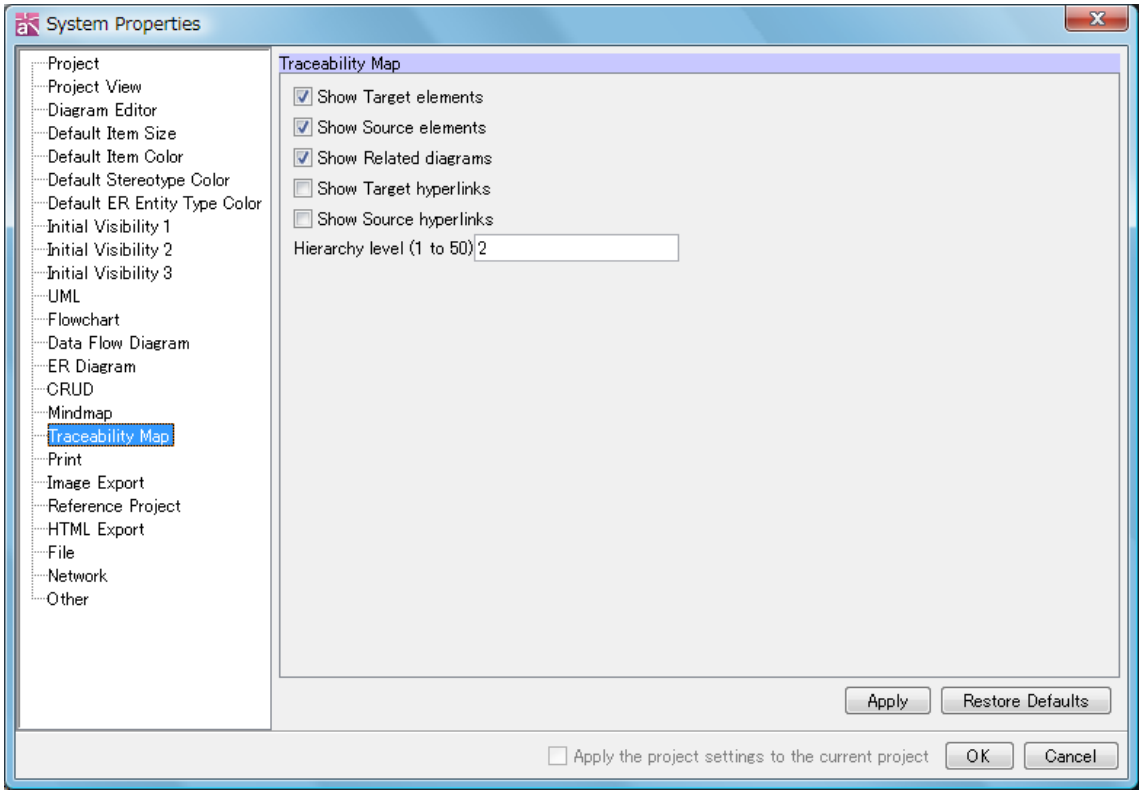
Check this option to show a UML icon when converting UML Model to Topic.

Default [ON]

d. Edge color

Set default Edge color.

41. 17. Traceability Map



a. Show Target elements

Default [ON]

b. Show Source elements

Default [ON]

c. Show Related diagrams

Default [ON]

d. Show Target hyperlinks

Default [OFF]

