

UML Parser

The libraries I used for the project are GitHub Java Parser for parsing the java files and Plantuml for generating UML class diagrams.

In Java Parser, Compilation Unit takes java files as input and parses the files. All the information of the java file such as class name, extends and interface classes, access modifiers, name, type and parameter of the method, public and private attributes are stored in the form of Abstract Syntax Tree. Each specific AST Node provides the specific information about the object it represents. For example if you have Method Declaration for methods, FieldDeclaration for fields. AST is created based Compilation Unit. By visiting nodes of the AST we can extract class name, extends and interface classes, modifiers, method name type parameters, field types, variable type etc. from a java file.

In the plantuml library, it creates UML class diagram from a plain text language. Whatever information we have extracted using the java parser from a java file is passed in form of plantuml syntax to plantuml and a class diagram is generated. Plantuml uses Graphviz software to layout its diagrams. Plantuml syntax starts with @startuml and ends with @enduml. In plantuml for showing relationship between classes symbol such as <|-- for extends, *-- for composition etc. are used. Also for declaring fields and methods we have to use the symbol ":" followed by fields or methods name. In plantuml for showing private character such as '-' and for public character such as '+' are used. These are some example of the syntax which plantuml uses fro drawing as class diagram.

We have also used Graphviz software as tool so that we can generate class diagrams. Graphviz consists of a graph description language named the DOT language. Plantuml uses this Graphviz/DOT language. Plantuml uses Graphviz to generate UML diagrams from text descriptions.