Operating System

Lab 03 Tasks

Name: Tooba Baqai

Sap ID: 46489

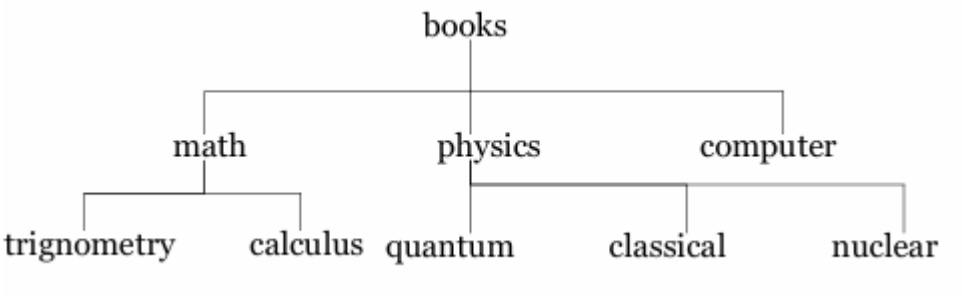
Batch: BSCS-5th semester

Lab Instructor:

Kausar Nasreen Khattak

Q1.

Make the following directory (03 Marks)



Solution:

```
Loading...

Welcome to Fedora 33 (riscv64)

[root@localhost ~]# mkdir books
[root@localhost ~]# ls
bench.py  books  hello.c
[root@localhost ~]#
```

```
[root@localhost ~]# cd books
[root@localhost books]# mkdir math
[root@localhost books]# mkdir physics
[root@localhost books]# mkdir computer
[root@localhost books]# ls
computer  math  physics
[root@localhost books]#
```

```
[root@localhost books]# cd math
[root@localhost math]# mkdir trignometry
[root@localhost math]# mkdir calculus
[root@localhost math]# ls
calculus  trignometry
[root@localhost math]#
```

```
[root@localhost math]# cd ..
[root@localhost books]# cd physics
[root@localhost physics]# mkdir quantum
[root@localhost physics]# mkdir classical
[root@localhost physics]# mkdir nuclear
[root@localhost physics]# ls
classical  nuclear  quantum
[root@localhost physics]#
```

Q2.

Which are the Linux Directory Commands? Explain the understanding of commands in your own words. Also define what is BASH? (02 Marks)

Note: Include screenshots, where required to illustrate your explanation.

Solution:

Understanding Directory Commands:

In Linux, directories help organize files and subdirectories. Various directory commands allow us to create, navigate, modify, and manage these directories. Some of the most commonly used commands include:

1. **mkdir: Create a new directory**

```
[root@localhost ~]# mkdir file
[root@localhost ~]# ls
bench.py  books  file  hello.c
[root@localhost ~]#
```

2. **rmdir: Remove an empty directory**

```
[root@localhost ~]# ls
bench.py  books  file  filee  hello.c
[root@localhost ~]# rmdir filee
[root@localhost ~]# ls
bench.py  books  file  hello.c
[root@localhost ~]#
```

3. **cd: Change directory**

```
[root@localhost ~]# ls
bench.py  books  file  hello.c
[root@localhost ~]# cd file
[root@localhost file]#
```

4. **cd/: Go to home directory**

```
[root@localhost ~]# mkdir file
[root@localhost ~]# mkdir file1
[root@localhost ~]# cd file
[root@localhost file]# mkdir file11
[root@localhost file]# mkdir file22
[root@localhost file]# cd file11
[root@localhost file11]# cd ..
[root@localhost file]#
```

5. **pwd: Present working directory**

```
[root@localhost file]# pwd
/root/file
[root@localhost file]#
```

6. **ls: List directory contents**

```
[root@localhost ~]# ls
bench.py  books  file  file1  hello.c
[root@localhost ~]#
```

7. **mv: Move or rename files and directories**

```
[root@localhost ~]# ls
bench.py  books  file  file1  hello.c
[root@localhost ~]# mv file file1
[root@localhost ~]# cd file1
[root@localhost file1]# ls
file
[root@localhost file1]#
```

8. **cp -r: Copy files and directories**

```
[root@localhost ~]# ls
bench.py  books  file1  file2  hello.c
[root@localhost ~]# cp -r file1 file2
[root@localhost ~]# cd file2
[root@localhost file2]# ls
file1
[root@localhost file2]#
```

9. **rm -r: Remove directories (if directory is not empty)**

```
[root@localhost ~]# ls
bench.py  books  file1  file2  hello.c
[root@localhost ~]# rm -r file2
[root@localhost ~]# ls
bench.py  books  file1  hello.c
[root@localhost ~]#
```