e. Show Source hyperlinks

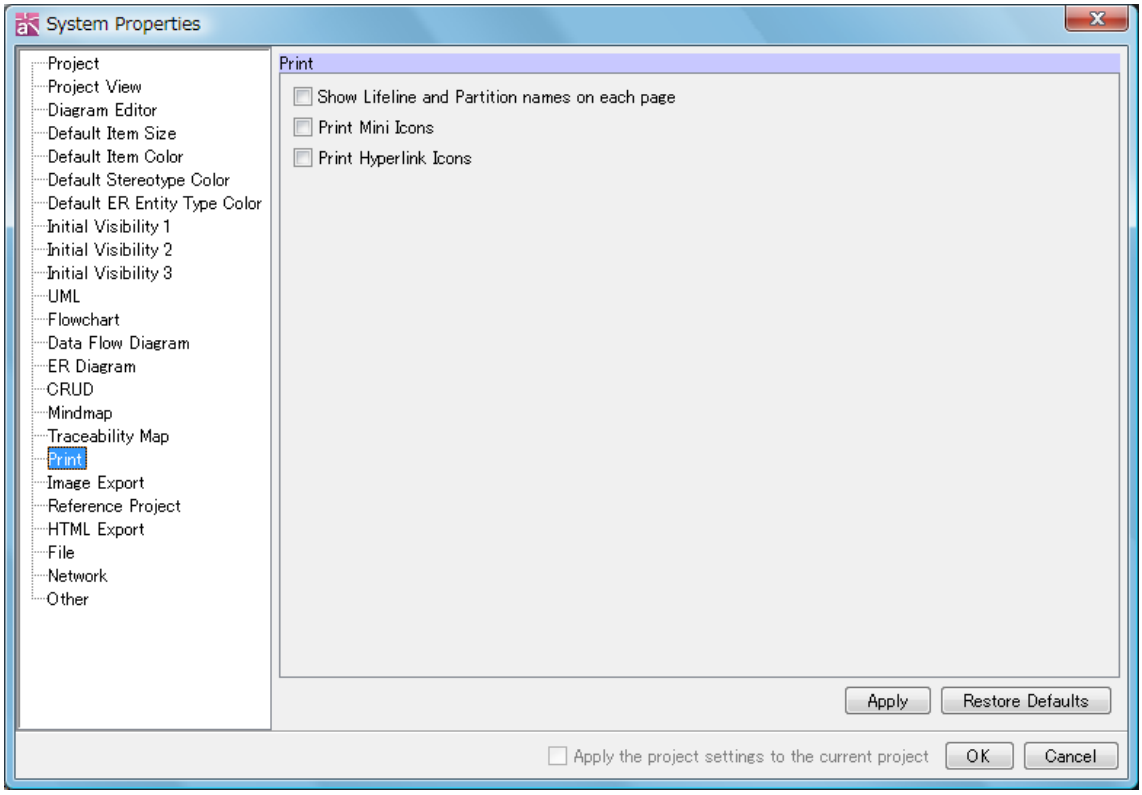
Default [OFF]

f. Hierarchy level (1 to 50)

Specify the hierarchy of traceability map from 1 up to 50.

Default [2]

41. 18. Print



a. Print Lifeline and Partition names on each page

Default [OFF]

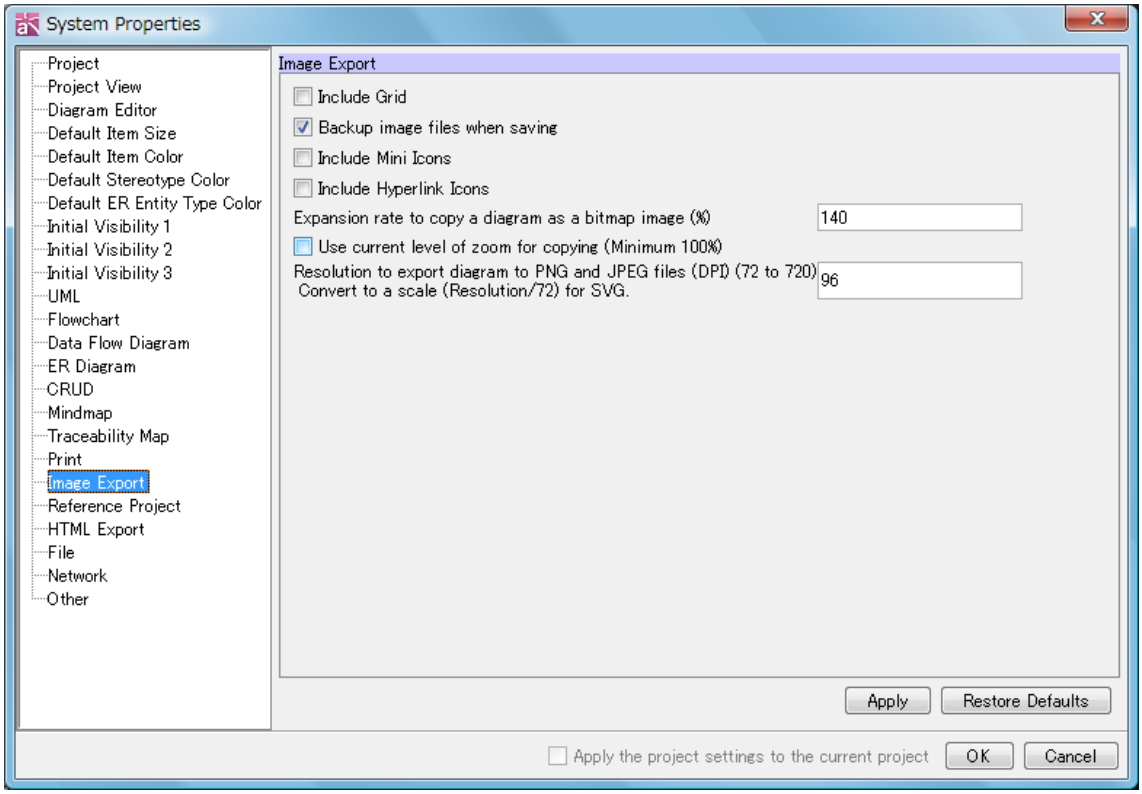
b. Print Mini Icons

Default [OFF]

c. Print Hyperlink Icons

Default [OFF]

41. 19. Image Export



a. Include Grid

Default [OFF]

b. Backup image files when saving

Check this option to create backup files when image files are saved.

