Operating System

Lab 03 Tasks

Name: Dua Amir

Sap ID: 47849

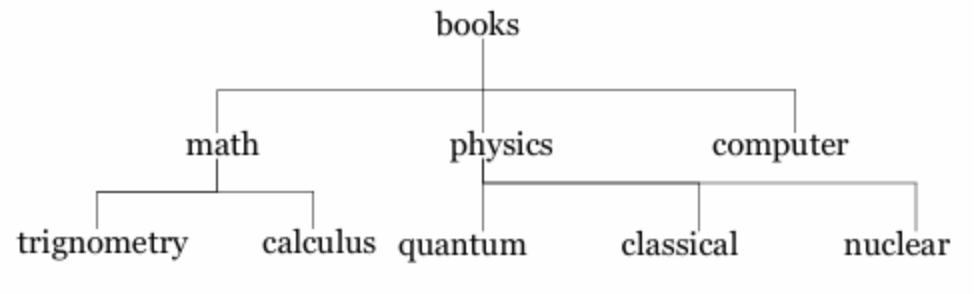
Batch: BSCS-5th semester

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 are used to organize files and other directories. Directory commands allows us to create, navigate, modify, and manage these directories. Here are some of the most commonly used directory commands:

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 ~]#
```

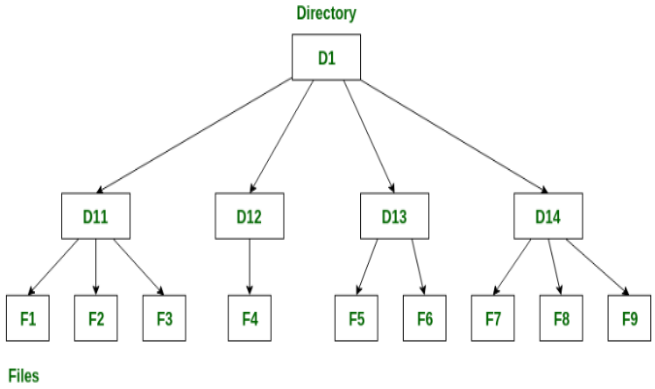
15. cat file: read data from that file

```
[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)

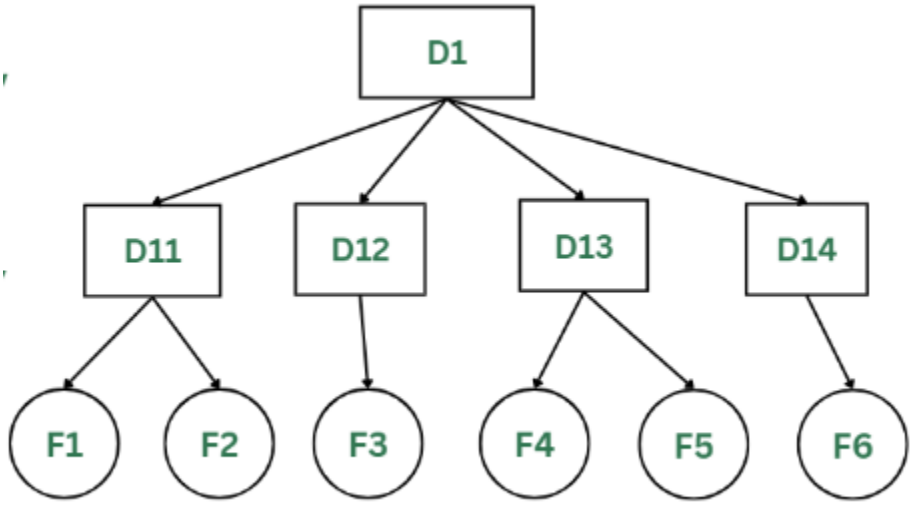
Solution:

```
[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 ~]#
```
