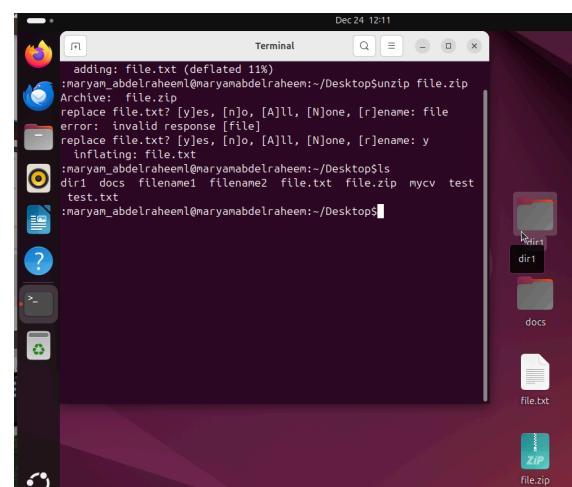
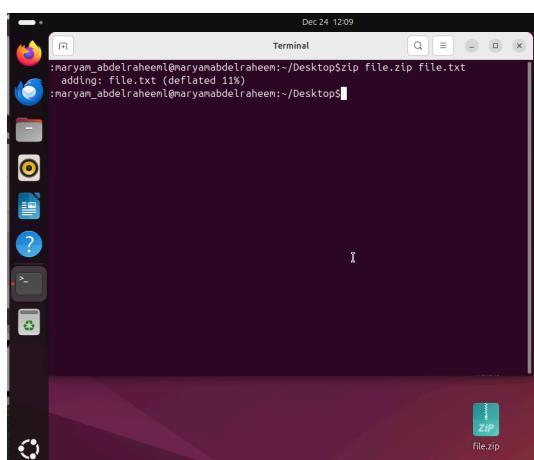
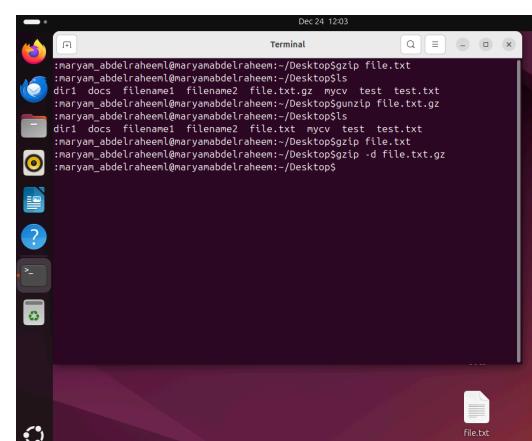
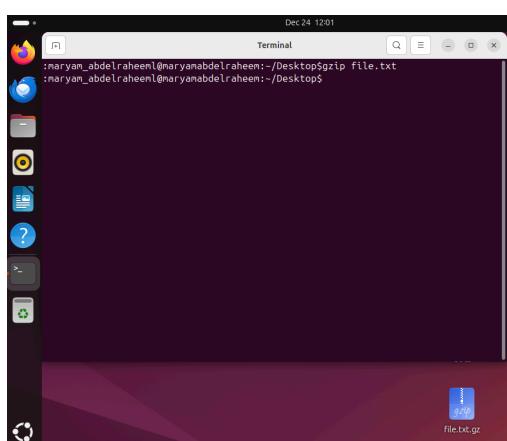
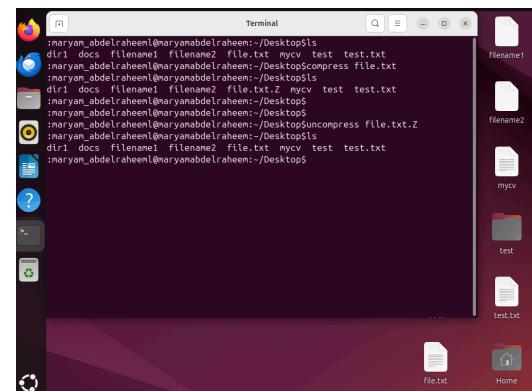
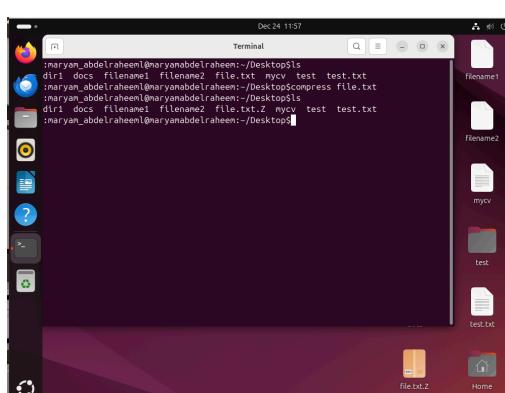


