Struna V.R.

Task№1

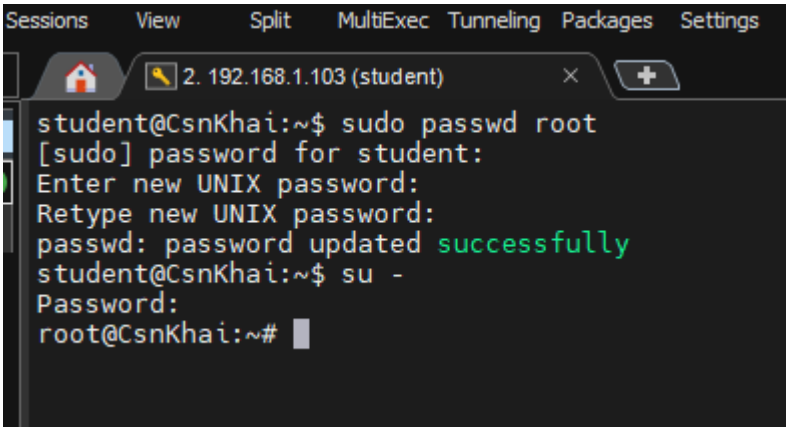
Part№1

1) Log in to the system as root.

su root

2) Use the passwd command to change the password. Examine the basic parameters of the command. What system file does it change *?

sudo passwd root



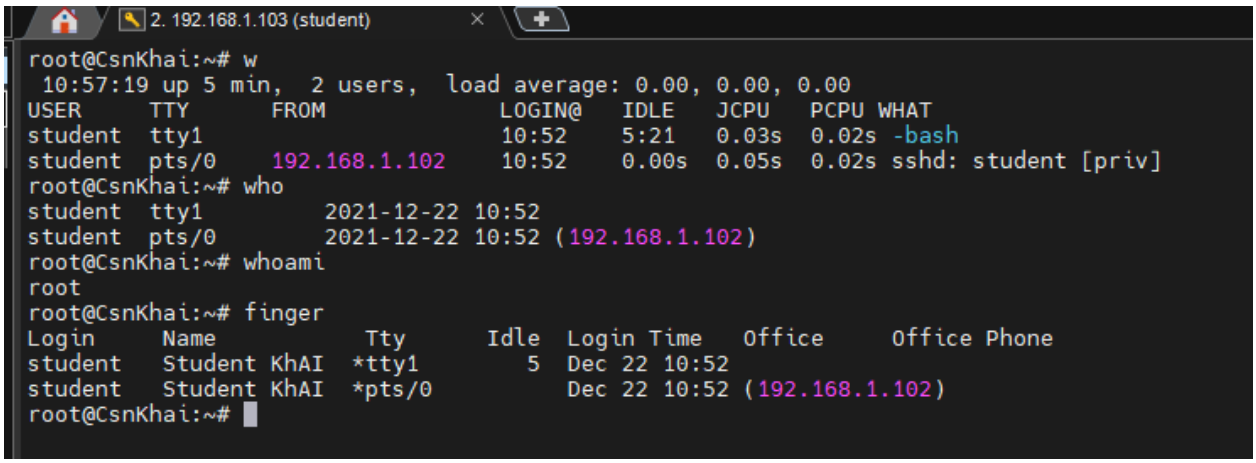
3) Determine the users registered in the system, as well as what commands they execute. What additional information can be gleaned from the command execution?

who

w

whoami

finger



4) Change personal information about yourself.

chfn

```
student@CsnKhai:~$ chfn
Password:
Changing the user information for student
Enter the new value, or press ENTER for the default
        Full Name: Student KhAI
        Room Number []: 555
        Work Phone []: 09865321213
        Home Phone []: 09621421313
student@CsnKhai:~$ finger
Login     Name           Tty      Idle  Login Time   Office     Office Phone
student   Student KhAI  *tty1        8  Dec 22 10:52 555        +0-986-532-121
student   Student KhAI  *pts/0          Dec 22 10:52 (192.168.1.102)
student@CsnKhai:~$ finger student
Login: student                          Name: Student KhAI
Directory: /home/student                Shell: /bin/bash
Office: 555, +0-986-532-1213            Home Phone: +0-962-142-1313
On since Wed Dec 22 10:52 (UTC) on tty1    8 minutes 51 seconds idle
     (messages off)
On since Wed Dec 22 10:52 (UTC) on pts/0 from 192.168.1.102
   3 seconds idle
     (messages off)
No mail.
No Plan.
```

5) Become familiar with the Linux help system and the man and info commands. Get help on the previously discussed commands, define and describe any two keys for these commands. Give examples.

man

```
student@CsnKhai:~$ man w
student@CsnKhai:~$ man finger
student@CsnKhai:~$ man passwd
```

```
W(1)                                                                User Commands

NAME
       w - Show who is logged on and what they are doing.

SYNOPSIS
       w [options] user [...]

DESCRIPTION
       w  displays  information  about the users currently on the machine, and their processes.  The header shows, in this order, the current time, h
       are currently logged on, and the system load averages for the past 1, 5, and 15 minutes.

       The following entries are displayed for each user: login name, the tty name, the remote host, login time, idle time, JCPU, PCPU, and the comma

       The JCPU time is the time used by all processes attached to the tty.  It does not include past background jobs, but does include currently run

       The PCPU time is the time used by the current process, named in the "what" field.

COMMAND-LINE OPTIONS
       -h, --no-header
              Don't print the header.

       -u, --no-current
              Ignores the username while figuring out the current process and cpu times.  To demonstrate this, do a "su" and do a "w" and a "w -u".
```

```
FINGER(1)                                BSD General Commands Manual                                FINGER(

NAME
     finger – user information lookup program

SYNOPSIS
     finger [-lmsp] [user ...] [user@host ...]

DESCRIPTION
     The finger displays information about the system users.

     Options are:

     -s    Finger displays the user's login name, real name, terminal name and write status (as a ``*'' after the terminal name if write permission is denied), idle time, login time, office location
           and office phone number.

           Login time is displayed as month, day, hours and minutes, unless more than six months ago, in which case the year is displayed rather than the hours and minutes.

           Unknown devices as well as nonexistent idle and login times are displayed as single asterisks.

     -l    Produces a multi-line format displaying all of the information described for the -s option as well as the user's home directory, home phone number, login shell, mail status, and the con-
           tents of the files ".plan", ".project", ".pgpkey" and ".forward" from the user's home directory.

           Phone numbers specified as eleven digits are printed as ``+N-NNN-NNN-NNNN''.  Numbers specified as ten or seven digits are printed as the appropriate subset of that string.  Numbers speci
```

```
PASSWD(1)

NAME
       passwd - change user password
```

```
OPTIONS
      The options which apply to the passwd command are:

      -a, --all
          This option can be used only with -S and causes show status for all users.

      -d, --delete
          Delete a user's password (make it empty). This is a quick way to disable a password for an account. It will set the named account passwordless.
```

