Programming Assignment 1

THE ASSIGNMENT IS PROVIDED FOR EDUCATIONAL PURPOSES ONLY

First, set up your development environment using the VirtualBox VM. Please see the page Getting started with the VMs for instructions.

Next, download the Assignment 1 PDF. In addition to the assignment requirements, It has information about how to get the starter code up and running.

IMPORTANT NOTES:

- **The submission instructions are at the end of this page.**
- **The assignment numbers are offset by 1. Even though this is assignment 1, the directory that you will get the starter code from is named "PA2" for the C++ version and "PA2J" for the Java version.**

Here are some more useful resources:

- The Cool Reference Manual
- A Tour of the Cool Support Code In particular, look at section 3 "String Tables".
- Some additional project resources, including **manuals for flex and jlex** as well as other documentation

The examples are in the VMs in the directory /usr/class/cs143/examples. Please copy these into your project directory if you wish to use them.

The correct version of spim is at /usr/class/cs143/bin/spim. This directory has been added to the PATH environment variable, so you don't need to type the whole path.

Once your lexer works, you should be able to compile the examples using your lexer and run them. As an example, the following should work (some output omitted):

```
$ make lexer
...
$ cp /usr/class/cs143/examples/hello_world.cl .
$ ./mycoolc hello_world.cl
$ spim hello_world.s
SPIM Version 6.5 of January 4, 2003
Copyright 1990-2003 by James R. Larus (larus@cs.wisc.edu).
All Rights Reserved.
See the file README for a full copyright notice.
Loaded: /usr/class/cs143/lib/trap.handler
Hello, World.
COOL program successfully executed
Stats -- #instructions : 154
#reads : 27 #writes 22 #branches 28 #other 77
```

How to Submit

1. Follow the instruction in the VirtualBox VM Setup tab to create a shared folder between your virtual machine and your host machine. Download the grading script from here on your host machine and move it into your shared folder. Inside your virtual machine, move the script into the directory in which you are doing the assignment (where the cool.flex or cool.lex file is). If your host machine has wget, you can run the following command in your shared folder to download the script.

   ```
   wget https://courses.edx.org/asset-
   v1:StanfordOnline+SOE.YCSCS1+3T2020+type@asset+block@pa1-grading.pl
   ```

The file is also available at https://drive.google.com/file/d/1HyOuOOmJ9waXCTI9oQSfP2HmkM-r5mze/view?usp=sharing

2. Run the script by typing

   ```
   perl pa1-grading.pl
   ```

   Note that you can also make the script executable by running `chmod a+x pa1-grading.pl` first, and then running it directly as `./pa1-grading.pl`

3. The script will give you a grade at the end, as well as a submission code. If you want to figure out why your lexer is failing certain tests, the tests will be put in the ./grading subdirectory. The output from your code will be in the ./grading/test-output directory.

4. Once you are satisfied with your grade, click on the arrow above or beneath to go to the "Programming Assignment 1 Submission" quiz. You can use this link to go directly to the quiz. Copy-and-paste the code from the script (to copy from the terminal in VirtualBox, use ctrl+shift+c) into the "Submission code:" box. Once you submit the quiz, your score should appear for the quiz. You can also resubmit the quiz if you wish to update your grade.