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Tools used:

A preliminary Java Parser has been built using the software **ANTLR4** with target language as python. It generates the Abstract Syntax Tree (AST) for the given Java files. The softwares/utilities used are:

- **ANTLR4**: ANother Tool for Language Recognition (ANTLR) is a parser generator that uses LL for parsing.
- **Graphviz**: Graphviz is a package of open-source tools initiated by AT&T Labs Research for drawing graphs specified in DOT language scripts

How to compile?

The Lexical grammar for Java8 is present in *Java8Lexer.g4* which has been obtained from <https://docs.oracle.com/javase/specs/jls/se8/html/jls-3.html>. The Syntactic grammar is present in *Java8Parser.g4* which has been obtained from <https://docs.oracle.com/javase/specs/jls/se8/html/jls-19.html>. To compile the source, use the bash script *build.sh*. Use the following command:

```
./build
```

It compiles the grammar with ANTLR4 and produces the files required for generating the AST.

How to execute?

The directory contains a python file *ASTGenerator.py* which builds the AST for the given Java file. You can directly run the driver file using the command:

```
./driver -input <input-Java-file> [-out <output-file>]
```

It generates a DOT file for the given input Java file.