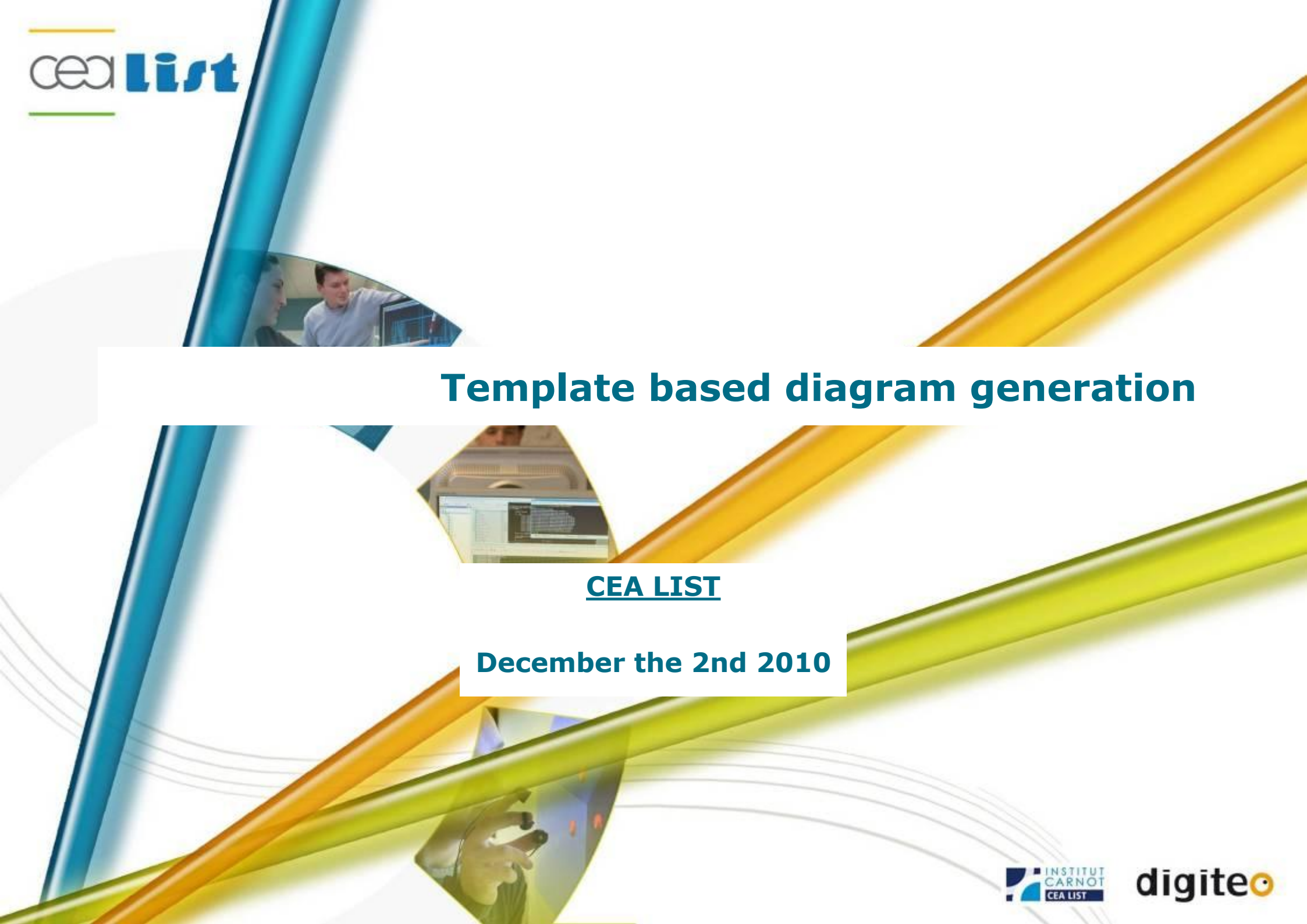
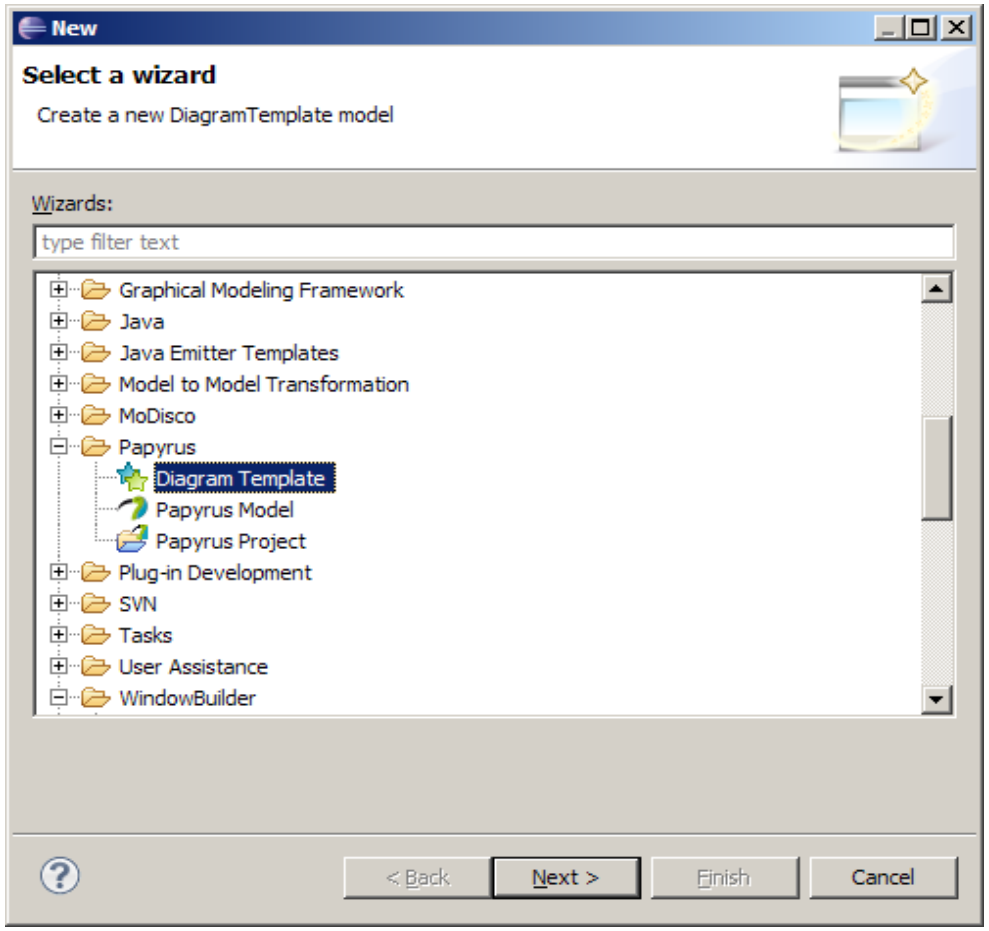


