CS4121 Project 0

Due Oct 3. 2023. 50 points

Extend the parser to allow for variable assignment and use, so that you can write multiple assignment statements followed by a single expression to be evaluated, like this:

```
rate = 9.8;
score = 5;
rate*score*score - 7*score + 10;!
```

The symbol ";" is the terminator of a statement, while the symbol "!" is the terminator of a program.

In this project, you will solve following subproblems.
1 Extend the grammar to accept multiple statements.
2 Extend the grammar to include a variable in an expression.
3 Extend the grammar to include an assignment statement.
4 Extend the parser to handle multiple statements, variables, and assignment statements.
5 You will use a symbol table to access variables and evaluate assignment statements. The symbol table implementation is provided in expr.c.

Ref.[1] and my lecture slide[2] are resources for this project.

The test case file tst is included in the project package, and the output file is tst.out, which is generated by the parser.

Reference:

1 "Chapter 5 – Parsing in Practice " at https://www3.nd.edu/~dthain/compilerbook/chapter5.pdf
2 Lecture 6 Bison

Acknowledgements:

It was adopted from the problem in the book “Introduction to Compilers and Language Design”.