6) Explore the more and less commands using the help system. View the contents of files .bash* using commands.

more

less

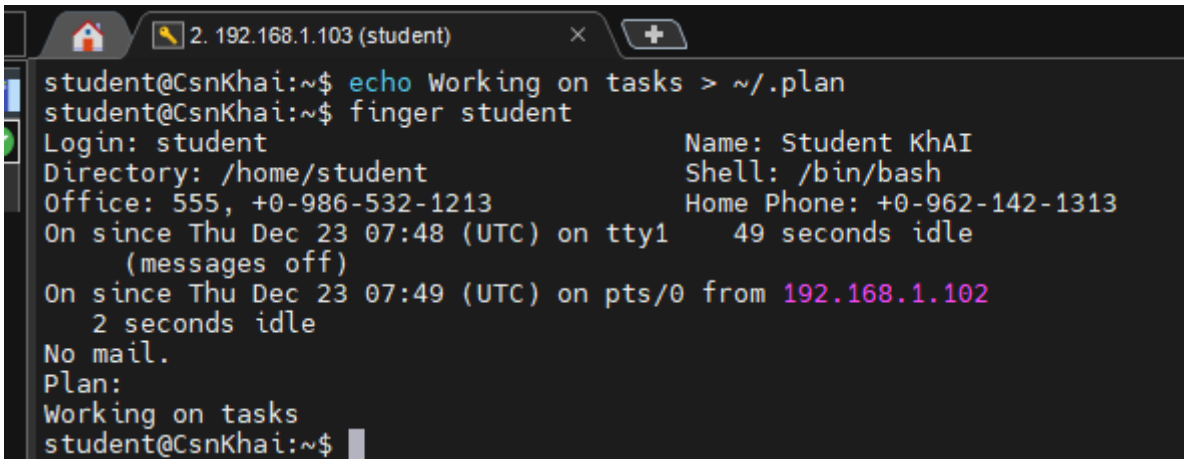
```
student@CsnKhai:~$ more .bash*
::::::::::::::
.bash_history
::::::::::::::
sudo su
top
sudo update.rc ssh defaults
sudo update-rc.d ssh defaults
sudo reboot
sudo shutdown -h now
ip a
passwd
nano /etc/shadow
who
whoami
passwd
sudo passwd
nano /etc/shadow
sudo nano /etc/passwd
sudo nano /etc/shadow
ip a
who
w
whoami
history
history ip a
finger
man w
info who
less .bash
less .bash*
more .bash*
tree
sudo apt-get install tree
tree
cd home
pwd
cd /home
tree
cd
file
man file
file -l
file -f
man file
```

```
sudo su
top
sudo update.rc ssh defaults
sudo update-rc.d ssh defaults
sudo reboot
sudo shutdown -h now
ip a
passwd
nano /etc/shadow
who
whoami
passwd
sudo passwd
nano /etc/shadow
sudo nano /etc/passwd
sudo nano /etc/shadow
ip a
who
w
whoami
history
history ip a
finger
man w
info who
less .bash
less .bash*
more .bash*
tree
sudo apt-get install tree
tree
cd home
pwd
cd /home
tree
cd
file
man file
file -l
file -f
man file
file *
file*
file
file a
file -a
cd /home
pwd
file *
cd /etc
man find
find -name host
sudo find -name host
ls
find -name "host*"
sudo find -name "host*"
grep host
```

```
student@CsnKhai:~$ less .bash*
```

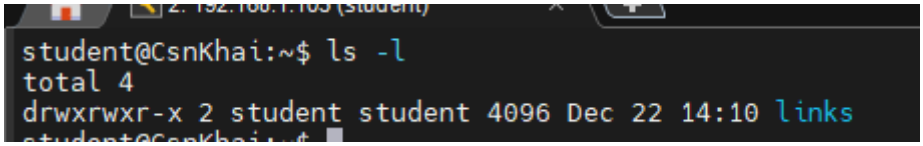
7) * Describe in plans that you are working on laboratory work 1. Tip: You should read the documentation for the finger command.

echo Working on tasks > ~/.plan



8) * List the contents of the home directory using the ls command, define its files and directories. Hint: Use the help system to familiarize yourself with the ls command.

ls –l (use long listing format)



Part№2

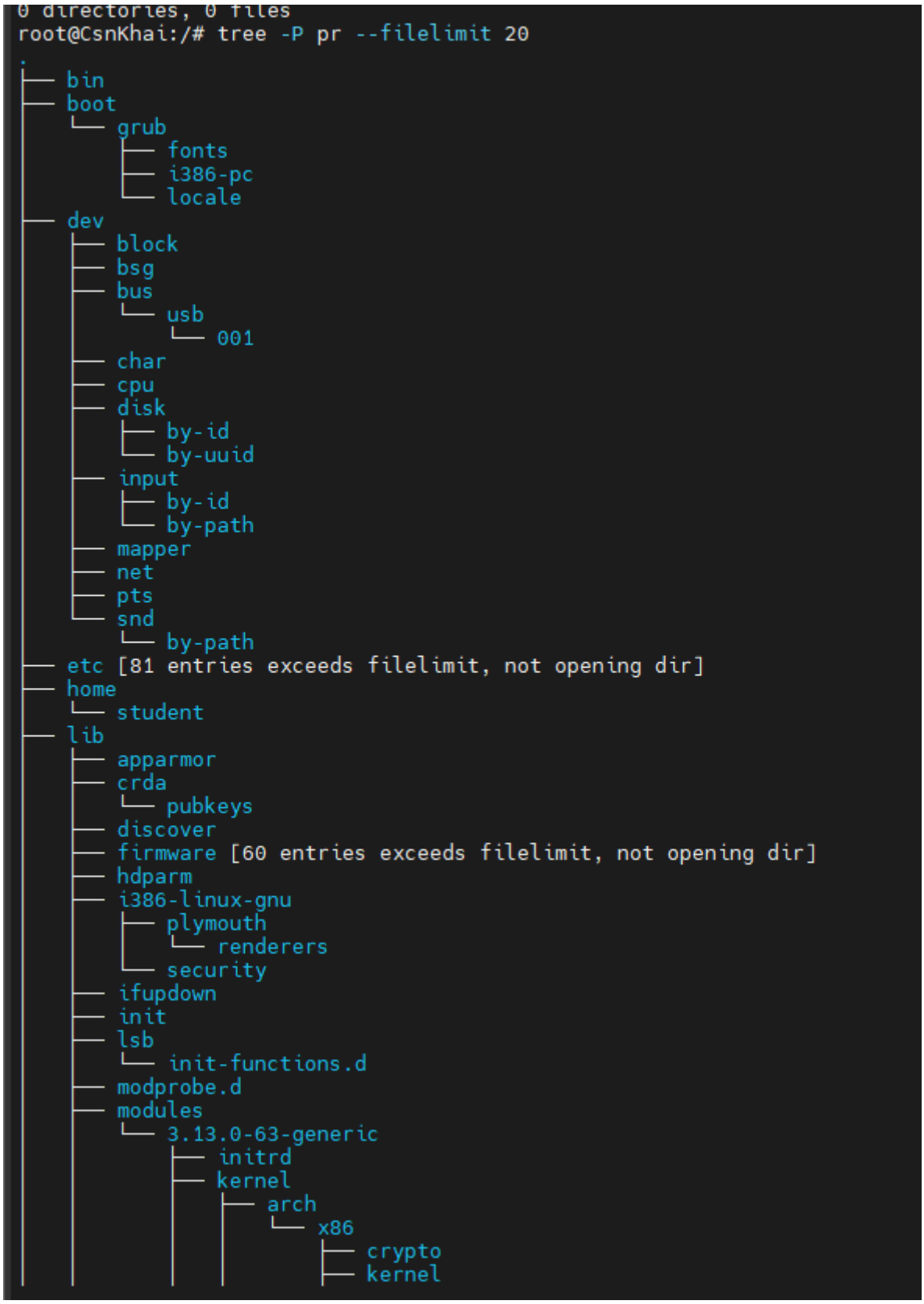
1) Examine the tree command. Master the technique of applying a template, for example, display all files that contain a character c, or files that contain a specific sequence of characters. List subdirectories of the root directory up to and including the second nesting level.