Template based diagram generation

CEA LIST

December the 2nd 2010

Create a new diagram template



Editor overview

Name of the diagram definition

Prefix used to name the diagram: prefix+name of the owner

Root to start search

The model to apply the template on

Clear specific information: remove application on a specific model

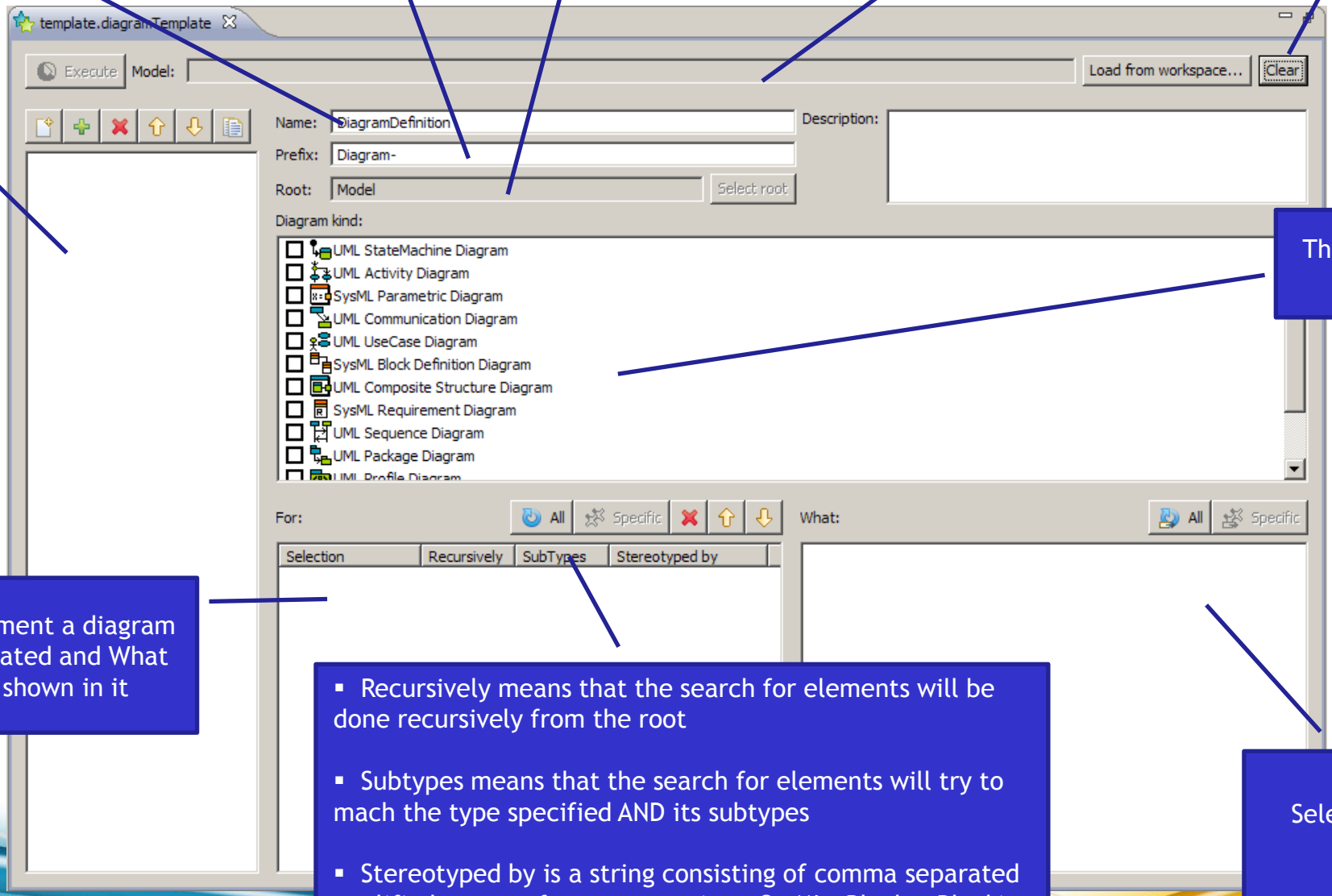
Diagram definitions

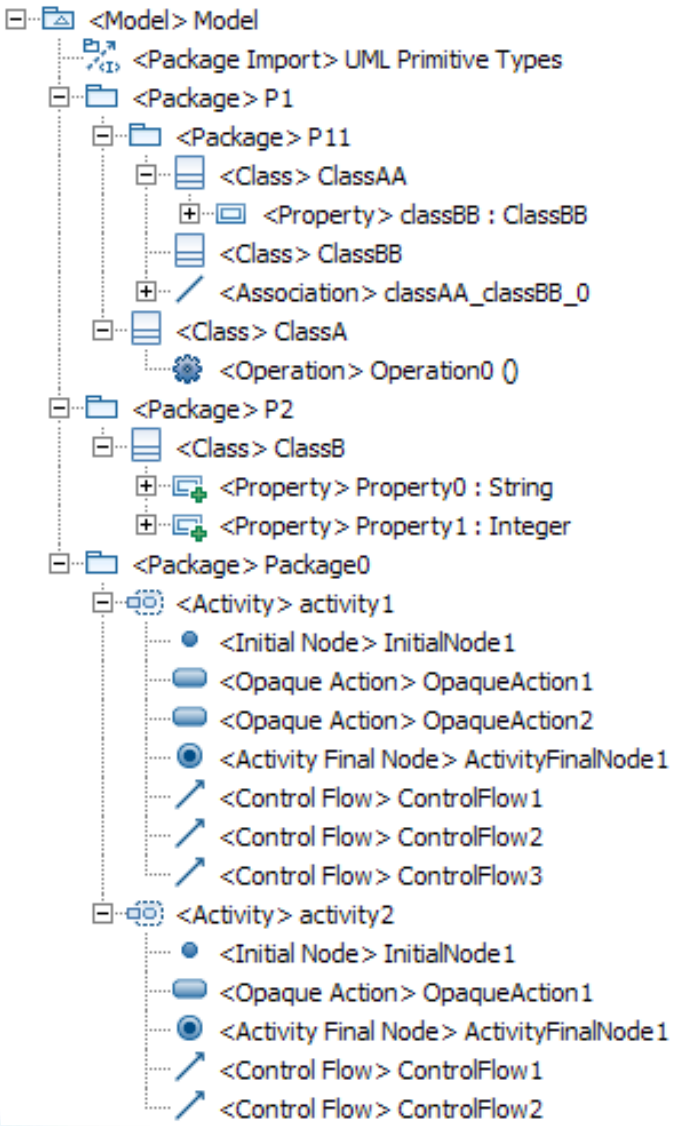
The kind of diagram to create

For which element a diagram should be created and What should be shown in it

- Recursively means that the search for elements will be done recursively from the root
- Subtypes means that the search for elements will try to mach the type specified AND its subtypes
- Stereotyped by is a string consisting of comma separated qualified names of stereotypes (e.g. SysML::Blocks::Block). The search will try to match this stereotype applications

