**CHAPTER 2**

**REVIEW OF LITERATURE**

1. **Paper 1**

Model-driven engineering many transformation tools are available. The [free and opensource software](https://en.wikipedia.org/wiki/Free_and_open_source_software) tools are available to create [Unified Modeling Language](https://en.wikipedia.org/wiki/Unified_Modeling_Language) (UML) class diagram and transform code. The features in Existing tools are:

* Java support with many language specific elements.
* Simple and easy to use user interface.
* Source code generation.

The issues in existing transformation tools i.e. code generation tools are:

* Supports only class diagram of the standard UML diagram types.
* UML Diagrams are able to generate only structural code.
* Most of the tools requires internet for the usage [3].

1. **Paper 2**

The aim of the proposed system is an approach for code generation from UML models able to generate structural code. In our approach, system applications are modeled using a UML class diagram to give a structural view. From the class diagram, structural code is generated.

From each class, a Java code is generated, describing its attributes and methods, and including the constructor method with attributes initialization passed by parameter. It will consider relationship between classes or interfaces as well as it generates get and set methods. In case if there is an inheritance including an interface or an abstract class, methods defined by them are generated as methods into the code of its immediate concrete subclas

1. **Comparative analysis**

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| --- | --- | --- | --- | --- |
| Tools | Implementation Language | O/P Code | Feature | Limitation |
| Code Cooker | JavaScript | C, C++ | Provide Easy GUI, Click And Drop ,Structural Diagram | Do Not Provide  Diagram, Exporting Pdf Format. |
| GenMy Model | Html5, JavaScript | Java, SQL | Supports Exporting Into Pdf Format, Structural Diagram. | Require Internet,  GUI is Not User Friendly |
| Class Builder | Java | C++ | Support structural diagram only, user friendly GUI. | Do not support Behavioral diagram compaitable with Win2K and XP only. |
| Code Maestro | C# | Java | User Friendly GUI,Supports structural diagram and image | Does not support behavioral diagram,generates partial code |
| CoDraw | C#$ | Java | Interactive user interface, generates structural and behavioral code. | Does not merge behavioral code with structural code. |

Table 2.1: Comparison between Existing tools and proposed tools

In the referred paper, the main drawback identified was that the existing tools supports only Class Diagram which translates it into partial java code and some are compatible with windows XP only. In our proposed tool, it translates class diagram into structural code and activity diagram into behavioral code as well as can save diagrams in image format. CoDraw can create jar file of a particular diagram.