**Homework 0826: Play with BASH**

Due: 26 August, noon

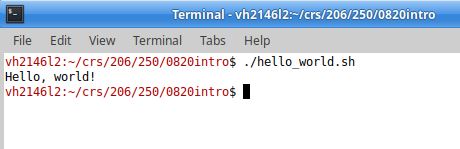
**C++ Introduction**

In this class, you will need to have some facility with the bash shell environment on a Linux or Unix computer. You can use your own computer if you have either Linux or mac os operating system, or you can use the department’s server sand. There are also native Linux computers in the nerdery. These instructions assume sand being accessed from a virtual Windows computer.

**Create and Run a BASH Script**

Use the following instructions to create and run a bash script.

1. Access sand via https://sand.truman.edu/vnc and click Connect
2. When the login dialog screen appears, click on the Start WM menu and select xfce4-session.
3. In the Login name: text box, enter your Truman username (e.g., abc1234) and press TAB
4. In the Password: text box, enter your Truman password and then click on Go!
5. If this is your first time accessing sand, you will get a Panel dialog asking for your panel setup. Click on Use default config.
6. When you have finished using the sand session, make sure you log out of sand; don’t simply close the window.
7. Open a command prompt (terminal) window on sand by clicking the Terminal Emulation icon along the bottom row.
8. Make a directory for your work. In the terminal window, issue a command such as  
   $ mkdir cs250  
   Note: for interoperability, you should *never* use spaces, or punctuation other than hyphens, underscores, or periods, in the names of directories or files. File and directory names follow the same rules as identifiers in programs.
9. Change your working directory to be the directory you just created with the command:  
   $ cd cs250
10. Open a new file with an editor such as geany or bluefish or Emacs with a command such as  
    $ geany hello\_world.sh &
11. Type the text of [hello\_world.sh](https://borax.truman.edu/250/0826/hello_world.sh.txt) into the editor buffer and save it.
12. Switch back to the terminal window, which should still have its working directory as cs250.
13. Make the file executable with the command  
    $ chmod +x hello\_world.sh
14. Run the file with the command  
    $ ./hello\_world.sh
15. If there are no errors, the message Hello, world! will appear on your screen, like this:



Except that your current working directory (before the $) will be different than mine.

1. If there are warning or error messages, read them carefully, fix the errors using the editor, save your changes, and re-run the script.

**Homework Assignment**

Follow the same procedure to create the file-size program copied from [this handout](https://borax.truman.edu/250/0826/filesize.sh.pdf). Replace “Your Name” with your preferred first name and your last name. Based on your reading of the bash tutorial, make sure you understand what every line of the file does. And of course, make sure the script runs correctly for you before you submit it.

By noon on Thursday, 26 August, submit the bash source code file to the [homework submission](https://borax.truman.edu/250/submit.php) page.

**Additional Notes**

If you have mac os, you really should install a newer version of bash than the one that comes installed. By far the easiest way to do this is to first install Homebrew, and then use Homebrew to install bash. Once you do this, your new bash interpreter will be located in /usr/local/bin, with a full path name of /usr/local/bin/bash (by default). In this case, you should modify your shell script’s first line to be  
#! /usr/local/bin/bash

To share files between sand and your network drives, plus lots of other useful information, see the [FAQ](https://sand.truman.edu/faq/) that Dr. Bindner maintains.