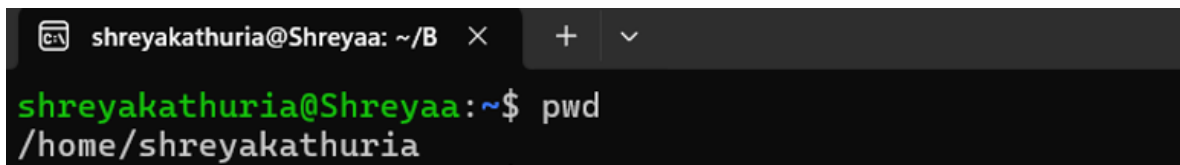


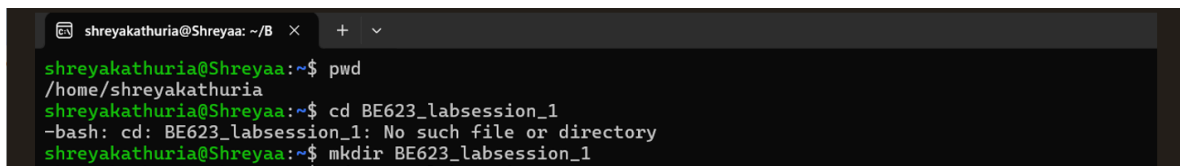
Indian Institute of Technology Gandhinagar
BE623 Biocomputing
Sem1 2025-2026

Lab session –1
(Shell, Filesystem and Permissions)

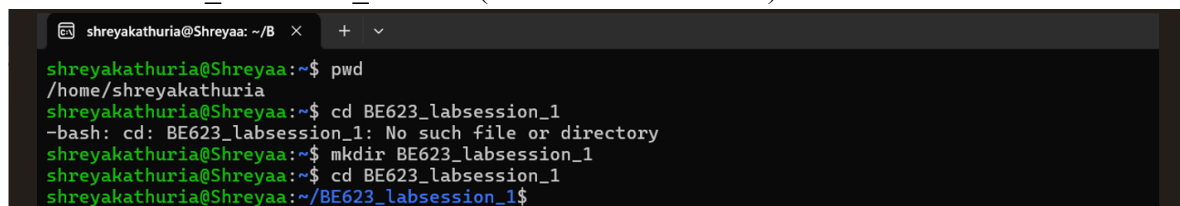
1- Open terminal and find out the path of the folder being displayed in the terminal.
(Hint- Use pwd command to check the current location in terminal and cd command to change the directory)

A terminal window with a dark background. The title bar shows 'shreyakathuria@Shreyaa: ~/B'. The prompt is 'shreyakathuria@Shreyaa:~\$'. The user has entered 'pwd' and the output is '/home/shreyakathuria'.

2- Change directory to the folder with files uploaded on classroom. Create a new folder named “BE623_labsession_1” (Hint- Use mkdir command)

A terminal window with a dark background. The title bar shows 'shreyakathuria@Shreyaa: ~/B'. The prompt is 'shreyakathuria@Shreyaa:~\$'. The user enters 'pwd' and the output is '/home/shreyakathuria'. Then the user enters 'cd BE623_labsession_1' and the output is '-bash: cd: BE623_labsession_1: No such file or directory'. Finally, the user enters 'mkdir BE623_labsession_1' and the output is 'shreyakathuria@Shreyaa:~\$ mkdir BE623_labsession_1'.

3- Enter BE623_labsession_1 folder (Hint use cd command)

A terminal window with a dark background. The title bar shows 'shreyakathuria@Shreyaa: ~/B'. The prompt is 'shreyakathuria@Shreyaa:~\$'. The user enters 'pwd' and the output is '/home/shreyakathuria'. Then the user enters 'cd BE623_labsession_1' and the output is '-bash: cd: BE623_labsession_1: No such file or directory'. Then the user enters 'mkdir BE623_labsession_1' and the output is 'shreyakathuria@Shreyaa:~\$ mkdir BE623_labsession_1'. Finally, the user enters 'cd BE623_labsession_1' and the output is 'shreyakathuria@Shreyaa:~/BE623_labsession_1\$'.

4- Confirm that your current folder is “BE623_labsession_1” (Hint use pwd command)

```
shreyakathuria@Shreyaa: ~/B × + v
shreyakathuria@Shreyaa:~$ pwd
/home/shreyakathuria
shreyakathuria@Shreyaa:~$ cd BE623_labsession_1/
shreyakathuria@Shreyaa:~/BE623_labsession_1$ pwd
/home/shreyakathuria/BE623_labsession_1
shreyakathuria@Shreyaa:~/BE623_labsession_1$
```

5- List all the files and folders in the directory (Hint use ls command)

6- Copy “sequence.fasta and protein.fasta” file to current folder

```
shreyakathuria@Shreyaa: ~/B × + v
shreyakathuria@Shreyaa:~$ ls
BE623_labsession_1  newfolder
shreyakathuria@Shreyaa:~$ cd BE623_labsession_1/
shreyakathuria@Shreyaa:~/BE623_labsession_1$ cp /mnt/c/Users/SHREYA/Downloads/protein.fasta .
```

```
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls
protein.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ cd /mnt/c/Users/SHREYA/Downloads/sequence.fasta .
-bash: cd: too many arguments
shreyakathuria@Shreyaa:~/BE623_labsession_1$ cp /mnt/c/Users/SHREYA/Downloads/sequence.fasta .
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls
protein.fasta  sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ |
```