I displayed files that contain pr.

tree –L 2

tree –P pr –filelimit 20

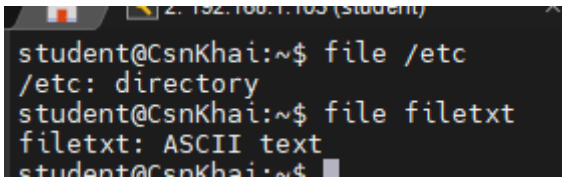
```
root@CsnKhai:/# tree -L 2
    └── zero
├── etc
    ├── adduser.conf
    ├── alternatives
    ├── apm
    ├── apparmor
    ├── apparmor.d
    ├── apt
    ├── bash.bashrc
    ├── bash_completion
    ├── bash_completion.d
    ├── bindresvport.blacklist
    ├── blkid.conf
    ├── blkid.tab -> /dev/.blkid.tab
    ├── ca-certificates
    ├── ca-certificates.conf
    ├── calendar
    ├── chatscripts
    ├── console-setup
    ├── cron.d
    ├── cron.daily
    ├── cron.hourly
    ├── cron.monthly
    ├── crontab
    ├── cron.weekly
    ├── dbus-1
    ├── debconf.conf
    ├── debian_version
    ├── default
    ├── deluser.conf
    ├── depmod.d
    ├── dhcp
    ├── dictionaries-common
    ├── discover.conf.d
    ├── discover-modprobe.conf
    ├── dpkg
    ├── emacs
    ├── environment
    ├── fonts
    ├── fstab
    ├── fstab.d
    ├── fuse.conf
    ├── gai.conf
    ├── groff
    ├── group
    ├── group-
    ├── grub.d
```



2) What command can be used to determine the type of file (for example, text or binary)? Give an example.

file /etc

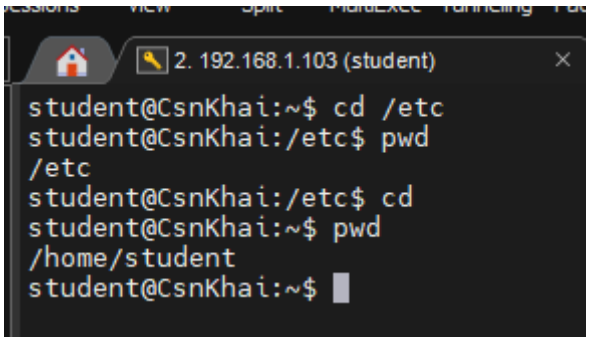
file filetxt



3) Master the skills of navigating the file system using relative and absolute paths. How can you go back to your home directory from anywhere in the filesystem?

cd /etc

If I want back to my home directory I use command **cd without any options**

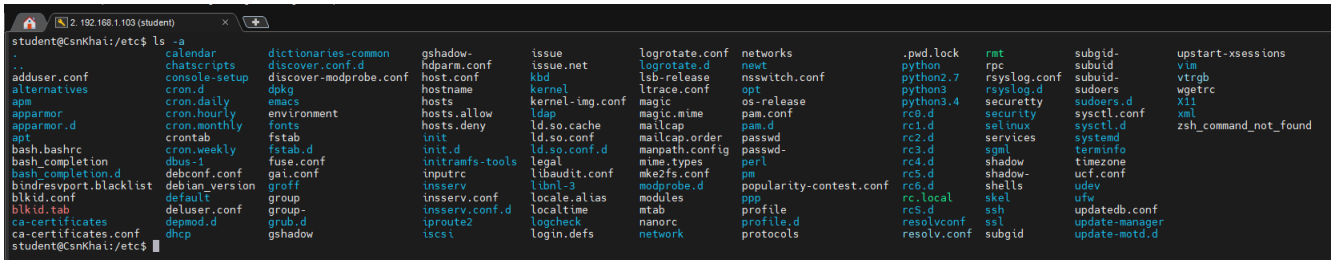


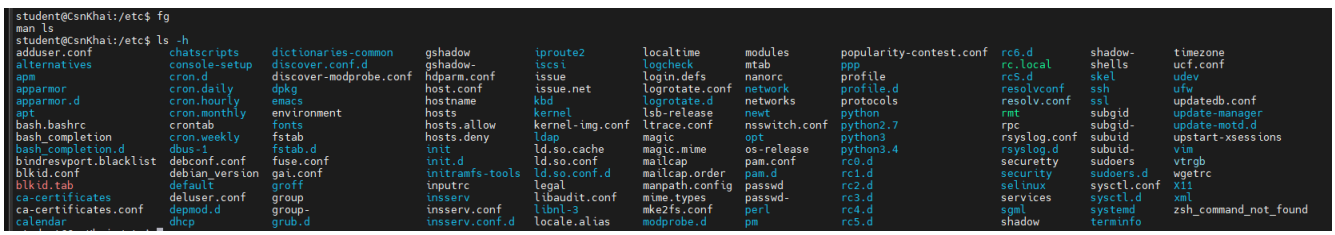
4) Become familiar with the various options for the ls command. Give examples of listing directories using different keys. Explain the information displayed on the terminal using the -l and -a switches.

