Generative Model Transformer

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ABSTRACT

The Generative Model Transformer (GMT) project is an Open Source initiative to build a Model Driven Architecure™ tool that allows fully customisable Platform Independent Models, Platform Description Models, Texture Mappings, and Refinement Transformations. The project should result in (a) a tool that fulfils the MDA promise for faster/more accurate/better maintainable application development, (b) a tool for industrial use, and (c) MDA related research—which is encouraged and needed. A distinctive feature of GMT is the emphasis of model transformations as "first-class model citizens". The implementation of model transformations is envisaged to be in conformance with the future OMG modeling standard for Queries, Views, and Transformations (QVT).

Categories & Subject Descriptors

D.2.2 [**Design Tools and Techniques**]: Model Driven Architecture - d*omain-specific architectures.*

General Terms

Design, Standardization, Languages.

Keywords

Model Driven Architecture (MDA), Generative Model Transformer (GMT), model transformation, QVT, domain-specific languages, Open Source.

1. INTRODUCTION

The GMT project is the result of a BOF session following the OOPSLA'02 workshop Generative Techniques in the Context of MDA [2]. For further background on GMT we refer to the abstract of the OOSPLA'03 poster "Generative Model Transformer: An Open Source MDA Tool Initiative" in the OOPSLA'03 Companion and to the GMT project's web site [1].

The GMT project has just started, and we are currently concentrating on the design of the core architecture that will allow various MDA tool components to plug-in to GMT, such that GMT

manages the workflow and co-ordinates model transformations across a chain of MDA components.

The GMT project intends to leverage existing assets such as the FUUT-je model-driven template language based generator developed by Ghica van Emde Boas, and to integrate with other Open Source tools such as the Eclipse IDE framework [10]. The GMT project will develop new components for advanced model-to-model and model-to-text transformations. Currently FUUT-je has been made available in Open Source format, and first work has started on UMLX, an Open Source Graphical Transformation Language for MDA [9].

2. SCOPE OF THE DEMONSTRATION

By October 2003 we expect to be in a position to demonstrate the GMT backbone and initial prototype MDA tool components. We intend to provide an overview of the GMT architecture, explaining how we envisage MDA tool components for specific types of transformations to plug into GMT.

The demonstration will be based on an example of a small e-commerce application that is modeled as a platform independent model (PIM), and will show how this model is transformed into platform specific source specifications and a working application using GMT tool components. The translation from PIM to source specifications will rely on template language-based transformation technology, as the development and implementation of a graphical transformation language is still work-in-progress.

The demonstration is intended to be highly interactive, and we invite the audience to contribute their requirements for model transformations and text/code generation. We may also use the opportunity to gather feedback on the priorities in the GMT project roadmap.

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