

Compilers 2023

SE3355
2023

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Lab 1: Straight-line Program Interpreter

Description

Implement a simple program analyzer and interpreter for the straight-line programming language. This exercise serves as an introduction to environments (symbol tables mapping variable-names to information about the variables); to abstract syntax (data structures representing the phrase structure of programs); to recursion over tree data structures, useful in many parts of a compiler; and to a functional style of programming without assignment statements.

It also serves as a “warm-up” exercise in C programming. Programmers experienced in other languages but new to C++ should be able to do this exercise, but will need supplementary material on C++.

In this lab, you should modify the file *slp.h/cc*. We have already given some hints for you in the comments.

Notice: Before you start this lab, you should carefully read the chapter 1 of the textbook. And if you have any question about this lab, feel free to contact TA.

Environment

You can learn how to build up the lab environment [here](#), and then clone the repository you fork to the environment you build.

Grade Test

The lab environment contains a grading script named as **scripts/grade.sh**, you can use it to evaluate your code, and that's how we grade your code, too. If you pass all the tests, the script will print a successful hint, otherwise, it will output some error messages. You can execute the script with the following commands.

```
shell% make gradelab1 or ./scripts/grade.sh lab1
shell% ...
shell% [^_^]: Pass #If you pass all the tests, you will see these messages.
shell% SCORE: 100
```

Handin

The deadline of this lab is on Wednesday 00:00, Sep 20, 2023, and if you miss the deadline, points will be deducted based on the number of days you are late!

After you have passed the grade test, you need first commit your code to your local repo,

and then push to gitlab, more details can refer to the website before.

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Questions or comments regarding *Compilers* course? Send e-mail to the course staffs or TAs.

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