Ls –l (long list)

Ls –a(all)

Ls –h(humanreadable)



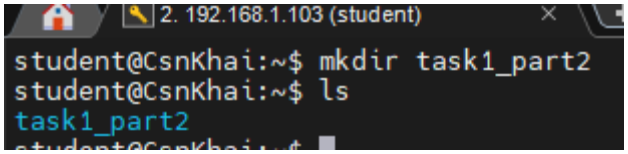


```
student@CsnKhai:/etc$ ls -l
total 732
-rw-r--r-- 1 root root    2981 Sep 15  2015 adduser.conf
drwxr-xr-x 2 root root    4096 Sep 15  2015 alternatives
drwxr-xr-x 3 root root    4096 Sep 15  2015 apm
drwxr-xr-x 3 root root    4096 Sep 15  2015 apparmor
drwxr-xr-x 8 root root    4096 Sep 15  2015 apparmor.d
drwxr-xr-x 6 root root    4096 Sep 15  2015 apt
-rw-r--r-- 1 root root    2177 Apr  9  2014 bash.bashrc
-rw-r--r-- 1 root root      45 Mar 22  2014 bash_completion
drwxr-xr-x 2 root root    4096 Sep 15  2015 bash_completion.d
-rw-r--r-- 1 root root     356 Jan  1  2012 bindresvport.blacklist
-rw-r--r-- 1 root root     321 Apr 16  2014 blkid.conf
lrwxrwxrwx 1 root root      15 Aug  5  2015 blkid.tab -> /dev/.blkid.tab
drwxr-xr-x 3 root root    4096 Sep 15  2015 ca-certificates
-rw-r--r-- 1 root root    7773 Sep 15  2015 ca-certificates.conf
drwxr-xr-x 2 root root    4096 Sep 15  2015 calendar
drwxr-s--- 2 root dip     4096 Sep 15  2015 chatscripts
drwxr-xr-x 2 root root    4096 Sep 15  2015 console-setup
drwxr-xr-x 2 root root    4096 Sep 15  2015 cron.d
drwxr-xr-x 2 root root    4096 Sep 15  2015 cron.daily
drwxr-xr-x 2 root root    4096 Sep 15  2015 cron.hourly
drwxr-xr-x 2 root root    4096 Sep 15  2015 cron.monthly
-rw-r--r-- 1 root root     722 Feb  9  2013 crontab
drwxr-xr-x 2 root root    4096 Sep 15  2015 cron.weekly
drwxr-xr-x 4 root root    4096 Sep 15  2015 dbus-1
-rw-r--r-- 1 root root    2969 Feb 23  2014 debconf.conf
-rw-r--r-- 1 root root      11 Feb 20  2014 debian_version
drwxr-xr-x 2 root root    4096 Sep 15  2015 default
-rw-r--r-- 1 root root     604 Nov  7  2013 deluser.conf
drwxr-xr-x 2 root root    4096 Sep 15  2015 depmod.d
drwxr-xr-x 4 root root    4096 Sep 15  2015 dhcp
drwxr-xr-x 2 root root    4096 Sep 15  2015 dictionaries-common
drwxr-xr-x 2 root root    4096 Sep 15  2015 discover.conf.d
-rw-r--r-- 1 root root     346 Dec 29  2013 discover-modprobe.conf
drwxr-xr-x 4 root root    4096 Sep 15  2015 dpkg
drwxr-xr-x 3 root root    4096 Sep 15  2015 emacs
-rw-r--r-- 1 root root      96 Sep 15  2015 environment
drwxr-xr-x 4 root root    4096 Sep 15  2015 fonts
-rw-r--r-- 1 root root     458 Sep 15  2015 fstab
drwxr-xr-x 2 root root    4096 Apr 16  2014 fstab.d
-rw-r----- 1 root fuse     280 May 24  2013 fuse.conf
-rw-r--r-- 1 root root    2584 Oct 10  2012 gai.conf
drwxr-xr-x 2 root root    4096 Sep 15  2015 groff
-rw-r--r-- 1 root root     665 Sep 15  2015 group
-rw------- 1 root root     658 Sep 15  2015 group-
drwxr-xr-x 2 root root    4096 Sep 15  2015 grub.d
-rw-r----- 1 root shadow   559 Sep 15  2015 gshadow
-rw------- 1 root root     552 Sep 15  2015 gshadow-
-rw-r--r-- 1 root root    4781 Nov 15  2013 hdparm.conf
-rw-r--r-- 1 root root      92 Feb 20  2014 host.conf
-rw-r--r-- 1 root root       8 Sep 15  2015 hostname
-rw-r--r-- 1 root root     187 Sep 15  2015 hosts
-rw-r--r-- 1 root root     411 Sep 15  2015 hosts.allow
-rw-r--r-- 1 root root     711 Sep 15  2015 hosts.deny
drwxr-xr-x 2 root root    4096 Sep 15  2015 init
```

5) Perform the following sequence of operations:

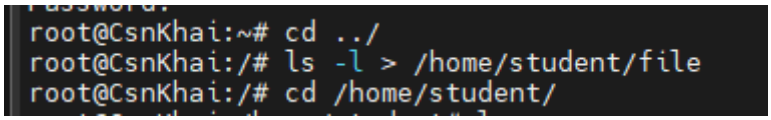
- create a subdirectory in the home directory;

Mkdir task1_part2



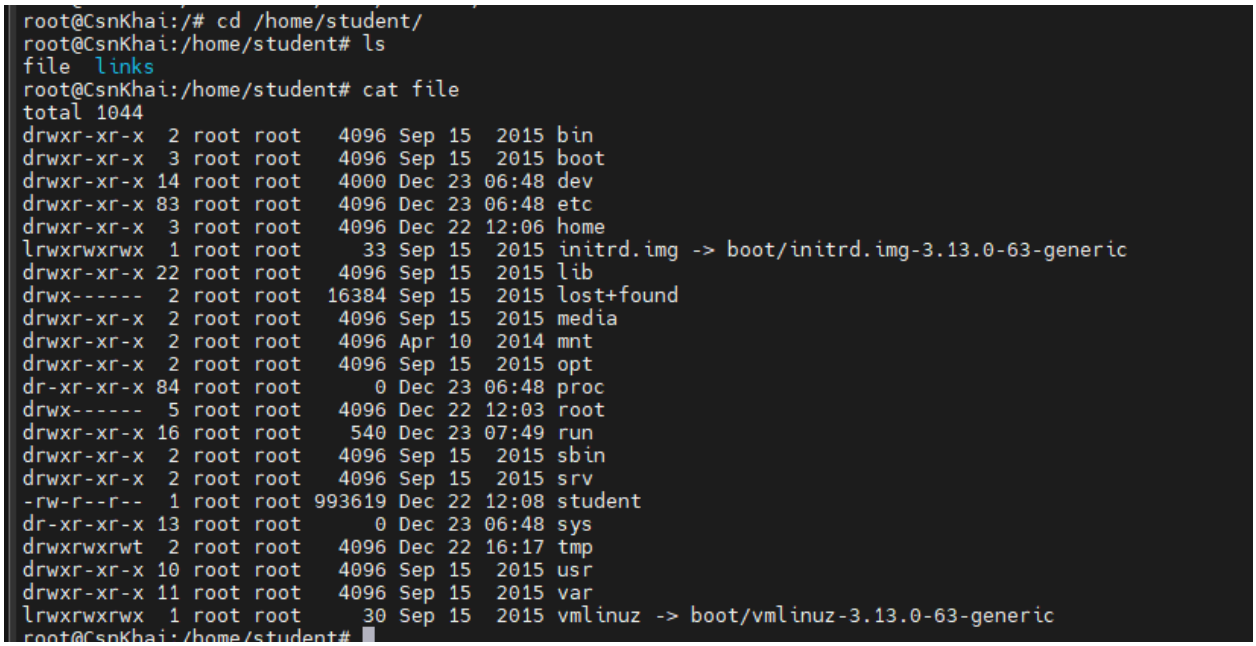
- in this subdirectory create a file containing information about directories located in the root directory (using I/O redirection operations);

