CS335 Semester 2022–2023-II
Project Milestone 2

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1 Usage Instructions

1.1 Compilation and Executing Instructions

To compile the compiler, go into the src directory and run the following make command:

```
make
```

1.2 Executing options

For the given compiler, we have to run the file using the following command:

```
./a.out <command-linearguments>
```

- -help option is passed as the **first** argument to know how to pass command line arguments to compiler. In this case, no other command line argument is take
- The **first** command line argument is always the input file path if "-help" option is not used.
- -verbose option is used for verbose error displaying
- -output option is used to set the name of the output dot file. An assign symbol is used after -output before mentioning the filename. This is done using the following syntax:

  ```
  -output=<filename.dot>
  ```

  For example "-output=hi.dot"

2 Assumptions and Explanations

2.1 Milestone 1

We have assumed that and AST for a complex program means that we display the biggest tree without any ambiguity. An AST can have ambiguity in creation especially in cases where there are more than 3 nonterminals/terminals on the right side of a production. In this case, there is a confusion of whether to incorporate the second or the third child of the node in the parse tree into the value label of the given node.
A structure for the AST node is defined in ast.h in src directory.
We have modified the Java grammar so that it is acceptable by a LALR(1) parser. We have used flex and bison in C++ for this task.

2.2 Milestone 2

The symbol table is stored in the file ‘symbolTable.csv’ and the three address code is stored in the file ‘threeAC.csv’.
Symbol table functionalities are defined in ‘symtab.h’ and three address code functionalities are defined in ‘threeAC.h’.
We have not computed the values of expressions, neither have we implemented a dimensionality

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check for array accesses. We do not have support for function and operator overloading. We also do not have support for imported libraries and files. We have not added support for inheritance.
We have not provided support for the evaluation of expressions and invocation of methods inside the println function.
We have not supported the declaration of variables inside the for loop header.