How to use OCL constraints in Papyrus

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A. Introduction
Papyrus provides facilities to write OCL constraint with a content assistant (code completion). OCL constraints declared in a profile may be evaluated on user models. This document illustrates these two features with a simple profile.

B. Declaring OCL constraint

To declare a constraint, we have to select the Constraints panel, then click on the red cross to add one constraint. The right part of this panel holds the constraint.

The Level combo choice is to selecting the context of the OCL evaluation. M1 is for user model level, that's the legal way to write constraints (here an instance of the meta-class Stereotype). M2 is for the meta class of the current element (metaClass (Stereotype)).

The following screenshot shows the choices proposed by the content assistant. We can call it by pressing Ctrl + Space.

For this example, we create two constraints:
- to check a tag value: self.aValue > 4
- to check a naming convention: self.base_CLASS.name.substring(1,4)='Imp_'

C. Validating UML models

We create a simple UML model and apply our stereotype on the class named AClass.

To validate this model, we have to switch to the UML editor, then right click on the model and select Validate OCL constraints defined in Stereotypes.
Once done, a popup menu shows the results. They are also reported in the Papyrus view.

Note that constraints on stereotype support inheritance mechanisms.

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