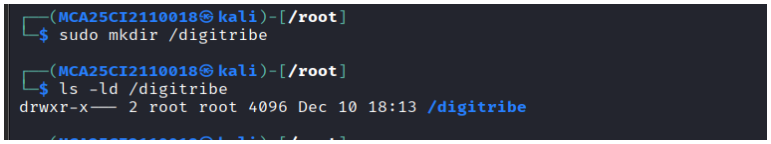
SET : 1

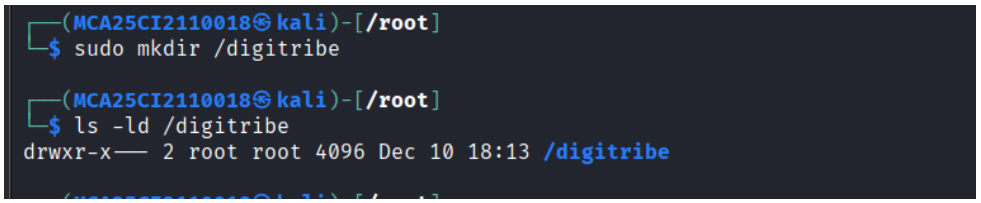
1.Create a directory named /digitribe.

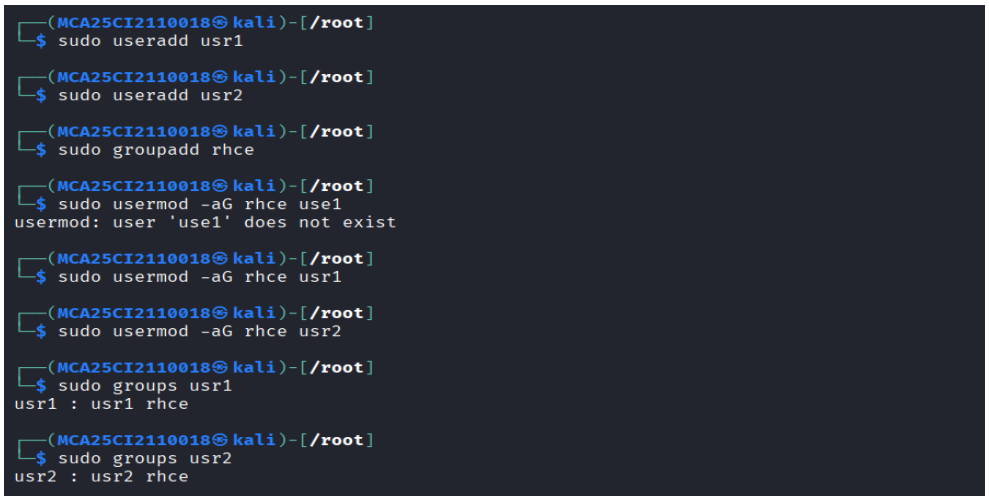
2.Allow user1 and user2 to share documents in the /digitribe directory using a group called rhce.

3.Both of them can read, write and remove documents from /digitribe directory, but any user not member of the group rhce unable to read, write and remove from /digitribe directory.

4.Schedule a Backup Script Create a cron job that runs a script named backup.sh every day at 2:00 AM.The script is located in /home/user1/scripts/.







```
┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo ls -ld
drwx------ 4 root root 4096 Dec 10 18:07 .

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo chown :rhce /digitribe

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo ls -ld
drwx------ 4 root root 4096 Dec 10 18:07 .

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo ls -ld/digitribe
ls: invalid option -- '/'
Try 'ls --help' for more information.

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo ls -ld /digitribe
drwxr-x--- 2 root rhce 4096 Dec 10 18:13 /digitribe

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo chown 2770 /digitribe

┌──(MCA25CI2110018㉿kali)-[/root]
└─$ sudo ls -ld /digitribe
drwxr-x--- 2 2770 rhce 4096 Dec 10 18:13 /digitribe
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo su usr1
┌──(usr1㉿kali)-[/]
└─$ cd /digitribe

┌──(usr1㉿kali)-[/digitribe]
└─$ touch f1.txt
touch: cannot touch 'f1.txt': Permission denied

┌──(usr1㉿kali)-[/digitribe]
└─$ exit
exit

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo chmod -aG sudo usr1
chmod: invalid mode: ‘-aG’
Try 'chmod --help' for more information.

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo usermod -aG sudo usr1

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo su usr1
┌──(usr1㉿kali)-[/]
└─$ cd /digitribe

┌──(usr1㉿kali)-[/digitribe]
└─$ sudo touch f1.txt
[sudo] password for usr1:

┌──(usr1㉿kali)-[/digitribe]
└─$ sudo su usr2
┌──(usr2㉿kali)-[/digitribe]
└─$ ls -l
total 0
-rw-r----- 1 root root 0 Dec 10 18:39 f1.txt
```

```
┌──(usr2㉿kali)-[/digitribe]
└─$ sudo -u guest ls
sudo: unknown user guest
sudo: error initializing audit plugin sudoers_audit
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo mkdir -p /home/usr1/script

┌──(MCA25CI2110018㉿kali)-[/]
└─$ nano /home/usr1/script/backup.sh
```

```
  GNU nano 8.6
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
* 2 * * * /home/usr1/script/backup.sh
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo crontab -u usr1 -e
no crontab for usr1 - using an empty one
Select an editor.  To change later, run select-editor again.
  1. /bin/nano        <---- easiest
  2. /usr/bin/vim.basic
  3. /usr/bin/vim.tiny

Choose 1-3 [1]: 1
crontab: installing new crontab
"/tmp/crontab.RivlFy/crontab":23: bad command
errors in crontab file, can't install.
Do you want to retry the same edit? (y/n) n
crontab: edits left in /tmp/crontab.RivlFy/crontab
```