Default [ON]

c. Include Mini Icons

Default [OFF]

d. Include Hyperlink Icons

Default [OFF]

e. Expansion rate to copy a diagram as a bitmap image (%)

Set the expansion rate to copy a diagram as a bitmap image (%).

Default [140]

f. Use current level of zoom for copying (Minimum 100%)

Click this option to use the zoom level of the screen for copy (Minimum 100%).

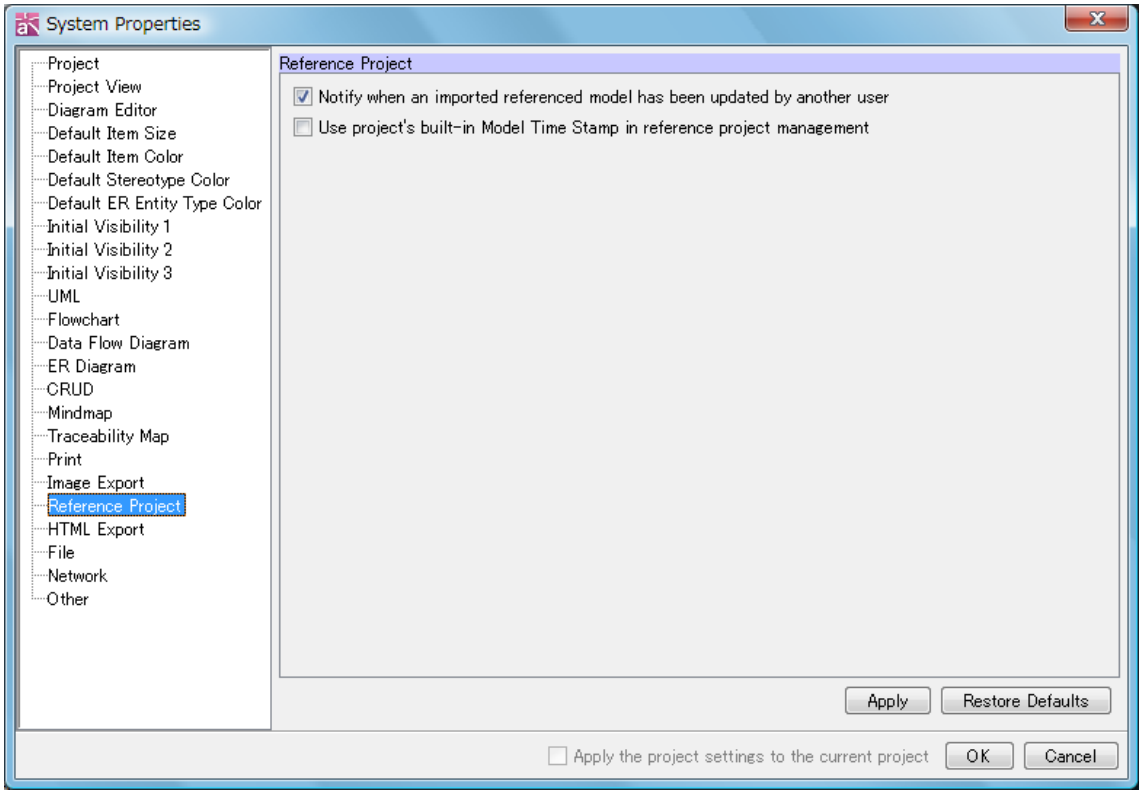
Default [OFF]

g. Resolution to export a diagram to PNG and JPEG files (DPI) (72 to 720)

Convert to a scale (Resolution/72) for SVG.

Default [96]

41. 20. Reference Project [P]



The merge options can be set in this segment.

a. Notify when an imported referenced model has updated by another user

Check this option to confirm the update of the reference projects when opening a project file.

