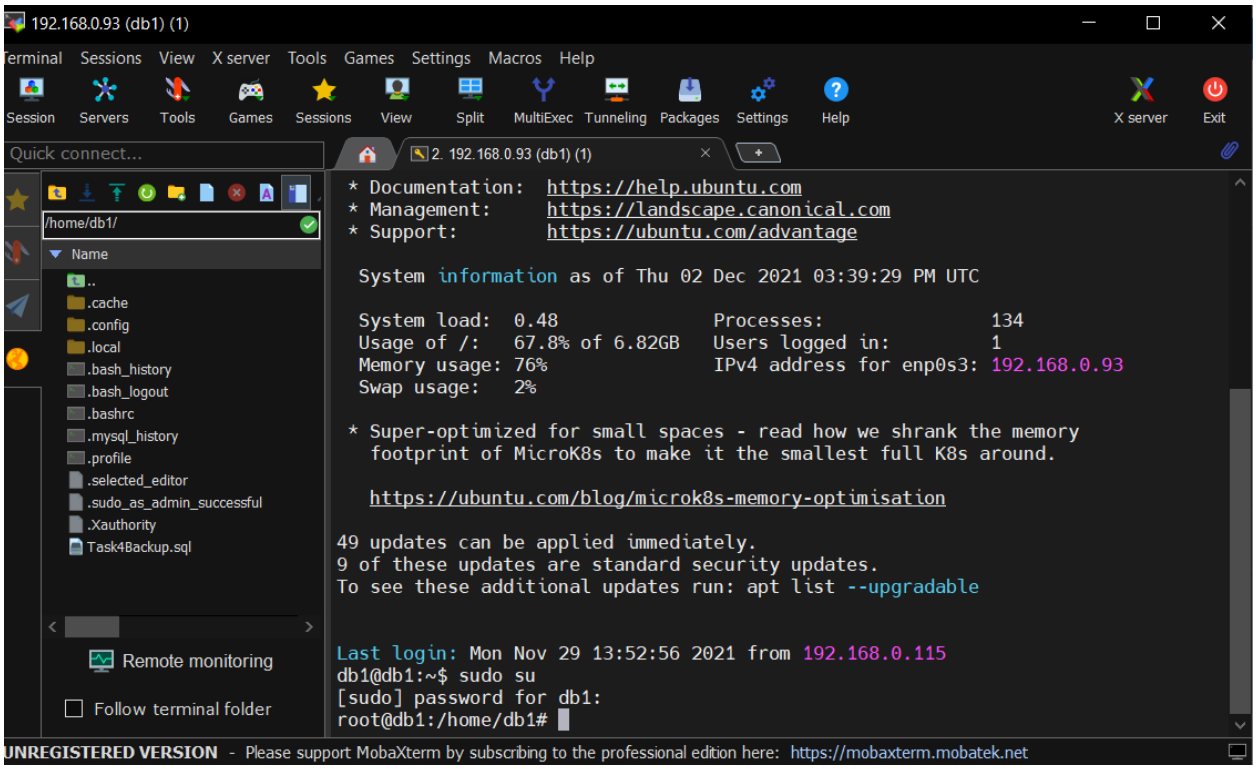
Task5.1

1) Log in to the system as root.

sudo su



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

```
/etc/passwd - user accounts information.
/etc/shadow - secure user account information.
/etc/pam.d/passwd  - PAM configuration for passwd.
```

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

```
db1:x:1000:1000:Ihor Mishchenko:/home/db1:/bin/bash
```

4) Change personal information about yourself

chfn db1

```
root@db1:/home/db1# chfn db1
Changing the user information for db1
Enter the new value, or press ENTER for the default
        Full Name [Ihor Mishchenko]: Ihor Mishchenko
        Room Number []:
        Work Phone []: 0915001000
        Home Phone []: 0925002000
        Other []: Lab account for lerning Linux
root@db1:/home/db1#
```

cat /etc/passwd

```
db1:x:1000:1000:Ihor Mishchenko,,0915001000,0925002000,Lab account for lerning L
```

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.