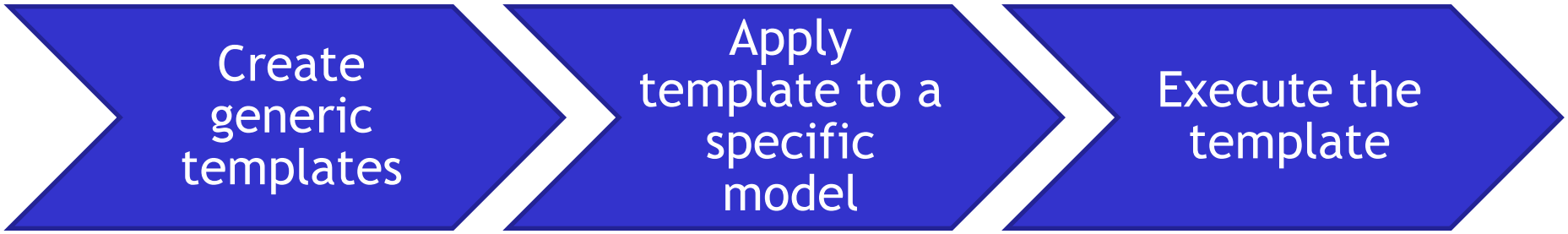
Select what should be shown



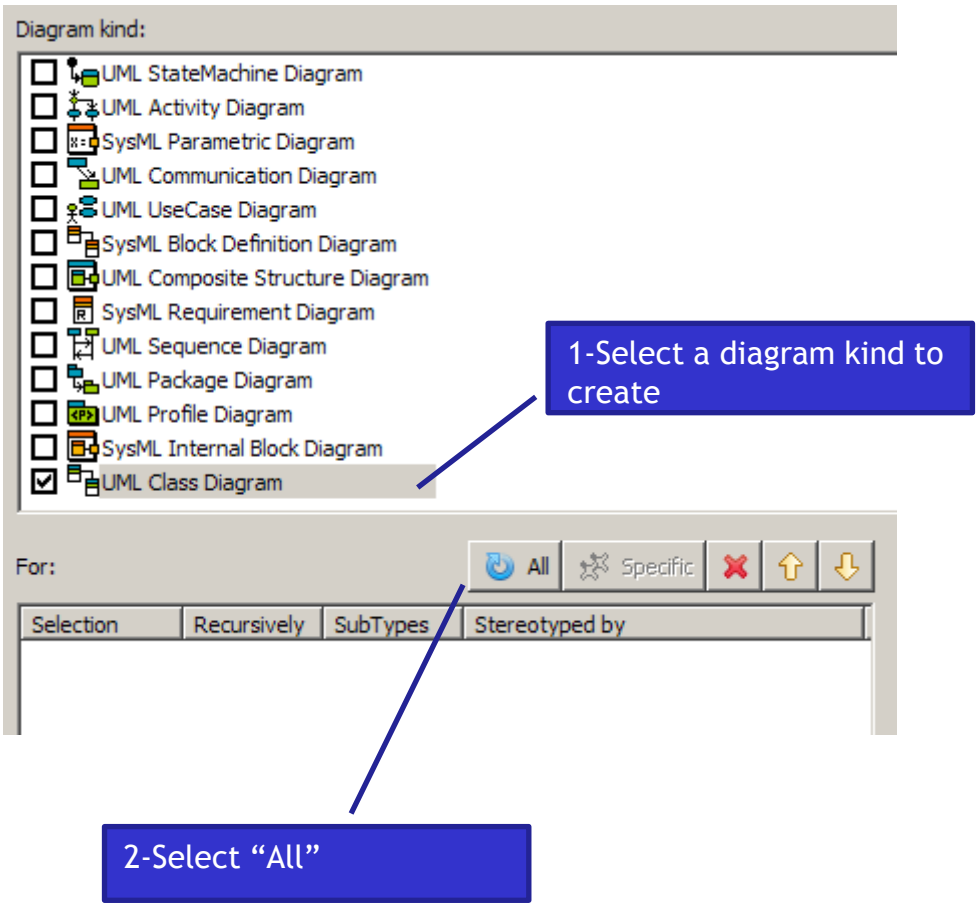


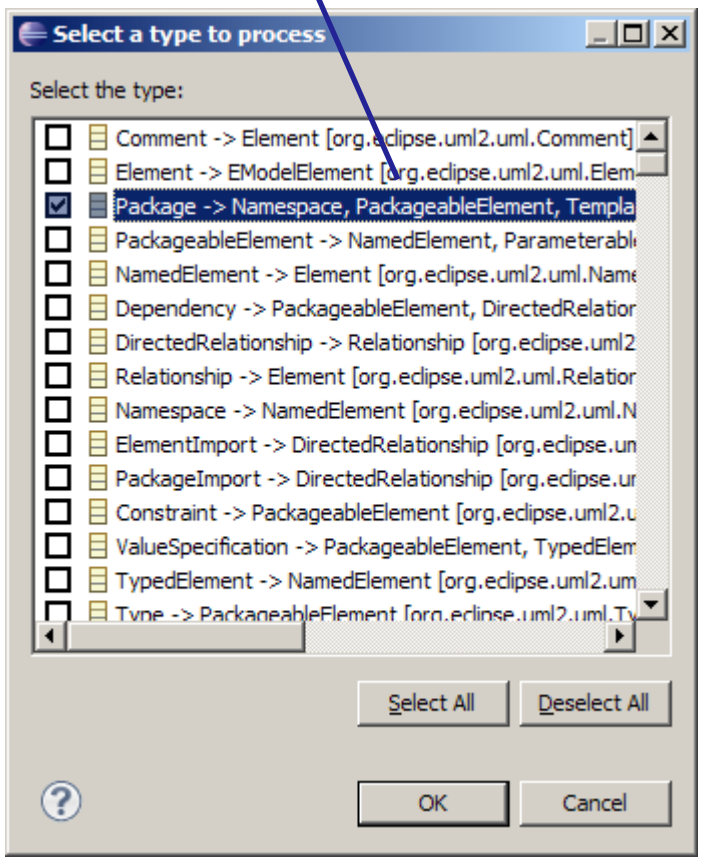
- **Create class diagrams for all packages**
  - Show classes
    - Show attributes and operations
  - Show associations
- **Create an activity diagram for activity1**
  - Show ControlFlows

Template editor



Create generic templates
Create class diagrams for all packages

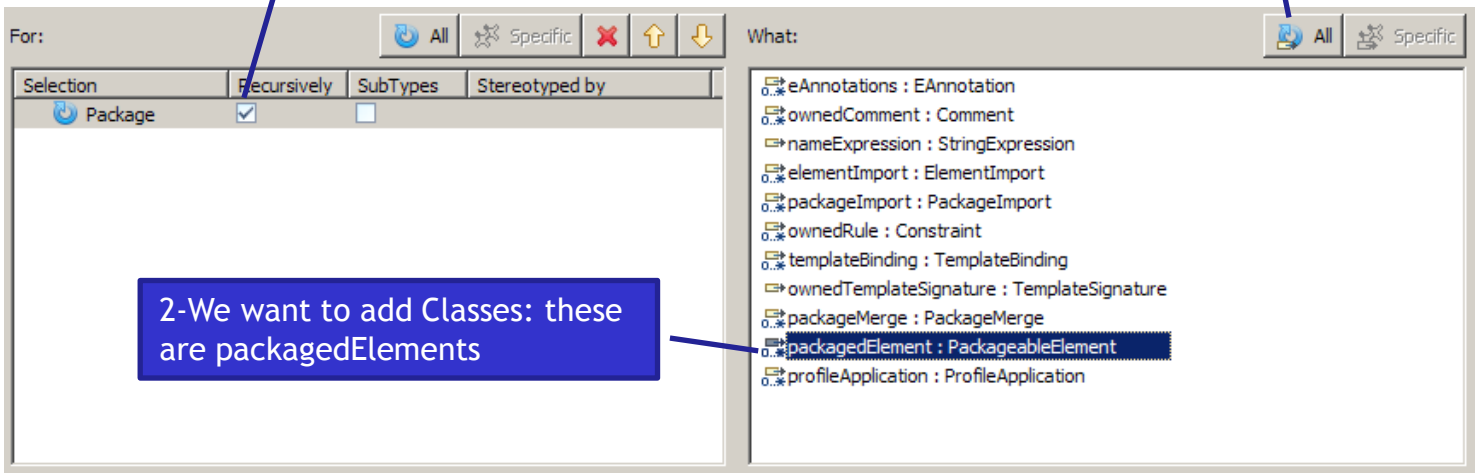




Create generic templates
Show classes

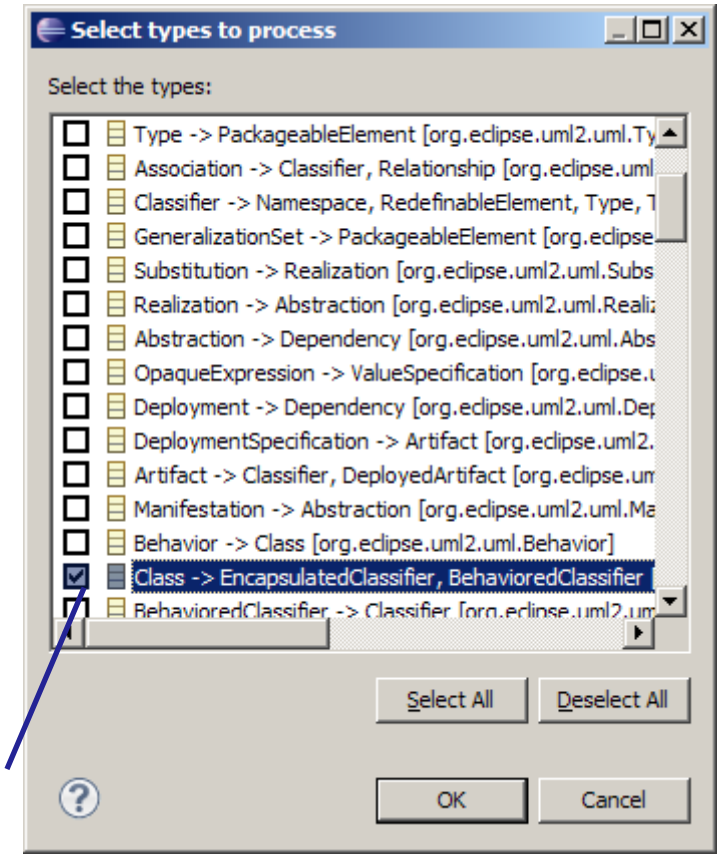
1-We want to create diagrams for all packages recursively

