Generic Decorator Technical documentation

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Abstract

This documentation presents the technical documentation of a base model decorator in association with a feature diagram editor. This feature diagram editor permit to model variability of a given architecture model (base model) on a variability model (here feature model). The aim of the base model decorator is to add a graphical decorator on Domain Model Elements from base model added on an optional feature in the base model modeler. This base model decorator tool and feature diagram editor take part of the ANR Project MOVIDA.

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CHAPTER

Preface

Feature models are a way to add variability on models. By variability, we mean to model common and variable parts of a given architecture. An example of use of variability is given by *Software Product Line (SPL)* which consists in derive different family of products according to their similarities and differences. Another use is to model different software architecture possible choices. The aim of the Generic Decorator Engine is adding variability information on the base model modeler by adding a decorator on Domain Model Elements. For more information about it please refer to the sample wink video .

Please also refer to end-user documentation .

CHAPTER 1

Installation

To install Base Model Decorator Engine you need to select the Feature Diagram Editor category on the *Movida Studio update site* and all of its dependencies and select *Base Model Decorator for Flow Model.* In this case, Base Model Decorator Engine is dependant from Feature Diagram Editor.

CHAPTER 2

Test of Base Model Decorator Engine

Derivation tests are available on the project **fr.inria.featureDiagramEditor.flow.demo**. To retrieve this project go to *File-> New -> Example ->Generic Decorator Sample -> Sample* . Then you can click on the session files (.aird) and open it. If it does not work, select Viewpoint Selection and click on Design.

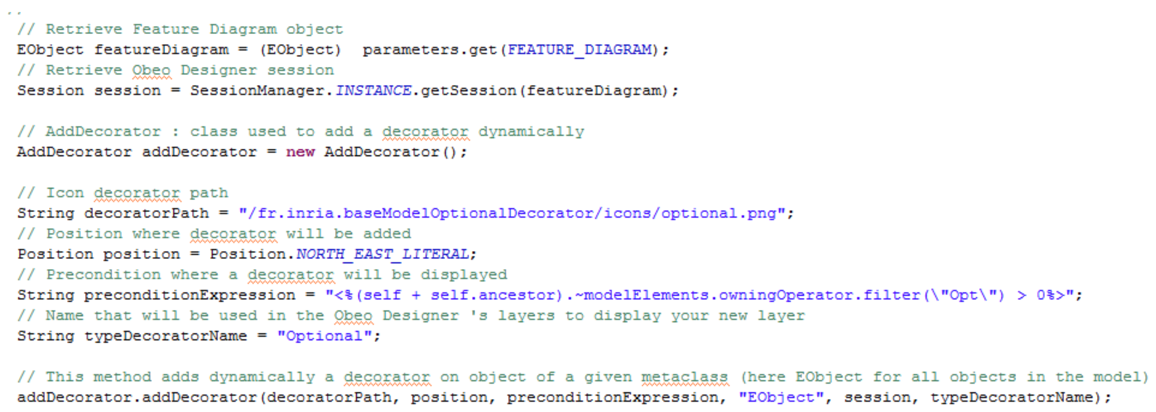
CHAPTER 3

How to create a new Generic decorator

This section presents how to create a new generic decorator.

To create a generic decorator you need to retrieve a session that contains a feature diagram. This can be made by creating a new Obeo Designer viewpoint example that extends the feature Diagram editor that enables a popup menu. This popup menu retrieve the current session and add the new decorator. It must have **fr.inria.generic_decorator.core** has on of its dependencies and call the class AddDecorator.

Then this popup menu will contains a code to call the creation of the new decorator such as in the following figure :



```
..
 // Retrieve Feature Diagram object
 EObject featureDiagram = (EObject)  parameters.get(FEATURE_DIAGRAM);
 // Retrieve Obeo Designer session
 Session session = SessionManager.INSTANCE.getSession(featureDiagram);

 // AddDecorator : class used to add a decorator dynamically
 AddDecorator addDecorator = new AddDecorator();

 // Icon decorator path
 String decoratorPath = "/fr.inria.baseModelOptionalDecorator/icons/optional.png";
 // Position where decorator will be added
 Position position = Position.NORTH_EAST_LITERAL;
 // Precondition where a decorator will be displayed
 String preconditionExpression = "<%(self + self.ancestor).~modelElements.owningOperator.filter(\"Opt\") > 0%>";
 // Name that will be used in the Obeo Designer 's layers to display your new layer
 String typeDecoratorName = "Optional";

 // This method adds dynamically a decorator on object of a given metaclass (here EObject for all objects in the model)
 addDecorator.addDecorator(decoratorPath, position, preconditionExpression, "EObject", session, typeDecoratorName);
```

CHAPTER 4

Conclusion

This document has presented the technical documentation and the tests of the generic decorator. This version works on every model based on EMF.