-- Day2 --

ls	- to list files in directory
tty	- to get the number of tele type terminal
chvt N	- to change the number of tty
date	- to get the date
cal	- to get the calendar of the present month
su - uname	- to switch to another user
id [user name]	- to get the id of the user (root = 0), (user >= 1000), (0 < system/services users < 1000)
clear	- to clear the terminal
exit	- to logout the user

-- Day3 --

eject	- to eject the CD tray
eject -t	- to close the CD's open tray (works only on the Desktops)
cat	- (**concatenate**) to view the content inside the .txt files only
cd [path]	- **change directory**, without arguments change the directory to the home user directory
cd ~	- change the directory to the home user directory, like cd only
cd ~[user]	- change the directory to the given home user directory ex: cd ~nu11/path/
cd -	- last working directory
cd .	- present working directory
cd .. = cd ./..	- go to parent directory
pwd	- present/print working/where directory
dir	- same as ls but without coloring the output
touch	- create empty text file, and can create more than file in the same time, without changing the content inside the file, but changing the last time accessed file
nano	- (basic text editor) to edit the text files

T!p: to copy more than on file, we can put every one file in a double quotes like this:

cp "file1" "file2" /etc/

Now both file1 and file2, will be copied to the destination path.

-- Day 4 --

tree - represents a directory or a path like a tree figure

mkdir - creates a new directory, ex: mkdir /tmp/newdirname

cp - copys a file and change the name of its copy,

ex: cp [filename] [newfilename], cp [filename] [another_path/filename]

"to copy a file to another path", ex: cp file1 ./../file1_copy

cp -r - recursive, to copy the directory with its content

(it overwrites the content of the original file/dir on the new path, only if existed!)

to change the name of copied directory, ex: cp -r d1/ d2/d3/ "new d1 will be named d3, if and only if d3 doesn't exist, if d3 existed it will be copied inside it!!"

mv - moves a file or directory to a new path and remove its source

rm - removes the fle

rmdir - removes the empty directory

rm -r - removes the directory with its content

rm -rf - force removing directory and files

!!**Attention**!! rm -rf dir / "don't let spaces after the name of directory, because it will read it as another thing to remove !!"

mv filename newf - to rename a file by indirect way

ls -a - all, list all hidden files

ls -r - reversed, list files with reversed arrangement of alphabet

ls -R - Recursive, list files and directories with its inside content,

ex: ls -R /home/

exit / logout - logout

reset - clear and start a new page of terminal

bg - continue paused command on the background or run jobs in background

reboot - reboot

shutdown -r now - reboot now

systemctl reboot - reboot

init 6 - reboot

shutdown - shutdown

shutdown -h now - shutdown now, "-h means hold"

poweroff - shutdown

init 0 - shutdown

systemctl poweroff - shutdown

; - append two commands

useradd [name] - create a new user / update default new user information (same adduser)

passwd [uname] - to set a password for the user (root only)

passwd - to change the password for the current user

systemctl poweroff -i - to shutdown and ignore inhibitors and users (self-learned)

-- Day 5 --

```
groupadd                - to create a new group for users
useradd -g [gname] [uname]    - to change the primary group for "a new user",
                              ex: useradd -g groupdc userali
usermod                 - to modify any data and info about the user
usermod -G              - to add/remove a user to another secondary groups,
                          ex: usermod -G groupdc userali
usermod -a -G           - to add the user to additional secondary group,
                          ex: usermod -a -G groupdc uname
usermod -g              - to change the primary group to an existed user,
                          ex: usermod -g group1 ali
userdel                 - to delete a user,    ex: userdel [username]
userdel -r              - to delete the use with his home directory too!
groupdel                - to delete a group,      ex: groupdel [groupname]
ls -l                   - list all files with their info
groupmod -p             - to set/change the password for the group
groupmod -g             - change the group ID to GID
groupmod -n [NEW] [OLD]- change the name of the group
chmod                   - change permissions,    ex: chmod [u,g,o] [+,-] [r,w,x] [filename]
                         ex: chmod ug+r,o-wx file1,  chmod a+w file2 (a=all),
       ex: chmod -x file4 (if you didn't select the permission to whom, it will execute to all)
chmod -R                - execute command on all (directory and what inside it recursively
chown                   - change ownership,      ex: chown [username:groupname] [filename]
./                      - to execute files,       ex: ./[filename]
```

-- Day 6 –

```
0 < [filename]          - to print the input to a file
1 > [filename]          - to print the output to a file
2 > [filename]          - to print the error to a file
cat <file1 >file2       - takes input from file1 and add it to file2
cat <<AnyWord>> file2   - makes you add inputs to the filename
                          and when you write AnyWord in the last line, it closes the inputs
<< or >>                - just to append the new result to the file instead of overwriting it!!
[command] >>output 2>> err – Takes the output and error from the same one command at once
                          ex: ls -l file1 file1010 >output 2>error (while file1 doesn’t exist)
&> or 2&>               - Takes the error and output,  ex: ls – l /home/ 2&>output
                          ex: ls -l file1 file1010 2&>outputanderror.text
file [filename]         - determine file type, gives some additional info about special files
```

| - takes output from a command as an input to another command
ex: ls -lR / | cat

less - to view/navigate the content inside the file, page by page

more - to view/navigate the content inside the file, page by page

tee - takes a copy from the output of a command and views it on the terminal and another copy in a file, ex: ls -l | tee [filename.txt]

tee -a - to append the result to the same file

Some commands:!