3-We want to process all the classes



2-We want to add Classes: these are packagedElements

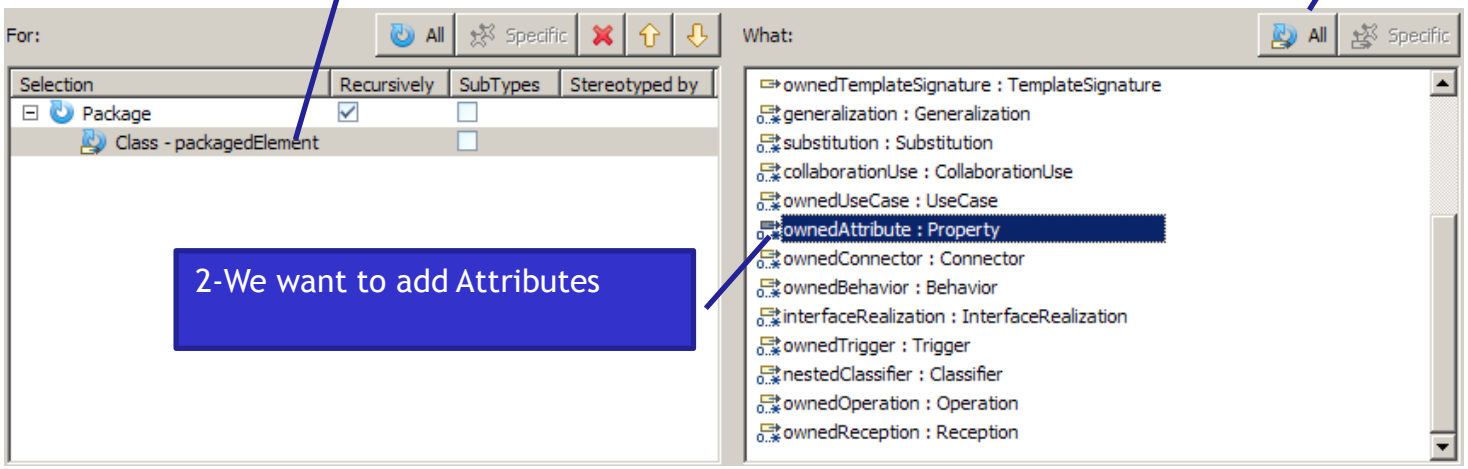
4-Select Class



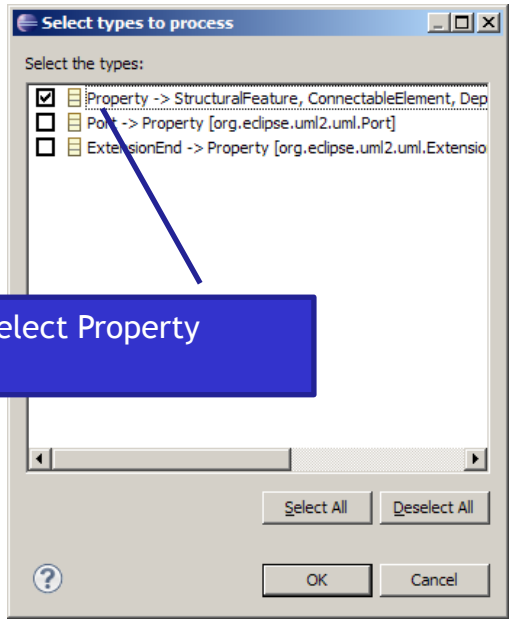
Create generic templates
Show attributes and operations

1-Select the “All classes”