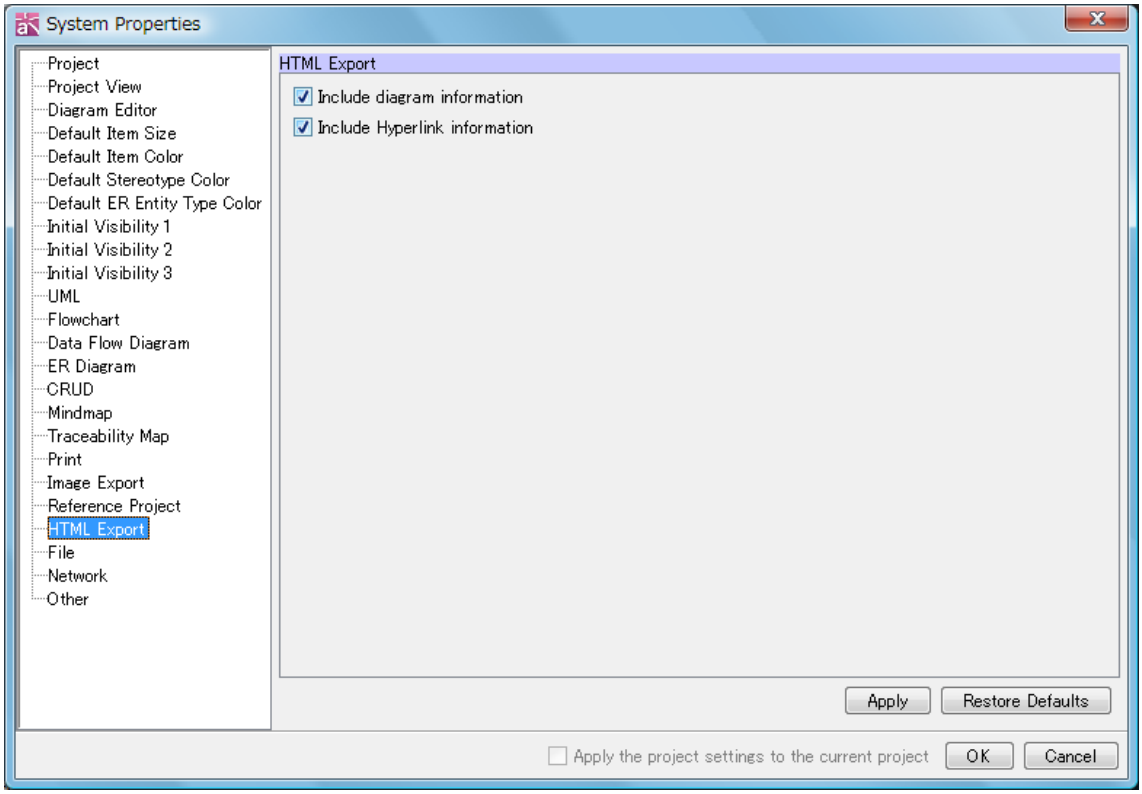
Default [ON]

b. Use project's built-in Model Time Stamp in reference project management

Check this option to use built-in model time stamp in reference project management, otherwise, file time stamp is used.

Default [OFF]

41. 21. HTML Export



a. Include diagram information

Click this option to output diagram information to HTML documents.

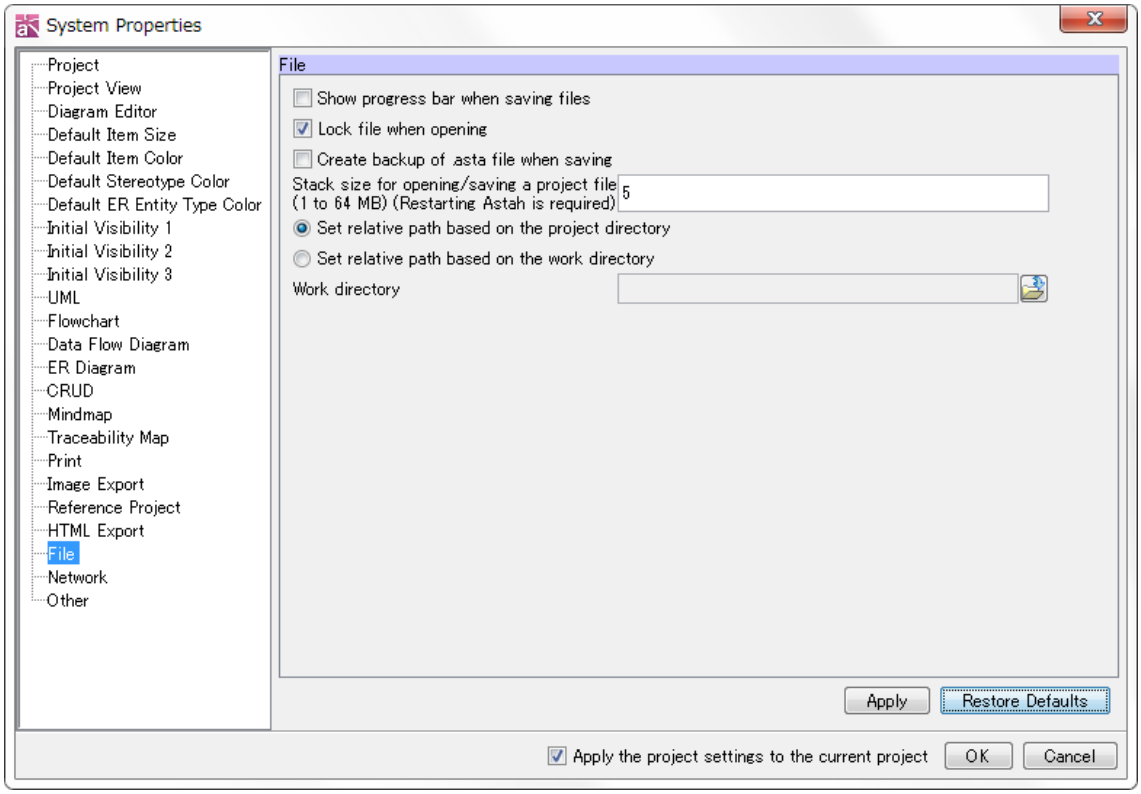
Default [ON]

