

CS370 Compilers Lab 5

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In this lab we take our previous lab code and implement the proper syntax rules from the DECAF programming language.

Screenshots

Good Test

```
zarafat@brooks:~/Documents/src/CS370/LAB5> make clean
rm lab5 lex.yy.c y.tab.c y.tab.h
zarafat@brooks:~/Documents/src/CS370/LAB5> make
lex lab5.l
yacc -d --verbose --debug lab5.y
gcc -O0 -Wextra -pedantic y.tab.c lex.yy.c symtable.c -o lab5 -lm
zarafat@brooks:~/Documents/src/CS370/LAB5> ./lab5 < GoodTest.decaf
zarafat@brooks:~/Documents/src/CS370/LAB5> █
```

Error Test

```
zarafat@brooks:~/Documents/src/CS370/LAB5> make clean
rm lab5 lex.yy.c y.tab.c y.tab.h
zarafat@brooks:~/Documents/src/CS370/LAB5> make
lex lab5.l
yacc -d --verbose --debug lab5.y
gcc -O0 -Wextra -pedantic y.tab.c lex.yy.c symtable.c -o lab5 -lm
zarafat@brooks:~/Documents/src/CS370/LAB5> ./lab5 < GoodTest.decaf
zarafat@brooks:~/Documents/src/CS370/LAB5> ./lab5 < ErrorTest.decaf
syntax error
Error on line: 37
zarafat@brooks:~/Documents/src/CS370/LAB5> █
```

Changelog

LEX

- added the DECAF tokens
- Added some debug prints to the tokens
- Added square brackets to the lex directive
- Added '<' token to the directive
- Added modulus '%'
- Added directive for HEX numbers
- Created function to convert hex numbers to their int value
- Disabled the newline return token

YACC

- added all the rules from DECAF and reformatted them to work with Bison */
- for each of the rules with a list of tokens I created a recursive rule that allows for one or more of the token.
- Replaced any instance of '=' with T_ASSIGN