CS335

Milestone II

Course Instructor :

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March 23, 2023

Development environment and tools used:

The program was developed in a system running **Ubuntu 22.04** with **ANTLR 4.11.1** installed. Python language was used to perform the visitor traversal of the AST generated by antlr. The following python packages were used:

1. antlr - To prepare AST and do lexical and syntax analysis.

2. argparse - To take and parse argument flags from the command line.

Execution Instructions:

To install the dependencies:
$ pip install -r requirements.txt

To execute and get the CSV dump of symbol tables and the text file containing the 3AC code (tac.txt), run:
$ python3 ./bin/SymbolTableVisitor.py –input <input>.java –output <output>.txt

NOTE: The output file and output argument are optional. Provide the output argument to get the 3AC code dump in file with required name, else we get the 3AC code in tac.txt by default if no output file and no output argument is provided.

Sample test cases and their description

1. **test_1.java**
   This is a simple java program to show the program execution and symbol table formation for IF-ELSE construct in java.

2. **test_2.java**
   This is a sample java program to demonstrate automatic type casting from int to float when we perform the operation like int + float, where the result is type casted to float.

3. **test_3.java**
   This code is used to show the implementation of break and continue statements in java.

4. **test_4.java**
   This codes shows the execution of switch-case and multiple functions in java.

5. **test_5.java**
   This test case demonstrates method chaining procedure in java, where one method calls another method. It also demonstrates presence of multiple methods inside one single class.

6. **test_6.java**
   This test case demonstrates the execution of for loop in java.

7. **test_7.java**
   This test case demonstrates the execution of While loop construct in java.

8. **test_8.java**
   This code illustrates the declaration and definition of arrays in java. We have declared, initialized and printed two arrays, one of int while other of char.

9. **test_9.java**
   This test presents the example of nesting in java. Since on piazza, we were asked to print nested scope in the same symbol table, we have not unnecessarily made many small symbol tables. Rather, all nested scopes are in one main symbol table.

10. **test_10.java**
    This test case demonstrates the use of all the operators and parenthesis in java.

Thank You