b. Include Hyperlink information

Click this option to output hyperlink information to HTML documents.

Default [ON]

41. 22. File



a. Show progress bar when saving files

Check this option to show progress bar when saving files.

Default [OFF]

b. Lock file when opening

Check this option to set a lock to a project file when opening it (.lock file will be generated in the directory where the project file is saved). When other users try to open the locked file, it opens in Read-Only mode.

Default [ON]

c. Create backup of .asta file when saving

Check this option to create a backup file when Project is saved.

Default [OFF]

d. Stack size for opening/saving a project file (1 to 64MB)

(Restarting Astah is required)

Specify the stack size number to open or save a project file.

Default [5]

e. Set relative path based on the project directory

Check this option to set the directory, where the Project is saved, to be the Base Directory of relative paths of Hyperlinks.

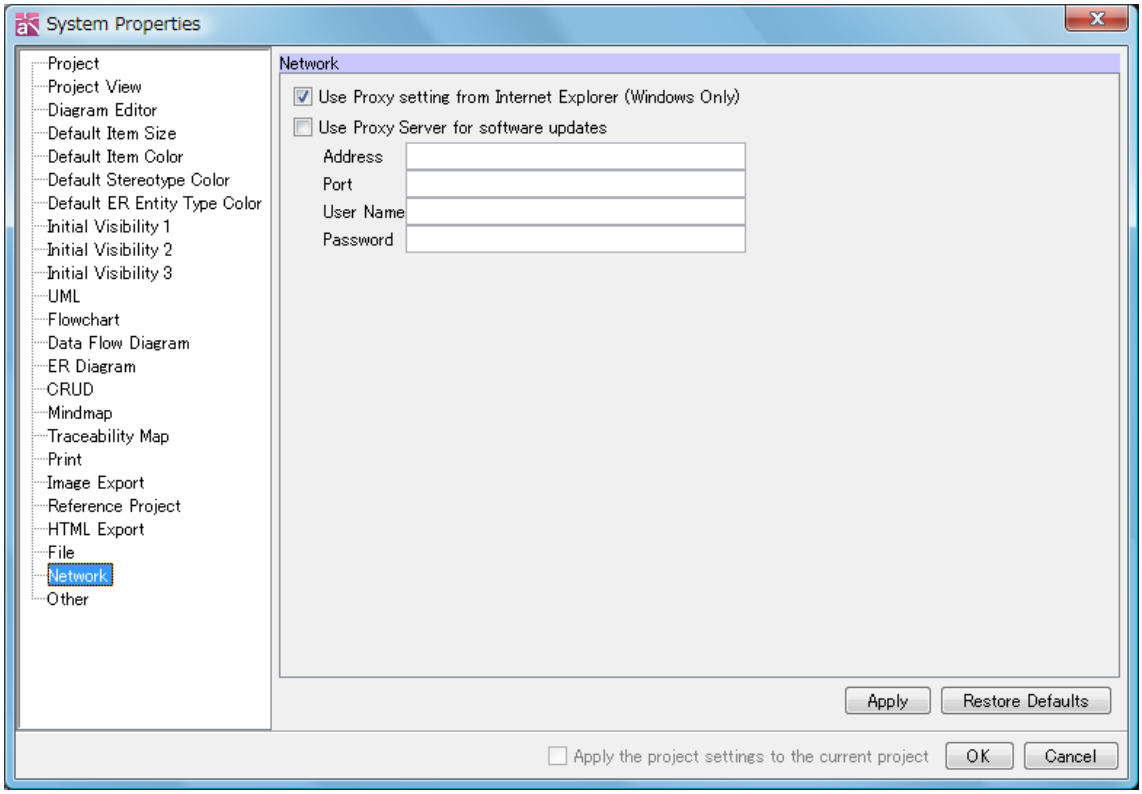
Default [ON]

f. Set relative path based on the work directory

Check this option to set the specified directory to be the Base Directory of relative paths of Hyperlinks.