Lab5

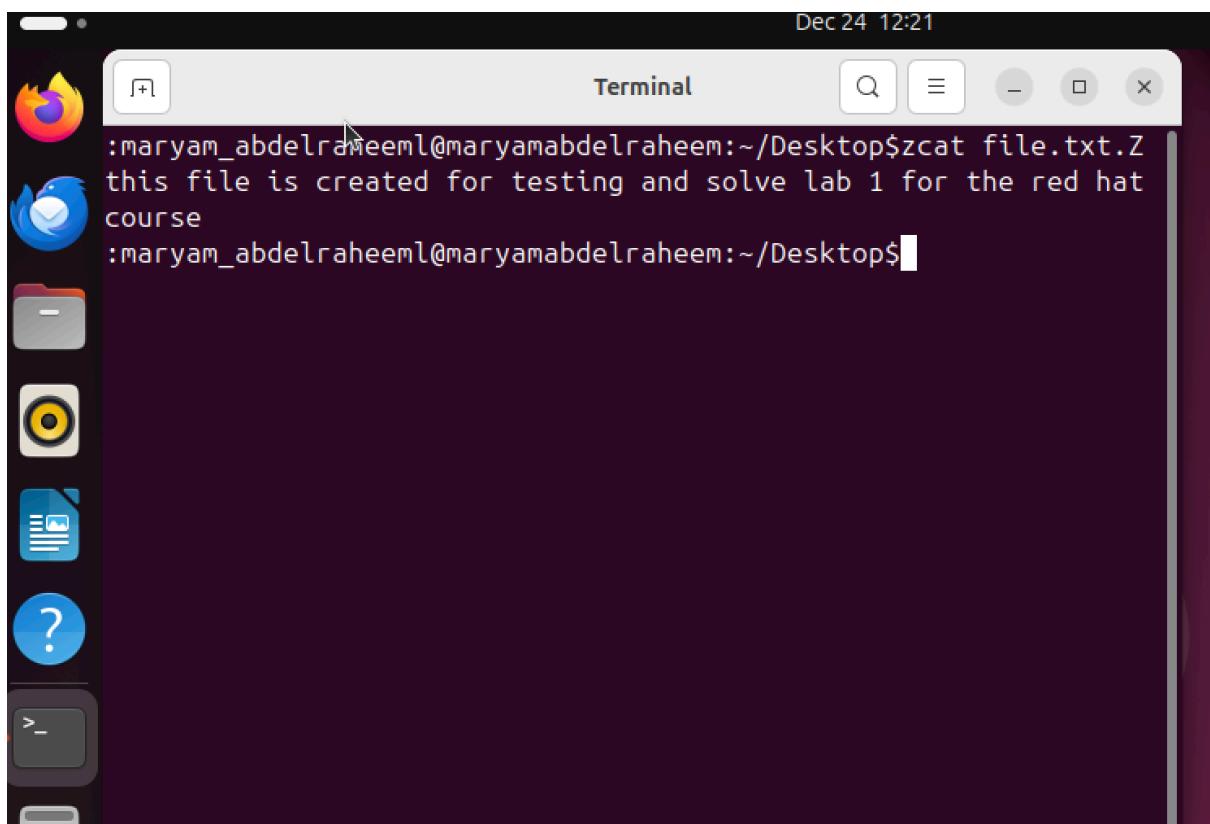
Red Hat

1. Compress a file by compress, gzip, zip commands and decompress it again. State the differences between compress and gzip commands.



- Compress----> old, not installed by default >> it edit the same file
- Gzip -----> most common on Linux >> edit on the same file
- zip-----> can compress multiple files into one archive >>It create in the uncompression method a new file and keep the compressed one.

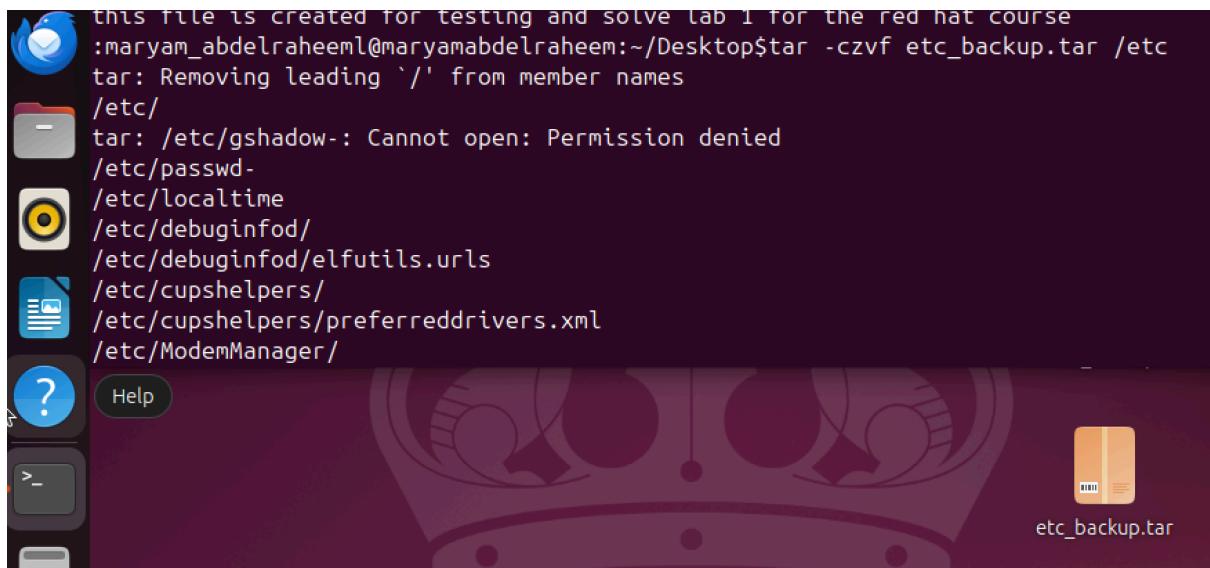
2. What is the command used to view the content of a compressed file.



