UWE4JSF A Model-Driven Generation Approach for Web Applications

Automatic Generation of Web Applications from UWE-Models

http://uwe.pst.ifi.lmu.de

UWE – UML-based Web Engineering

- based on standards (e.g., UML, MDA)
- separation of concerns (content, navigation, presentation, …)
- model-driven development process
- model consistency check

- set of plug-ins for the Eclipse IDE
- based purely on technologies from the Eclipse Modeling Project (EMF, ATL, JET)
- seamless combination with other tools (e.g., Eclipse Web Tools Platform)
- uses the scripting Object-Graph Navigation Language (OGNL)
- generates complete JSF 1.2 web frontend
- easy integration of J2EE backend
- support for JSF component libraries (e.g., Apache MyFaces Tomahawk)

UWE4JSF Generation Process

- input: UML models designed with UWE profile
- designed in any CASE tool that supports EMF UML2 2.x (e.g., MagicDraw)
- platform independent model (PIM) marked with presentation element mappings
- configurable MDA-compliant transformation chain PIM → PSM → Code
- custom handlers for actions, persistence, etc.
- flexible integration of legacy code
- result: fully JSF 1.2 conformant web application

Flexible data manipulation in processes with OGNL

UWE4JSF Generation Process

- UML Metamodel
- UWE Profile
- UWE Metamodel
- UML Source Model
- UWE Source Model
- PIM
- Presentation Element Mappings
- JSF Metamodel
- PSM to Code
- JSF-PSM
- UWE to JSF
- Validation
- Default Presentation Configuration

Complex data selection in navigation model with OGNL

Fine-grained mapping of abstract to concrete UI components (core-grained by rules)

Generated Example Application

Generated Example Application

UWE4JSF Framework

JSF

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DFG project MAEWA II 841/7-2, Germany
ICWE 2009 – San Sebastian, Spain – tool demonstration