Name: <u>Maimoona Khilji</u>

Program: BS-Data Science

Operating System – Lab 03

---

1. Try the following command sequence:
   - `cd`
   - `pwd`
   - `ls -al`


```
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji$ cd
maimoona@DESKTOP-3E3NBI6:~$
maimoona@DESKTOP-3E3NBI6:~$ pwd
/home/maimoona
maimoona@DESKTOP-3E3NBI6:~$ ls -al
total 12
drwxr-xr-x 1 maimoona maimoona  512 Mar 25 12:23 .
drwxr-xr-x 1 root     root      512 Mar 13 15:32 ..
-rw------- 1 maimoona maimoona 4063 Mar 27 18:13 .bash_history
-rw-r--r-- 1 maimoona maimoona  220 Mar 13 15:32 .bash_logout
-rw-r--r-- 1 maimoona maimoona 3771 Mar 13 15:32 .bashrc
drwx------ 1 maimoona maimoona  512 Mar 14 23:36 .config
drwxr-xr-x 1 maimoona maimoona  512 Mar 13 15:33 .landscape
-rw-r--r-- 1 maimoona maimoona    0 Mar 27 08:38 .motd_shown
-rw-r--r-- 1 maimoona maimoona  807 Mar 13 15:32 .profile
-rw-r--r-- 1 maimoona maimoona    0 Mar 25 12:23 .sudo_as_admin_successful
```

   - `cd .`
   - `pwd`   (where did that get you?)
   - `cd ..`
   - `pwd`
   - `ls -al`

Name: <u>Maimoona Khilji</u>

Program: BS-Data Science

- o `cd ..`
- o `pwd`
- o `ls -al`
- o `cd ..`
- o `pwd`   (what happens now)

Name: Maimoona Khilji

Program: BS-Data Science

- cd /etc
- ls -al | more

- cat passwd
- cd -
- pwd

Name: Maimoona Khilji

Program: BS-Data Science

2. Continue to explore the filesystem tree using `cd`, `ls`, `pwd` and `cat`. Look in `/bin`, `/usr/bin`, `/sbin`, `/tmp` and `/boot`. What do you see?

---

ls : It is used to list files and directories present in the current directory.

cd : We can move around the file hierarchy by using the cd command.

pwd : It shows the present directory
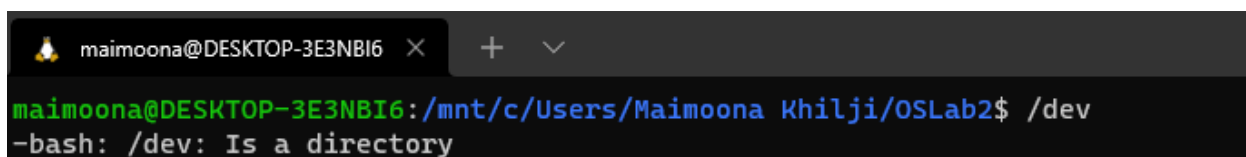
cat : It is used to create single or multiple files, view content of file, concatenate files and redirect output in terminal or files.

---

3. Explore `/dev`. Can you identify what devices are available? Which are character-oriented and which are block-oriented? Can you identify your tty (terminal) device ; who is the owner of your tty (use `ls -l`)?

Can you identify what devices are available? $ mount
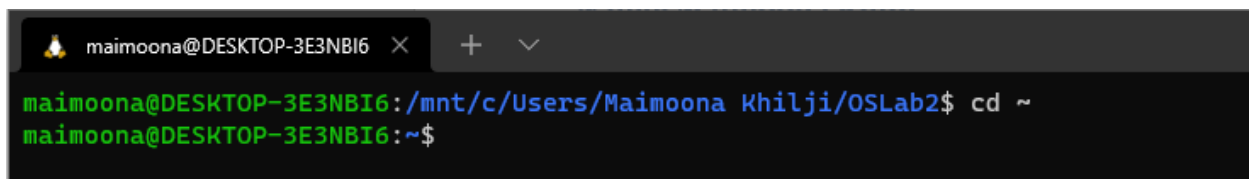
Which are character-oriented and which are block-oriented? Their type are also indicated as "c" or "b" in the permission column of the `ls -l` output.