The screenshot shows a macOS desktop environment. On the left, there's a dock with icons for Finder, Mail, Safari, and others. In the center, a terminal window is open with the title bar 'Terminal'. The window shows the command 'zcat file.txt.Z' being run, and the output is displayed as follows:

```
Dec 24 12:21
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$ zcat file.txt.Z
this file is created for testing and solve lab 1 for the red hat
course
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$
```

3. Backup /etc directory using tar utility.

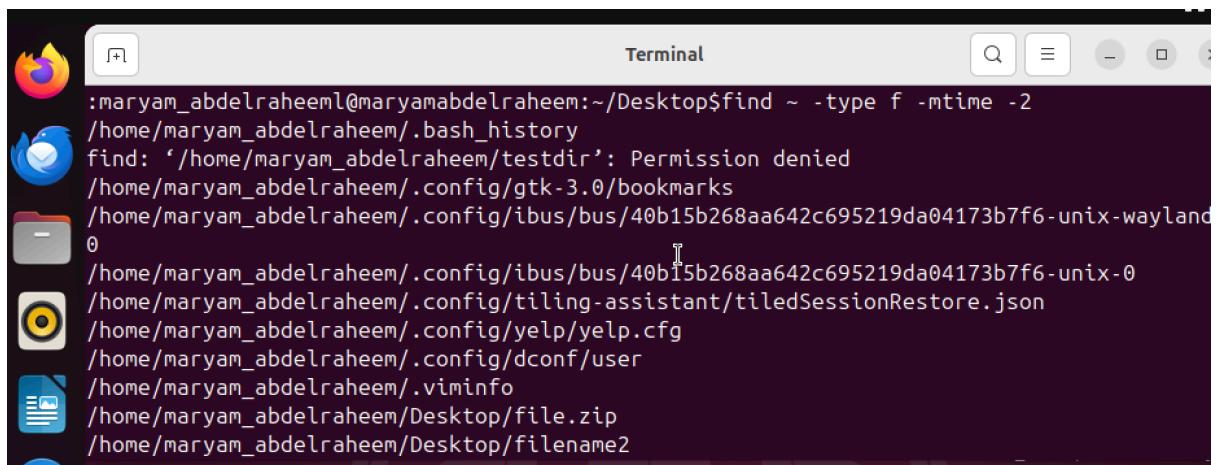


```
this file is created for testing and solve lab 1 for the red hat course
:maryam_abdelraheeml@maryamabdelraheem:~/Desktop$tar -czvf etc_backup.tar /etc
tar: Removing leading `/' from member names
/etc/
tar: /etc/gshadow-: Cannot open: Permission denied
/etc/passwd-
/etc/localtime
/etc/debuginfod/
/etc/debuginfod/elfutils.urls
/etc/cupshelpers/
/etc/cupshelpers/preferreddrivers.xml
/etc/ModemManager/

```

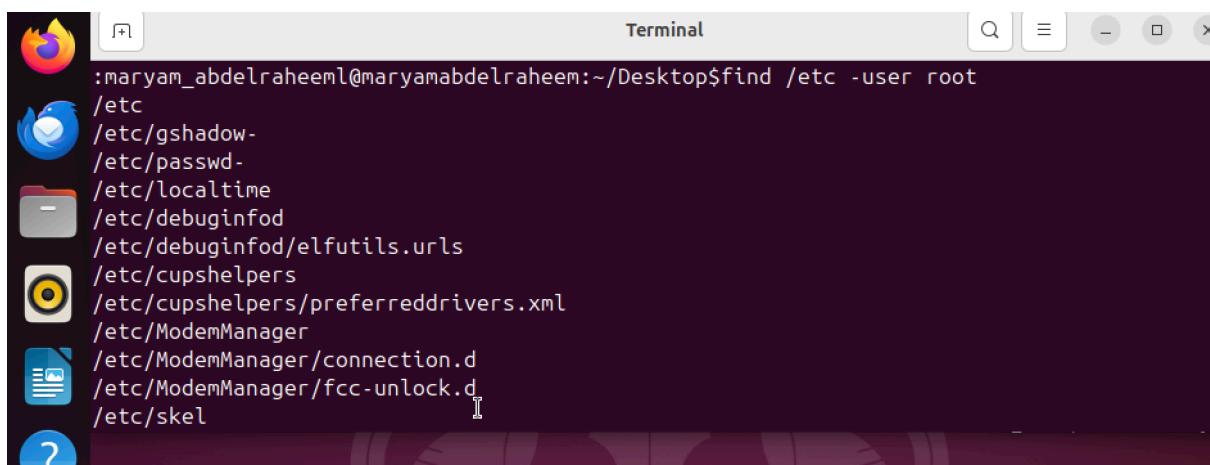
The desktop environment includes icons for a terminal, file manager, and system settings. A file named "etc_backup.tar" is visible on the desktop.

