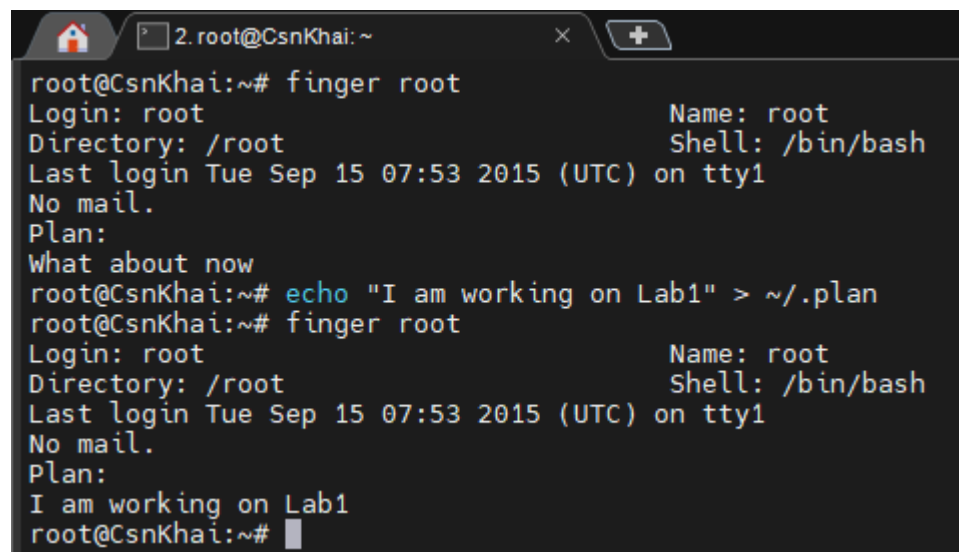## Task1.Part1

1) Log in to the system as root. – sudo -i

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

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? – cat /etc/passwd ; history

4) Change personal information about yourself. – chfn

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.
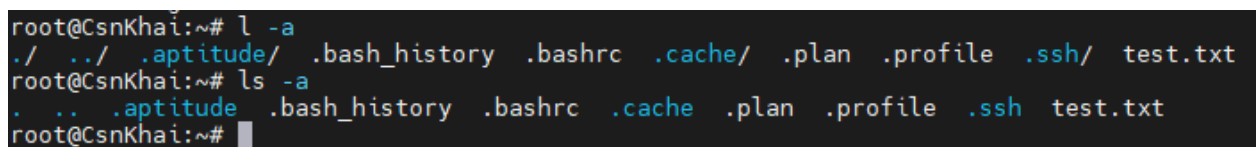
– chfn --help ; chfn –f – change full name of user only; sudo –i, sudo –s – login as root

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

```
2. root@CsnKhai:~                    ×        +
root@CsnKhai:~# finger root
Login: root                              Name: root
Directory: /root                         Shell: /bin/bash
Last login Tue Sep 15 07:53 2015 (UTC) on tty1
No mail.
Plan:
What about now
root@CsnKhai:~# echo "I am working on Lab1" > ~/.plan
root@CsnKhai:~# finger root
Login: root                              Name: root
Directory: /root                         Shell: /bin/bash
Last login Tue Sep 15 07:53 2015 (UTC) on tty1
No mail.
Plan:
I am working on Lab1
root@CsnKhai:~#
```

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.

```
root@CsnKhai:~# l -a
./  ../  .aptitude/  .bash_history  .bashrc  .cache/  .plan  .profile  .ssh/  test.txt
root@CsnKhai:~# ls -a
.  ..  .aptitude  .bash_history  .bashrc  .cache  .plan  .profile  .ssh  test.txt
root@CsnKhai:~#
```

Task1.Part2

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.

```
root@CsnKhai:~# tree -a -P 'c*' --prune
.
└── .aptitude
    └── config

1 directory, 1 file
root@CsnKhai:~#
```

```
14188 directories, 83175 files
root@CsnKhai:~# tree /
```

