Validation of UML Artifacts in Model Driven Engineering using Description Logics based Ontology Reasoners

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Abstract

This article presents an automatic approach to validate UML artifacts created during Model Driven Engineering. This validation approach may be used at both model and metamodel layer of Model Driven Architecture. This approach first automatically translates the UML artifacts into logical equivalent OWL 2 axioms and then use OWL 2 reasoners to validate the translations. Furthermore, the viability of the approach is demonstrated by validating 303 models and metamodels available in an online repository and the results show that half of the models and metamodels found erroneous.

References


**Index Terms**

Computer Science

Information Sciences

**Keywords**

Reasoning, Metamodels, Models, MDE, Ontology