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



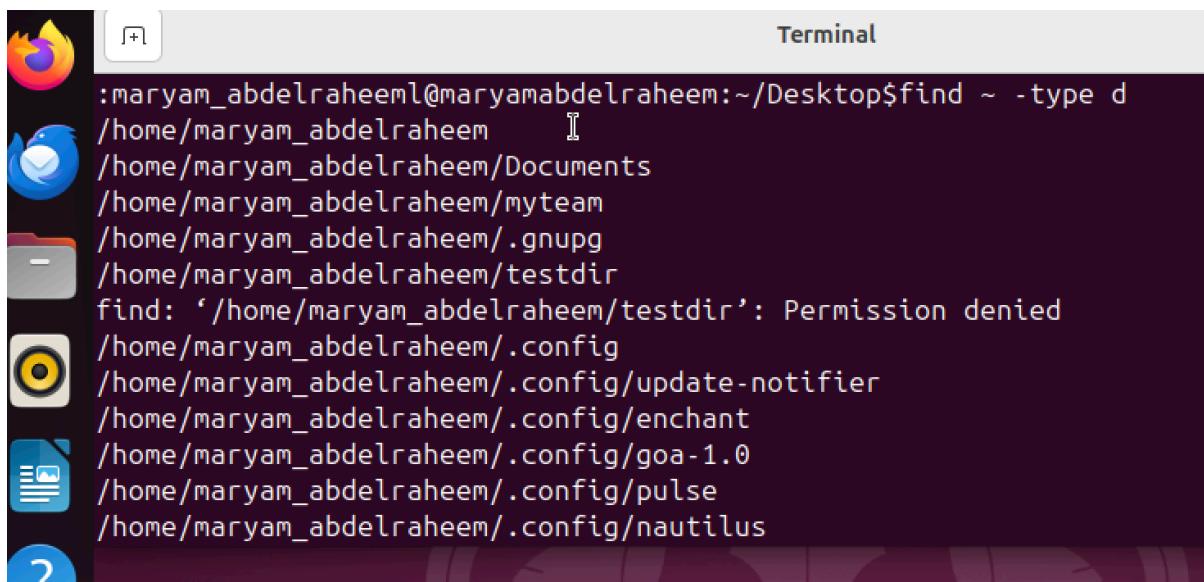
```
Terminal
:maryam_abdelraheeml@maryamabdelraheem:~/Desktop$find ~ -type f -mtime -2
/home/maryam_abdelraheem/.bash_history
find: '/home/maryam_abdelraheem/testdir': Permission denied
/home/maryam_abdelraheem/.config/gtk-3.0/bookmarks
/home/maryam_abdelraheem/.config/ibus/bus/40b15b268aa642c695219da04173b7f6-unix-wayland
0
/home/maryam_abdelraheem/.config/ibus/bus/40b15b268aa642c695219da04173b7f6-unix-0
/home/maryam_abdelraheem/.config/tiling-assistant/tiledSessionRestore.json
/home/maryam_abdelraheem/.config/yelp/yelp.cfg
/home/maryam_abdelraheem/.config/dconf/user
/home/maryam_abdelraheem/.viminfo
/home/maryam_abdelraheem/Desktop/file.zip
/home/maryam_abdelraheem/Desktop/filename2
```

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



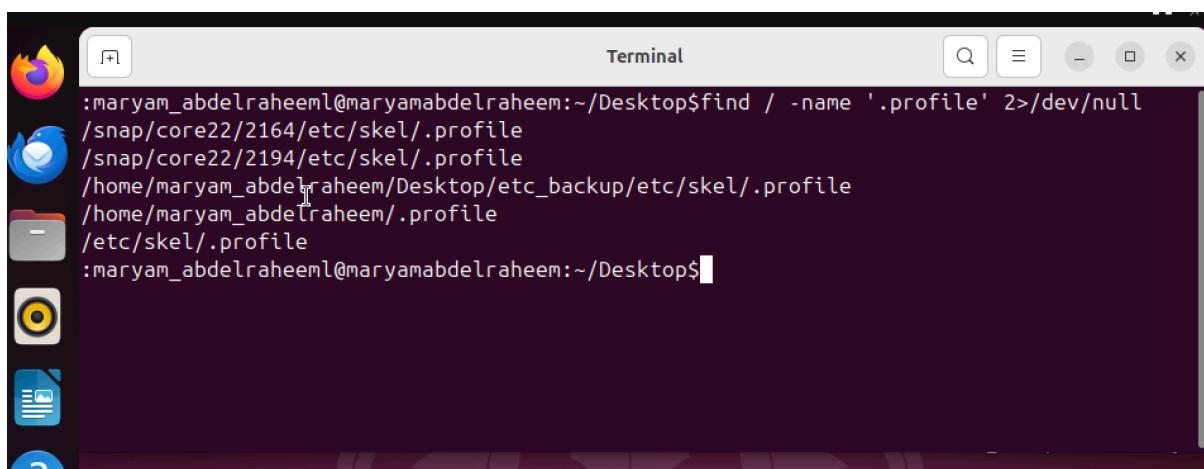
```
Terminal
:maryam_abdelraheeml@maryamabdelraheem:~/Desktop$find /etc -user root
/etc
/etc/gshadow-
/etc/passwd-
/etc/localtime
/etc/debuginfod
/etc/debuginfod/elfutils.urls
/etc/cupshelpers
/etc/cupshelpers/preferreddrivers.xml
/etc/ModemManager
/etc/ModemManager/connection.d
/etc/ModemManager/fcc-unlock.d
/etc/skel
```

