Forward Engineering tool For Code Generation from UML

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Introduction

The Unified Modeling Language (UML) is a very dominant modeling graphical language for specifying, constructing and documenting the artifacts of software system. UML is a collection of best engineering practices that have successful in the modeling for a design of a huge and complex systems. Modeling is very important for readability and reuse of the systems. The visual representations of the software are explained by the detail of programming concepts for the Object Oriented techniques. Nowadays UML is become a standard modeling language for the Industry which is used for the software designers. Modeling has plays an important role for any system and contributes to the understanding of the source inputs and outputs. Forward engineering tool for system design and implementation which generating source code from UML class model, and keeping the code and model synchronized and generating corresponding tables from UML. This tool is focused on creating a technology which will reduce the time of software development life cycle by providing an interface to instantly create the foundation of a hibernate project, within a few minutes of time as a Global software framework .

Materials and Methodology

For well formatted source code creation there is two options for selecting programming language Java and C#. Auto generated some basic business logics and method bodies like getter and setters.

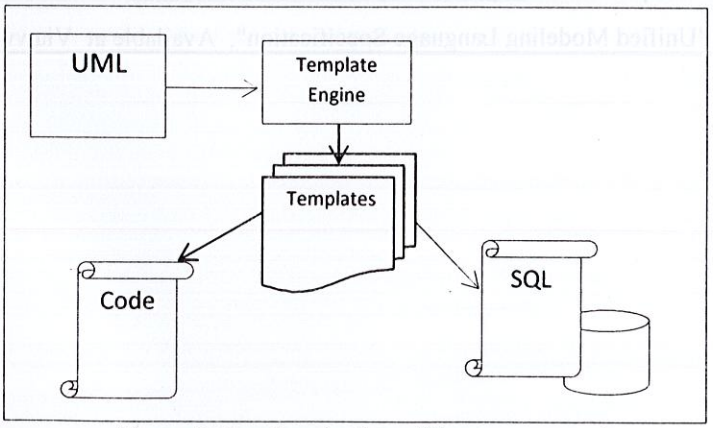

Figure 1: Synchronization of three components

Dynamic code creation involves the following major operations:
1. Get all the UML structure in UI and manipulate it to understand the Class structures and their relationships

2. Map each structure to a data model which capable of handling all the characteristics of a Class

3. Those models filter with the Class template of the user given language.

4. Generate the source files and export or save them to the given path

Results and Discussion

The Forward engineering tool is facilitating development of hibernate supported java project in an efficient way. Existing IDEs does not have this much of synchronization take place. This implementation is also facilitating to export the java project as NetBeans project format as well.

Conclusion

To facilitate the software development process, it would be ideal to have tools that automatically generate or help to generate executable code from the models. In this effort has been made to find methods to automatically generate executable code from the UML class. An object-oriented approach has been proposed to generate executable implementation code from UML class in an object-oriented programming language. A comparison with other code generation tools shows that the code generated by this forward engineering tool which uses template engine is much more compact, efficient and readable. Modeling plays an important role for any system and contributes to the understanding of the development process

References

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