Towards Model-driven Web Application Development with AspectWebML
An Integrated Development Environment

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The Graphical Modeling Framework (GMF) and the Eclipse Modeling Framework (EMF) provide a sound foundation upon which elaborate modeling applications can be built.

• Almost no sophisticated modeling support for AOM languages.
  • The current EMF tree-based editor for aspectWebML is not sufficient in terms of functionality and usability.

The gmfgraph model describes the graphical figures used to display a certain metamodel element.

Software Engineering is a comparably young discipline among other well-established Engineering disciplines. In this respect, characteristics like:
  • long development cycles
  • high percentage of project failures
are somewhat typical for this industry.

• Aspect-oriented modeling is a complex task, especially aspect-oriented interrelations are difficult to understand if the modeling environment provides no further assistance to the modeler.

• Standard generated GMF / EMF editors are not very user-friendly. Therefore customizations that are tailored to specific modeling languages’ characteristics are desperately needed.

The OCL Console of the Eclipse OCL example tutorial will be integrated in order to verify the correctness of OCL expressions.

• Additional usability-enhancing features will be built that allow for a more rapid development of aspectWebML models.

Model-driven Engineering aims to provide a solution to some of this problems in that it:
  • increases software quality,
  • advocates reusability,
  • boosts development speed and
  • raises level of abstraction.

• Due to difficulties during development of the model transformation facility, the ultimate realization differs from the proposal.

The aspectWebML metamodel.

EMF tree-based editor

Problem

Statement

Proposed

Solution

Solution