1. Inormation about command you can find in “manual” it is internal help`s system for start enter “**man man**” in terminal (second option it is name “tool”)

man man

```
MAN(1)                                                    Manual pager utils                                                    MAN(1)

NAME
       man - an interface to the system reference manuals

SYNOPSIS
       man [man options] [[section] page ...] ...
       man -k [apropos options] regexp ...
       man -K [man options] [section] term ...
       man -f [whatis options] page ...
       man -l [man options] file ...
       man -w|-W [man options] page ...

DESCRIPTION
       man is the system's manual pager.  Each page argument given to man is normally the name of a program, utility or function.  The manual page associ-
       ated with each of these arguments is then found and displayed.  A section, if provided, will direct man to look only in that section of the manual.
       The  default  action  is  to  search in all of the available sections following a pre-defined order (see DEFAULTS), and to show only the first page
       found, even if page exists in several sections.

       The table below shows the section numbers of the manual followed by the types of pages they contain.

       1   Executable programs or shell commands
       2   System calls (functions provided by the kernel)
       3   Library calls (functions within program libraries)
       4   Special files (usually found in /dev)
       5   File formats and conventions, e.g. /etc/passwd
       6   Games
       7   Miscellaneous (including macro packages and conventions), e.g. man(7), groff(7)
       8   System administration commands (usually only for root)
       9   Kernel routines [Non standard]

       A manual page consists of several sections.

       Conventional section names include NAME, SYNOPSIS, CONFIGURATION, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUE, ERRORS, ENVIRONMENT, FILES, VER-
       SIONS, CONFORMING TO, NOTES, BUGS, EXAMPLE, AUTHORS, and SEE ALSO.

       The following conventions apply to the SYNOPSIS section and can be used as a guide in other sections.

       bold text          type exactly as shown.
       italic text        replace with appropriate argument.
       [-abc]             any or all arguments within [ ] are optional.
 Manual page man(1) line 1 (press h for help or q to quit)
```

Man passwd

```
PASSWD(1)                       User Commands                       PASSWD(1)

NAME
       passwd - change user password

SYNOPSIS
       passwd [options] [LOGIN]

DESCRIPTION
       The passwd command changes passwords for user accounts. A normal user
       may only change the password for their own account, while the superuser
       may change the password for any account.  passwd also changes the
       account or associated password validity period.

   Password Changes
       The user is first prompted for their old password, if one is present.
       This password is then encrypted and compared against the stored
       password. The user has only one chance to enter the correct password.
       The superuser is permitted to bypass this step so that forgotten
       passwords may be changed.

       After the password has been entered, password aging information is
       checked to see if the user is permitted to change the password at this
       time. If not, passwd refuses to change the password and exits.

       The user is then prompted twice for a replacement password. The second
       entry is compared against the first and both are required to match in
       order for the password to be changed.

       Then, the password is tested for complexity. As a general guideline,
       passwords should consist of 6 to 8 characters including one or more
       characters from each of the following sets:

       •   lower case alphabetics

       •   digits 0 thru 9

       •   punctuation marks

       Care must be taken not to include the system default erase or kill
       characters.  passwd will reject any password which is not suitably
       complex.

   Hints for user passwords
       The security of a password depends upon the strength of the encryption
       algorithm and the size of the key space. The legacy UNIX System
       encryption method is based on the NBS DES algorithm. More recent
       methods are now recommended (see ENCRYPT_METHOD). The size of the key
       space depends upon the randomness of the password which is selected.

       Compromises in password security normally result from careless password
       selection or handling. For this reason, you should not select a
       password which appears in a dictionary or which must be written down.
       The password should also not be a proper name, your license number,
       birth date, or street address. Any of these may be used as guesses to
       violate system security.
```

