CSCE 3600: Systems Programming

Recitation Assignment 4 – Writing Bash Scripts

Available: Week 5 Due: Week 6

RECITATION DESCRIPTION:

The purpose of this laboratory assignment is to get you some practice in writing three short bash scripts. You may use other resources for this exercise including scripts worked on in class, the lecture notes on Canvas, section 9.2 Shell Scripting in the textbook, or searching for "bash tutorial" on Google, for example. Please feel free to also ask for assistance from your TA or fellow classmates, but make sure that you turn in your own work.

Please note that you are writing bash scripts, not C programs, for this exercise.

1. Write a bash script that accepts a person's name as a command-line argument and simply prints out the following greeting: "Good day, <name_entered>! Nice to meet you!", where <name_entered> is a positional parameter (i.e., a command-line argument) passed to the script. If the user does not enter a command-line argument when invoking this shell script, you will simply output: "Hope you have a great day!", without any name displayed. This bash script should be called **`rec04A.sh`**.

   SAMPLE OUTPUT (input in **bold**):

```
$ ./rec04A.sh Mark
Good day, Mark! Nice to meet you!
$ ./rec04A.sh
Hope you have a great day!
```

2. Write a bash script that (1) prompts the user to enter a Linux command and reads in the user's input, (2) prints out a meaningful message with the user's entered command to be executed, and finally (3) executes the user's entered command. The Linux command is to be read in, not passed as a command-line argument. This bash script should be called **`rec04B.sh`**.

   SAMPLE OUTPUT (input in **bold**):

```
$ ./rec04B.sh
Enter Linux command to perform: ls
Command to be executed: ls
a.out   Lab01A.c   Lab02B.sh  minor1.c  minor2.c
$ ./rec04B.sh
Enter Linux command to perform: ls -l
Command to be executed: ls -l
total 44
-rwx------ 1 mat0299 mat0299  7668 Feb  2 15:57 a.out
-rw------- 1 mat0299 mat0299    66 Feb  9 00:04 Lab01A.c
-rwx------ 1 mat0299 mat0299   281 Feb 10  2019 Lab02B.sh
-rw------- 1 mat0299 mat0299  2055 Oct  4 09:38 minor1.c
-rw------- 1 mat0299 mat0299  3145 Oct  8 19:47 minor2.c
```

3. Write a bash script that will repeatedly prompt the user to guess a random number between 1 and 10, inclusively, until the user correctly guesses it. To generate a random number, you can use `$RANDOM`, which is an internal bash function that returns a pseudorandom integer in the range 0 – 32767. You can use the modulus operator to limit the range, plus an offset value so that it's between 1 and 10, inclusively.

   Specifically, generate a random number between 1 and 10, inclusively. Then, in a loop, prompt the user to enter a number between 1 and 10. If the user's guess is correct, then print a congratulatory message with the correct number generated by the `$RANDOM` function. Otherwise, if the user's guess is not correct, print out an appropriate failure message and ask the user to try again. You will keep prompting the user and reading the user's guess until the user guesses the number correctly. This bash script should be called **`rec04C.sh`**.

   SAMPLE OUTPUT (input in **bold**):

```
$ ./rec04C.sh
Enter a number between 1 and 10: 5
Sorry, you are not correct. Try again!
Enter a number between 1 and 10: 9
Sorry, you are not correct. Try again!
Enter a number between 1 and 10: 2
Congratulations, the number is 2.
```

REQUIREMENTS:

- No comments are required for this recitation assignment.
- Your bash scripts will be graded based largely on whether they work correctly on the CSE machines (e.g., `cse01`, `cse02`, …, `cse06`), so you should make sure to execute these commands and that they run on a CSE machine.
- Although this assignment is to be submitted individually (i.e., each student will submit his/her own source code), you may receive assistance from your TA and even other classmates. Please remember that you are ultimately responsible for learning and comprehending this material as the recitation assignments are given in preparation for the minor assignments, which must be completed individually.

SUBMISSION:

- You will electronically submit your three bash scripts to the **Recitation 4** dropbox in Canvas by the due date and time. No late recitation assignments will be accepted.