SET : 2

Write a Shell Script to perform the following operations:

1. Count the number of hidden files in the current directory.
2. Count the number of regular files larger than 1 MB.
3. Display the number of symbolic links in the current directory.
4. Show the three smallest files in the current directory.
5. Display the oldest file (based on modification time).
6. List all directories in /var.
7. List all files with .log extension in the current directory.
8. Display all files owned by the current user.
9. Display the total disk usage of the current directory.
10. Exit.

```
#!/bin/bash

while true
do
    echo "_____________________________________"
    echo " File Operations Menu"
    echo "_____________________________________"
    echo "1. Count hidden files in current directory"
    echo "2. Count regular files larger than 1 MB"
    echo "3. Display number of symbolic links in current directory"
    echo "4. Show the three smallest files in current directory"
    echo "5. Display the oldest file (based on modification time)"
    echo "6. List all directories in /var"
    echo "7. List all .log files in current directory"
    echo "8. Display all files owned by the current user"
    echo "9. Display total disk usage of current directory"
    echo "10. Exit"
    echo "_____________________________________"
    read -p "Enter your choice: " choice

    case $choice in

        1)
            echo "Hidden files count:"
            sudo ls -la /home/kalios| wc -l
            ;;

        2)
            echo "Regular files larger than 1MB:"
            sudo find /home/kalios/ -type f -size +1M | wc -l
            ;;

        3)
            echo "Number of symbolic links:"
            sudo find /home/kalios/ -type ls | wc -l
            ;;

        4)
            echo "Three smallest files:"
            sudo ls /home/kalios/ -Sl -r | head -4 | tail -3
            ;;
```

```
        6)
            echo "Directories in /var:"
            sudo ls -d /var/*
            ;;

        7)
            echo ".log files in current directory:"
            sudo ls *.log
            ;;

        8)
            echo "Files owned by current user ($USER):"
            sudo find . -type f -user "$whomi"
            ;;

        9)
            echo "Total disk usage of current directory:"
            sudo du -sh .
            ;;

        10)
            echo "Exiting..."
            exit 0
            ;;

        *)
            echo "Invalid choice! Try again."
            ;;

    esac

    echo ""
done
```

SET : 3

```
while true
do
    clear
    echo "═══════════════════ MENU ═══════════════════"
    echo "1. show first 8 lines"
    echo "2. Show last 12 lines of system.log"
    echo "3. Show lines 5 to 15 of report.txt"
    echo "4. Search for 'error' in system.log"
    echo "5. Search for 'root' in /etc/passwd (ignore case)"
    echo "6. Show lines NOT containing 'success' in results.txt"
    echo "7. Count lines, words, characters in notes.txt"
    echo "8. Count only lines in data.txt"
    echo "9. Find all .txt files in /home"
    echo "10. Search .log files in /var/log for 'failed login'"
    echo "11. Exit"
    echo "═══════════════════════════════════════════"
    echo -n "Enter your choice: "
    read choice

    case $choice in
        1)
            echo "Showing first 8 lines:"
            head -n 8 system.log
            ;;
        2)
            echo "Showing last 12 lines of system.log:"
            tail -n 12 system.log
            ;;
        3)
            echo "Displaying lines 5 to 15 of report.txt:"
            head -n 15 report.txt | tail -n 11
            ;;
        4)
            echo "Searching for 'error' in system.log ... "
            grep "error" system.log
            ;;
        5)
            echo "Searching for 'root' in /etc/passwd (case-insensitive) ... "
            grep -i "root" /etc/passwd
            ;;
```

```
        6)
            echo "Showing lines NOT containing 'success' in results.txt:"
            grep -v "success" results.txt
            ;;
        7)
            echo "Counting lines, words, characters in notes.txt:"
            wc notes.txt
            ;;
        8)
            echo "Counting only lines in data.txt:"
            wc -l data.txt
            ;;
        9)
            echo "Finding all .txt files in /home:"
            find /home -type f -name "*.txt"
            ;;
        10)
            echo "Searching for 'failed login' inside all .log files in /var/log:"
            grep -R "failed login" /var/log/*.log
            ;;
        11)
            echo "Exiting... Goodbye!"
            exit 0
            ;;
        *)
            echo "Invalid choice. Please select a number from 1 to 11."
            ;;
    esac

    echo
    echo "Press Enter to continue... "
    read
done
```