6. Find all directories in your home directory.



```
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$find ~ -type d
/home/maryam_abdelraheem
/home/maryam_abdelraheem/Documents
/home/maryam_abdelraheem/myteam
/home/maryam_abdelraheem/.gnupg
/home/maryam_abdelraheem/testdir
find: '/home/maryam_abdelraheem/testdir': Permission denied
/home/maryam_abdelraheem/.config
/home/maryam_abdelraheem/.config/update-notifier
/home/maryam_abdelraheem/.config/enchant
/home/maryam_abdelraheem/.config/goa-1.0
/home/maryam_abdelraheem/.config/pulse
/home/maryam_abdelraheem/.config/nautilus
```

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



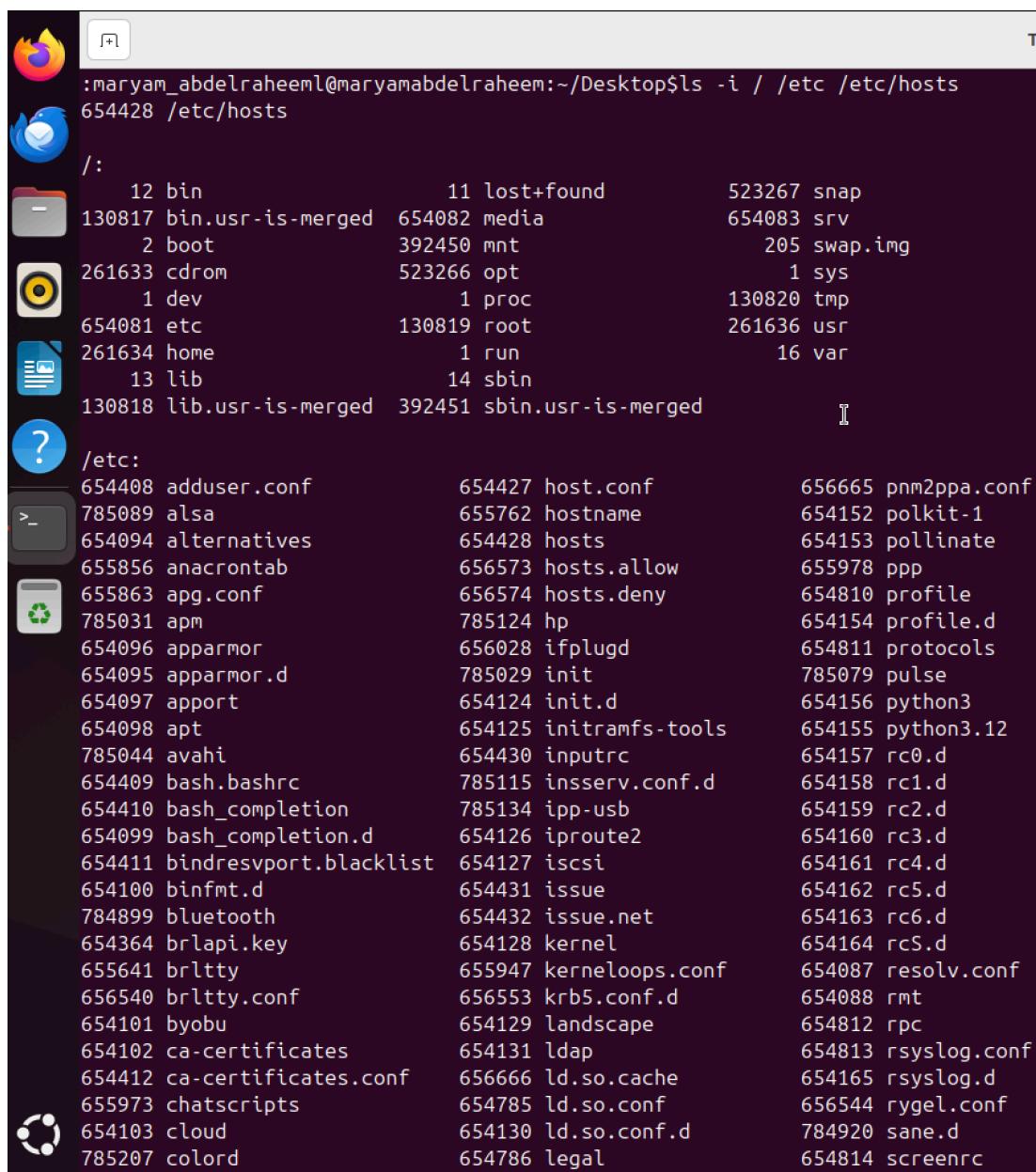
```
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$find / -name '.profile' 2>/dev/null
/snap/core22/2164/etc/skel/.profile
/snap/core22/2194/etc/skel/.profile
/home/maryam_abdelraheem/Desktop/etc_backup/etc/skel/.profile
/home/maryam_abdelraheem/.profile
/etc/skel/.profile
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$
```