Default [OFF]

41. 23. Network



a. Use Proxy setting from Internet Explorer (Windows Only)

Check this option to use the proxy server setting from Internet Explorer.

Default [ON]

b. Use Proxy Server for software updates

Check this option to use the proxy server to receive update information and activate node count license.

Default [OFF]

Configure the Proxy information in the following fields.

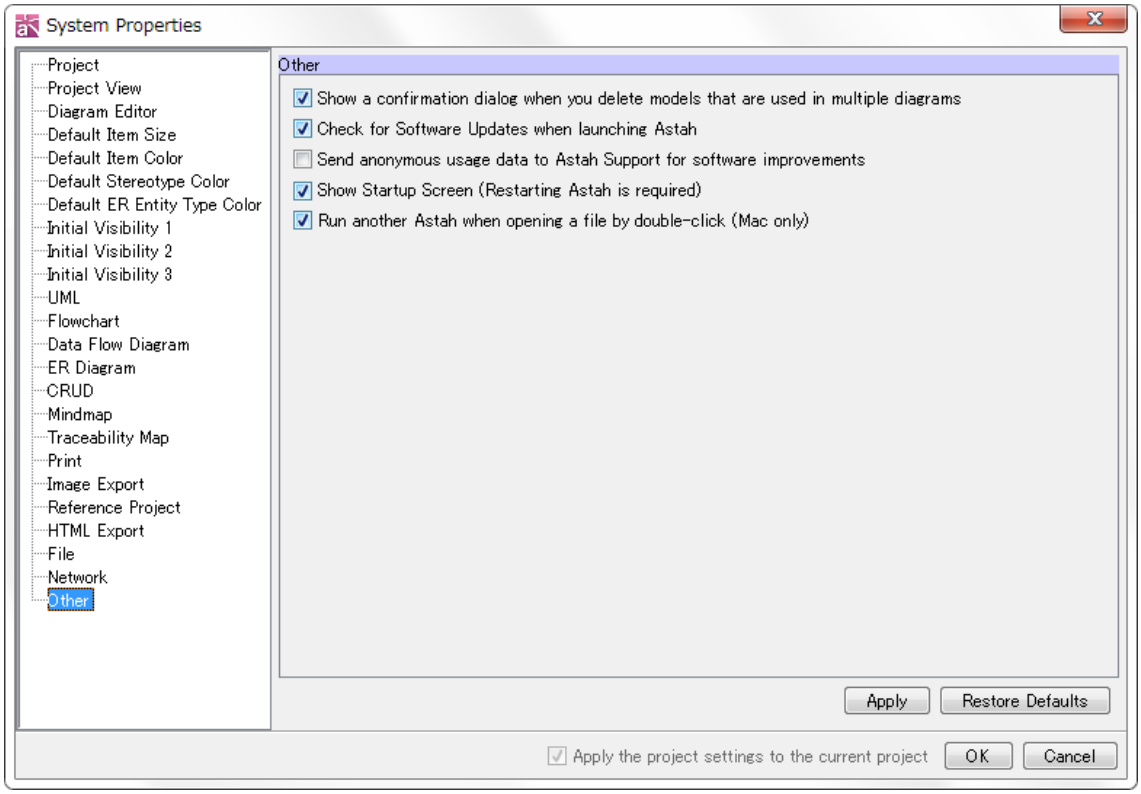
c. Address

d. Port

e. User Name

f. Password

41. 24. Other



a. Show a confirmation dialog when you delete models that are used in multiple diagrams

When this option is checked, a dialog appears when you try to delete model elements which are used in other Diagrams.

Default [ON]

b. Check for Software Update when launching Astah

Check this option if you want to check software update every time you launch Astah.

Default [ON]

c. Send anonymous usage data to Astah Support for software improvements

Check this option to allow to send anonymous usage data.

Default [OFF]

d. Show Startup Screen (Restarting Astah is required)

Check this option to show the startup screen.