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

```
root@CsnKhai:~# nano test.txt
root@CsnKhai:~# file test.txt
test.txt: ASCII text
root@CsnKhai:~# file .cache
.cache: directory
root@CsnKhai:~#
```

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 or cd ~

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.

```
2. root@CsnKhai: ~
root@CsnKhai:~# ls -a -h -r
test.txt  .ssh  .profile  .plan  .cache  .bashrc  .bash_history  .aptitude  ..  .
root@CsnKhai:~#
```

```
root@CsnKhai:~# ls -l -a
total 40
drwx------   5 root root 4096 Feb 16 13:40 .
drwxr-xr-x 21 root root 4096 Sep 15  2015 ..
drwx------   2 root root 4096 Sep 15  2015 .aptitude
-rw-------   1 root root  805 Feb 16 09:10 .bash_history
-rw-r--r--   1 root root 3106 Feb 20  2014 .bashrc
drwx------   2 root root 4096 Sep 15  2015 .cache
-rw-r--r--   1 root root   21 Feb 16 14:30 .plan
-rw-r--r--   1 root root  140 Feb 20  2014 .profile
drwx------   2 root root 4096 Sep 15  2015 .ssh
-rw-r--r--   1 root root   22 Feb 16 13:40 test.txt
root@CsnKhai:~#
```
- permission rules

5) Perform the following sequence of operations:

- create a subdirectory in the home directory;

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

- view the created file;

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

- delete the previously created subdirectory with the file requesting removal;

- delete the file copied to the home directory.

```
root@CsnKhai:~# mkdir subdir
root@CsnKhai:~# tree / > /subdir/rootdir.txt
-bash: /subdir/rootdir.txt: No such file or directory
root@CsnKhai:~# tree / > ~/subdir/rootdir.txt
root@CsnKhai:~# nano ~/subdir/rootdir.txt
root@CsnKhai:~# ls -l
total 8
drwxr-xr-x 2 root root 4096 Feb 16 14:55 subdir
-rw-r--r-- 1 root root   22 Feb 16 13:40 test.txt
root@CsnKhai:~# cp ~/subdir/rootdir.txt ~
root@CsnKhai:~# ls -l
total 5808
-rw-r--r-- 1 root root 5938883 Feb 16 14:59 rootdir.txt
drwxr-xr-x 2 root root    4096 Feb 16 14:55 subdir
-rw-r--r-- 1 root root      22 Feb 16 13:40 test.txt
root@CsnKhai:~# rm -r ~/subdir
root@CsnKhai:~# ls -l
total 5804
-rw-r--r-- 1 root root 5938883 Feb 16 14:59 rootdir.txt
-rw-r--r-- 1 root root      22 Feb 16 13:40 test.txt
root@CsnKhai:~# rm rootdir.txt
root@CsnKhai:~# ls -l
total 4
-rw-r--r-- 1 root root 22 Feb 16 13:40 test.txt
root@CsnKhai:~#
```

6) Perform the following sequence of operations:

- create a subdirectory test in the home directory;

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

- 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;

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

- rename the hard link file to hard_lnk_labwork2;

- rename the soft link file to symb_lnk_labwork2 file;