SET : 4

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo groupadd -g 2000 user_1

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo useradd -u 2000 -g 2000 -m user_1


┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo groupadd -g 2000 user_2
groupadd: GID '2000' already exists

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo groupadd -g 3000 user_2

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo useradd -u 3000 -g 3000 -m user_3
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ groups user_1
user_1 : user_1

┌──(MCA25CI2110018㉿kali)-[/]
└─$ groups user_3
user_3 : user_2
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo addgroup rach

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo usermod -aG rach user_1

┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo usermod -aG rach user_3
```

```
user_1:x:2000:
user_2:x:3000:
rach:x:1026:user_1,user_3
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo chage -M 30 user_1
```

```
┌──(MCA25CI2110018㉿kali)-[/]
└─$ sudo chage -m 5 -M 60 -W 5 user_3
```

SET : 5

```
echo "1. count the UPPERCASE and lowercase leter in file "
echo "2. display all word ending with ing"
echo "3. count and display number of word starting with A-M"
echo "4. count occurrences of a user provided pattern"
echo "5. sorted all word according to length (sort → large)"
echo "6. display a file sorted by line length in desc order"
echo "7. display each line in reversed word-by-word"
echo "8. display owner, group and permission of file"
echo "9. display whether file is directory, regular file,link or socket"
echo "10. display only line that contain only  3 words"
read -p "Enter your Choice :" ch
case $ch in
    1)
        read -p "enter file name to count UPERCASE and lowercase : " file
        if [ -e $file ]; then
            if [ -x $file ]; then
                echo "UPPERCASE : $(grep -o '[A-Z]' $file | wc -w) "
                echo "lowercase : $(grep -o '[a-z]' $file | wc -w)"
            else
                echo "file exist but not executable"
            fi
        else
            echo "file not exsist "
        fi;;
    2)
        read -p "enter file name to display all word ending with 'ing' : " file
        if [ -e $file ]; then
            if [ -x $file ]; then
```

```
            echo "count No of word staring with A-M : $(grep -o '\<[A-Ma-m][A-Za-z]*\>' dat
a.txt | wc -l)"
            echo "--Words--"
            echo "$(grep -o '\<[A-Ma-m][A-Za-z]*\>' data.txt)";;
    4)
        read -p "enter pattent to count : " pattent
        echo "$(grep -o "$pattent" data.txt | wc -l)";;
    5)
        echo "$(tr -s ' ' '\n' <data.txt | sort -n -k1,1| awk '{print length, $0}' | so
rt -n | cut -d" " -f2-)";;
    6)
        echo "$(awk '{print length($0), $0}' data.txt |sort -nr| cut -d" " -f2- )";;
    7)
        echo "$(awk '{ for(i=NF;i>0;i--) printf "%s ", $i; print "" }' data.txt )";;
    8)
        echo "$(stat -c "%a" data.txt)";;
    9)
        read -p "enter file name to check type : " file
        echo "$(stat -c '%F' $file)";;
    10)
        read -p "enter file name to display line that contain exactly 3 words : " f
        echo "$(awk 'NF==3' $f)"
        ;;
    *)
        echo "Invalid Choice";;
esac
```

SET : 6

```
echo "1. count the number of chars,words and lines"
echo "2. count the number of words exactly 5 & display them "
echo "3. count the number of words starting with 0 and end by *"
echo "4. count the number of occurrences of a perticular word"
echo "5. display all the words in file in ascending order"
echo "6. display the file in descending order"
echo "7. display the file in reverse order"
echo "8. display type of file"
echo "9. display the attributes of file "
echo "10. display all the line that length exactly 10"
read -p "enter your choice : " ch
case $ch in
    1)
        read -p "enter file name  : " fi
        if [ -e $fi ]; then
            if [ -x $fi ]; then
                wa=$(wc -w "$fi")
                la=$(wc -l "$fi")
                ca=$(wc -m "$fi")
                echo "No of Charactor : $ca "
                echo "No of Lines : $la"
                echo "No of Words : $wa"
            else
                echo "file exist but not executable "
            fi
        else
            echo "file not exist"
        fi;;
    2)
        echo "Display word excatly 5 length"
```

