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Developing a model-driven reengineering approach for migrating PL/SQL triggers to Java: A practical experience

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ABSTRACT

Model-driven software engineering (MDE) techniques are not only useful in forward engineering scenarios, but can also be successfully applied to evolve existing systems. RAD (Rapid Application Development) platforms emerged in the nineties, but the success of modern software technologies motivated that a large number of enterprises tackled the migration of their RAD applications, such as Oracle Forms. Our research group has collaborated with a software company in developing a solution to migrate PL/SQL monolithic code on Forms triggers and program units to Java code separated in several tiers.

Our research focused on the model-driven reengineering process applied to develop the migration tool for the conversion of PL/SQL code to Java. Legacy code is represented in form of KDM (Knowledge-Discovery Metamodel) models. In this paper, we propose a software process to implement a model-driven

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Applying model-driven engineering in small software enterprises

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A tool to support the definition and enactment of model-driven migration processes

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ABSTRACT

One of the main challenges to achieve the industrial adoption of Model-Driven Engineering (MDE) paradigm is building tools able to support model-driven software processes. We present a tool for the definition and enactment of model-driven migration processes. We have created a SPEM-based language for defining Abstract Migration models that represent an MDE migration solution for a particular pair of source and target technologies. For each legacy application to be migrated, the Abstract Migration model is transformed into a Concrete Migration model which contains all the information needed for the enactment. Then, these models are enacted by means of a process interpreter which generates Trac tickets for executing automated tasks by means of Ant scripts and managing manual tasks with the Mylyn tool.

Our work has therefore two main contributions: i) it proposes a novel solution for the enactment that integrates the execution of the automated tasks with the generation of tickets to support the manual tasks, and ii) it describes how MDE techniques can be used to implement process engineering tools, in particular migration processes. The article presents the approach and describes in detail the essential

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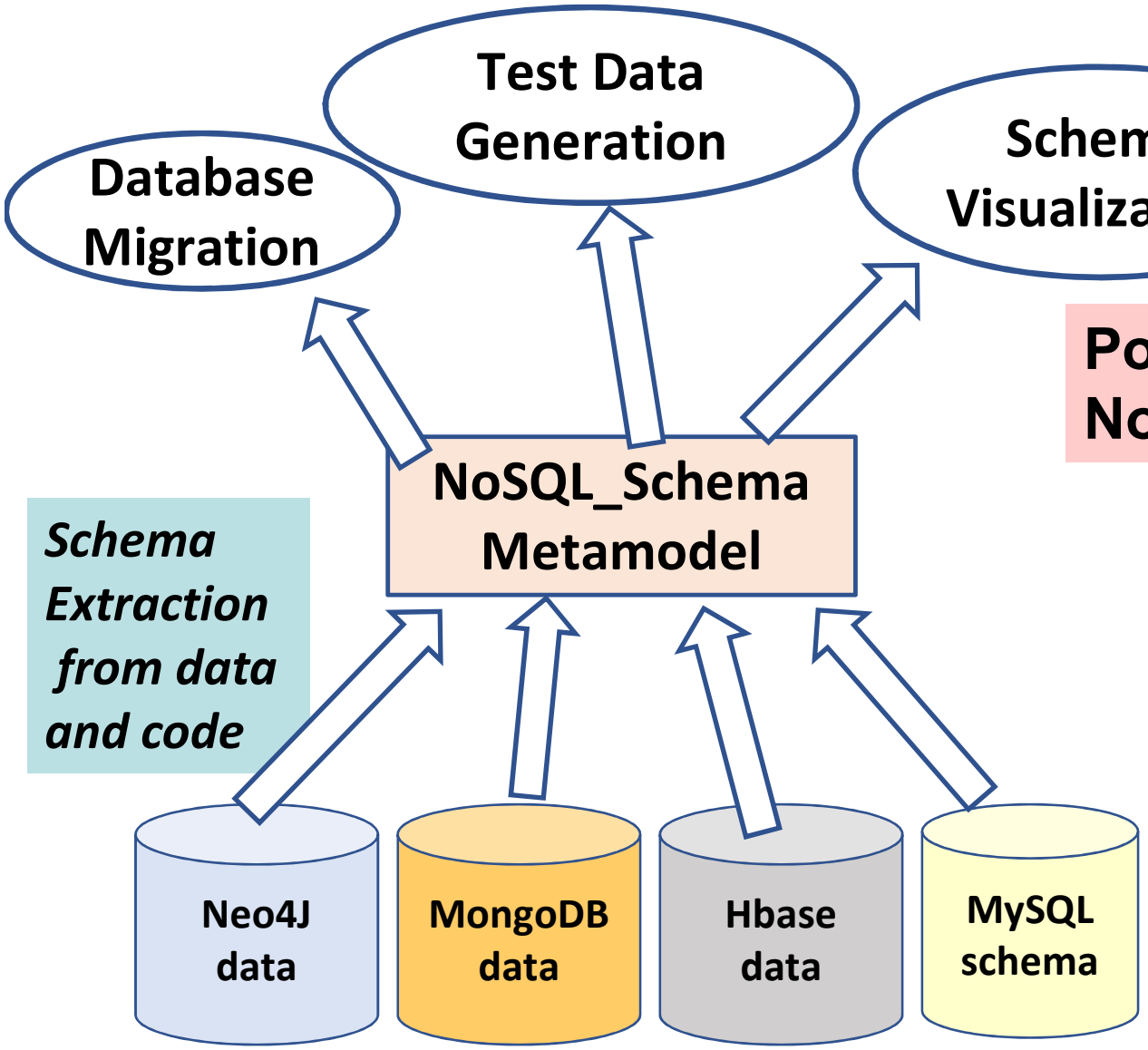

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