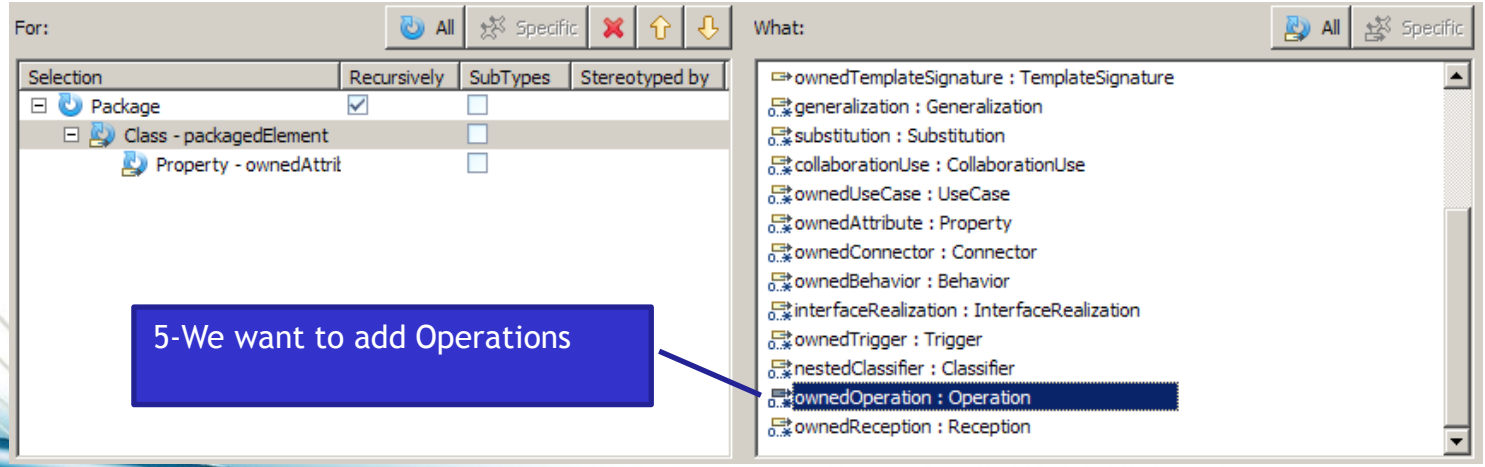
3-We want to process them all



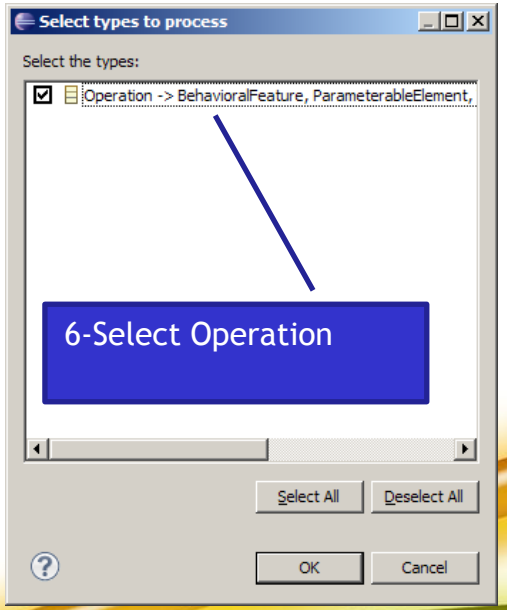
2-We want to add Attributes



4-Select Property

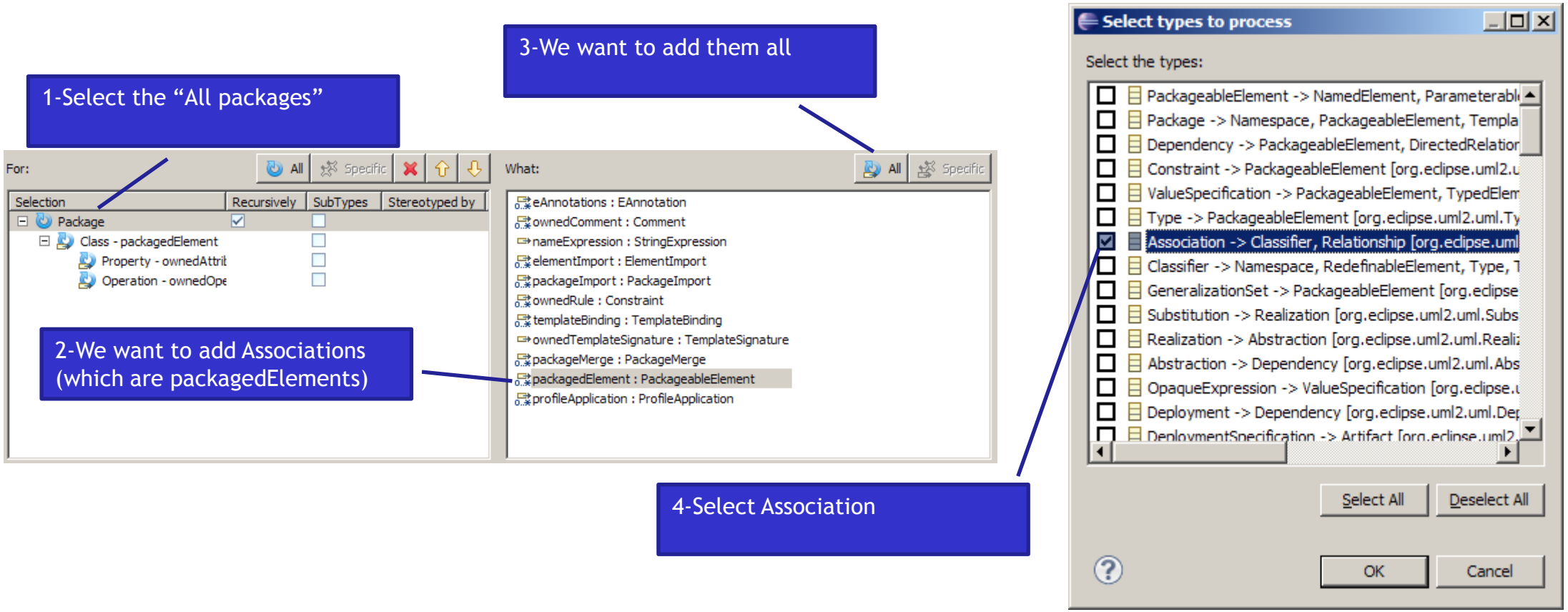


5-We want to add Operations



6-Select Operation

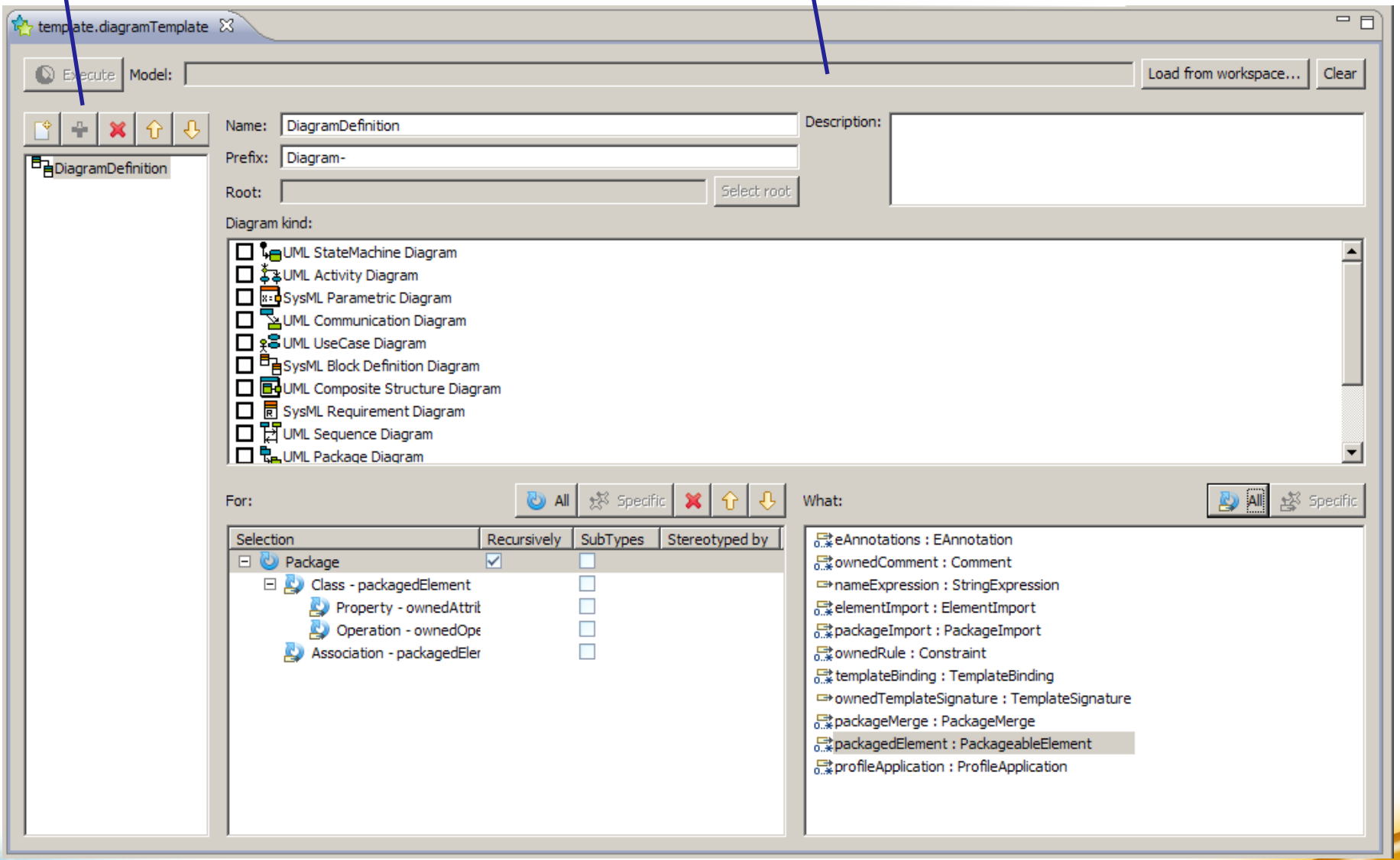
Create generic templates
Show associations



