Complete lab4 and lab 5

```
mohamed@dell:~$ sudo find /etc -name passwd -exec cat {} \; | grep '^g' | cut -d: -f1,5 | sort -t: -k2 > file3
mohamed@dell:~$ cat file3
geoclue:
gnome-initial-setup:
games:games
gdm:Gnome Display Manager
gnome-remote-desktop:GNOME Remote Desktop
mohamed@dell:~$
```

6. Write two commands: first: to search for all files on the system that named .bash_profile. Second: sorts the output of ls command on / recursively, Saving their output and error in 2 different files and sending them to the background

```
                                    mohamed@dell: ~
mohamed@dell:~$ find / -type f -name ".bash_profile" > bash_profile_file_saved.txt
```

```
                                    mohamed@dell: ~
mohamed@dell:~$ ls -R / | sort > sorted.txt 2> error_file
ls: cannot open directory '/etc/credstore': Permission denied
ls: cannot open directory '/etc/credstore.encrypted': Permission denied
ls: cannot open directory '/etc/cups/ssl': Permission denied
ls: cannot open directory '/etc/polkit-1/rules.d': Permission denied
ls: cannot open directory '/etc/ssl/private': Permission denied
```

```
  Open                                                    sorted.txt
103750 application-x-deb.png
103751 application-x-deb.png
103752 application-x-deb.png
103753 application-x-deb.png
103754 application-x-deb.png
103755 application-x-deb.png
103756 application-x-deb.png
103757 application-x-deb.png
103758 application-x-deb.svg
```

```
mohamed@dell:~$ compress mycv
mohamed@dell:~$ uncompress mycv.z
gzip: mycv.z: No such file or directory
mohamed@dell:~$ uncompress mycv.Z
mohamed@dell:~$ gzip mycv
mohamed@dell:~$ gunzip mycv.gz
mohamed@dell:~$ zip mycv.zip mycv
  adding: mycv (deflated 30%)
mohamed@dell:~$ unzip mycv.zip
Archive:  mycv.zip
replace mycv? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: mycv
mohamed@dell:~$ |
```

```
                              mohamed@dell: ~

mohamed@dell:~$ compress mycv
mohamed@dell:~$ zcat mycv.Z
1-Hello
2----------------
3- My name is Mohamed kamal
4- My age is 24 years old
6- Gradueted from faculty of computers and artificial intelligence
7- I have more experience in manual testing and automation testing
mohamed@dell:~$ |
```

3.Backup /etc directory using tar utility.

```
mohamed@dell:~$ tar -cf etc_backup.tar /etc
tar: Removing leading `/' from member names
tar: Removing leading `/' from hard link targets
tar: /etc/cups/subscriptions.conf.O: Cannot open: Permission denied
tar: /etc/cups/ssl: Cannot open: Permission denied
tar: /etc/cups/subscriptions.conf: Cannot open: Permission denied
tar: /etc/sudoers.d/README: Cannot open: Permission denied
tar: /etc/ppp/pap-secrets: Cannot open: Permission denied
tar: /etc/ppp/chap-secrets: Cannot open: Permission denied
tar: /etc/polkit-1/rules.d: Cannot open: Permission denied
tar: /etc/credstore: Cannot open: Permission denied
tar: /etc/.pwd.lock: Cannot open: Permission denied
tar: /etc/ufw/user6.rules: Cannot open: Permission denied
```

4. Starting from your home directory, find all files that were modified in the last two day.

```
                                    mohamed@dell: ~
mohamed@dell:~$ find ~ -type f -mtime -2
/home/mohamed/.config/dconf/user
/home/mohamed/.config/enchant/en_US.exc
/home/mohamed/.config/enchant/en_US.dic
/home/mohamed/.config/tiling-assistant/tiledSessionRestore.json
/home/mohamed/.config/ibus/bus/a54849e65e12486c997144e5f02c1798-unix-way
/home/mohamed/.config/ibus/bus/a54849e65e12486c997144e5f02c1798-unix-0
/home/mohamed/.config/gtk-3.0/bookmarks
/home/mohamed/.config/gedit/accels
/home/mohamed/.viminfo
/home/mohamed/snap/firefox/common/.mozilla/firefox/Crash Reports/Instal
```

5. Starting from /etc, find files owned by root user.

```
mohamed@dell:~$ find /etc -type f -user root
/etc/X11/xinit/xserverrc
/etc/X11/xinit/xinputrc
/etc/X11/xinit/xinitrc
/etc/X11/Xsession
/etc/X11/Xreset.d/README
/etc/X11/Xresources/x11-common
/etc/X11/Xwrapper.config
/etc/X11/xsm/system.xsm
/etc/X11/default-display-manager
/etc/X11/XvMCConfig
```

6. Find all directories in your home directory.

```
mohamed@dell:~$ find ~ -type d
/home/mohamed
/home/mohamed/Videos
/home/mohamed/Templates
/home/mohamed/Desktop
/home/mohamed/.config
/home/mohamed/.config/goa-1.0
/home/mohamed/.config/evolution
/home/mohamed/.config/evolution/sources
/home/mohamed/.config/dconf
/home/mohamed/.config/enchant
/home/mohamed/.config/tiling-assistant
/home/mohamed/.config/procps
/home/mohamed/.config/ibus
```

