



EGF Exercices – EMF – UC 2

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Understanding how to customize the EMF generation with EGF

Plugins

- ▶ `org.eclipse.egf.usecase.emf.uc2`
- ▶ Use the library model and project in the `org.eclipse.egf.usecase.emf.uc2` plugin

Prerequisite

- ▶ Read the EGF Tutorial
- ▶ Read the « reuse and customization » EGF tutorial
- ▶ Read the « EMF Generation Patterns » EGF tutorial
- ▶ Understand the « EMF-UC1 » use case in the `org.eclipse.egf.usecase.emf.uc1`

Problem Statement

- ▶ Writing a first factory component which applies a basic EMF generation with patterns from a genmodel file
- ▶ Indications:
 - ▶ Cf. UC EMF UC1 / Exercice #2

Learning

- ▶ Simple Emf generation without customization

Difficulty

- ▶ 1/5

Correction

- ▶ EMF_UC2_1_Library.fcore

Problem Statement

- ▶ Redefine the « Writer.[set | get]Name » methods, « Library.getBooks » and « Library.getStock » methods
- ▶ Indications:
 - ▶ Create four patterns: both 1) for Writer and Library, and 2) for generating the get and set methods. The get/set patterns inherit from the « Class.getGenFeature.TODO.override » and « Class.setGenFeature.TODO.override » patterns.
 - ▶ In the preCondition, write the precondition to apply the pattern
 - ▶ In a doGenerate method, write the get/set generation code
 - ▶ Invoke « EMF [Model | Edit | Editor] Pattern » factory component. For the Model, add a pattern substitution. This is a list of three substitution [super-pattern EMF pattern] / [pattern created for overriding]
 - ▶ In the plugin.xml dependencies, don't forget to add a dependency toward « org.eclipse.egf.emf.pattern » which contains the « Class.getGenFeature.TODO.override » pattern

Learning

- ▶ Override of get/set feature

Difficulty

- ▶ 3/5

Correction

- ▶ EMF_UC2_2_Library_ClassGetSetGenFeature.fcore

Problem Statement

- ▶ In the Person Class from the Library model, a « getFullName » Operation is added. Define a pattern to implement the method body.
- ▶ Indications:
 - ▶ Create a pattern which inherits from the « Class.implementedGenOperation.TODO.override ».
 - ▶ In the implementation part, redefines the contents of the « doGenerate » method with the expected code.
 - ▶ In the preCondition, write the precondition to apply the pattern: the current genOperation equals « getFullName »
 - ▶ Invoke « EMF [Model | Edit | Editor] Pattern » factory component. For the Model API generation, add a pattern substitution. To the substitution list, add the new created pattern.
 - ▶ In the plugin.xml dependencies, don't forget to add a dependency toward « org.eclipse.egf.emf.pattern » which contains the « Class.implementedGenOperation.TODO.override » pattern

Learning

- ▶ Override of operation

Difficulty

- ▶ 3/5

Correction

- ▶ EMF_UC2_3_Library_ClassImplementedOperation.fcore

Problem Statement

- ▶ Emf Model level: Realize an implementation of derived attributes and references
- ▶ Emf edit level: Redefine the getText and getImage
- ▶ Apply it the « extlibrary_extension.ecore » model stored in the « org.eclipse.egf.usecase.emf.uc1 » plugin
- ▶ General indications:
 - ▶ Like EMF with insert and override, a pattern inherits from Class.insert and Class.getGenFeature.TODO.override
 - ▶ To redefine a getText method, a pattern inherits from the ItemProvider.getText.override pattern
 - ▶ For the getImage, the overlay method defined in a super-class can be redefined in the current Class; to insert this overlay redefinition (i.e., with a new method in the class), a pattern inherits from the ItemProvider.insert pattern

Learning

- ▶ Overwrite of derived features and item providers

Difficulty

- ▶ 3/5

Correction

- ▶ EMF_UC2_4_LibraryExtension_ClassInsert_ItemProvider.fcore

Problem Statement

- ▶ Refines the Edit and Editor « plugin.properties » file contents.
- ▶ General indications:
 - ▶ Create two patterns, for Edit and Editor. The Edit[or] pattern inherits from the « PluginProperties » pattern in the EMF Edit[or] Pattern factory component.
 - ▶ Next, there are two possibilities to change the plugin.properties file. See below.
 - ▶ Invoke « EMF [Model | Edit | Editor] Pattern » factory component. For the Model API generation, add a pattern substitution. To the substitution list, add the new created patterns.
 - ▶ In the plugin.xml dependencies, don't forget to add a dependency toward « org.eclipse.egf.emf.pattern » which contains the « Class.implementedGenOperation.TODO.override » pattern
- ▶ Indications – Solution 1 – Append in-contents:
 - ▶ This solution adds / redefines properties at the end of the file. This solution is just given for illustration.
 - ▶ In the implementation part, create a method which declares the new properties code and, in the orchestration, add it at the end.
- ▶ Indications – Solution 2 – Redefinition:
 - ▶ In the implementation part, redefine the contents of the « doGenerate » method with the expected code. Generally, we start from a copy/paste from the original code and next adaptations are made. Pro: accurate modifications. Con: maintenance.

Learning

- ▶ Redefinition of specific parts in an EMF generation

Difficulty

- ▶ 3/5

Correction

- ▶ EMF_UC2_5_DomainIndependent_PluginProperties.fcore