For tty information: $ w

4. Change back into your home directory.

Name: <u>Maimoona Khilji</u>

Program: BS-Data Science

5. Create a directory called OSLab2.
6. Make subdirectories called `work` and `play` .

maimoona@DESKTOP-3E3NBI6 × + ∨

```
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji$ mkdir OSLab2
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji$ cd OSLab2
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ mkdir work play
```

7. Delete the subdirectory called `work`.

maimoona@DESKTOP-3E3NBI6 × + ∨

```
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ rmdir work/
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ |
```

8. Copy the file `/etc/passwd` into play directory in single command.
9. Move it into the subdirectory `play`.

maimoona@DESKTOP-3E3NBI6 × + ∨

```
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ cp /etc/passwd play
```

10. What is the difference between listing the contents of directory play with `ls -l` , ls and `ls -L`?

ls: list contents of directory

ls -L: list contents of directory

ls – l : list files in long format including

- content permission
- number of links to content
- group owner of the content

Name: Maimoona Khilji

Program: BS-Data Science

- size of the content in bytes
- last modified date / time of the content
- file or directory name

---

11. Create a file called `hello.txt` that contains the words "`hello world`".

```
maimoona@DESKTOP-3E3NBI6 ✕   +  ∨

maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ cat > hello.txt
"Hello World!"
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$
```

12. Imagine you were working on a system and someone accidentally deleted the `ls` command (`/bin/ls`). How could you get a list of the files in the current directory? Try it.

```
maimoona@DESKTOP-3E3NBI6 ✕    +  ∨

maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ echo *
etc hello.txt play
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$
```

13. How would you create and then delete a file called "`$SHELL`"? Try it.

```
maimoona@DESKTOP-3E3NBI6 ✕    +  ∨

maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ touch '$SHELL'
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ rm '$SHELL'
```

14. How would you create and then delete a file that begins with the symbol `#`? Try it.

```
maimoona@DESKTOP-3E3NBI6 ✕    +  ∨

maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ touch '#File'
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ rm '#File'
```

Name: Maimoona Khilji

Program: BS-Data Science

15. How would you create and then delete a file that begins with the symbol `-`? Try it.

```
maimoona@DESKTOP-3E3NBI6 ✕   +   ∨
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ touch -- -hello
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ rm -- -hello
```

16. What is the output of the command: `echo {con,pre}{sent,fer}{s,ed}`? Now, from your home directory, copy `/etc/passwd` and `/etc/group` into your home directory in one command given that you can only type `/etc` once.

```
maimoona@DESKTOP-3E3NBI6 ✕   +   ∨                          –   □   ✕
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ echo {con,pre}{sent,fer}{s,ed}
consents consented confers confered presents presented prefers prefered
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ |
```

17. Still in your home directory, copy the entire directory `play` to a directory called `work`.

```
maimoona@DESKTOP-3E3NBI6 ✕   +   ∨
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ mkdir work
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ cp -rd play work
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ cd work
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2/work$ echo *
play
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2/work$
```

18. Delete the `work` directory and its contents with one command. Accept no complaints or queries.

```
maimoona@DESKTOP-3E3NBI6 ✕   +   ∨
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$ rm -r work
maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji/OSLab2$
```

