Lab 4.2:

4- get the login names and comments

We would get it in section 1 and 5 with cut using the delimiter of : after grepping with g

```
[Mon Dec 16 127 $]grep ^g /etc/passwd | cut -d: -f1,5
games:games
geoclue:User for geoclue
gdm:
gnome-initial-setup:
[Mon Dec 16 127 $]
```

5- sort using their comments

```
[Mon Dec 16 127 $]grep ^g /etc/passwd | cut -d: -f1,5 | sort -t: -k2
gdm:
gnome-initial-setup:
games:games
geoclue:User for geoclue
[Mon Dec 16 127 $]
```

6- search for all bash_profile existing on the machine and output the ls recursive on / in a file and suppress the error

```
/home/iredadmin/.bash_profile
/home/iredapd/.bash_profile
/home/islam/.bash_profile
[Mon Dec 16 127 $]sudo find -name .bash_profile > ~/profiles 2>/dev/null ;  ls
-R / 2>~/bla | sort >> ~/list.txt
```

LAB 5:

1- compress a file using gzip,zip and decompress

```
[Mon Dec 16 127 $]zip file.zip file.txt
  adding: file.txt (deflated 83%)
[Mon Dec 16 127 $]gzip file.txt
[Mon Dec 16 127 $]ls
 bla           f2            list.txt    oldpasswd                  testdir
 Desktop       file.txt.gz   man.txt     Pictures                   Videos
 docs          file.zip      Music       Public
 Documents     folder1       myCV        'sing are treated as val-'
 Downloads     folder2       myteam      Templates
[Mon Dec 16 127 $]
```

```
    Similar command is: 'gunzip'
    [Mon Dec 16 127 $]gunzip file.txt.gz
    [Mon Dec 16 127 $]unzip -l file.zip
    Archive:  file.zip
      Length       Date    Time    Name
    ---------  ---------- -----    ----
       103195  12-15-2024 15:11    file.txt
    ---------                      -------
       103195                      1 file
    [Mon Dec 16 127 $]
```

I used -l just to view it to decompress it just simply remove the -l

```
    Archive:  file.zip
      Length       Date    Time    Name
    ---------  ---------- -----    ----
       103195  12-15-2024 15:11    file.txt
    ---------                      -------
       103195                      1 file
    [Mon Dec 16 127 $]unzip file.zip
    Archive:  file.zip
    replace file.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: Y
```

2- how to view a compressed file
For each compression method has its own viewing method for compress you use zcat with
compress,gzip,bzip2
For zip you can use unzip with the -l flag
3- archive /etc

```
    /etc/logwatch/conf/logwatch.conf
    /etc/logwatch/conf/override.conf
    /etc/logwatch/conf/services/
    /etc/logwatch/conf/services/postfix.conf
    /etc/logwatch/scripts/
    /etc/logwatch/scripts/services/
    /etc/freshclam.conf.2024.12.10.11.27.27
    [Mon Dec 16 127 $]man tar
    [Mon Dec 16 127 $]sudo tar -cvf etc.tar /etc
```

4- find files modified the last 2 days

```
[Mon Dec 16 127 $]man find
[Mon Dec 16 127 $]find -mtime -2
.
./.local/share/keyrings
./.local/share/gnome-shell
./.local/share/gnome-shell/application_state
./.local/share/gnome-shell/notifications
./.local/share/evolution/addressbook/system
./.local/share/evolution/addressbook/system/contacts.db
./.local/share/gvfs-metadata
./.local/share/gvfs-metadata/root
./.local/share/gvfs-metadata/root-c155b10e.log
./.local/state/wireplumber
```

5- find files owned by the root user
Cd to the root dir and
Find / -user root

```
[Mon Dec 16 127 $]find -user root
.
./boot
./boot/efi
./boot/efi/EFI
./boot/efi/EFI/centos
find: './boot/efi/EFI/centos': Permission denied
./boot/grub2
find: './boot/grub2': Permission denied
./boot/loader
./boot/loader/entries
```

6- find the directories
First cd to the root dir
Find / -type d

```
[Mon Dec 16 127 $]find -type d
.
./boot
./boot/efi
./boot/efi/EFI
./boot/efi/EFI/centos
find: './boot/efi/EFI/centos': Permission denied
./boot/grub2
find: './boot/grub2': Permission denied
./boot/loader
./boot/loader/entries
```

7- find all with the .profile

```
[Mon Dec 16 127 $]sudo find -iname *.profile
find: './proc/1312/task/1312/net': Invalid argument
find: './proc/1312/net': Invalid argument
find: './run/user/1000/gvfs': Permission denied
./etc/lvm/profile/cache-mq.profile
./etc/lvm/profile/cache-smq.profile
./etc/lvm/profile/command_profile_template.profile
./etc/lvm/profile/lvmdbusd.profile
./etc/lvm/profile/metadata_profile_template.profile
./etc/lvm/profile/thin-generic.profile
./etc/lvm/profile/thin-performance.profile
./etc/lvm/profile/vdo-small.profile
[Mon Dec 16 127 $]
```

