Programming Assignment 2

First, set up your development environment using the VirtualBox VM. You can use the same VM as you used for the first assignment, so you probably won't need to do anything for this. Please see the page Getting started with the VM for instructions.

Next, download the Assignment 2 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 have now been added at the end of this page.**
- **The assignment numbers are offset by 1. Even though this is assignment 2, the directory that you will get the starer code from is named "PA3" for the C++ version and "PA3J" for the Java version.**
- **If you are using C++, once you run the make command that checks out the starter code, you will need to make one slight change to our code before it will link. Please comment out line 29 of the file parser-phase.cc (which you should not otherwise modify), so that it looks like:**

```
//int curr_lineno;                  // needed for lexical analyzer
```

Here are some more useful resources:

- The Cool Reference Manual
- A Tour of the Cool Support Code In particular, look at section 6 "Abstract Syntax Trees".
- Some additional project resources, including **manuals for bison and CUP** as well as other documentation

As with assignment 1, the examples are 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 parser works, you should be able to compile the examples using your parser and run them. As an example, the following should work (some output omitted):

```
$ make parser
...
$ cp /usr/class/cs143/examples/hello_world.cl .
$ ./mycoolc hello_world.cl
$ /usr/class/cs143/bin/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.f or cool.cup 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@pa2-grading.pl
```

This will save the script (pa2-grading.pl) in your assignment directory.

If you receive a wget error, the file is also available at https://drive.google.com/file/d/1EuJ7lUW1ykY53gjvkDdc8na3k-yU0Biz/view?usp=sharing

1. Run the script by typing

   ```
   perl pa2-grading.pl
   ```

   Note that you can also make the script executable by running `chmod a+x pa2-grading.pl` first, and then running it directly as `./pa2-grading.pl`

2. The script will give you a grade at the end, as well as a submission code. If you want to figure out why your parser 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.

3. Once you are satisfied with your grade, click on the arrow above or beneath to go to the "Programming Assignment 2 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.