ls –l > /home/student/file



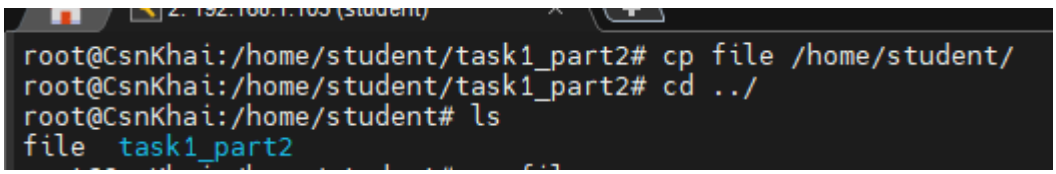
- view the created file;

cat file



- copy the created file to your home directory using relative and absolute addressing.

cp file /home/student



- delete the previously created subdirectory with the file requesting removal; - delete the file copied to the home directory.

rm –R task1_part2

```
student@CsnKhai:~$ rm -R task1_part2
rm: remove write-protected regular file ‘task1_part2/file’? y
student@CsnKhai:~$ ls
student@CsnKhai:~$
```

6) Perform the following sequence of operations:

- create a subdirectory **test** in the home directory;

mkdir links

```
student@CsnKhai:/home$ cd
student@CsnKhai:~$ mkdir links
student@CsnKhai:~$ ls
links
```

- copy the **.bash_history** file to this directory while changing its name to **labwork2**;

cp .bash_history ~/links/labwork2

```
student@CsnKhai:~$ cp .bash_history ~/links/labwork2
student@CsnKhai:~$ cd links
student@CsnKhai:~/links$ ls
labwork2
student@CsnKhai:~/links$
```

- create a hard and soft link to the **labwork2** file in the test subdirectory; - how to define soft and hard link, what do these concepts;

ln –s labwork2 soft (-s create soft link)

ln labwork2 hard

```
student@CsnKhai:~/links$ ln -s labwork2 soft
student@CsnKhai:~/links$ ln labwork2 hard
student@CsnKhai:~/links$ ls
hard  labwork2  soft
```

- change the data by opening a symbolic link. What changes will happen and why

nano soft

nano labwork2

```
student@CsnKhai:~/links$ nano soft
student@CsnKhai:~/links$ nano labwork2
```

```
  GNU nano 2.2.6

privet
top
sudo update.rc ssh defaults
sudo update-rc.d ssh defaults
sudo reboot
sudo shutdown -h now
ip a
passwd
nano /etc/shadow
who
whoami
passwd
sudo passwd
nano /etc/shadow
sudo nano /etc/passwd
sudo nano /etc/shadow
ip a
who
w
whoami
history
history ip a
finger
man w
info who
less .bash
less .bash*
more .bash*
tree
sudo apt-get install tree
tree
```

```
privet
top
sudo update.rc ssh defaults
sudo update-rc.d ssh defaults
sudo reboot
sudo shutdown -h now
ip a
passwd
nano /etc/shadow
who
whoami
passwd
sudo passwd
nano /etc/shadow
sudo nano /etc/passwd
sudo nano /etc/shadow
ip a
```

- rename the hard link file to **hard_lnk_labwork2**;

- rename the soft link file to **symb_lnk_labwork2 file**;

mv hard hard_lnk_labwork2

mv soft symb_lnk_labwork2

```
student@CsnKhai:~/links$ mv hard hard_lnk_labwork2
student@CsnKhai:~/links$ mv soft symb_lnk_labwork2
student@CsnKhai:~/links$ ls
hard_lnk_labwork2  labwork2  symb_lnk_labwork2
student@CsnKhai:~/links$
```

- then delete the **labwork2**. What changes have occurred and why?

rm labwork2

```
student@CsnKhai:~/links$ rm labwork2
student@CsnKhai:~/links$ ls -l
total 4
-rw------- 1 student student 1947 Dec 22 14:08 hard_lnk_labwork2
lrwxrwxrwx 1 student student    8 Dec 22 14:07 symb_lnk_labwork2 -> labwork2
student@CsnKhai:~/links$
```

7) Using the locate utility, find all files that contain the squid and traceroute sequence.

Locate '*traceroute*'

Locate '*squid*'

```
root@CsnKhai:/# locate '*traceroute*'
/etc/alternatives/traceroute6
/etc/alternatives/traceroute6.8.gz
/lib/modules/3.13.0-63-generic/kernel/drivers/tty/n_tracerouter.ko
/usr/bin/traceroute6
/usr/bin/traceroute6.iputils
/usr/share/man/man8/traceroute6.8.gz
/usr/share/man/man8/traceroute6.iputils.8.gz
/var/lib/dpkg/alternatives/traceroute6
root@CsnKhai:/# locate '*squid*'
```

8) Determine which partitions are mounted in the system, as well as the types of these partitions.

The standard Linux disk layout uses four partitions:

1. / root, the main partition for the filesystem;
2. /boot - bootloader files
3. /home - section for user files;
4. swap - swap partition, to unload pages from RAM if it is full.

9) Count the number of lines containing a given sequence of characters in a given file.

Create file

touch bro.txt

```
2. 192.168.1.103 (student)
student@CsnKhai:~$ touch bro.txt
student@CsnKhai:~$ nano bro.txt
```

Write some text

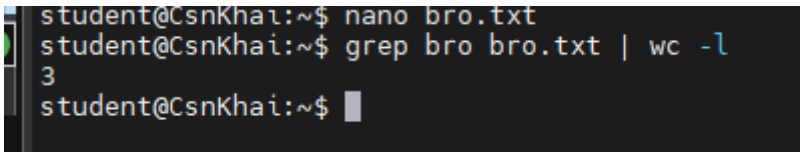
nano bro.txt

```
2. 192.168.1.103 (student)
  GNU nano 2.2.6

What's up bro?
I love you bro!
Can you borrow me some cash, bro?
I will give it back.
```

