

ECEN 5013

Assignment 1: Bash Scripting Basics

Github Classroom Link

<https://classroom.github.com/a/V6Dlbshj>

Guidelines:

1. Start the assignment as early as possible.
2. Ask doubts to the SAs in their office hours if faced with any issue or drop a message on the slack channels pertaining the problem.
3. Students are expected to follow the [coding guidelines](#).
4. The ESE Honor Code applies to this and all other assignments.

Suggested Reading:

1. <https://nsdl.oercommons.org/courses/an-introduction-to-linux-2/view>
2. Linux System Programming Chapter 1.
3. <https://ryantutorials.net/bash-scripting-tutorial/bash-variables.php>

Implementation:

1. Bring up a virtual machine environment using Virtualbox and Ubuntu 18, or install Ubuntu 18 standalone on a dedicated machine. See instructions [here](#) for help with this step.
2. Write a bash script **finder.sh** as described below
 - a. Accepts the following runtime arguments
 - i. The first argument is a path to a directory on the filesystem, referred to below as **filesdir**
 - ii. The second argument is a text string which will be searched within these files, referred to below as **searchstr**
 - b. Exits with return value 1 error and print statements if any of the parameters above were not specified
 - c. Exits with return value 1 error and print statements if **filesdir** does not represent a directory on the filesystem
 - d. Prints a message "The number of files are X and the number of matching lines are Y" where X is the number of files in the directory and all subdirectories and Y is the number of matching lines found in respective files.

Example invocation:

finder.sh home/APES/assignment1 linux

3. Write a bash script **writer.sh** as described below
 - a. Accepts the following arguments
 - i. The first argument is a full path to a file (including filename) on the filesystem, referred to below as **writefile**
 - ii. The second argument is a text string which will be written within this file, referred to below as **writestr**
 - b. Exits with return value 1 error and print statements if any of the arguments above were not specified
 - c. Creates a new file with name and path **writefile** with first line content **writestr**, 2nd line content your github username, 3rd line content is the output returned by the “date” utility.
 - i. Exits with return code 1 and error print statement if the file could not be created.

Example:

writer.sh home/APES/assignment1/sample.txt ios

4. Run the bash script **tester.sh** provided with your assignment github repository with slight modification described below. This script:
 - a. Accepts the following arguments:
 - i. The first argument is the number of files to write **numfiles**
 - ii. The second argument is the string to write to each file **writestr**
 - b. Defaults to use **numfiles** 10 and **writestr** “ECEN_5013_IS_AWESOME” if respective arguments are not specified.
 - c. Creates an empty directory /tmp/ecen5013
 - d. Loops to create **numfiles** files in directory /tmp/ecen5013 using the writer.sh script, with **writefile** first argument name /tmp/ecen5013/**writestr**X where X is a number from 1 to numfiles, and **writestr** is passed as the second argument.
 - i. As provided, the script only creates a single file. You need to modify it to include a loop which creates the number of files specified in **numfiles**.
 - e. Runs finder.sh script with **filesdir** set to /tmp/ecen5013 and **searchstr** set to **writestr**
 - f. Compares output to expected output “The number of files are **numfiles** and the number of matching lines are **numfiles**”. Prints “success” on match or “error” on mismatch.

Validation:

1. The tester.sh script should be modified to accomplish the requirements as specified.
2. The tester.sh script should return “success” when run.

3. You should be able to modify the resulting /tmp/ecen5013 folder content and re-run finder.sh to verify your finder script output changes accordingly. You should **not** modify the /tmp/ecen5013 target folder.
4. Ensure all error handling has been implemented as described above for finder.sh and writer.sh scripts.
5. Include the validation output from the tester.sh script redirected to the "assignments/assignment1/assignment1result.txt" file for grading purposes.

Deliverables:

- Submit via github classroom and your repository setup via the classroom link above. Use the following git command to submit your assignment after committing your changes:
git push origin master
- Verify your repository found at the github classroom link above contains your latest code and question responses before the deadline.
- Please submit a link to your github repository in canvas.