Project 3 Documentation

Armon Rahimi, Gage Dimapindan, Richard Gobea

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1) Problem Statement

All of the identifiers declared within the program should be placed in a symbol table and accessed by the symbol table handling procedures. Modify your parser according to the simplified Rat20F and add code to your parser that will produce the assembly code instructions. The instructions should be kept in an array and at the end, the content of the array is printed out to produce the listing of assembly code. Your array should hold at least 1000 assembly instructions. The instructions starts from 1. The listing should include an array index for each entry so that it serves as label to jump to. The compiler should also produce a listing of all the identifiers.

2) How to Use the Program

step 1: in Linux, open the terminal and switch to the directory that contains the necessary files

step 2: in the command line of the terminal, type:

```
g++ Main.cpp -o main
```

to compile the code

step 3: run the program by typing:

```
./main
```

step 4: while the program is running, input the name of the file you wish to have read step 5: to have multiple output files, change the name of the file you wish to make an output with on line 48 in Main.cpp

3) Design of Program

- Main.cpp – consists of the main function that runs the program
- Machine.h – header file that contains the Rat20F language and the symbol table
- class.h – header file that reads and labels a token, lexeme, and its types; it also gets symbols and stores its address with each corresponding symbol
- lexer.h – works the same as its namesake; contains the lexer for this program
- test1.txt, test2.txt, test3.txt (test files) – the test files that act as the input file for the Main file to read
- output1.txt, output2.txt, output3.txt (output files) – the output files that contain the result of running the program, however the output files can be custom made and don't necessarily have to be called "output"

4) Any Limitations

none

5) Any Shortcomings

none