```
            echo "file not exist"
        fi;;
    2)
        echo "Display word excatly 5 length"
        echo "$(grep -o '\b[a-zA-Z]\{5\}\b' data.txt)"
        echo "No of words : $(grep -o '\b[a-zA-Z]\{5\}\b' data.txt | wc -l) ";;
    3)
        echo "$(grep -o '\<0[^ ]*\*\>' data.txt )";;
    4)
        read -p "enter word to fine : " wo
        echo "$(grep -iwo $wo data.txt | wc -l)";;
    5)
        echo "--- Sortted Words ---"
        echo "$(tr -s ' ' '\n' < data.txt | sort)";;
    6)
        echo "--file in desc---"
        echo "$(sort -r data.txt)";;
    7)
        echo "Display File In reverse "
        echo "$(tac data.txt)";;
    8)
        echo " File Type :$(stat -c %F data.txt) ";;
    9)
        echo "--file attribute--"
        echo "$(stat data.txt)";;
    10)
        echo "display line that exactly 10"
        echo "$(grep -E '^.{10}$' data.txt)";;
    *)
        echo "Invalid Choice ";;
esac
```

SET : 7

```
mca25ci2110018@kali:~$ sudo adduser trainer1

We trust you have received the usual lecture from the local Sys
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for mca25ci2110018:
Adding user `trainer1' ...
Adding new group `trainer1' (1016) ...
Adding new user `trainer1' (1004) with group `trainer1' ...
Creating home directory `/home/trainer1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for trainer1
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] Y
mca25ci2110018@kali:~$ sudo chage -d 0 trainer1
```

```
mca25ci2110018@kali:~$ sudo groupadd -g 5500 developer
mca25ci2110018@kali:~$ sudo useradd -m -g developer d1
mca25ci2110018@kali:~$ sudo useradd -m -g developer d2
mca25ci2110018@kali:~$ sudo useradd -m -g developer d3
mca25ci2110018@kali:~$ groups d1
d1 : developer
```

```
mca25ci2110018@kali:~$ sudo chage -m 120 d1
mca25ci2110018@kali:~$ sudo chage -m 120 d2
mca25ci2110018@kali:~$ sudo chage -m 120 d3
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chage -m 10 d1
mca25ci2110018@kali:~$ sudo chage -m 20 d2
```

```
mca25ci2110018@kali:~$ sudo usermod -L d3
mca25ci2110018@kali:~$ sudo usermod -U d3
usermod: unlocking the user's password would result in a passwordless account.
You should set a password with usermod -p to unlock this user's password.
```

```
mca25ci2110018@kali:~$ sudo groupadd progectgrp1
mca25ci2110018@kali:~$ sudo useradd -m mahesh1
mca25ci2110018@kali:~$ sudo useradd -m ramesh1
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo usermod -aG progectgrp1 mahesh1
mca25ci2110018@kali:~$ sudo usermod -aG progectgrp1 ramesh1
mca25ci2110018@kali:~$ sudo mkdir /project1
mca25ci2110018@kali:~$ sudo chown :progectgrp1 / project1
```

SET : 9

```
mca25ci2110018@kali:~$ touch examfile1.txt
mca25ci2110018@kali:~$ ls -ld examfile1.txt
-rw-r--r-- 1 mca25ci2110018 mca25ci2110018 0 Dec 12 10:25 examfile1.txt
mca25ci2110018@kali:~$ sudo chmod 640 examfile1.txt
[sudo] password for mca25ci2110018:
Sorry, try again.
[sudo] password for mca25ci2110018:
mca25ci2110018@kali:~$ ls -ld examfile1.txt
-rw-r----- 1 mca25ci2110018 mca25ci2110018 0 Dec 12 10:25 examfile1.txt
mca25ci2110018@kali:~$ sudo useradd examusr
mca25ci2110018@kali:~$ sudo group tramA1
sudo: group: command not found
mca25ci2110018@kali:~$ sudo groupadd tramA1
mca25ci2110018@kali:~$ sudo chown rxamusr:teamA1 examfile1.txt
chown: invalid user: 'rxamusr:teamA1'
mca25ci2110018@kali:~$ sudo chown examusr:teamA1 examfile1.txt
mca25ci2110018@kali:~$ ls -ld examfile1.txt
-rw-r----- 1 examusr teamA1 0 Dec 12 10:25 examfile1.txt
```

```
mca25ci2110018@kali:~$ sudo mkdir /public_exam1
mca25ci2110018@kali:~$ sudo ls -ld /public_exam1
drwxr-xr-x 2 root root 4096 Dec 12 10:29 /public_exam1
mca25ci2110018@kali:~$ sudo chmod 777 /public_exam1
mca25ci2110018@kali:~$ sudo ls -ld /public_exam1
drwxrwxrwx 2 root root 4096 Dec 12 10:29 /public_exam1
```

```
mca25ci2110018@kali:~$ sudo chmod 755 checkID.sh
chmod: cannot access 'checkID.sh': No such file or directory
mca25ci2110018@kali:~$ ./checkID.sh
bash: ./checkID.sh: No such file or directory
mca25ci2110018@kali:~$ sudo chmod 755 checkID.sh
chmod: cannot access 'checkID.sh': No such file or directory
mca25ci2110018@kali:~$ sudo chmod u+s checkID.sh
chmod: cannot access 'checkID.sh': No such file or directory
```

SET : 10