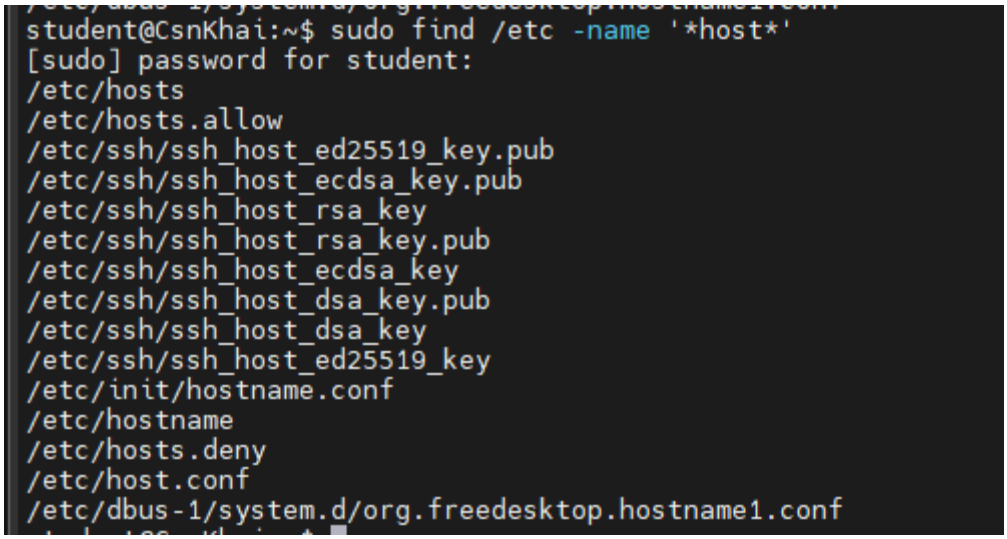
Count number of lines containing word bro

grep bro bro.txt | wc -l



10) Using the find command, find all files in the /etc directory containing the host character sequence.

Sudo find /etc –name '*host*'



11) List all objects in /etc that contain the ss character sequence. How can I duplicate a similar command using a bunch of grep?

Sudo find /etc –name '*ss*'

Sudo grep /etc –nr 'ss' /etc (n -Show relative line number in the file; r - Recursively search subdirectories listed)