7. Write a command to search for all files on the system that, its name is ".profile".

```
mohamed@dell:~$ locate .profile
/etc/skel/.profile
/home/mohamed/.profile
/snap/core22/1748/etc/skel/.profile
/snap/core22/1748/usr/share/base-files/dot.profile
/snap/core22/1748/usr/share/base-files/dot.profile.md5sums
/snap/core22/1748/usr/share/lintian/profiles/dpkg/main.profile
/snap/core22/1748/usr/share/opensc/asepcos.profile
/snap/core22/1748/usr/share/opensc/authentic.profile
/snap/core22/1748/usr/share/opensc/cardos.profile
/snap/core22/1748/usr/share/opensc/cyberflex.profile
/snap/core22/1748/usr/share/opensc/entersafe.profile
/snap/core22/1748/usr/share/opensc/epass2003.profile
```

8. Identify the file types of the following: /etc/passwd, /dev/pts/0, /etc, /dev/sda

/etc/passwd > Regular file start with (-)

/dev/pts/0 > Character device starts with (c)

/dev/sda > Block device starts with (b)

/etc > Directory start with (d)

```
mohamed@dell:~$ ls -l /etc/passwd /dev/pts/0 /etc /dev/sda
crw--w----   1 mohamed tty  136, 0 Mar 13 11:21 /dev/pts/0
brw-rw----   1 root    disk   8, 0 Mar 13 10:44 /dev/sda
-rw-r--r--   3 root    root    2956 Mar 11 12:46 /etc/passwd

/etc:
total 1144
```

9. List the inode numbers of /, /etc, /etc/hosts.

```
                                                    mohamed@dell: ~
mohamed@dell:~$ ls -i -d / /etc /etc/hosts
      2 /   786433 /etc  786826 /etc/hosts
```

10. Copy /etc/passwd to your home directory, use the commands diff and cmp, and Edit in the file you copied, and then use these commands again, and check the output

```
mohamed@dell:~$ cp /etc/passwd ~/copy_of_passwd
mohamed@dell:~$ ls ~/copy_of_passwd
/home/mohamed/copy_of_passwd
mohamed@dell:~$ diff /etc/passwd ~/copy_of_passwd
mohamed@dell:~$ cmp /etc/passwd ~/copy_of_passwd
mohamed@dell:~$ gedit ~/copy_of_passwd
mohamed@dell:~$ diff /etc/passwd ~/copy_of_passwd
51a52
> echo"hello from copying file ..."
mohamed@dell:~$ cmp /etc/passwd ~/copy_of_passwd
cmp: EOF on /etc/passwd after byte 2956, line 51
mohamed@dell:~$ |
```

11. Create a symbolic link of /etc/passwd in /boot.

```
Thu Mar 13 10:45:41 AM EET 2025
mohamed@dell:~$ sudo ln -s /etc/passwd /boot/soft_link
[sudo] password for mohamed:
mohamed@dell:~$ ls -l /boot
total 91788
-rw-r--r-- 1 root root   292076 Feb 17 11:40 config-6.11.0-19-generic
drwxr-xr-x 5 root root     4096 Mar  9 22:03 grub
lrwxrwxrwx 1 root root       28 Mar  9 22:00 initrd.img -> initrd.img-6.11
-rw-r--r-- 1 root root 68368775 Mar  9 22:12 initrd.img-6.11.0-19-generic
lrwxrwxrwx 1 root root       28 Mar  9 22:00 initrd.img.old -> initrd.img-
ric
-rw-r--r-- 1 root root   142796 Apr  8  2024 memtest86+ia32.bin
-rw-r--r-- 1 root root   143872 Apr  8  2024 memtest86+ia32.efi
-rw-r--r-- 1 root root   147744 Apr  8  2024 memtest86+x64.bin
-rw-r--r-- 1 root root   148992 Apr  8  2024 memtest86+x64.efi
lrwxrwxrwx 1 root root       11 Mar 13 10:48 soft_link -> /etc/passwd
-rw------- 1 root root  9400141 Feb 17 11:40 System.map-6.11.0-19-generic
lrwxrwxrwx 1 root root       25 Mar  9 22:00 vmlinuz -> vmlinuz-6.11.0-19-
-rw------- 1 root root 15329672 Feb 17 12:17 vmlinuz-6.11.0-19-generic
lrwxrwxrwx 1 root root       25 Mar  9 22:00 vmlinuz.old -> vmlinuz-6.11.0
mohamed@dell:~$ |
```

12. Create a hard link of /etc/passwd in /boot. Could you? Why?

Hard link was created, because of /boot is on the same partition from /etc wfdff

If there are in different partition it is not created

```
mohamed@dell:~$ sudo ln /etc/passwd /boot/hardlink
mohamed@dell:~$ ls -l /boot
total 91792
-rw-r--r-- 1 root root   292076 Feb 17 11:40 config-6.11.0-19-generic
drwxr-xr-x 5 root root     4096 Mar  9 22:03 grub
-rw-r--r-- 2 root root     2956 Mar 11 12:46 hardlink
lrwxrwxrwx 1 root root       28 Mar  9 22:00 initrd.img -> initrd.img-6.11
-rw-r--r-- 1 root root 68368775 Mar  9 22:12 initrd.img-6.11.0-19-generic
lrwxrwxrwx 1 root root       28 Mar  9 22:00 initrd.img.old -> initrd.img-
ric
-rw-r--r-- 1 root root   142796 Apr  8  2024 memtest86+ia32.bin
-rw-r--r-- 1 root root   143872 Apr  8  2024 memtest86+ia32.efi
-rw-r--r-- 1 root root   147744 Apr  8  2024 memtest86+x64.bin
-rw-r--r-- 1 root root   148992 Apr  8  2024 memtest86+x64.efi
```