CS 5600 Homework 0

Assignment steps

1. Activate your Piazza account - you should have received a registration email; if not, you can sign up at http://piazza.com/northeastern/fall2016/cs560001

2. Get a CCIS Unix account. If you are registered in CCIS you should be automatically enrolled; otherwise go to https://my.ccs.neu.edu/, click "Apply for account", and fill in the necessary information.

3. Install the CS5600 virtual machine image – see instructions on the next page. Start your virtual machine and log in before doing steps 4-7.

4. Check out your copy of the Homework 0 Git repository:

```
git clone https://myid@github.ccs.neu.edu/cs5600-f16/myid-hw0
```

where `myid` is your CCIS username.

5. Edit the file "EDIT-ME.txt" in the repository you've checked out, answering the questions you find there. Commit your changes to the file (see the git-instructions.pdf document uner "Course Resources" in Blackboard) and push your changes so that the graders can see them; e.g.:

```
git commit EDIT-ME.txt -m 'answered the questions'
git push
```

(Note that if you don't specify a commit message with -m, git will start an editor and ask you to write a message. When you're working on bigger programs, commit messages will become important.)

6. Create a C program named "homework.c" in this directory which counts from 0 to 9 using a loop, printing each number. Add the file to the repository, commit it, and push your changes.

```
git add homework.c
git commit homework.c -m 'new file, per directions'
git push
```

7. Compile the file with debugging (-g) and run it under the gdb debugger. Step through it until it has incremented the loop variable several times, then execute the following commands in the debugger: "info locals", "where", and "list". Take a screenshot, add it to the repository, commit it, and push; e.g.:

```
git add screenshot.png
git commit -m 'a screenshot' screenshot.png
git push
```

Note - to take a screenshot in Ubuntu Linux (e.g. on a workstation in the lab) you can use Applications->Accessories->Take Screenshot. In Windows press PrtSc (print screen) which will copy a screenshot into the clipboard; then you can paste it into Paint (All Programs -> Accessories -> Paint) and then save it. On a Mac Command-shift-3 will save a copy of your entire screen to a file on your desktop named "Screen shot <date> at <time>.png"; alternately Command-shift-4 will let you select part of the screen to capture.

Virtual machine instructions

The purpose of the CS 5600 virtual machine image is to provide a uniform computing environment for working on assignments and for grading them. You can *probably* get the assignments to work on any 32-bit Linux system, and with a bit more work you might get them to work on other Unix systems, but your work will be graded on a copy of this virtual machine, and if you ask for help you will need to show your code running (or not running) on this machine.

You should be able to run it under any of the following virtualization platforms:

- VirtualBox on Windows, Linux, and Mac OS X (free from virtualbox.org)
- VMware Player on Windows and Linux
- VMware Workstation on Windows (and Linux?)
- VMware Fusion on Mac OS X

You can probably use it with KVM on Linux and Parallels on Windows/Mac as well, but you're on your own.

To install the virtual machine download the file
http://pjd-1.ccs.neu.edu/files/CS5600-f16-Ubuntu32.ova

Virtualbox instructions:

1. before you do anything else you will have to go to Preferences/Network and click '+' to add a host-only network.
2. Use the "Import" function in VirtualBox or VMware to install the .ova file.
3. Click the "settings" button, and when the settings window comes up, click "OK"
   (for some reason this step seems to be needed, even though it doesn't seem to do anything)
4. Start the VM, log in as user 'student', password 'student'.
   Note that it will ask you if you want to upgrade to Ubuntu 16.something – click "no".
5. Create a new account with the same user ID as your CCIS account.
   - click the weird Ubuntu logo at the very top left of the screen
   - select "Settings" and "Users and Groups"
   - click "+" to add a new user, set the user name, user id, and password
   - now click "Manage groups", and add the new account to the "admin" group.

Note that if you get an error message on starting the VM ("Failed to open a session for the virtual machine CS5600-f16-Ubuntu32") then it means you forgot step 3.

This has been tested on VirtualBox 5.0.26 on Mac OS X 10.10.5. Please let me know if you have difficulties on other versions or operating systems.