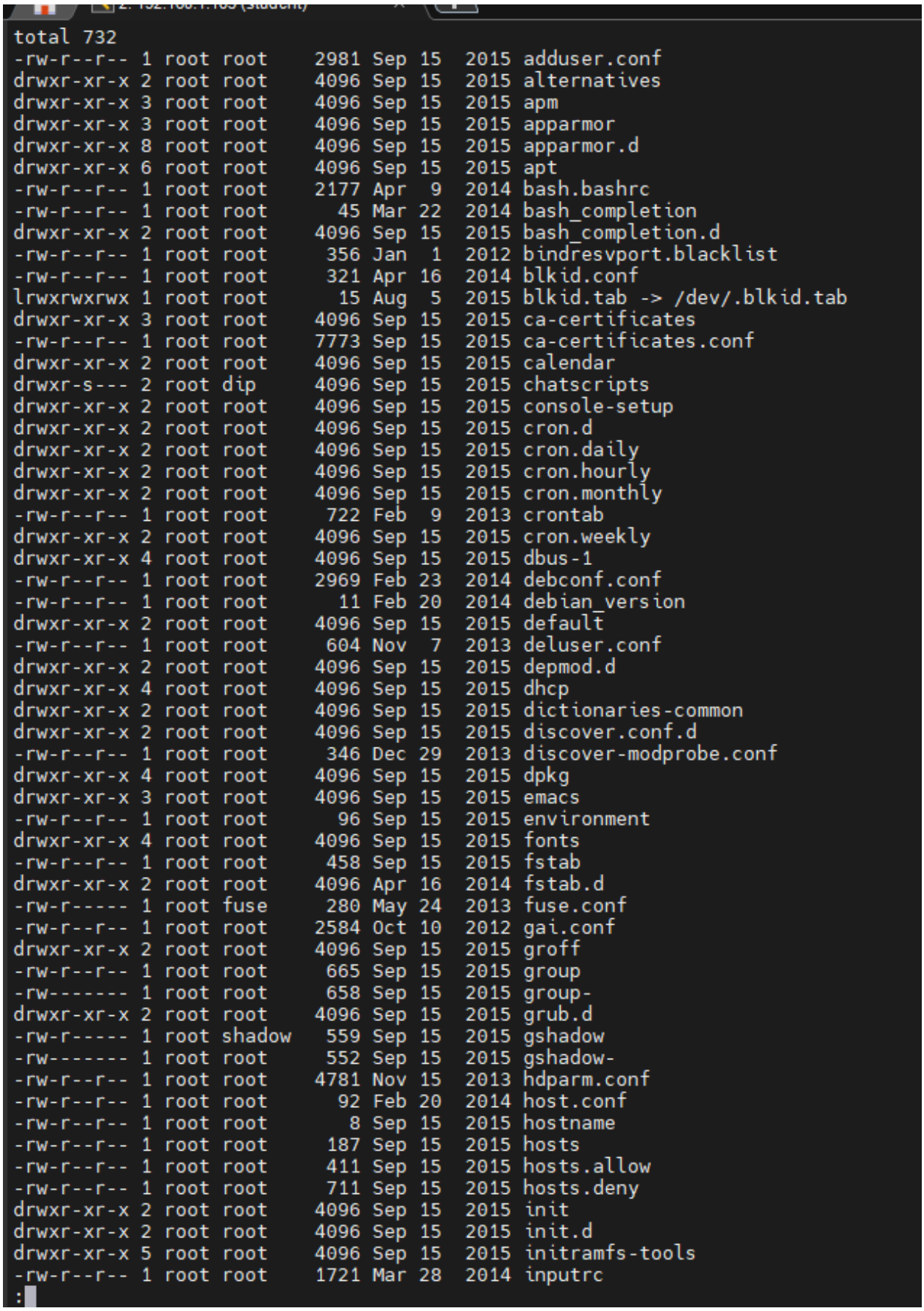
```
/etc/dbus-1/system.d/org.freedesktop.hostname1.conf
student@CsnKhai:~$ sudo find /etc -name '*ss*'
/etc/default/ssh
/etc/default/nss
/etc/ufw/applications.d/openssh-server
/etc/issue.net
/etc/rc3.d/S20ssh
/etc/rc5.d/S20ssh
/etc/ssl
/etc/ssl/openssl.cnf
/etc/ssl/certs/Verisign_Class_1_Public_Primary_Certification_Authority_-_G2.pem
/etc/ssl/certs/Verisign_Class_1_Public_Primary_Certification_Authority_-_G3.pem
/etc/ssl/certs/Buypass_Class_2_Root_CA.pem
/etc/ssl/certs/Verisign_Class_4_Public_Primary_Certification_Authority_-_G3.pem
/etc/ssl/certs/Buypass_Class_2_CA_1.pem
/etc/ssl/certs/DigiCert_High_Assurance_EV_Root_CA.pem
/etc/ssl/certs/NetLock_Express_=Class_C=_Root.pem
/etc/ssl/certs/Sonera_Class_1_Root_CA.pem
/etc/ssl/certs/Swisscom_Root_CA_1.pem
/etc/ssl/certs/Verisign_Class_2_Public_Primary_Certification_Authority_-_G2.pem
/etc/ssl/certs/DigiCert_Assured_ID_Root_G3.pem
/etc/ssl/certs/Equifax_Secure_eBusiness_CA_1.pem
/etc/ssl/certs/Verisign_Class_3_Public_Primary_Certification_Authority_2.pem
/etc/ssl/certs/SwissSign_Gold_CA_-_G2.pem
/etc/ssl/certs/Certplus_Class_2_Primary_CA.pem
/etc/ssl/certs/Swisscom_Root_CA_2.pem
/etc/ssl/certs/DigiCert_Assured_ID_Root_CA.pem
/etc/ssl/certs/Starfield_Class_2_CA.pem
/etc/ssl/certs/VeriSign_Class_3_Public_Primary_Certification_Authority_-_G4.pem
/etc/ssl/certs/Verisign_Class_1_Public_Primary_Certification_Authority.pem
/etc/ssl/certs/TC_TrustCenter_Class_3_CA_II.pem
/etc/ssl/certs/VeriSign_Class_3_Public_Primary_Certification_Authority_-_G5.pem
/etc/ssl/certs/NetLock_Arany_=Class_Gold=_Főtanúsítvány.pem
/etc/ssl/certs/TC_TrustCenter_Class_2_CA_II.pem
/etc/ssl/certs/DigiCert_Assured_ID_Root_G2.pem
/etc/ssl/certs/NetLock_Qualified_=Class_QA=_Root.pem
/etc/ssl/certs/Verisign_Class_3_Public_Primary_Certification_Authority.pem
/etc/ssl/certs/SwissSign_Platinum_CA_-_G2.pem
/etc/ssl/certs/NetLock_Notary_=Class_A=_Root.pem
/etc/ssl/certs/NetLock_Business_=Class_B=_Root.pem
/etc/ssl/certs/Verisign_Class_3_Public_Primary_Certification_Authority_-_G3.pem
/etc/ssl/certs/Swisscom_Root_EV_CA_2.pem
/etc/ssl/certs/Sonera_Class_2_Root_CA.pem
/etc/ssl/certs/D-TRUST_Root_Class_3_CA_2_EV_2009.pem
/etc/ssl/certs/T-TeleSec_GlobalRoot_Class_2.pem
/etc/ssl/certs/D-TRUST_Root_Class_3_CA_2_2009.pem
/etc/ssl/certs/Buypass_Class_3_CA_1.pem
/etc/ssl/certs/Verisign_Class_3_Public_Primary_Certification_Authority_-_G2.pem
/etc/ssl/certs/SwissSign_Silver_CA_-_G2.pem
/etc/ssl/certs/Equifax_Secure_Global_eBusiness_CA.pem
/etc/ssl/certs/Buypass_Class_3_Root_CA.pem
/etc/ssl/certs/Verisign_Class_2_Public_Primary_Certification_Authority_-_G3.pem
/etc/ssl/certs/T-TeleSec_GlobalRoot_Class_3.pem
/etc/ssl/certs/Go_Daddy_Class_2_CA.pem
/etc/init.d/ssh
/etc/pam.d/common-session-noninteractive
/etc/pam.d/accountsservice
```

```
/etc/apparmor.d/abstractions/base:54:  /opt/*-linux-uclibc/lib/ld-uClibc*.so* mrix,
student@CsnKhai:~$ sudo grep -nr 'ss' /etc
/etc/logrotate.d/apt:4:  compress
/etc/logrotate.d/apt:5:  missingok
/etc/logrotate.d/apt:12:  compress
/etc/logrotate.d/apt:13:  missingok
/etc/logrotate.d/ufw:5: missingok
/etc/logrotate.d/ufw:7: compress
/etc/logrotate.d/ufw:8: delaycompress
/etc/logrotate.d/ppp:4: missingok
/etc/logrotate.d/ppp:6: compress
/etc/logrotate.d/aptitude:4:  compress
/etc/logrotate.d/aptitude:5:  missingok
/etc/logrotate.d/dpkg:4:        compress
/etc/logrotate.d/dpkg:5:        delaycompress
/etc/logrotate.d/dpkg:6:        missingok
/etc/logrotate.d/dpkg:13:       compress
/etc/logrotate.d/dpkg:14:       delaycompress
/etc/logrotate.d/dpkg:15:       missingok
/etc/logrotate.d/upstart:3:        missingok
/etc/logrotate.d/upstart:5:        compress
/etc/logrotate.d/rsyslog:5:     missingok
/etc/logrotate.d/rsyslog:7:     delaycompress
/etc/logrotate.d/rsyslog:8:     compress
/etc/logrotate.d/rsyslog:25:/var/log/messages
/etc/logrotate.d/rsyslog:29:    missingok
/etc/logrotate.d/rsyslog:31:    compress
/etc/logrotate.d/rsyslog:32:    delaycompress
/etc/default/rcS:20:# assume that the BIOS clock is set to UTC time (recommended)
/etc/default/rcS:23:# be more verbose during the boot process
/etc/default/ssh:1:# Default settings for openssh-server. This file is sourced by /bin/sh from
/etc/default/ssh:2:# /etc/init.d/ssh.
/etc/default/ssh:4:# Options to pass to sshd
/etc/default/grub:27:# Uncomment if you don't want GRUB to pass "root=UUID=xxx" parameter to Linux
/etc/default/useradd:7:# as possible
/etc/default/useradd:22:# The number of days after a password expires until the account
/etc/default/crda:5:# Governments assert the right to regulate usage of radio spectrum within
/etc/default/ntpdate:12:# Additional options to pass to ntpdate
/etc/default/keyboard:14:# specify an alternative keymap.  Make sure it will be accessible
/etc/default/dbus:6:# Parameters to pass to dbus.
/etc/default/nss:1:# /etc/default/nss
/etc/default/nss:15:#   If set to TRUE, the getservbyname{,_r}() function will assume
```

12) Organize a screen-by-screen print of the contents of the /etc directory. Hint: You must use stream redirection operations.