Name: <u>Maimoona Khilji</u>

Program: BS-Data Science

19. Experiment with the options on the `ls` command. What do the `d`, `l`, `R` and `F` options do?
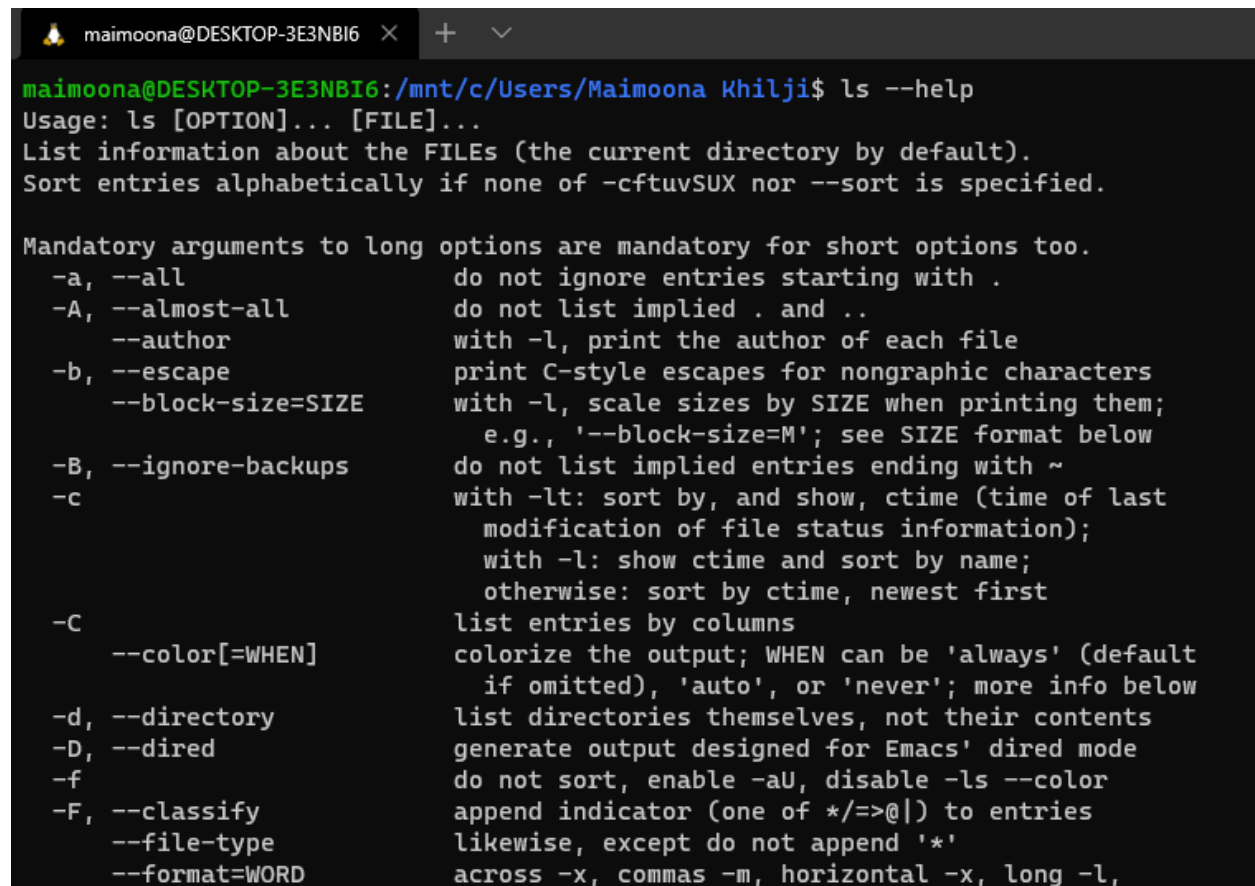
---

ls: list contents of directory

ls –d */ : displays only directories

ls – i: list files along inode number

ls – R : displays subdirectories as well

ls – F: Flags filenames

---

20. Try ls --help

```
maimoona@DESKTOP-3E3NBI6  X    +   ∨

maimoona@DESKTOP-3E3NBI6:/mnt/c/Users/Maimoona Khilji$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILEs (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
  -a, --all                  do not ignore entries starting with .
  -A, --almost-all           do not list implied . and ..
      --author               with -l, print the author of each file
  -b, --escape               print C-style escapes for nongraphic characters
      --block-size=SIZE      with -l, scale sizes by SIZE when printing them;
                               e.g., '--block-size=M'; see SIZE format below
  -B, --ignore-backups       do not list implied entries ending with ~
  -c                         with -lt: sort by, and show, ctime (time of last
                               modification of file status information);
                               with -l: show ctime and sort by name;
                               otherwise: sort by ctime, newest first
  -C                         list entries by columns
      --color[=WHEN]         colorize the output; WHEN can be 'always' (default
                               if omitted), 'auto', or 'never'; more info below
  -d, --directory            list directories themselves, not their contents
  -D, --dired                generate output designed for Emacs' dired mode
  -f                         do not sort, enable -aU, disable -ls --color
  -F, --classify             append indicator (one of */=>@|) to entries
      --file-type            likewise, except do not append '*'
      --format=WORD          across -x, commas -m, horizontal -x, long -l,
```