8- file types of /etc /dev/pts/0 /etc/passwd /dev/sda

```
[Mon Dec 16 127 $]file /etc
/etc: directory
[Mon Dec 16 127 $]file /dev/pts/0
/dev/pts/0: character special (136/0)
[Mon Dec 16 127 $]file /etc/passwd
/etc/passwd: ASCII text
[Mon Dec 16 127 $]file /dev/sda
/dev/sda: block special (8/0)
[Mon Dec 16 127 $]
```

9- inode of /etc

```
[Mon Dec 16 127 $]ls -id /etc
67154817 /etc
[Mon Dec 16 127 $]3~
```

Inode of /

```
67154817 /etc
[Mon Dec 16 127 $]ls -id /
128 /
[Mon Dec 16 127 $]
```

Inode of /etc/hosts

```
[Mon Dec 16 127 $]ls -id /etc/hosts
71033099 /etc/hosts
[Mon Dec 16 127 $]
```

10- copying /etc/passwd and diffing and comparing with the new file

```
[Mon Dec 16 127 $]cp /etc/passwd ~/diffed_file
[Mon Dec 16 127 $]diff /etc/passwd ~/diffed_file
[Mon Dec 16 127 $]vim ~/diffed_file
[Mon Dec 16 127 $]diff /etc/passwd ~/diffed_file
1a2,3
> heqlhqwpe
> changing the file
[Mon Dec 16 127 $]cmp /etc/passwd ~/diffed_file
/etc/passwd /home/Vomato/diffed_file differ: byte 33, line 2
[Mon Dec 16 127 $]man cmp
[Mon Dec 16 127 $]cp /etc/passwd ~/diffed_file
[Mon Dec 16 127 $]cmp /etc/passwd ~/diffed_file
[Mon Dec 16 127 $]
```

11- soft linking /etc/passwd to a new link inside

```
[Mon Dec 16 127 $]sudo ln -s /etc/passwd/ /boot/passwd_link
[sudo] password for Vomato:
[Mon Dec 16 127 $]cd /boot
[Mon Dec 16 127 $]ls -l
total 203808
-rw-r--r--. 1 root root     211175 Jul 21  2022 config-5.14.0-134.el9.x86_64
drwxr-xr-x. 3 root root         17 Dec  9 03:08 efi
drwx------. 5 root root         97 Dec 16 13:16 grub2
-rw-------. 1 root root 123030671 Dec  9 03:10 initramfs-0-rescue-19db3d9b16b34
c33afaea6d9b04197d9.img
-rw-------. 1 root root  57525037 Dec  9 03:12 initramfs-5.14.0-134.el9.x86_64.
img
drwxr-xr-x. 3 root root         21 Dec  9 03:09 loader
lrwxrwxrwx  1 root root         12 Dec 16 14:00 passwd_link -> /etc/passwd/
lrwxrwxrwx. 1 root root         45 Dec  9 03:09 symvers-5.14.0-134.el9.x86_64.gz
 -> /lib/modules/5.14.0-134.el9.x86_64/symvers.gz
-rw-------. 1 root root   5306779 Jul 21  2022 System.map-5.14.0-134.el9.x86_64
-rwxr-xr-x. 1 root root  11308360 Dec  9 03:10 vmlinuz-0-rescue-19db3d9b16b34c3
3afaea6d9b04197d9
-rwxr-xr-x. 1 root root  11308360 Jul 21  2022 vmlinuz-5.14.0-134.el9.x86_64
[Mon Dec 16 127 $]
```

12- hard linking /etc/passwd to a new one in /boot

```
ln: failed to create hard link '/boot/passwd_link': File exists
[Mon Dec 16 127 $]sudo ln /etc/passwd /boot/passwd_hard_link
ln: failed to create hard link '/boot/passwd_hard_link' => '/etc/passwd': Inval
id cross-device link
[Mon Dec 16 127 $]
```

Cant work because they need to have the same inode and /boot is in a different partition by viewing df -h

```
tmpfs                  833M  9.8M  824M   2% /run
/dev/mapper/cs-root     45G  7.7G   38G  18% /
/dev/sda1             1014M  249M  766M  25% /boot
tmpfs                  417M  112K  417M   1% /run/user/1000
/dev/sr0               101M  101M     0 100% /run/media/Vomato/CDROM
/dev/sr1               8.2G  8.2G     0 100% /run/media/Vomato/CentOS-Stream-9-Ba
```

The root directory is in a different partition than the /boot directory