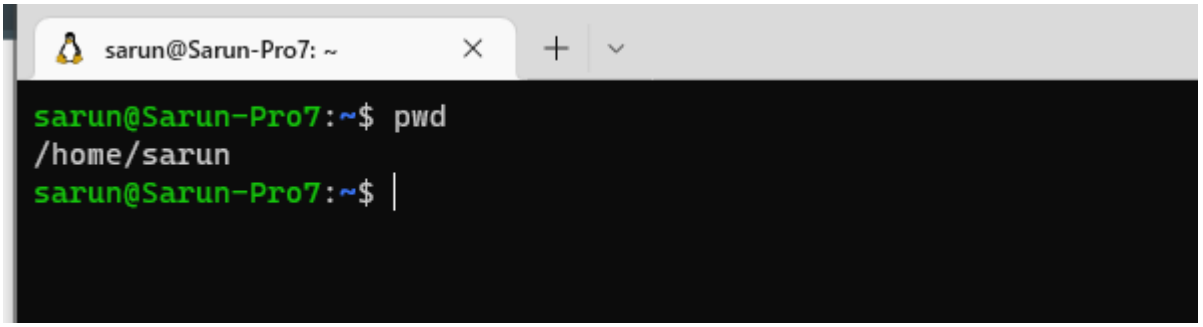
Operating Systems

Lab 1

For each question, you need to take a screenshot of the Linux commands you use and the results of the commands and put the screenshot under the question. You may use this link, https://kb.iu.edu/d/afsk , to find the Linux commands you may need to use.

1. Show the current working directory.
   (Example output)



2. Create a subdirectory "sub1" under your home directory.

```
shoviper@shoviper:~$ mkdir sub1
```

3. Change to the subdirectory you created in the previous question.

```
shoviper@shoviper:~$ cd sub1
shoviper@shoviper:~/sub1$ pwd
/home/shoviper/sub1
```

4. Create a text file using the following command cat > test1.txt. Then enter a few lines of text then press ctrl-d to save the file.

```
shoviper@shoviper:~/sub1$ cat > test1.txt
Hello
shoviper@shoviper:~/sub1$ ls
test1.txt
```

5. Create a subfolder sub11 under your current directory.

```
shoviper@shoviper:~/sub1$ mkdir sub11
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt
```

6. List the files and folders in your working directory.

```
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt
```

7. List the files and folders in your working directory by showing properties such as permissions, owners, and sizes.

```
shoviper@shoviper:~/sub1$ ls -la
total 16
drwxr-xr-x 3 shoviper shoviper 4096 Jul 12 20:58 .
drwxr-x--- 4 shoviper shoviper 4096 Jul 12 20:52 ..
drwxr-xr-x 2 shoviper shoviper 4096 Jul 12 20:58 sub11
-rw-r--r-- 1 shoviper shoviper    6 Jul 12 20:55 test1.txt
```

8. How can we tell the difference between a file and a folder from the result of the command in the previous question? (For this question, you may give only your explanation without any screenshots)

   First Character: The first character of each line indicates the type of the entry:

   - "-" indicates a regular file.
   - "d" indicates a directory (folder).

9. List the files and folders in your working directory including the hidden files.

```
shoviper@shoviper:~/sub1$ ls -a
.  ..  sub11  test1.txt
```

10. Copy the contents of the test1.txt to the new file test2.txt.

```
shoviper@shoviper:~/sub1$ cp -i test1.txt test2.txt
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt  test2.txt
```

11. Copy the contents of the test1.txt to the new file test3.txt.

```
shoviper@shoviper:~/sub1$ cp -i test1.txt test3.txt
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt  test2.txt  test3.txt
```

12. Rename test2.txt to test2.dat.

```
shoviper@shoviper:~/sub1$ mv -i test2.txt test2.dat
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt  test2.dat  test3.txt
```

13. Delete the file test3.txt.

```
shoviper@shoviper:~/sub1$ rm -i test3.txt
rm: remove regular file 'test3.txt'? y
shoviper@shoviper:~/sub1$ ls
sub11  test1.txt  test2.dat
```

14. Delete all files in the folder sub1.

```
shoviper@shoviper:~/sub1$ rm -i *
rm: cannot remove 'sub11': Is a directory
rm: remove regular file 'test1.txt'? y
rm: remove regular file 'test2.dat'? y
shoviper@shoviper:~/sub1$ ls
sub11
```