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

```
2. root@CsnKhai: ~/test                    ×        +

root@CsnKhai:~# mkdir test
root@CsnKhai:~# cp ~/.bash_history ~/test/labwork2
root@CsnKhai:~# ls -l
total 8
drwxr-xr-x 2 root root 4096 Feb 16 15:22 test
-rw-r--r-- 1 root root   22 Feb 16 13:40 test.txt
root@CsnKhai:~# cd test
root@CsnKhai:~/test# ls -l
total 4
-rw------- 1 root root 805 Feb 16 15:22 labwork2
root@CsnKhai:~/test# nano labwork2
root@CsnKhai:~/test# ln labwork2 hardlnk
root@CsnKhai:~/test# ln -s labwork2 softlnk
root@CsnKhai:~/test# ls -l
total 8
-rw------- 2 root root 805 Feb 16 15:22 hardlnk
-rw------- 2 root root 805 Feb 16 15:22 labwork2
lrwxrwxrwx 1 root root   8 Feb 16 15:24 softlnk -> labwork2
root@CsnKhai:~/test# nano softlnk
root@CsnKhai:~/test# ls -l
total 8
-rw------- 2 root root 584 Feb 16 15:26 hardlnk
-rw------- 2 root root 584 Feb 16 15:26 labwork2
lrwxrwxrwx 1 root root   8 Feb 16 15:24 softlnk -> labwork2
root@CsnKhai:~/test# nano labwork2
root@CsnKhai:~/test# mv hardlnk hard_lnk_labwork2
root@CsnKhai:~/test# ls -l
total 8
-rw------- 2 root root 584 Feb 16 15:26 hard_lnk_labwork2
-rw------- 2 root root 584 Feb 16 15:26 labwork2
lrwxrwxrwx 1 root root   8 Feb 16 15:24 softlnk -> labwork2
root@CsnKhai:~/test# mv softlnk soft_lnk_labwork2
root@CsnKhai:~/test# ls -l
total 8
-rw------- 2 root root 584 Feb 16 15:26 hard_lnk_labwork2
-rw------- 2 root root 584 Feb 16 15:26 labwork2
lrwxrwxrwx 1 root root   8 Feb 16 15:24 soft_lnk_labwork2 -> labwork2
root@CsnKhai:~/test# rm labwork2
root@CsnKhai:~/test# ls -l
total 4
-rw------- 1 root root 584 Feb 16 15:26 hard_lnk_labwork2
lrwxrwxrwx 1 root root   8 Feb 16 15:24 soft_lnk_labwork2 -> labwork2
root@CsnKhai:~/test#
```

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

```
root@CsnKhai:~# mount
/dev/sda1 on / type ext4 (rw,errors=remount-ro)
proc on /proc type proc (rw,noexec,nosuid,nodev)
sysfs on /sys type sysfs (rw,noexec,nosuid,nodev)
none on /sys/fs/cgroup type tmpfs (rw)
none on /sys/fs/fuse/connections type fusectl (rw)
none on /sys/kernel/debug type debugfs (rw)
none on /sys/kernel/security type securityfs (rw)
udev on /dev type devtmpfs (rw,mode=0755)
devpts on /dev/pts type devpts (rw,noexec,nosuid,gid=5,mode=0620)
tmpfs on /run type tmpfs (rw,noexec,nosuid,size=10%,mode=0755)
none on /run/lock type tmpfs (rw,noexec,nosuid,nodev,size=5242880)
none on /run/shm type tmpfs (rw,nosuid,nodev)
none on /run/user type tmpfs (rw,noexec,nosuid,nodev,size=104857600,mode=0755)
none on /sys/fs/pstore type pstore (rw)
systemd on /sys/fs/cgroup/systemd type cgroup (rw,noexec,nosuid,nodev,none,name=systemd)
root@CsnKhai:~#
```

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

```
root@CsnKhai:~# grep "door" test2 | wc -l
3
```

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

```
root@CsnKhai:~# find /etc -type f -exec grep -l "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?

```
2. root@CsnKhai: ~                          ×
root@CsnKhai:~# grep -R 'ss' /etc
```

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

```
2. root@CsnKhai: ~                          ×
root@CsnKhai:~# tree /etc | less
root@CsnKhai:~#
```

15) * List the first 5 directory files that were recently accessed in the /etc directory.

```
2. root@CsnKhai: ~                 ×    +
root@CsnKhai:~# find /etc -type f -exec stat -c '%X %n' {} \; | sort -nr | awk 'NR==1,NR==5 {print $2}'
/etc/.pwd.lock
/etc/xml/xml-core.xml.old
/etc/xml/xml-core.xml
/etc/xml/catalog.old
/etc/xml/catalog
root@CsnKhai:~#
```