```
mca25ci2110018@kali:~$ sudo mkdir /home/student/my_file_cron_job1.txt
mca25ci2110018@kali:~$ crontab -e
no crontab for mca25ci2110018 - using an empty one

Select an editor.  To change later, run 'select-editor'.
  1. /bin/nano        <---- easiest
  2. /usr/bin/vim.basic
  3. /usr/bin/vim.tiny

Choose 1-3 [1]: 1
```

```
Choose 1-3 [1]: 1
crontab: installing new crontab
"/tmp/crontab.l1ZRZd/crontab":23: bad minute
errors in crontab file, can't install.
Do you want to retry the same edit? (y/n) y
crontab: installing new crontab
"/tmp/crontab.l1ZRZd/crontab":23: bad minute
errors in crontab file, can't install.
Do you want to retry the same edit? (y/n) y
crontab: installing new crontab
"/tmp/crontab.l1ZRZd/crontab":23: bad minute
errors in crontab file, can't install.
Do you want to retry the same edit? (y/n) n
crontab: edits left in /tmp/crontab.l1ZRZd/crontab
mca25ci2110018@kali:~$ crontab -e
no crontab for mca25ci2110018 - using an empty one
crontab: installing new crontab
mca25ci2110018@kali:~$ crontab -r
mca25ci2110018@kali:~$ crontab -l
no crontab for mca25ci2110018
```

```
# m h  dom mon dow   command
while ! test -f /home/student/my_first_cron_job.txt; do sleep 1s; done
* * 11,12,13 * * /usr/bin/date >> /home/student/my_first_cron_job.txt
```

SET : 11

```
mca25ci2110018@kali:~$ sudo useradd analyst1
useradd: user 'analyst1' already exists
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo useradd analyst11
mca25ci2110018@kali:~$ sudo chage -d 0 analyst11
mca25ci2110018@kali:~$ 2sudo groupadd -g 47000 sysops11
bash: 2sudo: command not found
mca25ci2110018@kali:~$ sudo groupadd -g 47000 sysops11
groupadd: GID '47000' already exists
mca25ci2110018@kali:~$ sudo groupadd -g 57000 sysops11
mca25ci2110018@kali:~$ cat /etc/group
```

```
analyst11:x:2036:
sysops11:x:57000:
```

```
mca25ci2110018@kali:~$ sudo useradd op1
mca25ci2110018@kali:~$ sudo useradd op2
mca25ci2110018@kali:~$ sudo useradd op3
mca25ci2110018@kali:~$ sudo usermod -aG sysops11 op1
mca25ci2110018@kali:~$ sudo usermod -aG sysops11 op2
mca25ci2110018@kali:~$ sudo usermod -aG sysops11 op3
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ date -d "+100 days" +%Y-%m-%d
2026-03-22
mca25ci2110018@kali:~$ sudo chage -E 2026--03-21 op1
mca25ci2110018@kali:~$ sudo chage -E 2026--03-21 op2
mca25ci2110018@kali:~$ sudo chage -E 2026--03-21 op3
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chage -M 7 op1
mca25ci2110018@kali:~$ sudo chage -M 14 op2
mca25ci2110018@kali:~$ sudo chage -l op1
Last password change                                    : Dec 12, 2025
Password expires                                        : Dec 19, 2025
Password inactive                                       : never
Account expires                                         : Mar 21, 2026
Minimum number of days between password change          : 0
Maximum number of days between password change          : 7
Number of days of warning before password expires       : 7
mca25ci2110018@kali:~$
```

