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 (such as textbooks) on C.

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 Dingji Li, who is the teaching assistant responsible for lab 1.

Environment

You can download the lab environment here, and then decompress it to your current directory by the following commands.

```
shell% tar -zxvf lab1.tar.gz
```

Grade Test

The lab environment contains a grading script named as **gradeMe.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% ./gradeMe.sh
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 Tuesday 12:00 AT NOON, Sep 18, 2018, and no delay is allowed!

Afte you have passed the grade test, you need first package your code and rename the file lab1_xxx.tar.gz to lab1_[your student ID].tar.gz. For example, if your student ID is 516037900000, then the file name should be lab1_516037900000.tar.gz, and no any other letters are included. You can use the following commands to finish this step.

```
shell% make handin #This command will do the packaging for you, generating a file named as lab1_xxx.tar.gz
shell% mv lab1_xxx.tar.gz lab1_516037900000.tar.gz
```

In the end, you need to submit the renamed tar.gz file to ftp://dj_lee:public@public.sjtu.edu.cn/upload/lab1 before the deadline.

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