w - who is login, where and what he is doing, and load average

whatis [command] - to tell what the command does

who - who is logged on the system

whoami - print the user name associated with the current effective user ID

whereis [command] - where the binary of the command is, its 'man' page and the documentation

which - shows the full path of (shell) commands, where it executed from
ex: which python >>>> **/usr/bin**

last - all login logs, and information about the last logged in users

lastlog - reports the most recent login of all users or of a given user

---

-- Day 7 --

ls -i - to list files with inode number

stat [path] - alternative to (ls -i), it also displays file or file system status (self)

df - disk free space

df -h - disk free space in Human readable.

df -i - get Inode info about the disk space

df -ih - in human readable

df -B[SIZE] - scale sizes by SIZE, SIZE here is represented by :[K, M, G, T, etc.]
you can specify the size with a number before the symbol
ex: df -B512K /home, df -B2G /root/, df -B100M /home/abdulrhman (man)

-- Day 8 --

ln [source] [link] - to make a hard link to a file
This command have **4** forms, you can see its man page: **man ln**

ln -s, ln --symbolic - make symbolic/soft links instead of hard links
ex: ln -s /home/work/file1 /tmp/work/tempfilename

lsblk - list block devices or connected disks

-- Day 9 --

fdisk - to go inside the disk, and to manage and change inside it

fdisk -l - list Partition Tables for the connected devices and then exit

fdisk -l [disk path] - to list only the selected disk info

portprobe - to make the kernel scan the disks or partition tables, automatically scan all disks connected - inform the OS of Partition Table changes

portprobe [disk/partition] - scan only the selected disk, or the selected partition - inform the OS of Partition Table changes for a specified disk

mkfs - make a new filesystem, (by default it will be ext2)

mkfs fs-options - Filesystem-specific options to be passed to the real filesystem builder, Although not guaranteed, the following options are supported by most FS builders

mkfs [options] [-t <type>] [fs-options] <device> [<size>]

ex: mkfs -v -t ext4 -b1024 /dev/sdb1

ex: mkfs -V -t xfs -f -b size=1024 -L SDB1Part /dev/sdb1

mkfs.[fs type] [partition] - specify filesystem type with its own options

ex: mkfs.xfs -f -b size=1024 -L SDB2_Partition /dev/sdb2

mkfs -f - to force the overwrite of the filesystem

mkfs -isize=[isize] - to set the size of the inode

dd - disk dump

dd if=[path1] of[path2] bs=[size] count=[nofblocks]

if means the input file, **of** means the output file destination, **bs** = block size

mount [source] [dest] - to mount any device

umount - to un-mount

dumpe2fs [partition] - dump the partition information (only ext2, ext3 and ext4)

dumpe2fs -h [partition] - Only displays the Super Block information.

e2fsck - to check the extN Linux filesystem (ext2, ext3 and ext4)

e2fsck -f - to force the check of the filesystem

-- Day 10 --

mount -t [type] [path] - to mount a partition with the type of the filesystem

mount LABEL=label_name [mount path] - to mount a partition with its name/label

blkid - locate/print block device attributes

e2label <device> [label] - to label the partition with a name (only for extN filesystems)

xfs_admin -L [label] <device> - to set Label name to XFS partition

xfs_info <mounted partition> - to print information about mounted XFS partition

xfs_repair <Partition> - repairs corrupt or damaged XFS filesystem

```
mount -a                        - reads all the /etc/fstab and mount it and check if there errors!
mount -av                       - (-v) option to see what happens OR verbose mode
mount -U [UUID] <device>        - to mount a device with its UUID
cfdisk [device path]            - a utility in Linux, that allow to manage fdisk more easily!
gzip [filename]                 - to compress a file with extension .gz
gunzip [filename]               - to decompress the compression of a compressed .gz file
bzip2 [filename]                - to compress a file with extension .bz2
bunzip2 [filename]              - to decompress the compression of a compressed .bz2 file
du [path]                       - to get the space/size for the whole directory and its content
du -sh [path]                   - s to summarize, h for human readable
tar cf [file.tar] [src1 src2]   - create tape archive file, to make an archive of files
tar xf [file.tar]               - to extract the content inside the .tar file
tar cvf [file.tar] [src1 src2]  - create verbose file (view what files are being archived)
tar xvf [filename]              - extract verbose file (view what files are being extracted)
tar cvfz/j [file.tar] [sources] - create gzip/bzip2 compressed file while tape archiving files
                                  z for gzip, j for bzip2
tar xvfj [filename]             - extract compressed archived file
tar tvf [filename]              - t, to list the content without extracting its content
tar uvf [file.tar] [source]     - u, to append files to the archived file
tar f file.tar --delete [source] - --delete, delete files existed in the archived .tar file
time + command                  - to print the time of executing the command
```