```
Last password change                                    : Dec 12, 2025
Password expires                                        : Dec 26, 2025
Password inactive                                       : never
Account expires                                         : Mar 21, 2026
Minimum number of days between password change          : 0
Maximum number of days between password change          : 14
Number of days of warning before password expires       : 7
```

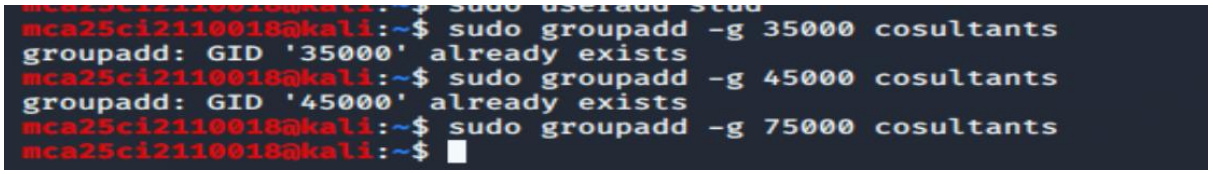
```
mca25ci2110018@kali:~$ sudo mkdir/ exam_area1
sudo: mkdir/: command not found
mca25ci2110018@kali:~$ sudo mkdir /exam_area1
mca25ci2110018@kali:~$ sudo chmod 777 /exam_area1
mca25ci2110018@kali:~$ ls -ld /exam_area1
drwxrwxrwx 2 root root 4096 Dec 12 10:55 /exam_area1
mca25ci2110018@kali:~$ sudo chmod =t /exam_area1
mca25ci2110018@kali:~$
```

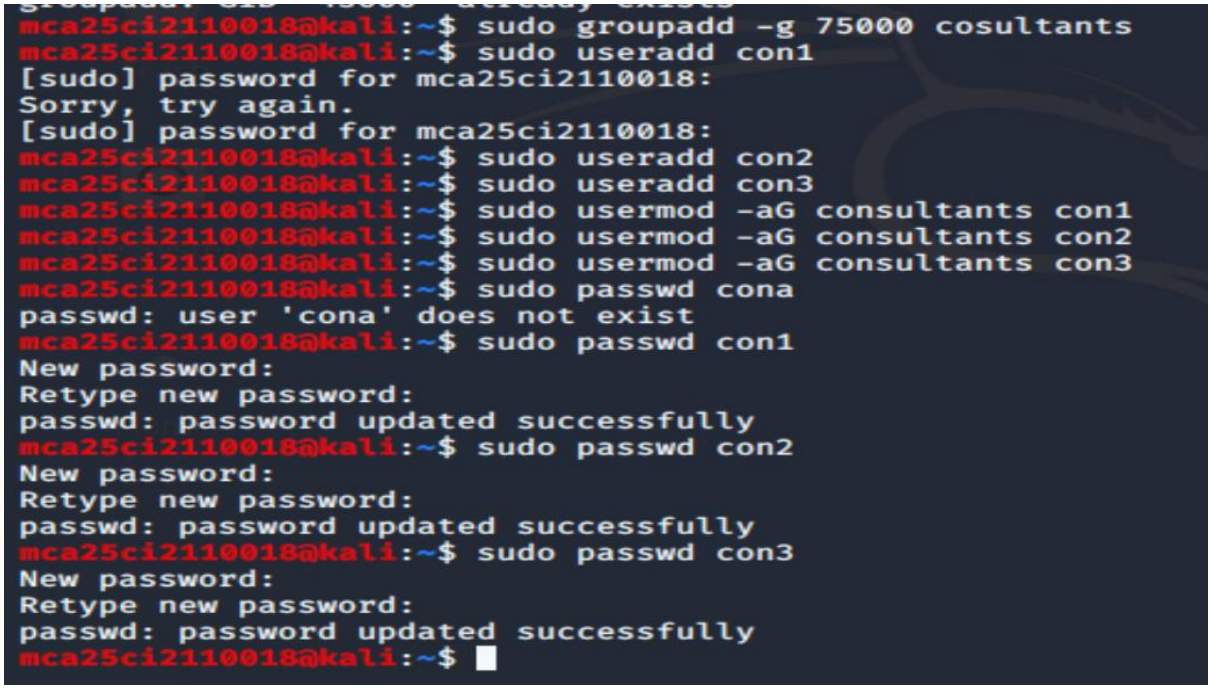
SET : 12

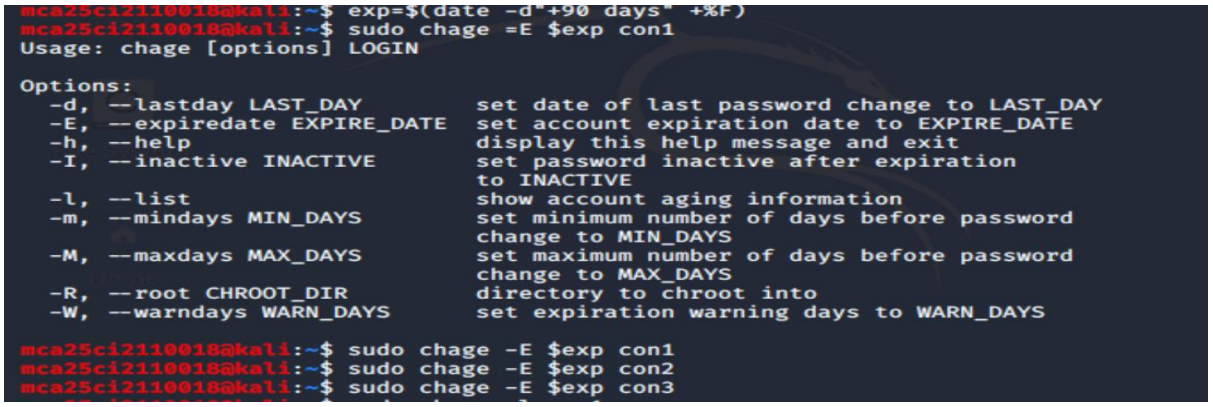
```
echo ""
echo "========= SET 12 MENU ========="
echo "1. Count blank, non-blank, and comment lines"
echo "2. Display words that contain only digits"
echo "3. Words that start and end with same letter"
echo "4. Count occurrences of a specific line"
echo "5. All words sorted in reverse dictionary order"
echo "6. Display file contents in reverse line order"
echo "7. Show last modification date and creation time"
echo "8. Check if file is empty and show file type"
echo "9. Display lines with length between 5 and 12"
echo "10. Exit"
echo "=================================="
echo -n "Enter your choice: "
read ch

case $ch in

1)
    echo "Blank lines: $(grep -c '^$' "$FILE")"
    echo "Non-blank lines: $(grep -cv '^$' "$FILE")"
    echo "Comment lines (#): $(grep -c '^#' "$FILE")"
    ;;