Create generic templates

Add this diagram definition

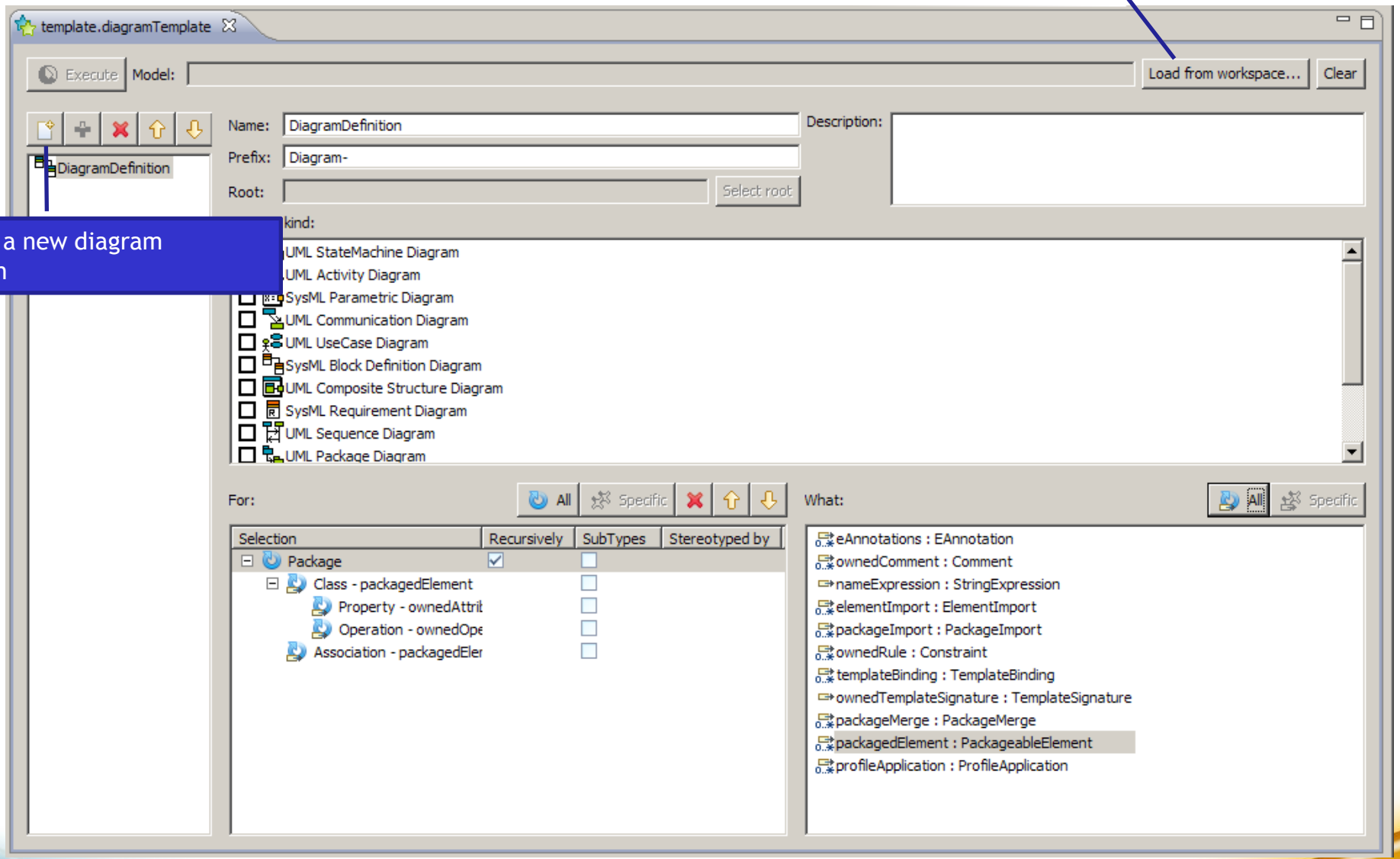
At this stage, the template is generic



Apply template to a specific model

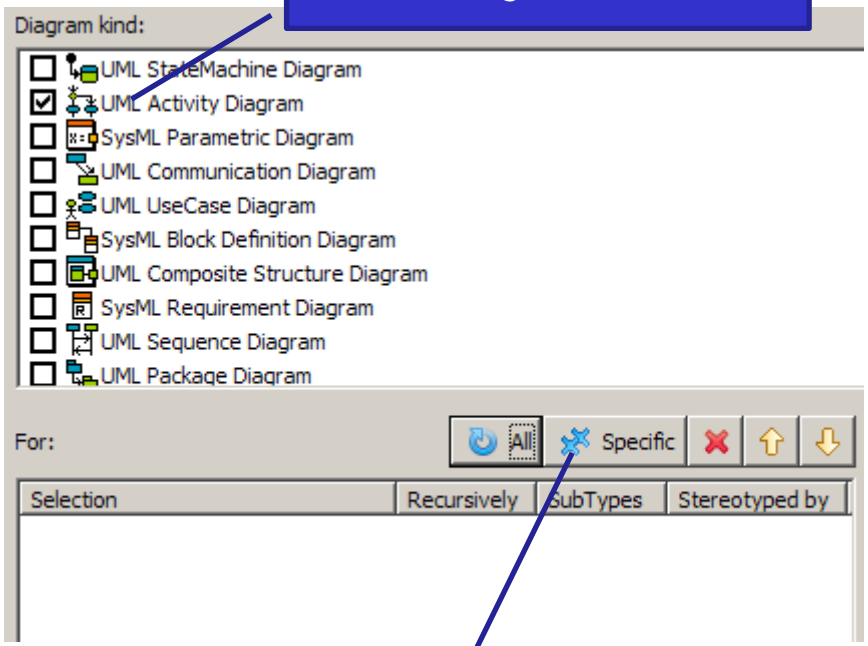
1-Select a UML model to apply this template on

2-Create a new diagram definition



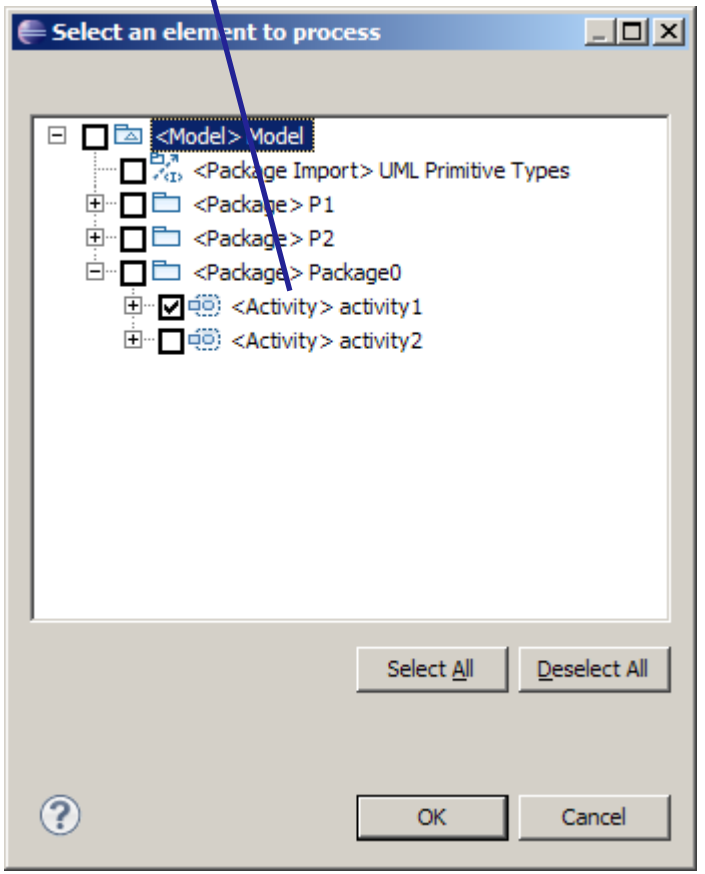
Apply template to a specific model
Create an activity diagram for activity1