-- Day 11 --

```
ps                              - Current working processes from the present terminal only
ps a                            - Current working processes from the whole terminal opened
ps aux                          - All running processes existed on the system
kill [PID]                      - to kill a background running-process on the GUI
kill -l                         - list all the signals of killing process
kill -[N] [PID]                 - to specify the command with the signals
ps -ef                          - to preview the PPID
pstree                          - view in tree
pgrep [Pname]                   - process grep, to get the process ID by the name of it
pkill [Pname]                   - kill the process by its name
[Process name] &                - to make the application running in the background
jobs                            - display status of running background processes
fg %[n]                         - run the process in the foreground,
                                n is the number of the process in the background running processes
bg %[n]                         - run process in the background
```

-- Day 12 --

killall [Pname] - to kill all processes with the shared name

top - information about the system and top running processes and the load of the machine and can kill the real time running processes.

Looks like Task Manager in Windows !!

nice -n [value] [PID/Pname] - to set the nice value of the process with its name you can start the process with a value given with the command

renice -n [value] [PID/Pname]- to set/change the priority for a real-time running process

ps -eo "[more arguments]" - to print some additional info with the arguments

updatedb - to force update for the Database

locate [filename] - to locate/search for a file with his name

find [path] -name [filename] - the path we want to only search in, and the name of the file ..

find [path] -iname [filename]- iname = insensitive name, that we don't care whether the letters are capital or small

find -perm -name - perm, permission, to search with permission of the file

find -atime - access time e.g.(1 for the last 24 hours, +1 for 24 hours and before)

grep [word] [destinationpath]- to search the content of the file, it shows the full line of the word !!

grep -i - insensitive name

grep -v [word] - grep everything except word,

grep -n [word] - -n, for the line number

grep -R [word] [path] - -R, for recursively, to search the word in every file in the path !!

grep -lR [word] [path] - -l, to list only the files containing the word

cut -f [fieldn] -d [delimiter] [filepath] - while -f, for the field number and -d, for the delimiter between the content words

example : 'cut -f 1,3 -d : /etc/passwd' or '-f 1-4' to get all fields in range as we can get more than one field in the same time !!

sort - to sort the content or the result of a file in arrangement by default, it arranges the content as a string !!

sort -n - to sort in numeric arrangement

uniq - to report or omit repeated lines, it compares the line with the line before, and then omit it, so you may see things are repeated

!!! so we can sort first and then uniq !!!

-- Day 13 --

vim - creates a file or open it if it existed

-- Day 14 --

systemctl [service] - to work with the service

journalctl -

systemctl status [service] - to get the status of the service

systemctl -l - to show the result in full

systemctl disable/enable - to change the vendor preset of the service

systemctl start [service] - to start a dead service

systemctl stop [service] - to stop a running service

service [service] start/stop/status – same like systemctl but with init

chkconfig [service] on/off - to change the vendor preset of the service like enable/disable

systemctl is-active/enable [service]- to see if the service is active or not and enabled or not

systemctl mask [service] - mask the service and prevent it from working

systemctl unmask [service] - unmask the service and make it working again

systemctl get-default - to get the default target.

systemctl set-default [Mode] – to change/reset the default target of the machine

runlevel - to get your run level

systemctl isolate [target] - to change the systemd target while running the machine

init [run lvl number] - to change the run level of init run levels

telinit - work like init

systemctl list-units - list all the Unit files of systemd with information about it like if it is running, loaded or active or not ..etc.

systemctl list-unit-files - list files of the services existed in /usr/lib/systemd/system/

systemctl reload [service] - to re-read and apply the configuration file of the service.

-- Day 15 --

grub2-mkconfig - to re-generate the GRU configuration settings in the terminal

grub2-mkconfig -o [path] - to make the output in the file to a path, like the main source of

the GRUB cfg file in the /etc/

ls -Z - to view the SELinux LABEL

mount -o remount,rw /sysroot/ - to change the mount mode to read-write mode in the Recovery Mode

chroot /sysroot/ - to change the root filesystem in the Recovery Mode to the real root filesystem

touch /.autorelabel -

-- Day 16 --

systemctl daemon-reload - to reload the configuration files

nmcli - Network Manager

ip addr show - to preview your machine ip addresses found on the machine

ip a s - same as the above and it can be abbreviated.

ifdown [Interface] - to take down the Network Interface (disable)

ifup [Interface] - to bring up the Network Interface (enable)

ifconfig - to configure the Network Interface

-- Day 17 --

nmcli connection show - to list the connections on your interfaces.

nmcli connection show [Profile] - to list the Profile with in -depth details about it.

nmcli connection delete [Profile] – to delete the connection.

nmcli connection add con-name [newName] ifname [InterfaceName] type [type] autoconnect [yes/no]

- to add a new connection.

nmcli connection modify [name] - to modify the connections with a specific attribute.