Sudo ls –l /etc | less

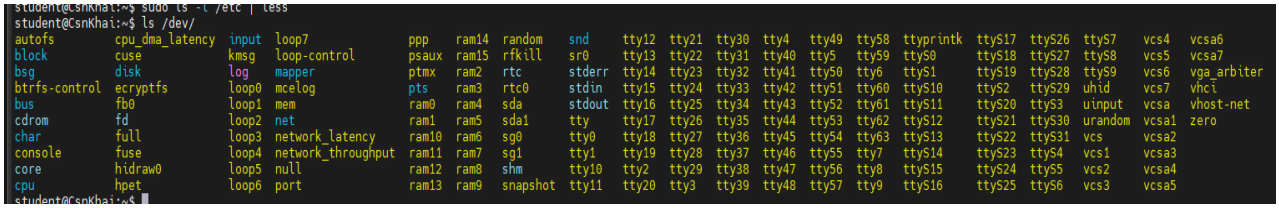
```
student@CsnKhai:~$ sudo ls -l /etc | less
```


total 732
-rw-r--r-- 1 root root 2981 Sep 15 2015 adduser.conf
drwxr-xr-x 2 root root 4096 Sep 15 2015 alternatives
drwxr-xr-x 3 root root 4096 Sep 15 2015 apm
drwxr-xr-x 3 root root 4096 Sep 15 2015 apparmor
drwxr-xr-x 8 root root 4096 Sep 15 2015 apparmor.d
drwxr-xr-x 6 root root 4096 Sep 15 2015 apt
-rw-r--r-- 1 root root 2177 Apr 9 2014 bash.bashrc
-rw-r--r-- 1 root root 45 Mar 22 2014 bash_completion
drwxr-xr-x 2 root root 4096 Sep 15 2015 bash_completion.d
-rw-r--r-- 1 root root 356 Jan 1 2012 bindresvport.blacklist
-rw-r--r-- 1 root root 321 Apr 16 2014 blkid.conf
lrwxrwxrwx 1 root root 15 Aug 5 2015 blkid.tab -> /dev/.blkid.tab
drwxr-xr-x 3 root root 4096 Sep 15 2015 ca-certificates
-rw-r--r-- 1 root root 7773 Sep 15 2015 ca-certificates.conf
drwxr-xr-x 2 root root 4096 Sep 15 2015 calendar
drwxr-s--- 2 root dip 4096 Sep 15 2015 chatscripts
drwxr-xr-x 2 root root 4096 Sep 15 2015 console-setup
drwxr-xr-x 2 root root 4096 Sep 15 2015 cron.d
drwxr-xr-x 2 root root 4096 Sep 15 2015 cron.daily
drwxr-xr-x 2 root root 4096 Sep 15 2015 cron.hourly
drwxr-xr-x 2 root root 4096 Sep 15 2015 cron.monthly
-rw-r--r-- 1 root root 722 Feb 9 2013 crontab
drwxr-xr-x 2 root root 4096 Sep 15 2015 cron.weekly
drwxr-xr-x 4 root root 4096 Sep 15 2015 dbus-1
-rw-r--r-- 1 root root 2969 Feb 23 2014 debconf.conf
-rw-r--r-- 1 root root 11 Feb 20 2014 debian_version
drwxr-xr-x 2 root root 4096 Sep 15 2015 default
-rw-r--r-- 1 root root 604 Nov 7 2013 deluser.conf
drwxr-xr-x 2 root root 4096 Sep 15 2015 depmod.d
drwxr-xr-x 4 root root 4096 Sep 15 2015 dhcp
drwxr-xr-x 2 root root 4096 Sep 15 2015 dictionaries-common
drwxr-xr-x 2 root root 4096 Sep 15 2015 discover.conf.d
-rw-r--r-- 1 root root 346 Dec 29 2013 discover-modprobe.conf
drwxr-xr-x 4 root root 4096 Sep 15 2015 dpkg
drwxr-xr-x 3 root root 4096 Sep 15 2015 emacs
-rw-r--r-- 1 root root 96 Sep 15 2015 environment
drwxr-xr-x 4 root root 4096 Sep 15 2015 fonts
-rw-r--r-- 1 root root 458 Sep 15 2015 fstab
drwxr-xr-x 2 root root 4096 Apr 16 2014 fstab.d
-rw-r----- 1 root fuse 280 May 24 2013 fuse.conf
-rw-r--r-- 1 root root 2584 Oct 10 2012 gai.conf
drwxr-xr-x 2 root root 4096 Sep 15 2015 groff
-rw-r--r-- 1 root root 665 Sep 15 2015 group
-rw------- 1 root root 658 Sep 15 2015 group-
drwxr-xr-x 2 root root 4096 Sep 15 2015 grub.d
-rw-r----- 1 root shadow 559 Sep 15 2015 gshadow
-rw------- 1 root root 552 Sep 15 2015 gshadow-
-rw-r--r-- 1 root root 4781 Nov 15 2013 hdparm.conf
-rw-r--r-- 1 root root 92 Feb 20 2014 host.conf
-rw-r--r-- 1 root root 8 Sep 15 2015 hostname
-rw-r--r-- 1 root root 187 Sep 15 2015 hosts
-rw-r--r-- 1 root root 411 Sep 15 2015 hosts.allow
-rw-r--r-- 1 root root 711 Sep 15 2015 hosts.deny
drwxr-xr-x 2 root root 4096 Sep 15 2015 init
drwxr-xr-x 2 root root 4096 Sep 15 2015 init.d
drwxr-xr-x 5 root root 4096 Sep 15 2015 initramfs-tools
-rw-r--r-- 1 root root 1721 Mar 28 2014 inputrc
:

13) What are the types of devices and how to determine the type of device? Give examples.

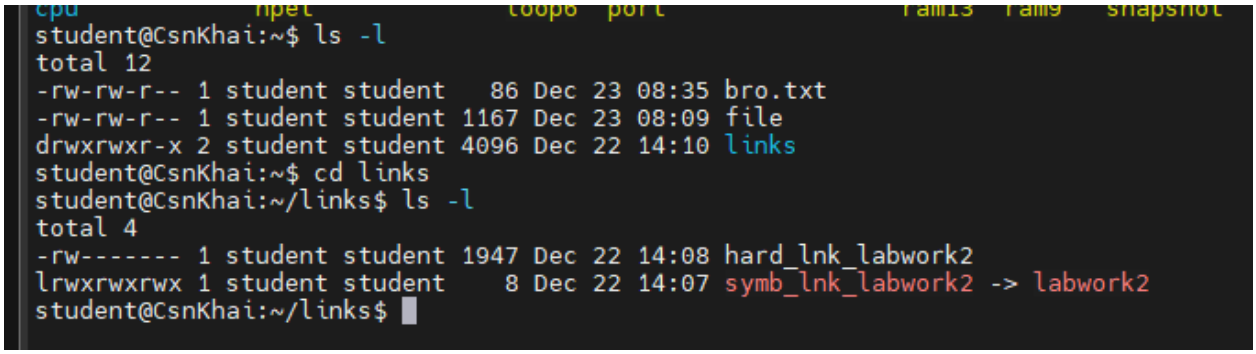
Notice the first character on each line. It indicates the type of device. The "b" symbol stands for linux block devices (block), and the "c" symbol stands for character (character) devices.

ls /dev/



14) How to determine the type of file in the system, what types of files are there?

ls –l



The first character indicates the file type:

‘-’ - regular file;

d - directory;

b - block device;

c - character device;

l - symbolic link;

p - pipe (pipe, fifo);

s - socket.

15) * List the first 5 directory files that were recently accessed in the /etc directory. (ls – lt /etc | head -6)