7- List all the files and folders in the directory (Hint use ls command)

```
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls
protein.fasta  sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls
protein.fasta  sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ |
```

8- Find out if there is any hidden file or folder in the directory (Hint: ls -al)

```
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls
protein.fasta  sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls -al
total 92
drwxr-xr-x  2 shreyakathuria shreyakathuria  4096 Aug 11 07:40 .
drwxr-x---  9 shreyakathuria shreyakathuria  4096 Aug 11 07:30 ..
-rwxrwxrwx  1 shreyakathuria shreyakathuria   467 Aug  9 13:05 protein.fasta
-rwxr-xr-x  1 shreyakathuria shreyakathuria 79551 Aug 11 07:40 sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$
```

9- Find out permissions associated with files in the folder (Hint: ls -l)

```
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls -l
total 84
-rwxrwxrwx 1 shreyakathuria shreyakathuria   467 Aug  9 13:05 protein.fasta
-rwxr-xr-x 1 shreyakathuria shreyakathuria 79551 Aug 11 07:40 sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$
```

10- Find out the permissions of the files and folders in /

```
shreyakathuria@Shreyaa: ~  
shreyakathuria@Shreyaa:~$ cd BE623_labsession_1/  
shreyakathuria@Shreyaa:~/BE623_labsession_1$ cd  
shreyakathuria@Shreyaa:~$ ls -l /  
total 2740  
lrwxrwxrwx 1 root root 7 Apr 22 2024 bin -> usr/bin  
drwxr-xr-x 2 root root 4096 Feb 26 2024 bin.usr-is-merged  
drwxr-xr-x 2 root root 4096 Apr 22 2024 boot  
drwxr-xr-x 15 root root 3860 Aug 9 07:49 dev  
drwxr-xr-x 88 root root 4096 Aug 11 07:08 etc  
drwxr-xr-x 3 root root 4096 Aug 6 18:02 home  
-rwxrwxrwx 1 root root 2724480 Jul 31 14:56 init  
lrwxrwxrwx 1 root root 7 Apr 22 2024 lib -> usr/lib  
drwxr-xr-x 2 root root 4096 Apr 8 2024 lib.usr-is-merged  
lrwxrwxrwx 1 root root 9 Apr 22 2024 lib64 -> usr/lib64  
drwx----- 2 root root 16384 Aug 6 17:55 lost+found  
drwxr-xr-x 2 root root 4096 Feb 15 08:09 media  
drwxr-xr-x 7 root root 4096 Aug 6 17:56 mnt  
drwxr-xr-x 2 root root 4096 Feb 15 08:09 opt  
dr-xr-xr-x 258 root root 0 Aug 9 07:49 proc  
drwx----- 3 root root 4096 Feb 15 08:11 root  
drwxr-xr-x 19 root root 560 Aug 9 07:49 run  
lrwxrwxrwx 1 root root 8 Apr 22 2024 sbin -> usr/sbin  
drwxr-xr-x 2 root root 4096 Mar 31 2024 sbin.usr-is-merged  
drwxr-xr-x 2 root root 4096 Aug 6 17:56 snap  
drwxr-xr-x 2 root root 4096 Feb 15 08:09 srv  
dr-xr-xr-x 13 root root 0 Aug 11 04:23 sys  
drwxrwxrwt 8 root root 4096 Aug 11 03:58 tmp  
drwxr-xr-x 12 root root 4096 Feb 15 08:09 usr  
drwxr-xr-x 13 root root 4096 Aug 6 17:56 var  
shreyakathuria@Shreyaa:~$
```

11- Change the permissions of the file “protein.fasta” so that it is readable, writable and executable by everyone (Hint use chmod).

```
shreyakathuria@Shreyaa:~$ cd BE623_labsession_1/  
shreyakathuria@Shreyaa:~/BE623_labsession_1$ chmod a+rw protein.fasta  
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls -al  
total 92  
drwxr-xr-x 2 shreyakathuria shreyakathuria 4096 Aug 11 07:40 .  
drwxr-x--- 9 shreyakathuria shreyakathuria 4096 Aug 11 07:30 ..  
-rwxrwxrwx 1 shreyakathuria shreyakathuria 467 Aug 9 13:05 protein.fasta  
-rwxr-xr-x 1 shreyakathuria shreyakathuria 79551 Aug 11 07:40 sequence.fasta  
shreyakathuria@Shreyaa:~/BE623_labsession_1$
```

Change the permissions back to what they were.

```
shreyakathuria@Shreyaa:~/BE623_labsession_1$ chmod a+rwX protein.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls-l
ls-l: command not found
shreyakathuria@Shreyaa:~/BE623_labsession_1$ ls -l
total 84
-rwxrwxrwx 1 shreyakathuria shreyakathuria  467 Aug  9 13:05 protein.fasta
-rwxr-xr-x 1 shreyakathuria shreyakathuria 79551 Aug 11 07:40 sequence.fasta
shreyakathuria@Shreyaa:~/BE623_labsession_1$ |
```