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

Man less

```
DESCRIPTION
       Less is a program similar to more (1), but it has many  more  features.
       Less  does  not  have to read the entire input file before starting, so
       with large input files it starts up faster than text  editors  like  vi
       (1).  Less uses termcap (or terminfo on some systems), so it can run on
       a variety of terminals.  There is even  limited  support  for  hardcopy
       terminals.   (On  a hardcopy terminal, lines which should be printed at
       the top of the screen are prefixed with a caret.)

       Commands are based on both more and vi.  Commands may be preceded by  a
       decimal number, called N in the descriptions below.  The number is used
       by some commands, as indicated.
```

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.**

sudo tree -L 2 -P '*c*'

```
2. 192.168.0.93 (db1) (1)
root@db1:/# sudo apt-get install tree
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 42 not upgraded.
Need to get 43.0 kB of archives.
After this operation, 115 kB of additional disk space will be used.
Get:1 http://ua.archive.ubuntu.com/ubuntu focal/universe amd64 tree a
1 [43.0 kB]
Fetched 43.0 kB in 5s (8,293 B/s)
Selecting previously unselected package tree.
(Reading database ... 109005 files and directories currently installe
Preparing to unpack .../tree_1.8.0-1_amd64.deb ...
Unpacking tree (1.8.0-1) ...
Setting up tree (1.8.0-1) ...
Processing triggers for man-db (2.9.1-1) ...
root@db1:/# sudo tree -L 2 -P '*c*'
.
├── boot
│   ├── config-5.4.0-90-generic
│   ├── config-5.4.0-91-generic
│   ├── grub
```

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

Check directory use ls

```
root@db1:/home/db1# ls
Task4Backup.sql  task5.1
root@db1:/home/db1#
```

Check types of file

file task5.1

file Task4Backup.sql

```
root@db1:/home/db1# ls
Task4Backup.sql  task5.1
root@db1:/home/db1# file task5.1
task5.1: directory
root@db1:/home/db1# file Task4Backup.sql
Task4Backup.sql: ASCII text, with very long lines
root@db1:/home/db1# _
```

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 $home

```
root@db1:/home/db1# cd $home
root@db1:~# _
```

cd ~

```
root@db1:~# cd ~
root@db1:~# _
```

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.**

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);

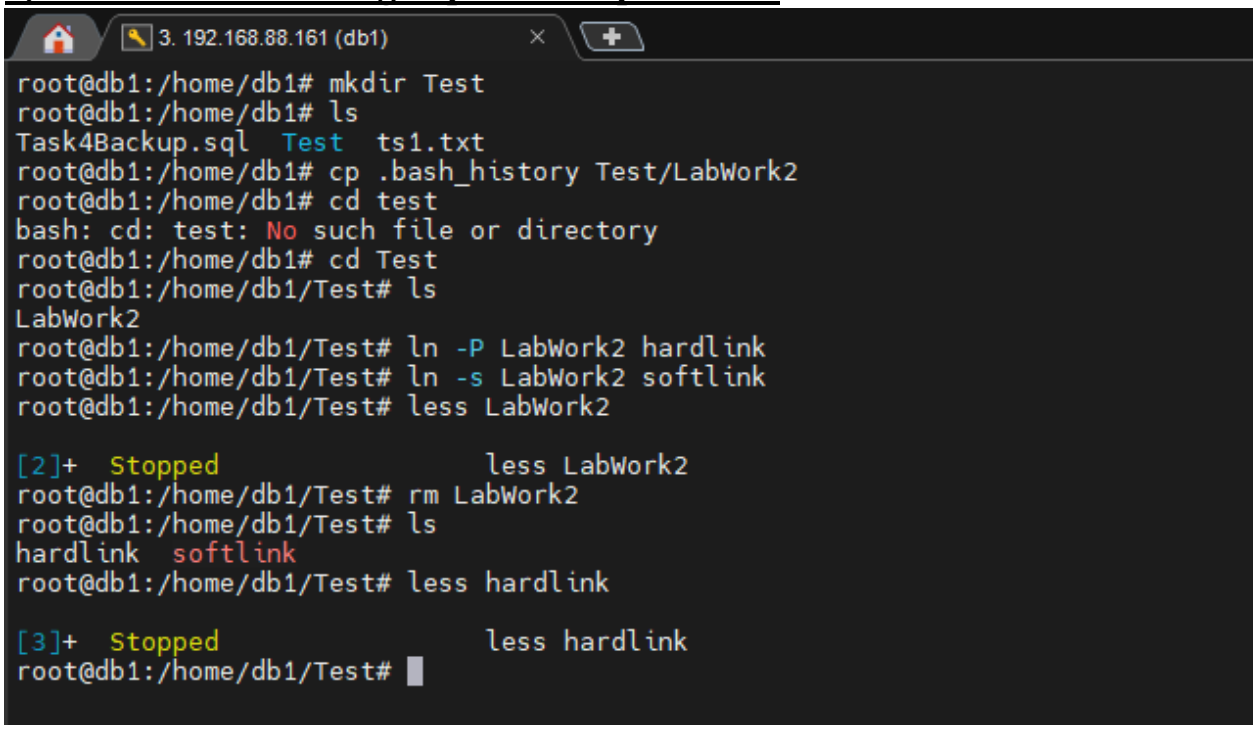
- view the created file;