1-Select a diagram kind to create

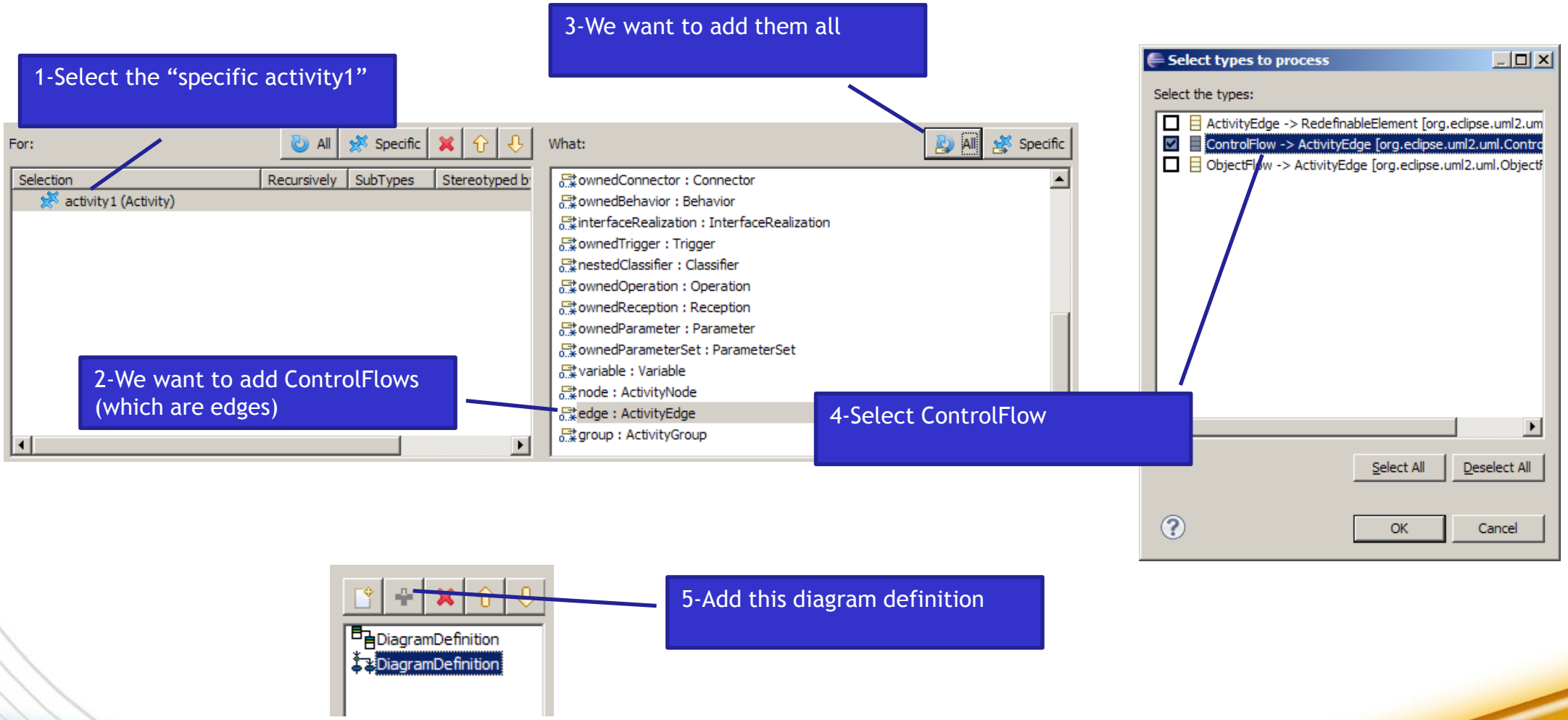


2-Select “Specific”

3-Select the element you want to create the diagram for. Here, select activity1

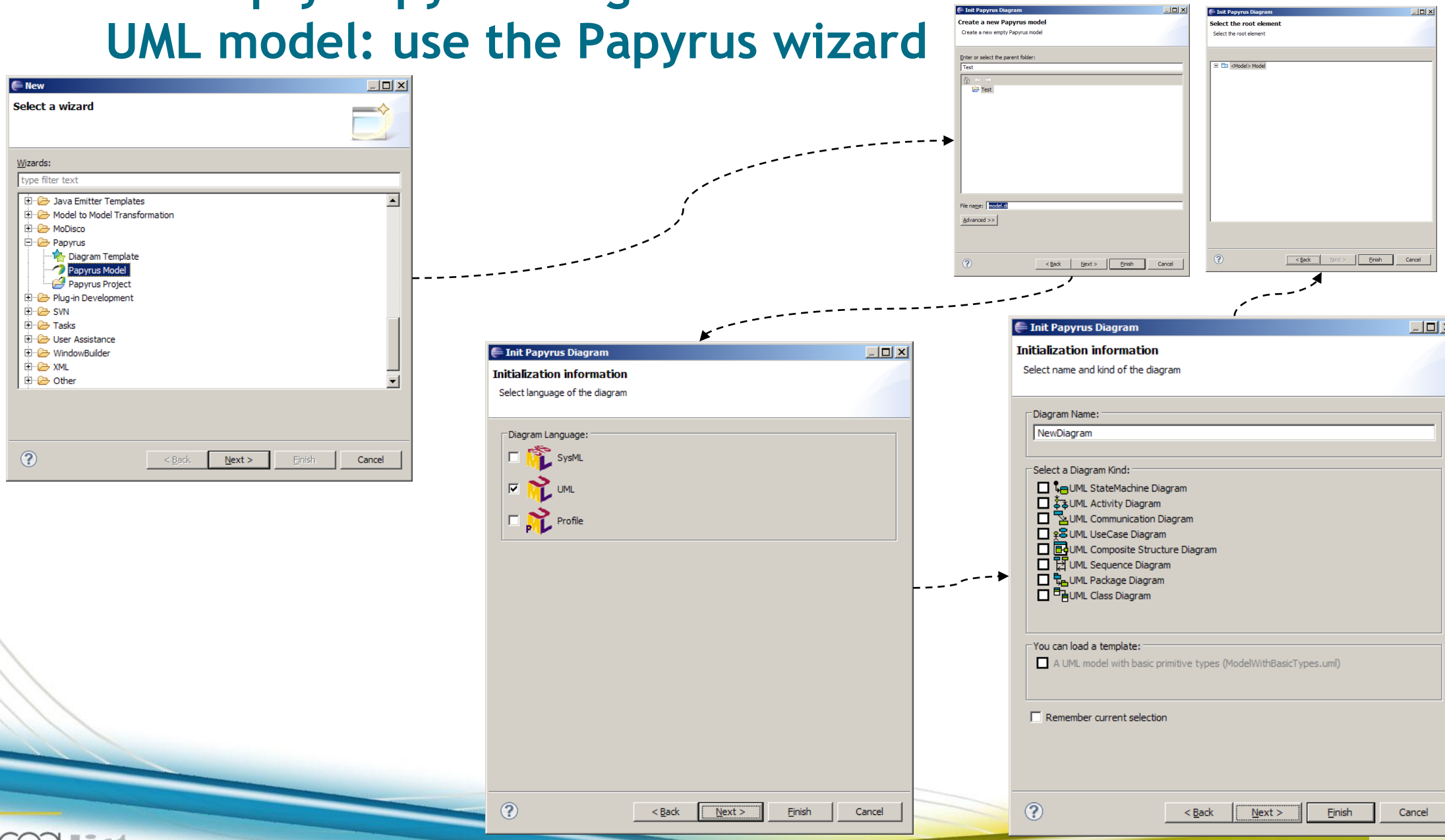


Apply template to a specific model
Show ControlFlows



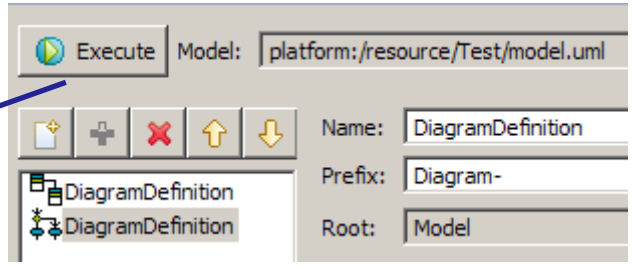
Execute the template

- An empty Papyrus diagram must be created for the UML model: use the Papyrus wizard