15. Go back to your home folder.

```
shoviper@shoviper:~/sub1$ cd ..
shoviper@shoviper:~$ pwd
/home/shoviper
```

16. Create a folder sub12 under sub1 without changing to sub1 first.

```
shoviper@shoviper:~$ mkdir sub1/sub12
```

17. Go to folder sub1

```
shoviper@shoviper:~$ cd sub1
shoviper@shoviper:~/sub1$ pwd
/home/shoviper/sub1
```

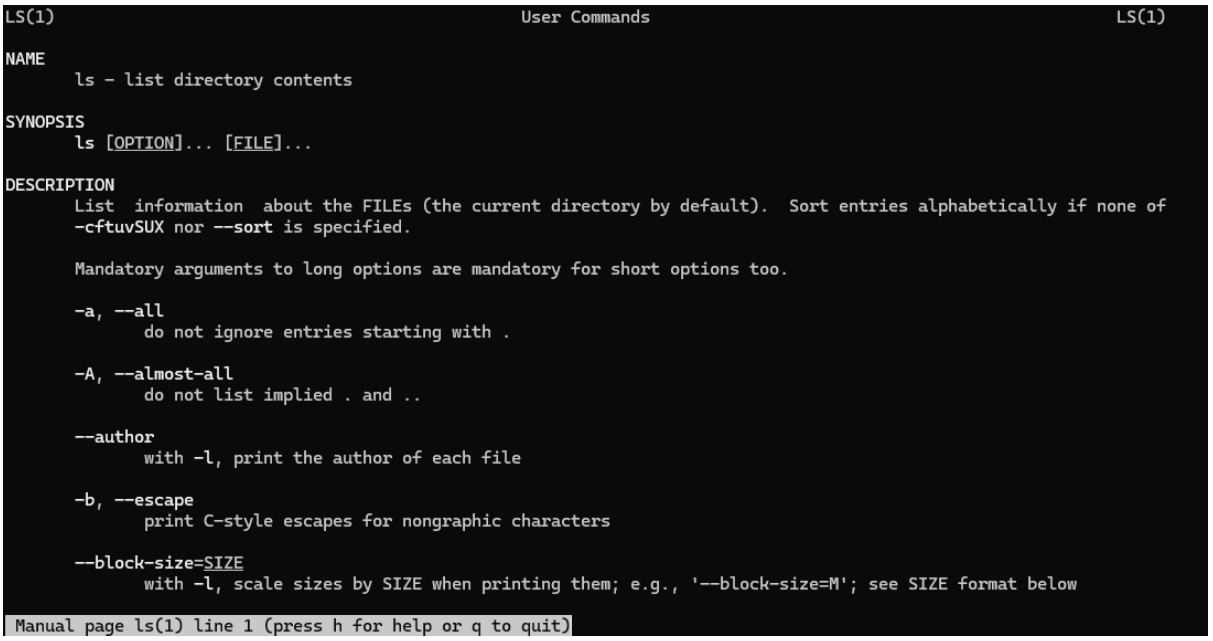
18. Create the following files in the folder sub1, file1.txt, file2.dat, file3.doc, file4.txt, file5.txt, file11.txt, and file21.dat. (Hint: The easiest way to do this is to use the "touch" command. However, if you do not know how to use "touch," you can use a text editor to create those files or create one file and copy the contents to the rest. You do not need to take a screenshot or answer anything for this question.)
19. Copy only the files whose names begin with "file" and follow by only one digit from folder sub1, i.e., copy only file1.txt, file2.dat, file3.doc, file4.txt, and file5.txt to folder sub11. You need to use only one cp command.

```
shoviper@shoviper:~/sub1$ cp file[0-9].* sub11/
```

20. List the files in folder sub11 without changing to the folder sub11 first.

```
shoviper@shoviper:~/sub1$ ls sub11
file1.txt  file2.dat  file3.doc  file4.txt  file5.txt
```

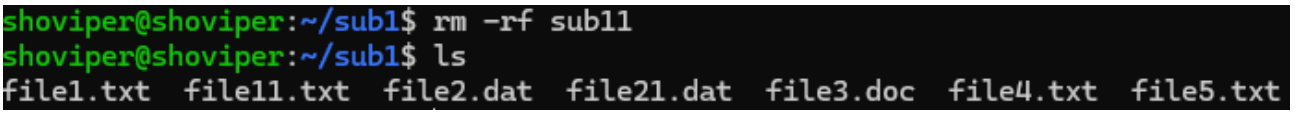
21. Show the manual of the ls command.



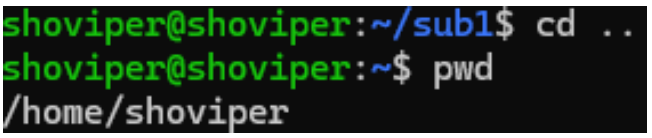
22. Show the list of files in folder sub1 and you sort the result based on the extension in the ascending order.

23. Remove the folder sub12.

24. Remove all files in folder sub11 using only one command.



25. Go back to your home directory.



26. Create folder sub11 under sub1 without going into sub1 first.

27. Copy the file file1.txt from folder sub1 to folder sub1/sub11 without going to sub1 first. **You need to refer to the file and folder using relative path.**

```
shoviper@shoviper:~$ cp sub1/file1.txt sub1/sub11
```

28. Copy the file file2.dat from folder sub1 to folder sub1/sub11 without going to sub1 first. **You need to refer to the file and folder using absolute path.**

```
shoviper@shoviper:~$ cp /home/shoviper/sub1/file2.dat /home/shoviper/sub1/sub11
```

29. Remove the folder sub1 and everything inside it with one command and without user confirmation.

```
shoviper@shoviper:~$ rm -rf sub1
shoviper@shoviper:~$ ls
shoviper@shoviper:~$
```