Note: (2>/dev/null hides permission errors)

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

/etc/passwd	Regular text file
/dev/pts/0	Character device (terminal)
/etc	Directory
/dev/sda	Block device (disk)

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

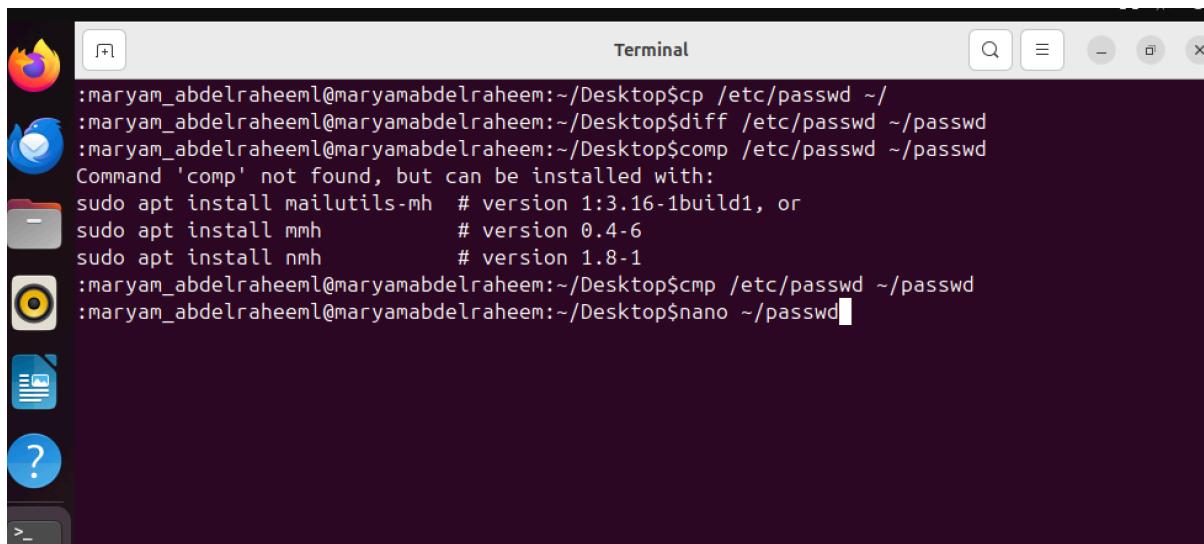


```
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$ls -i / /etc /etc/hosts
654428 /etc/hosts

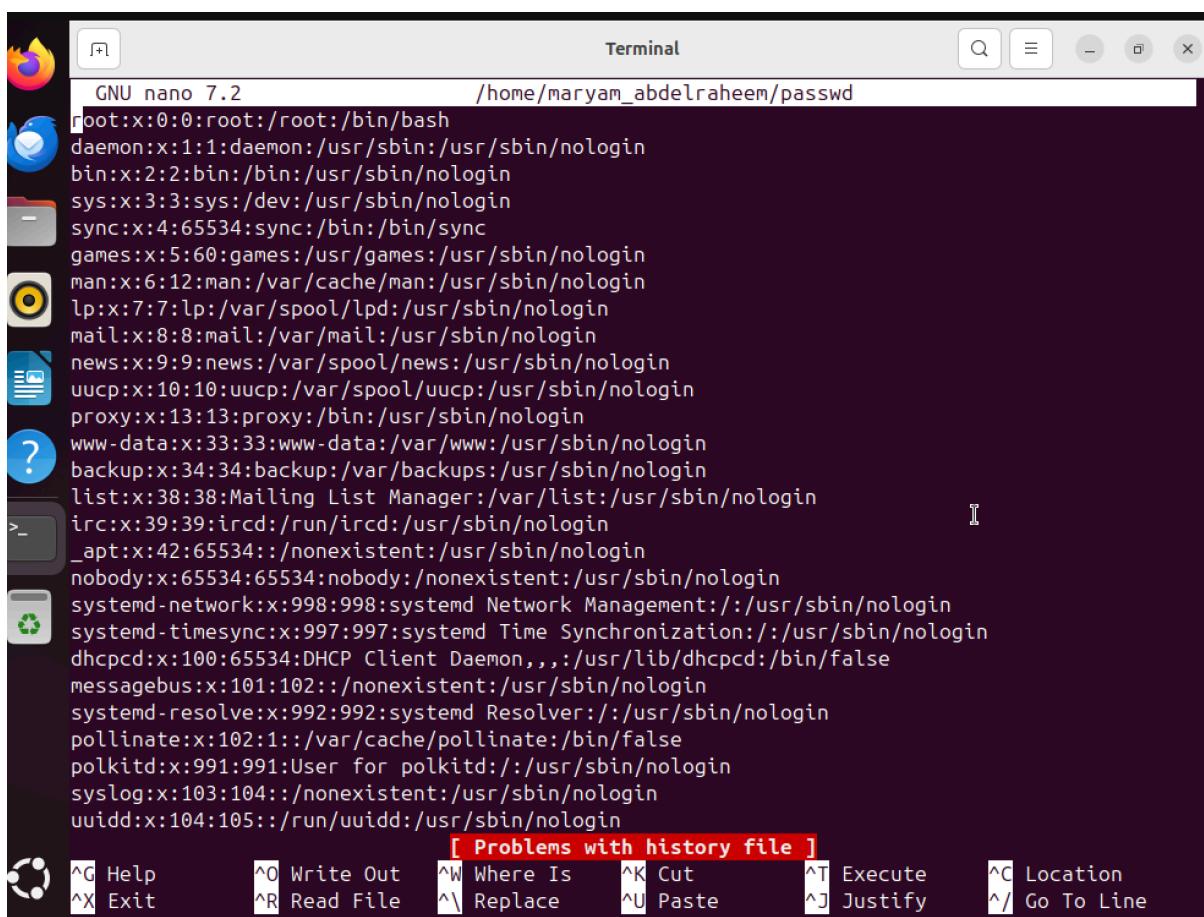
/: 
 12 bin           11 lost+found      523267 snap
130817 bin usr-is-merged 654082 media      654083 srv
  2 boot          392450 mnt        205 swap.img
261633 cdrom      523266 opt         1 sys
  1 dev            1 proc        130820 tmp
654081 etc          130819 root       261636 usr
261634 home         1 run         16 var
  13 lib           14 sbin
130818 lib usr-is-merged 392451 sbin usr-is-merged

/etc:
654408 adduser.conf    654427 host.conf      656665 pnm2ppa.conf
785089 als้า           655762 hostname      654152 polkit-1
654094 alternatives     654428 hosts        654153 pollinate
655856 anacrontab      656573 hosts.allow   655978 ppp
655863 apg.conf        656574 hosts.deny    654810 profile
785031 aptm             785124 hp          654154 profile.d
654096 apparmor        656028 ifplugd     654811 protocols
654095 apparmor.d       785029 init        785079 pulse
654097 apport           654124 init.d      654156 python3
654098 apt              654125 initramfs-tools 654155 python3.12
785044 avahi            654430 inutrc      654157 rc0.d
654409 bash.bashrc      785115 insserv.conf.d 654158 rc1.d
654410 bash_completion   785134 ipp-usb      654159 rc2.d
654099 bash_completion.d 654126 iproute2    654160 rc3.d
654411 bindresvport.blacklist 654127 iscsi      654161 rc4.d
654100 binfmt.d          654431 issue      654162 rc5.d
784899 bluetooth         654432 issue.net    654163 rc6.d
654364 brlapi.key        654128 kernel      654164 rcS.d
655641 brltty            655947 kerneloops.conf 654087 resolv.conf
656540 brltty.conf       656553 krb5.conf.d   654088 rmt
654101 byobu              654129 landscape    654812 rpc
654102 ca-certificates   654131 ldap         654813 rsyslog.conf
654412 ca-certificates.conf 656666 ld.so.cache 654165 rsyslog.d
655973 chatscripts        654785 ld.so.conf    656544 rygel.conf
654103 cloud              654130 ld.so.conf.d 784920 sane.d
785207 colord             654786 legal       654814 screenrc
```