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

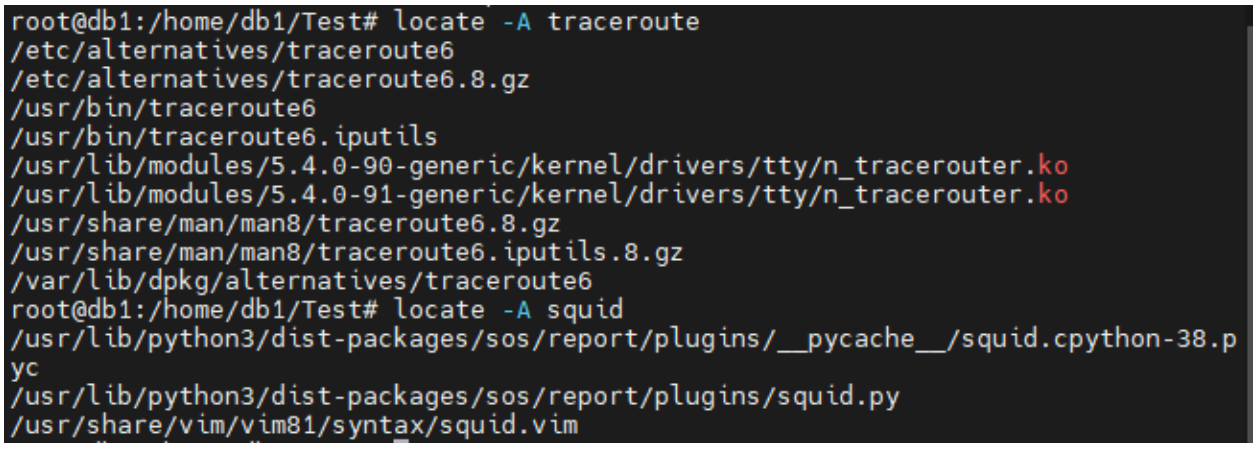
- delete the previously created subdirectory with the file requesting removal;

- delete the file copied to the home directory.

6) Perform the following sequence of operations:



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



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

```
root@db1:/home/db1/Test# df
Filesystem                         1K-blocks    Used Available Use% Mounted on
udev                                  457232       0    457232   0% /dev
tmpfs                                 100480    1076     99404   2% /run
/dev/mapper/ubuntu--vg-ubuntu--lv    7155192 4870628   1901384  72% /
tmpfs                                 502400       0    502400   0% /dev/shm
tmpfs                                   5120       0      5120   0% /run/lock
tmpfs                                 502400       0    502400   0% /sys/fs/cgrou
/dev/loop0                             56832   56832         0 100% /snap/core18/
/dev/loop2                             56832   56832         0 100% /snap/core18/
/dev/loop1                             72064   72064         0 100% /snap/lxd/210
/dev/loop3                             63360   63360         0 100% /snap/core20/
/dev/loop4                             68864   68864         0 100% /snap/lxd/218
/dev/loop5                             33152   33152         0 100% /snap/snapd/1
/dev/loop6                             43264   43264         0 100% /snap/snapd/1
/dev/sda2                             999320  207420    723088  23% /boot
/dev/loop7                             63488   63488         0 100% /snap/core20/
tmpfs                                 100480       0    100480   0% /run/user/100
```

