CSc 3320: Systems Programming
Fall 2021
Homework
1: Total points 100

Full Name: Sriram Mohan

Campus ID: smohan6

Panther #: 002535667

1.

S.no	UNIX	LINUX
1.	UNIX is a free open-source well specified operating system software.	LINUX is a variety of UNIX, and like UNIX, is free and open-source as well.
2.	Not all UNIX systems can have the main features of LINUX.	All LINUX systems are based on UNIX and have UNIX's main features.

Examples of non-LINUX UNIX-based operating systems are Apple OS, Solaris, and System V.

2. The Pipe Mechanism is a UNIX philosophy that takes the output of one process to use as input for another process. The pipe is indicated by '|'.

Eg:- $ ls | wc -l

Here, we list the files, which we then use to display their word count.

3. /bin: A sub-directory that contains binary executable files

/dev: A sub-directory that contains the device files

/boot: A sub-directory that contains important files used to boot the

operating system (kind of like a system32 equivalent for Linux)

/usr: A sub-directory that contains user-specific files

/etc: A sub-directory that contains configuration files

/sbin: A sub-directory that contains binary executable files for admins and

other super users

4. Multitasking and multi-user are safe advantages of UNIX, that improve the

performance and quality of the system, by letting multiple users and

programs run at once, without having them interfere with one another.

S.no	Multi-task	Multi-user
1.	Multitasking involves running multiple processes/programs at once.	Multi-user means that users are allowed to access a given system all simultaneously.
2.	This usually occurs one system.	This only works on multiple systems connected to a network/server.

5. -rwxr-xr-x indicates that the following **file** (indicated by the first hyphen, that it's not a directory) is
   - Readable, writable, and executable by the owner user
   - Only readable and executable by a shared group
   - Only readable and executable by all other users

   The command used to achieve this is:

   $ chmod 755 <name of file>

6. Directories (indicated by 'd') have ways of reading, writing, and execution different from that of files:
   - 'Read' enables users to view/list contents of a directory.
   - 'Write' enables users to alter content in directories, such as deleting/creating new files.
   - 'Execute' enables users to run files in the directory, or change into the directory (using cd).

7. aaba

8. abc

9. ia

10. aba

11. a+z+z

12. abb

13. a0

14. abb.

15. aa. A

16. very very cool good weather

17. -99

18. -9.9

19. 'http:\/\/.*\.edu'

20. '[^\-]\+{0,1}[0-9]+'

21. '\/[A-Za-z].*\/[A-Za-z].*'

22. '[A-Za-z_][A-Za-z0-9_]+'

23. '[\(]{0,1}\d{3}[\)]{0,1}\-{0,1}\d{3}\-{0,1}\d{4}

PART III

Step 1: I log into my account on the server and create the directory known as 'homeworks.'

```
[smohan6@gsuad.gsu.edu@snowball ~]$ mkdir homeworks
[smohan6@gsuad.gsu.edu@snowball ~]$ ls
544c18_a73343e7e2dc42cf8ecc7e342684c029.pdf  foo.class  homeworks       midterm          publicRegular
a.out                                        foo.java   Lab3           myexamfile.txt   publicSubmission
calc.sh                                      foo.sh     Lab4           myName.c         Result
checkError.sh                                hello      Lab8           newList.txt      Result.txt
csc3320                                      hello.c    Lab9           PhoneBook.sh     simple.sh
findStr                                      hello.sh   ls             phoneBook.txt    statementCount1.sh
findStr.c                                    helpme.sh  mandatabase.txt public
```

Step 2: I navigate to 'homeworks' and create 'homework_instructions.txt' with vi.

```
[smohan6@gsuad.gsu.edu@snowball ~]$ cd homeworks
[smohan6@gsuad.gsu.edu@snowball homeworks]$ vi homework_instructions.txt
```

Step 3: I then write all the instructions onto the text file and save it.

```
Submission instructions:
1.     Create a Google doc for each homework assignment submission.
2.     Start your responses from page 2 of the document and copy these instructions on page 1.
3.     Fill in your name, campus ID and panther # in the fields provided. If this information is
 missing in your document TWO POINTS WILL BE DEDUCTED per submission.
4.     Keep this page 1 intact on all your submissions. If this submissions instructions page is
 missing in your submission TWO POINTS WILL BE DEDUCTED per submission.
5.     Each homework will typically have 2-3 PARTS, where each PART focuses on specific topic(s)
.
6.     Start your responses to each PART on a new page.
7.     If you are being asked to write code copy the code into a separate txt file and submit th
at as well.
8.     If you are being asked to test code or run specific commands or scripts, provide the evid
ence of your outputs through a screenshot and copy the same into the document.
9.     Upon completion, download a .PDF version of the document and submit the same.
:wq
```

Step 4: I change the file permission such that only I will be able to edit the file, and perhaps execute it, but others will only be able to read my file.

```
[smohan6@gsuad.gsu.edu@snowball homeworks]$ chmod 744 homework_instructions.txt
```

Step 5: And finally, I list all the lines of homework_instructions.txt that contain the word 'POINTS' using the following command.

```
[smohan6@gsuad.gsu.edu@snowball homeworks]$ grep -E 'POINTS | points' homework_instructions.txt
3.     Fill in your name, campus ID and panther # in the fields provided. If this information is
 missing in your document TWO POINTS WILL BE DEDUCTED per submission.
4.     Keep this page 1 intact on all your submissions. If this submissions instructions page is
 missing in your submission TWO POINTS WILL BE DEDUCTED per submission.
[smohan6@gsuad.gsu.edu@snowball homeworks]$
```