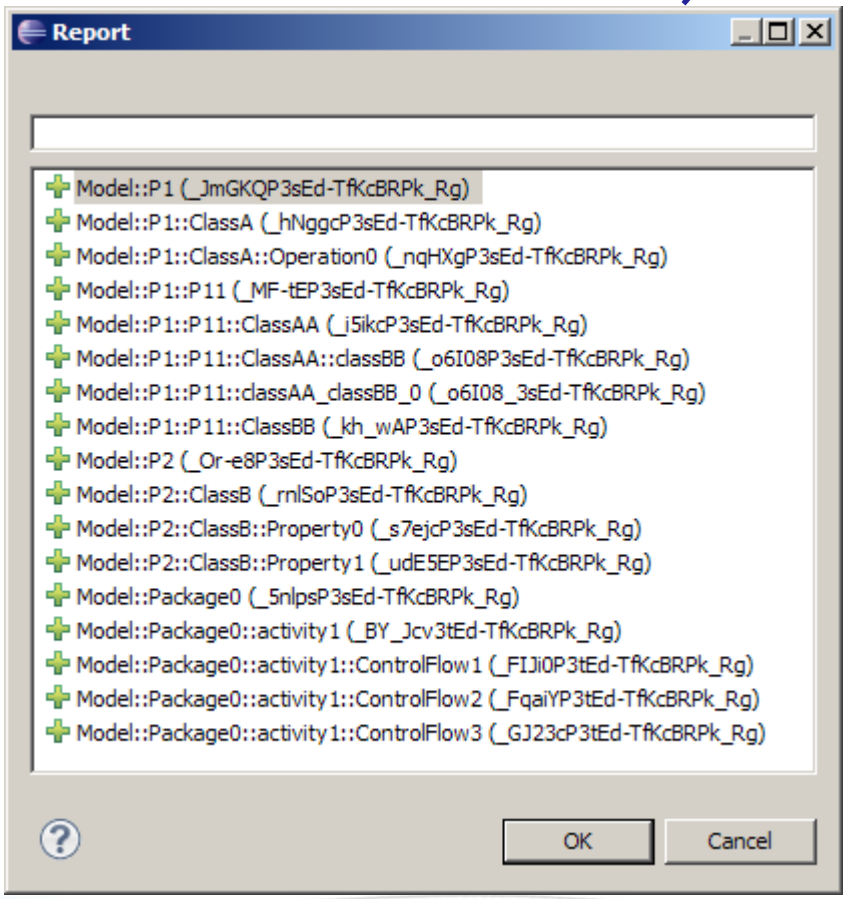


Execute the template

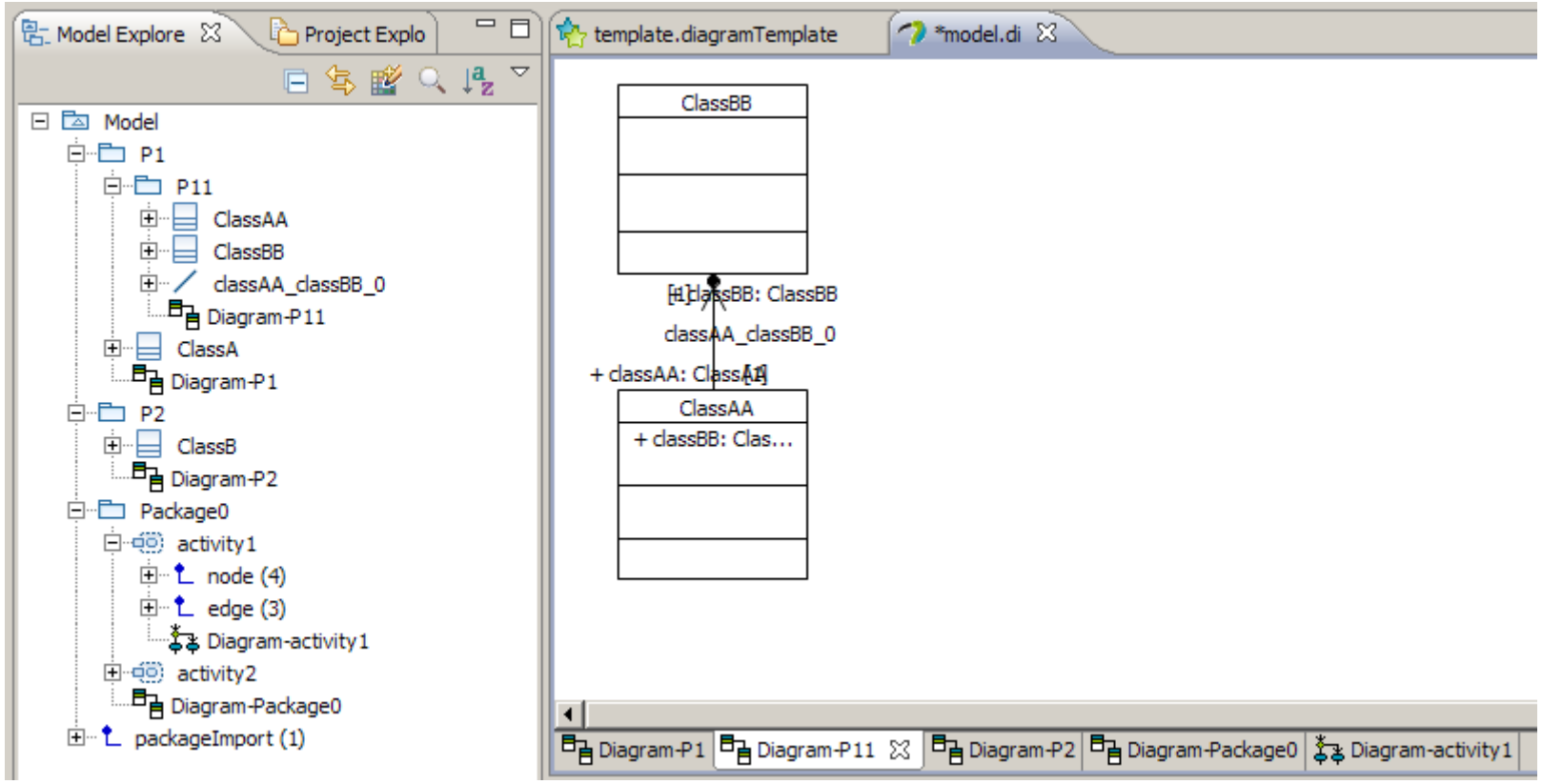
1-When your template is defined : Execute



2-You get a report of what has been added (green +). If something matches the template definition but failed to be shown on a diagram or a diagram cannot be created, you will get a red X for it



Result


Model Explore
Project Explo
Model
P1
P11
ClassAA
ClassBB
classAA_classBB_0
Diagram-P11
ClassA
Diagram-P1
P2
ClassB
Diagram-P2
Package0
activity1
node (4)
edge (3)
Diagram-activity1
activity2
Diagram-Package0
packageImport (1)
template.diagramTemplate
*model.di
ClassBB
[1] classBB: ClassBB
classAA_classBB_0
+ classAA: ClassAA [1]
ClassAA
+ classBB: Clas...
Diagram-P1
Diagram-P11
Diagram-P2
Diagram-Package0
Diagram-activity1

- **If the drag and drop feature is not well implemented then the diagram generation will fail**
  - Post a bug to the developer responsible for the diagram that failed.
- **Expressivity is clearly not enough**
  - Use queries (Modisco) to define :
    - for which elements diagrams are to be created
    - what to show on each diagram
- **Layout of generated diagrams is not always adequate**
  - Post process generation with advanced auto layout algos
  - Let the template designer choose which layout to apply on a diagram definition
- **Report is too laconic**
  - A verbose trace should be generated