10. **ls -r: show list of directories in reverse**

```
[root@localhost ~]# ls
bench.py  books  file1  hello.c
[root@localhost ~]# ls -r
hello.c  file1  books  bench.py
[root@localhost ~]#
```

11. ls -a: show hidden files also of that directory

```
[root@localhost ~]# ls
bench.py  books  file1  hello.c
[root@localhost ~]# ls -a
.    .bash_logout   .bashrc   books   file1       hello.c
..   .bash_profile  bench.py  .cshrc  .fldev_cfg  .tcshrc
[root@localhost ~]#
```

12. ls -l: show all details list of files

```
[root@localhost ~]# ls
bench.py  books  file1  hello.c
[root@localhost ~]# ls -l
total 16
-rw-r--r-- 1 root root 114 Dec 26  2020 bench.py
drwxr-xr-x 5 root root 107 Sep  6 21:41 books
drwxr-xr-x 2 root root  58 Sep  6 22:08 file1
-rw-r--r-- 1 root root 185 Sep  9  2018 hello.c
[root@localhost ~]#
```

13. touch: to create an empty file

```
[root@localhost ~]# touch file
[root@localhost ~]# ls
bench.py  books  file  file1  hello.c
[root@localhost ~]#
```

14. cat > file: create file and gave us space to write data in that file

```
[root@localhost ~]# ls
bench.py  books  file  file1  hello.c
[root@localhost ~]# cat > file2
this is file 2
[root@localhost ~]# ls
bench.py  books  file  file1  file2  hello.c
[root@localhost ~]#
```

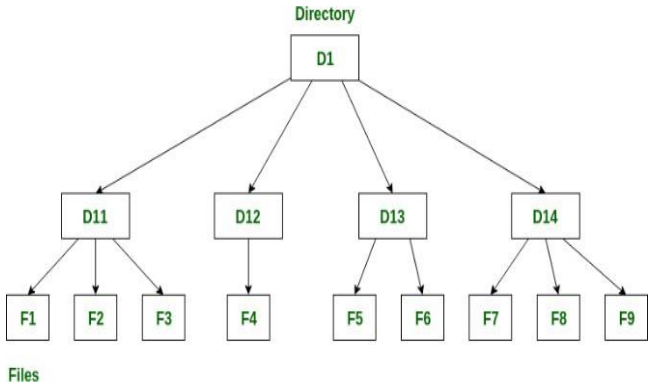
15. cat file: read data from that file

```
[root@localhost ~]# ls
bench.py  books  file  file1  hello.c
[root@localhost ~]# cat > file2
this is file 2
[root@localhost ~]# ls
bench.py  books  file  file1  file2  hello.c
[root@localhost ~]# cat file2
this is file 2
[root@localhost ~]#
```

BASH:

BASH (Bourne-Again Shell) is a command-line interpreter or shell that provides a user interface to interact with the Linux operating system. It is the default shell for most Linux distributions. BASH allows us to execute commands, manage files and directories.

Q3.



Note: Include screenshots, where required to illustrate your explanation. (02 Marks)

