Building Applications using Model Driven Development

Nasser Mustafa

Model Driven Development (MDD) employs models to develop applications. In this paradigm, developers can use a modeling language such as UML to build a model that represents a real world application. This technique provides a faster and an effective way for applications developments compared with the conventional techniques of developing applications by writing computer programs.

The aim of this project is to develop software application using MDD. Students are required to build a UML Class diagram that represents a real world application then generate a code that represent the classes from the UML Class diagram. Many transformation languages can be used to generate for instance a Java code from a Class diagram. The code then can be executed to ensure that it satisfies the application requirements.

The project shall involve the following milestones which require the coverage of the lifecycle phases of a software application:

1. Propose a real world problem.
2. Analyze the problem and identify all its requirements.
3. Build a data model (class diagram) that represents all classes required by the problem.
4. Define the constraints, associations, and cardinalities for all classes.
5. Validate the need for each class, association, cardinality, constraint, etc.. .
6. Generate a Java code from the class diagram using some transformation languages.
7. Execute and validate the code.
8. Generate an automatic report using some eclipse plugins such as GenDOC.

This project can be a group project of three students maximum.