

# **Computer Science at Kent**

## **OCL for EMF: User guide**

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# 1 Overview

The Object Constraint Language, OCL, is a language for navigating over and constraining an object-oriented model defined using the concepts of Class, Attribute, Operation, Association, Generalization etc. The language is usually associated with the Unified Modelling Language, UML).

Research at the University of Kent has resulted in an executable (Java) implementation of the OCL. This implementation has been developed as part of the Kent Modelling Framework, KMF, enabling OCL expressions to be evaluated in the context of a model population that is implemented by a set of Java Classes and Interfaces.

The Eclipse Modeling Framework, EMF, is a Java framework and code generation facility for building tools and other applications. The generation tool takes as input the definition of a model, using concepts derived from those found in the UML.

KMF and EMF are similar frameworks. In order to provide support for executing OCL expressions in the context of an EMF model a bridge has been developed that enables the OCL evaluation facility of KMF to be used over EMF models.

The distribution package contains:

- OCLCommon – a library design to support common OCL functions regardless of the modeling framework (KMF or EMF)

- OCL4KMF – an extension of OCLCommon for KMF

- OCL4EMF – an extension of OCLCommon for EMF

- OCL4EMFPlugin – a plug-in for Eclipse

The package allows the following use cases:

- Syntactic analysis of OCL expression
- Semantic analysis of OCL constraints
- Evaluation of OCL constraints
- Generation of Java code for OCL constraints

Examples how to implement these scenarios are shown in test package from OCL4X libraries.

In general all the scenarios follow the following pattern:

- Initialize the model
- Initialize the population if it's necessary (evaluation)
- Instantiate an appropriate OCL processor (KMF or EMF)

- Invoke the desired method (parse, evaluate etc).

Hope this will help.