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.



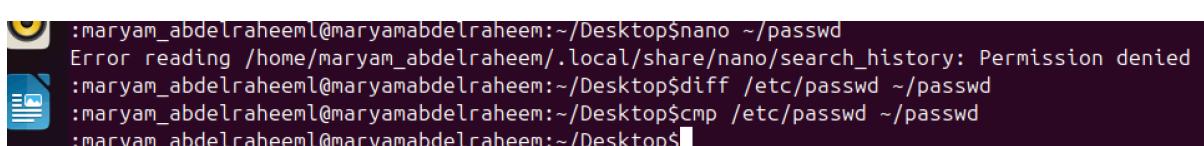
```
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$cp /etc/passwd ~/
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$diff /etc/passwd ~/passwd
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$comp /etc/passwd ~/passwd
Command 'comp' not found, but can be installed with:
sudo apt install mailutils-mh # version 1:3.16-1build1, or
sudo apt install mmh           # version 0.4-6
sudo apt install nmh          # version 1.8-1
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$cmp /etc/passwd ~/passwd
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$nano ~/passwd
```



```
GNU nano 7.2 /home/maryam_abdelraheem/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
systemd-timesync:x:997:997:systemd Time Synchronization:/:/usr/sbin/nologin
dhpcd:x:100:65534:DHCP Client Daemon,,,:/usr/lib/dhpcd:/bin/false
messagebus:x:101:102::/nonexistent:/usr/sbin/nologin
systemd-resolve:x:992:992:systemd Resolver:/:/usr/sbin/nologin
pollinate:x:102:1::/var/cache/pollinate:/bin/false
polkitd:x:991:991:User for polkitd:/:/usr/sbin/nologin
syslog:x:103:104::/nonexistent:/usr/sbin/nologin
uuidd:x:104:105::/run/uuidd:/usr/sbin/nologin
```