2)
    echo "Words with only digits:"
    grep -oE '[0-9]+' "$FILE"
    ;;

3)
    echo "Words that start and end with same letter:"
    grep -oE '\b([a-zA-Z])([a-zA-Z0-9_]*\1)\b' "$FILE"
    ;;

4)
    echo -n "Enter exact line to count: "
    read line
    echo "Occurrences: $(grep -xFe "$line" "$FILE" | wc -l)"
    ;;

5)
    echo "Words sorted in reverse dictionary order:"
    grep -oE '\w+' "$FILE" | sort -r
    ;;

6)
    echo "File contents in reverse line order:"
    tac "$FILE"
```

```
7)
    echo "Last modification date:"
    stat -c %y "$FILE"

    echo "Creation time (Birth time):"
    stat -c %w "$FILE"
    ;;

8)
    if [ ! -s "$FILE" ]; then
        echo "File is empty"
    else
        echo "File is NOT empty"
    fi

    echo "File type:"
    file "$FILE"
    ;;

9)
    echo "Lines with length between 5 and 12 characters:"
    awk 'length($0) >= 5 && length($0) <= 12' "$FILE"
    ;;

10)
    echo "Exiting..."
    exit 0
    ;;

*)
    echo "Invalid option. Try again."
    ;;
esac
```

SET : 13


mca25ci2110018@kali:~$ sudo groupadd -g 35000 cosultants
groupadd: GID '35000' already exists
mca25ci2110018@kali:~$ sudo groupadd -g 45000 cosultants
groupadd: GID '45000' already exists
mca25ci2110018@kali:~$ sudo groupadd -g 75000 cosultants
mca25ci2110018@kali:~$


mca25ci2110018@kali:~$ sudo groupadd -g 75000 cosultants
mca25ci2110018@kali:~$ sudo useradd con1
[sudo] password for mca25ci2110018:
Sorry, try again.
[sudo] password for mca25ci2110018:
mca25ci2110018@kali:~$ sudo useradd con2
mca25ci2110018@kali:~$ sudo useradd con3
mca25ci2110018@kali:~$ sudo usermod -aG consultants con1
mca25ci2110018@kali:~$ sudo usermod -aG consultants con2
mca25ci2110018@kali:~$ sudo usermod -aG consultants con3
mca25ci2110018@kali:~$ sudo passwd cona
passwd: user 'cona' does not exist
mca25ci2110018@kali:~$ sudo passwd con1
New password:
Retype new password:
passwd: password updated successfully
mca25ci2110018@kali:~$ sudo passwd con2
New password:
Retype new password:
passwd: password updated successfully
mca25ci2110018@kali:~$ sudo passwd con3
New password:
Retype new password:
passwd: password updated successfully
mca25ci2110018@kali:~$


mca25ci2110018@kali:~$ exp=$(date -d"+90 days" +%F)
mca25ci2110018@kali:~$ sudo chage =E $exp con1
Usage: chage [options] LOGIN
Options:
-d, --lastday LAST_DAY set date of last password change to LAST_DAY
-E, --expiredate EXPIRE_DATE set account expiration date to EXPIRE_DATE
-h, --help display this help message and exit
-I, --inactive INACTIVE set password inactive after expiration
to INACTIVE
-l, --list show account aging information
-m, --mindays MIN_DAYS set minimum number of days before password
change to MIN_DAYS
-M, --maxdays MAX_DAYS set maximum number of days before password
change to MAX_DAYS
-R, --root CHROOT_DIR directory to chroot into
-W, --warndays WARN_DAYS set expiration warning days to WARN_DAYS
mca25ci2110018@kali:~$ sudo chage -E $exp con1
mca25ci2110018@kali:~$ sudo chage -E $exp con2
mca25ci2110018@kali:~$ sudo chage -E $exp con3

```
mca25ci2110018@kali:~$ sudo chage -l con1
Last password change                                    : Dec 12, 2025
Password expires                                        : Jan 11, 2026
Password inactive                                       : never
Account expires                                         : Mar 12, 2026
Minimum number of days between password change          : 0
Maximum number of days between password change          : 30
Number of days of warning before password expires       : 7
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chage -M 15 con2
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chage -d 0 con1
mca25ci2110018@kali:~$ sudo chage -d 0 con2
mca25ci2110018@kali:~$ sudo chage -d 0 con3
```

SET : 14