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

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

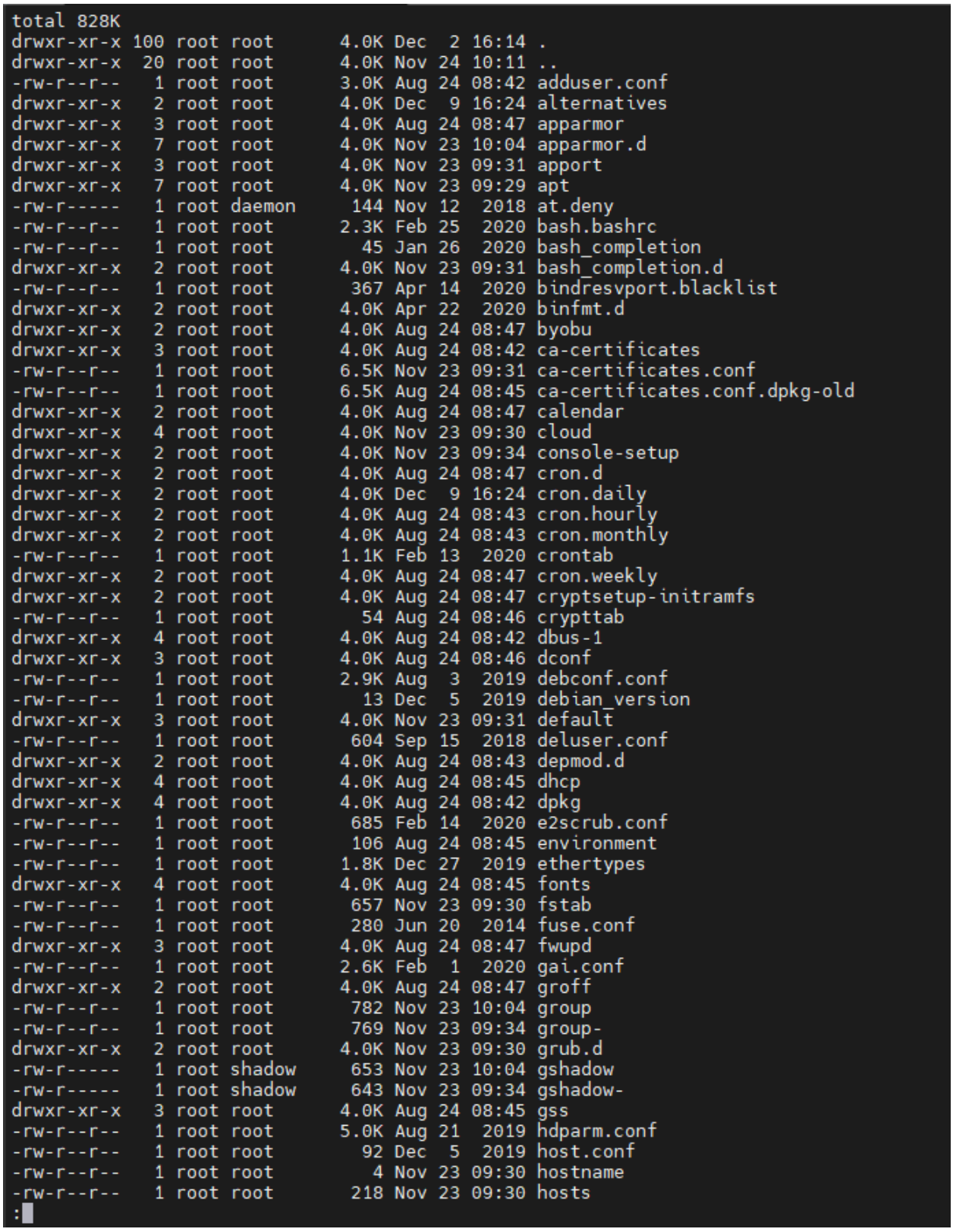
```
root@db1:/etc# cd /etc/ && sudo find -type f -name "*host*"
./hosts.allow
./cloud/templates/hosts.suse.tmpl
./cloud/templates/hosts.debian.tmpl
./cloud/templates/hosts.redhat.tmpl
./cloud/templates/hosts.freebsd.tmpl
./cloud/templates/hosts.alpine.tmpl
./hosts
./ssh/ssh_host_dsa_key
./ssh/ssh_host_rsa_key
./ssh/ssh_host_ecdsa_key.pub
./ssh/ssh_host_ecdsa_key
./ssh/ssh_host_ed25519_key.pub
./ssh/ssh_host_dsa_key.pub
./ssh/ssh_host_rsa_key.pub
./ssh/ssh_host_ed25519_key
./hosts.deny
./host.conf
./hostname
root@db1:/etc#
```