Default [ON]

e. Run another Astah when opening a file by double-click (Mac only)

Check this option to run another Astah when opening a file by double-click. (Mac only)

Default [ON]

42. Programming Language Setting (Java, C#, C++)

The programming language for the project can be specified in Astah. By setting the language, skeleton code in the selected language can be exported and also models with specific attributes that are defined by the language are created.

42. 1. Setting programming language

42. 1. 1. Setting programming language

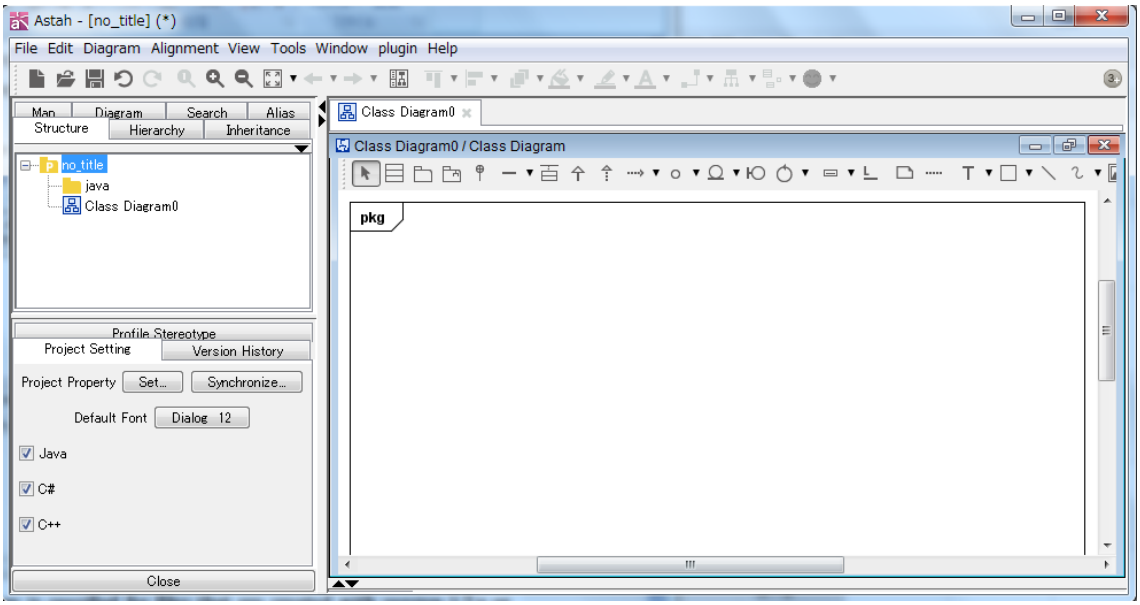
Language can be set by simply checking on the checkbox on the [Project Setting] of Project's property. Once language is specified, setting of specific information defined by language is available on the properties of Class, Attribute and Operation.

To see Project property, go to Project File Properties - [Project Setting] Tab.

To see Class language property, go to Class Properties - [Language] Tab.

To see Attribute language property, go to Attribute Properties (Class Diagram) - [Language] Tab.

To see Operation language property, go to Operation Properties - [Language] Tab.



No programming language is specified for files that are created with version 5.2.x or earlier. This can be set on [Project Setting] Tab of Project's property in version 5.3 or later.

42. 1. 2. Applying and removing language setting

1) Applying language setting

By checking on the checkbox of language on the [Project Setting] Tab of Project Property

View, the checked language will apply to the whole project. Java/C#/C++ language information can be specified in the [Language] Tab of Classes, Attributes and Operations.

2) Removing language setting

By checking off the checkbox on the [Project setting] Tab of Project Property View, the language setting will be removed from the project.

42. 1. 3. Setting default programming language for new projects

The default language can be specified in the System Property - File tab.

42. 1. 4. Specifying Primitive Type

Primitive types are included in the list of types of Attribute or Return Value of Operation and so on. If no programming language is specified, Java primitive types are shown as default.

43. Astah API

By using Astah's Plug-in architecture, you are able to add specific features to Astah using Astah API.

[Reference API]
Astah API obtains main model information of Class Diagrams, UseCase Diagrams, Statemachine Diagrams, Activity Diagrams, Sequence Diagrams, Communication Diagrams, Composite Structure Diagrams, Flowchart[P], Data Flow Diagrams (DFD)[P], CRUD[P], ER Diagrams[P], Requirement Diagrams [P] and topic information of Mind Maps.

[Edit API]
Models in Class diagrams, UseCase Diagrams, Sequence Diagrams, Composite Structure Diagrams, ER Diagrams [P], Requirement Diagrams [P] and Mind Map topics can be created, edited and deleted by using Astah API.

