

# CS335A

## Project

### Milestone 1

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## Tools used

A preliminary Java Parser has been built using the software ANTLR4 with the target language as python. It generates the Abstract Syntax Tree (AST) for the Java programs. The software/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

## Build

The Lexical grammar for Java8 is present in Lexer.g4 which has been obtained from [Java 17 Lexical Structure](#).

The Syntactic grammar is present in Parser.g4 which has been obtained from [Java 17 Syntax](#).

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.

## 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:

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

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