

A Domain Specific Language for Security Model in Database-centric applications

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Abstract. To be decided.

1 Introduction

Model-Driven Engineering (MDE) turns the attention on models, instead of code.

Model-Driven Security (MDS) is a specialization on the domain of security.

One of my recent effort in MDS is to propose a model-driven approach in defining security policies for accessing data in database-centric application.

In this report, I am going to realize this proposal into a prototype by using the technology I learnt from the course.

Organization

2 Background and Motivation

Relational Databases and SQL

Access Control in Relational Databases

ACL and Authorization Constraints

Related work on realizing SQLSI

3 The SQLSI Metamodels

3.1 Input Metamodels

Data Model Metamodel

Security Model Metamodel

3.2 Output Metamodels

Relational Schema Metamodel

4 The SQLSI Language and Design

4.1 A DSL for Security Model

Definition

Building an editor with Xtext

SQLSI Code generation with Acceleo

4.2 A M2M Transformation from Data Model to Relational Schema

Definition

Database Schema generation with Acceleo

5 Case study: A Simple University Management System

6 Conclusions and Future Work