Please refer to API User Guide for detail.
Windows: Go to [Start] - [Program] - [Astah Professional (UML)] - [API User Guide]
Mac & Linux: Go to Astah installation folder/api/ja/doc/index.html

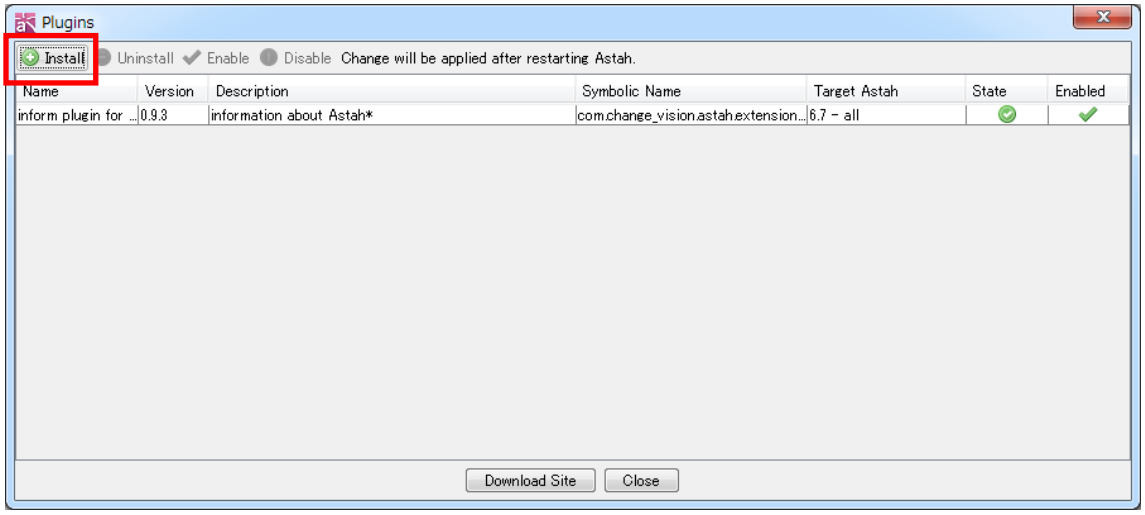
You can find information regarding Astah API at:
Astah API: http://astah.net/features/astah-api

44. Plugins

[Astah Plug-ins]

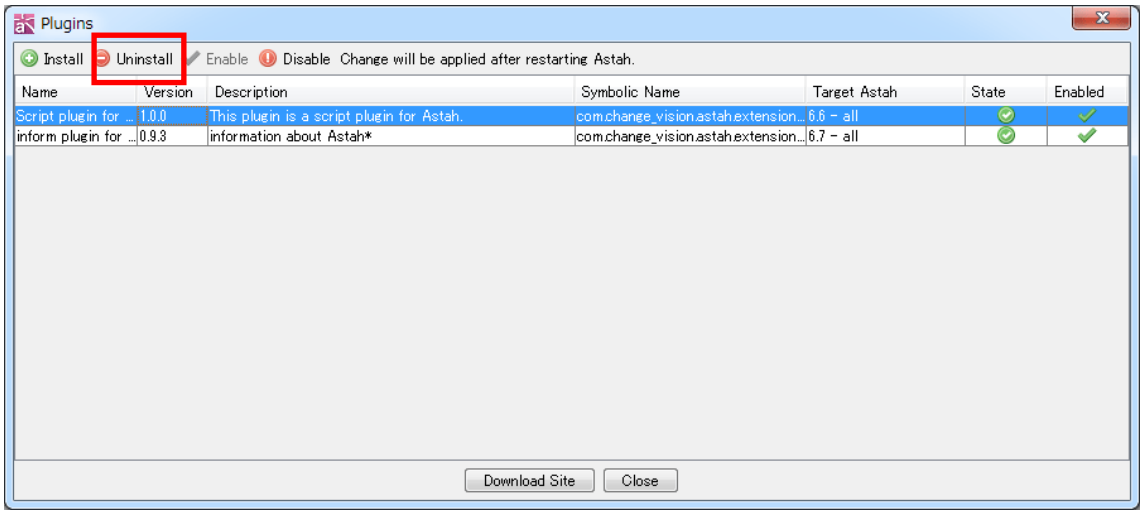
Write your own Plug-in by using Astah API to extend the features of Astah such as adding menu, extended view and original components into Astah's GUI.

44. 1. 1. Install



In order to install Plug-ins, click [Install] button and select the target Plug-in's jar file and restart Astah.

44. 1. 2. Uninstall



In order to uninstall Plug-ins, select the Plug-in from the list and then click [Uninstall] button. For more information, please visit at http://astah.net/features/plugins