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

```
root@db1:/etc# ls -al |grep "ss"
drwxr-xr-x   3 root root       4096 Aug 24 08:45 gss
-rw-r--r--   1 root root         26 Aug  4 14:53 issue
-rw-r--r--   1 root root         19 Aug  4 14:53 issue.net
-rw-r--r--   1 root root        510 Aug 24 08:43 nsswitch.conf
-rw-r--r--   1 root root       1939 Dec  2 16:14 passwd
-rw-r--r--   1 root root       1886 Nov 23 10:04 passwd-
drwxr-xr-x   4 root root       4096 Nov 23 09:34 ssh
drwxr-xr-x   4 root root       4096 Nov 23 09:32 ssl
```

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

Ls -alh | less



```
total 828K
drwxr-xr-x 100 root root      4.0K Dec  2 16:14 .
drwxr-xr-x  20 root root      4.0K Nov 24 10:11 ..
-rw-r--r--   1 root root      3.0K Aug 24 08:42 adduser.conf
drwxr-xr-x   2 root root      4.0K Dec  9 16:24 alternatives
drwxr-xr-x   3 root root      4.0K Aug 24 08:47 apparmor
drwxr-xr-x   7 root root      4.0K Nov 23 10:04 apparmor.d
drwxr-xr-x   3 root root      4.0K Nov 23 09:31 apport
drwxr-xr-x   7 root root      4.0K Nov 23 09:29 apt
-rw-r-----   1 root daemon     144 Nov 12  2018 at.deny
-rw-r--r--   1 root root      2.3K Feb 25  2020 bash.bashrc
-rw-r--r--   1 root root        45 Jan 26  2020 bash_completion
drwxr-xr-x   2 root root      4.0K Nov 23 09:31 bash_completion.d
-rw-r--r--   1 root root       367 Apr 14  2020 bindresvport.blacklist
drwxr-xr-x   2 root root      4.0K Apr 22  2020 binfmt.d
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 byobu
drwxr-xr-x   3 root root      4.0K Aug 24 08:42 ca-certificates
-rw-r--r--   1 root root      6.5K Nov 23 09:31 ca-certificates.conf
-rw-r--r--   1 root root      6.5K Aug 24 08:45 ca-certificates.conf.dpkg-old
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 calendar
drwxr-xr-x   4 root root      4.0K Nov 23 09:30 cloud
drwxr-xr-x   2 root root      4.0K Nov 23 09:34 console-setup
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 cron.d
drwxr-xr-x   2 root root      4.0K Dec  9 16:24 cron.daily
drwxr-xr-x   2 root root      4.0K Aug 24 08:43 cron.hourly
drwxr-xr-x   2 root root      4.0K Aug 24 08:43 cron.monthly
-rw-r--r--   1 root root      1.1K Feb 13  2020 crontab
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 cron.weekly
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 cryptsetup-initramfs
-rw-r--r--   1 root root        54 Aug 24 08:46 crypttab
drwxr-xr-x   4 root root      4.0K Aug 24 08:42 dbus-1
drwxr-xr-x   3 root root      4.0K Aug 24 08:46 dconf
-rw-r--r--   1 root root      2.9K Aug  3  2019 debconf.conf
-rw-r--r--   1 root root        13 Dec  5  2019 debian_version
drwxr-xr-x   3 root root      4.0K Nov 23 09:31 default
-rw-r--r--   1 root root       604 Sep 15  2018 deluser.conf
drwxr-xr-x   2 root root      4.0K Aug 24 08:43 depmod.d
drwxr-xr-x   4 root root      4.0K Aug 24 08:45 dhcp
drwxr-xr-x   4 root root      4.0K Aug 24 08:42 dpkg
-rw-r--r--   1 root root       685 Feb 14  2020 e2scrub.conf
-rw-r--r--   1 root root       106 Aug 24 08:45 environment
-rw-r--r--   1 root root      1.8K Dec 27  2019 ethertypes
drwxr-xr-x   4 root root      4.0K Aug 24 08:45 fonts
-rw-r--r--   1 root root       657 Nov 23 09:30 fstab
-rw-r--r--   1 root root       280 Jun 20  2014 fuse.conf
drwxr-xr-x   3 root root      4.0K Aug 24 08:47 fwupd
-rw-r--r--   1 root root      2.6K Feb  1  2020 gai.conf
drwxr-xr-x   2 root root      4.0K Aug 24 08:47 groff
-rw-r--r--   1 root root       782 Nov 23 10:04 group
-rw-r--r--   1 root root       769 Nov 23 09:34 group-
drwxr-xr-x   2 root root      4.0K Nov 23 09:30 grub.d
-rw-r-----   1 root shadow     653 Nov 23 10:04 gshadow
-rw-r-----   1 root shadow     643 Nov 23 09:34 gshadow-
drwxr-xr-x   3 root root      4.0K Aug 24 08:45 gss
-rw-r--r--   1 root root      5.0K Aug 21  2019 hdparm.conf
-rw-r--r--   1 root root        92 Dec  5  2019 host.conf
-rw-r--r--   1 root root         4 Nov 23 09:30 hostname
-rw-r--r--   1 root root       218 Nov 23 09:30 hosts
:
```