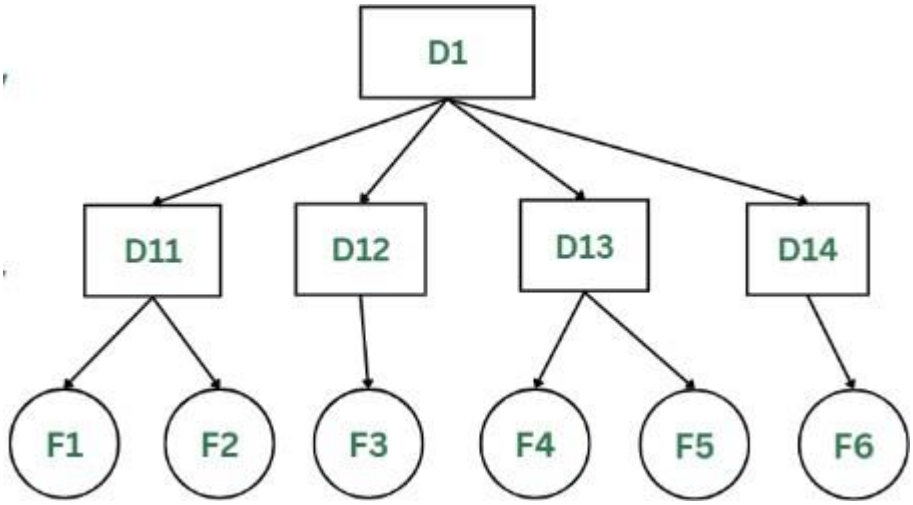
Solution:

```
[root@localhost ~]# ls
bench.py  books  file1  file2  hello.c
[root@localhost ~]# cp -r file1 file2
[root@localhost ~]# mkdir D1
[root@localhost ~]# cd D1
[root@localhost D1]# mkdir D11
[root@localhost D1]# mkdir D12
[root@localhost D1]# mkdir D13
[root@localhost D1]# mkdir D14
[root@localhost D1]# ls
D11  D12  D13  D14
[root@localhost D1]# cd D11
[root@localhost D11]# touch F1
[root@localhost D11]# touch F2
[root@localhost D11]# touch F3
[root@localhost D11]# ls
F1  F2  F3
[root@localhost D11]# cd ..
[root@localhost D1]# cd D12
[root@localhost D12]# touch F4
[root@localhost D12]# ls
F4
[root@localhost D12]# cd ..
[root@localhost D1]# cd D13
[root@localhost D13]# touch F5
[root@localhost D13]# touch F6
[root@localhost D13]# ls
F5  F6
```

```
[root@localhost D13]# cd ..
[root@localhost D1]# cd D14
[root@localhost D14]# touch F7
[root@localhost D14]# touch F8
[root@localhost D14]# touch F9
[root@localhost D14]# ls
F6  F7  F8  F9
[root@localhost D14]#
```

Q4.

Make the following directory (03 Marks)



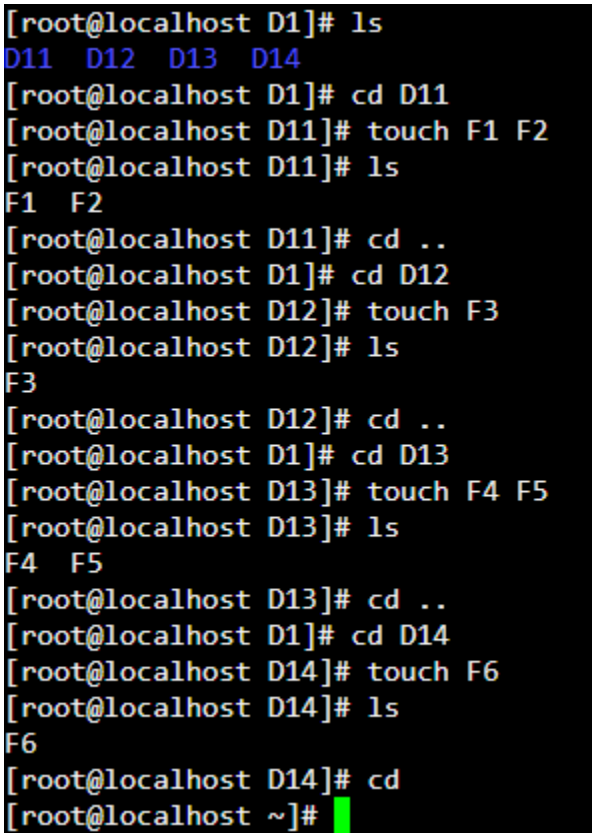
Note: Include screenshots, where required to illustrate your explanation.

Solution:

```
Loading...

Welcome to Fedora 33 (riscv64)

[root@localhost ~]# mkdir D1
[root@localhost ~]# ls
bench.py  D1  hello.c
[root@localhost ~]# cd D1
[root@localhost D1]# mkdir D11
[root@localhost D1]# mkdir D12
[root@localhost D1]# mkdir D13
[root@localhost D1]# mkdir D14
```


[root@localhost D1]# ls
D11 D12 D13 D14
[root@localhost D1]# cd D11
[root@localhost D11]# touch F1 F2
[root@localhost D11]# ls
F1 F2
[root@localhost D11]# cd ..
[root@localhost D1]# cd D12
[root@localhost D12]# touch F3
[root@localhost D12]# ls
F3
[root@localhost D12]# cd ..
[root@localhost D1]# cd D13
[root@localhost D13]# touch F4 F5
[root@localhost D13]# ls
F4 F5
[root@localhost D13]# cd ..
[root@localhost D1]# cd D14
[root@localhost D14]# touch F6
[root@localhost D14]# ls
F6
[root@localhost D14]# cd
[root@localhost ~]#