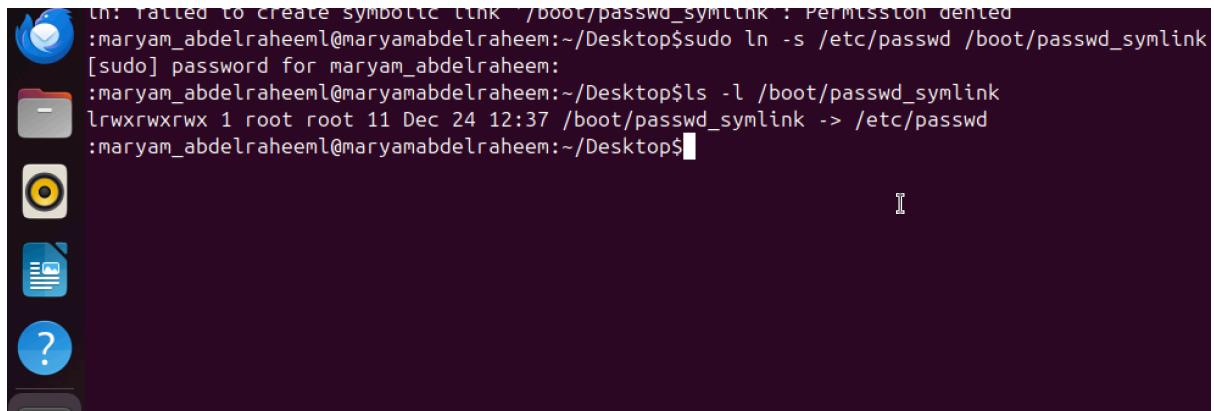
[Problems with history file]

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^A Replace ^U Paste ^J Justify ^/ Go To Line



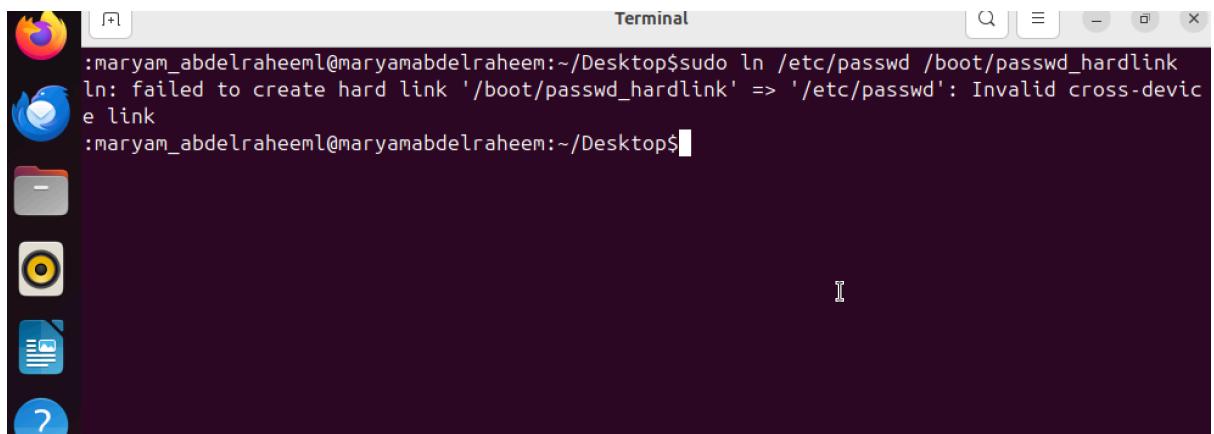
```
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$nano ~/passwd
Error reading /home/maryam_abdelraheem/.local/share/nano/search_history: Permission denied
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$diff /etc/passwd ~/passwd
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$cmp /etc/passwd ~/passwd
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$
```

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



```
ln: failed to create symbolic link '/boot/passwd_symlink': Permission denied
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$ sudo ln -s /etc/passwd /boot/passwd_symlink
[sudo] password for maryam_abdelraheem:
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$ ls -l /boot/passwd_symlink
lrwxrwxrwx 1 root root 11 Dec 24 12:37 /boot/passwd_symlink -> /etc/passwd
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$
```

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



```
Terminal
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$ sudo ln /etc/passwd /boot/passwd_hardlink
ln: failed to create hard link '/boot/passwd_hardlink' => '/etc/passwd': Invalid cross-device link
:maryam_abdelraheem@maryamabdelraheem:~/Desktop$
```

Failed:

- 1.Hard links must be on the same filesystem
- 2./etc and /boot are usually different partitions