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

```
root@db1:/etc# file /dev/sda
/dev/sda: block special (8/0)
root@db1:/etc# file /home/db1/ts1.txt
/home/db1/ts1.txt: ASCII text
root@db1:/etc# ls -lha /dev
total 4.0K
drwxr-xr-x  20 root root        4.1K Dec  9 13:00 .
drwxr-xr-x  20 root root        4.0K Nov 24 10:11 ..
crw-r--r--   1 root root     10, 235 Dec  9 13:00 autofs
drwxr-xr-x   2 root root         320 Dec  9 13:00 block
drwxr-xr-x   2 root root          80 Dec  9 13:00 bsg
crw-rw----   1 root disk     10, 234 Dec  9 13:00 btrfs-control
drwxr-xr-x   3 root root          60 Dec  9 13:00 bus
lrwxrwxrwx   1 root root           3 Dec  9 13:00 cdrom -> sr0
drwxr-xr-x   2 root root        3.6K Dec  9 13:00 char
crw--w----   1 root tty       5,   1 Dec  9 13:00 console
lrwxrwxrwx   1 root root          11 Dec  9 13:00 core -> /proc/kcore
drwxr-xr-x   3 root root          60 Dec  9 13:00 cpu
crw-------   1 root root     10,  59 Dec  9 13:00 cpu_dma_latency
crw-------   1 root root     10, 203 Dec  9 13:00 cuse
drwxr-xr-x   7 root root         140 Dec  9 13:00 disk
brw-rw----   1 root disk    253,   0 Dec  9 13:00 dm-0
drwxr-xr-x   3 root root         100 Dec  9 13:00 dri
lrwxrwxrwx   1 root root           3 Dec  9 13:00 dvd -> sr0
crw-------   1 root root     10,  62 Dec  9 13:00 ecryptfs
crw-rw----   1 root video    29,   0 Dec  9 13:00 fb0
lrwxrwxrwx   1 root root          13 Dec  9 13:00 fd -> /proc/self/fd
crw-rw-rw-   1 root root      1,   7 Dec  9 13:00 full
crw-rw-rw-   1 root root     10, 229 Dec  9 13:00 fuse
crw-------   1 root root    241,   0 Dec  9 13:00 hidraw0
crw-------   1 root root     10, 228 Dec  9 13:00 hpet
drwxr-xr-x   2 root root           0 Dec  9 13:00 hugepages
crw-------   1 root root     10, 183 Dec  9 13:00 hwrng
crw-------   1 root root     89,   0 Dec  9 13:00 i2c-0
lrwxrwxrwx   1 root root          12 Dec  9 13:00 initctl -> /run/initctl
drwxr-xr-x   4 root root         320 Dec  9 13:00 input
crw-r--r--   1 root root      1,  11 Dec  9 13:00 kmsg
drwxr-xr-x   2 root root          60 Dec  9 13:00 lightnvm
lrwxrwxrwx   1 root root          28 Dec  9 13:00 log -> /run/systemd/journal/dev-log
brw-rw----   1 root disk      7,   0 Dec  9 13:00 loop0
brw-rw----   1 root disk      7,   1 Dec  9 13:00 loop1
brw-rw----   1 root disk      7,   2 Dec  9 13:00 loop2
brw-rw----   1 root disk      7,   3 Dec  9 13:00 loop3
brw-rw----   1 root disk      7,   4 Dec  9 13:00 loop4
brw-rw----   1 root disk      7,   5 Dec  9 13:00 loop5
brw-rw----   1 root disk      7,   6 Dec  9 13:00 loop6
brw-rw----   1 root disk      7,   7 Dec  9 13:00 loop7
crw-rw----   1 root disk     10, 237 Dec  9 13:00 loop-control
drwxr-xr-x   2 root root          80 Dec  9 13:00 mapper
crw-------   1 root root     10, 227 Dec  9 13:00 mcelog
crw-r-----   1 root kmem      1,   1 Dec  9 13:00 mem
drwxrwxrwt   2 root root          40 Dec  9 13:00 mqueue
drwxr-xr-x   2 root root          60 Dec  9 13:00 net
crw-rw-rw-   1 root root      1,   3 Dec  9 13:00 null
crw-------   1 root root     10, 144 Dec  9 13:00 nvram
crw-r-----   1 root kmem      1,   4 Dec  9 13:00 port
crw-------   1 root root    108,   0 Dec  9 13:00 ppp
crw-------   1 root root     10,   1 Dec  9 13:00 psaux
crw-rw-rw-   1 root tty       5,   2 Dec  9 16:48 ptmx
```

crw-character;

brw-block

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

```
root@db1:/etc# file /dev/sda
/dev/sda: block special (8/0)
root@db1:/etc# file /home/db1/ts1.txt
/home/db1/ts1.txt: ASCII text
root@db1:/etc#
```

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

Ls -ltr | tair -n 5

```
root@db1:/etc# ls -ltr | tail -n 5
-rw-r--r-- 1 root root     3688 Nov 24 10:12 mailcap
-rw-r--r-- 1 root root    25898 Dec  2 15:40 ld.so.cache
-rw-r--r-- 1 root root     1939 Dec  2 16:14 passwd
drwxr-xr-x 2 root root     4096 Dec  9 16:24 cron.daily
drwxr-xr-x 2 root root     4096 Dec  9 16:24 alternatives
root@db1:/etc#
```