```
mca25ci2110018@kali:~$ sudo useradd -s /bin/bash analyst14
mca25ci2110018@kali:~$ sudo passwd analyst14
New password:
Retype new password:
passwd: password updated successfully
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo groupadd -g 85000 rearch1
mca25ci2110018@kali:~$ getent group rearcg1
mca25ci2110018@kali:~$ getent group rearch1
rearch1:x:85000:
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chage -E $exp analyst14
mca25ci2110018@kali:~$ sudo chage -l analyst14
Last password change                                    : Dec 12, 2025
Password expires                                        : Jan 11, 2026
Password inactive                                       : never
Account expires                                         : Mar 12, 2026
Minimum number of days between password change          : 0
Maximum number of days between password change          : 30
Number of days of warning before password expires       : 7
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ for u in $(getent group rearch | awk -F: '{print $4}' |tr',''');
> sudo chage -M 45 "$u" done
bash: syntax error near unexpected token `sudo'
mca25ci2110018@kali:~$
```

SET : 15

```
echo "1. count the UPPERCASE and lowercase leter in file "
echo "2. display all word ending with ing"
echo "3. count and display number of word starting with A-M"
echo "4. count occurrences of a user provided pattern"
echo "5. sorted all word according to length (sort → large)"
echo "6. display a file sorted by line length in desc order"
echo "7. display each line in reversed word-by-word"
echo "8. display owner, group and permission of file"
echo "9. display whether file is directory, regular file,link or socket"
echo "10. display only line that contain only  3 words"
read -p "Enter your Choice :" ch
case $ch in

    1)
            read -p "enter file name to count UPERCASE and lowercase : " file
            if [ -e $file ]; then
                    if [ -x $file ]; then
                            echo "UPPERCASE : $(grep -o '[A-Z]' $file | wc -w) "
                            echo "lowercase : $(grep -o '[a-z]' $file | wc -w)"
                    else
                            echo "file exist but not executable"

                    fi
            else
                    echo "file not exsist "
            fi;;

    2)
            read -p "enter file name to display all word ending with 'ing' : " file
            if [ -e $file ]; then
                    if [ -x $file ]; then
```

```
            echo "count No of word staring with A-M : $(grep -o '\<[A-Ma-m][A-Za-z]*\>' dat
a.txt | wc -l)"
            echo "--Words--"
            echo "$(grep -o '\<[A-Ma-m][A-Za-z]*\>' data.txt)";;

    4)
            read -p "enter pattent to count : " pattent

            echo "$(grep -o "$pattent" data.txt | wc -l)";;
    5)
            echo "$(tr -s ' ' '\n' <data.txt | sort -n -k1,1| awk '{print length, $0}' | so
rt -n | cut -d" " -f2-)";;
    6)
            echo "$(awk '{print length($0), $0}' data.txt |sort -nr| cut -d" " -f2- )";;

    7)
            echo "$(awk '{ for(i=NF;i>0;i--) printf "%s ", $i; print "" }' data.txt )";;

    8)
            echo "$(stat -c "%a" data.txt)";;

    9)
            read -p "enter file name to check type : " file

            echo "$(stat -c '%F' $file)";;

    10)
            read -p "enter file name to display line that contain exactly 3 words : " f
            echo "$(awk 'NF==3' $f)"
            ;;

    *)
            echo "Invalid Choice";;
esac
```

SET : 16

```
mca25ci2110018@kali:~$ sudo mkdir /home/techdocs11
mca25ci2110018@kali:~$ ls -ld /home/techdocs11
drwxr-xr-x 2 root root 4096 Dec 12 23:13 /home/techdocs11
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chown :techdocs11 /hoem/techdocs11
chown: cannot access '/hoem/techdocs11': No such file or directory
mca25ci2110018@kali:~$ sudo chown :techdocs11 /home/techdocs11
mca25ci2110018@kali:~$ ls -ld /home/techdocs11
drwxr-xr-x 2 root techdocs11 4096 Dec 12 23:13 /home/techdocs11
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ id tech1
uid=2019(tech1) gid=2019(tech1) groups=2019(tech1),47001(techdocs1)
mca25ci2110018@kali:~$ sudo -tech1
usage: sudo -h | -K | -k | -V
usage: sudo -v [-AknS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-AknS] [-g group] [-h host] [-p prompt] [-U user] [-u user] [command]
usage: sudo [-AbEHknPS] [-r role] [-t type] [-C num] [-g group] [-h host] [-p prompt] [-T
            timeout] [-u user] [VAR=value] [-i|-s] [<command>]
usage: sudo -e [-AknS] [-r role] [-t type] [-C num] [-g group] [-h host] [-p prompt] [-T
            timeout] [-u user] file ...
mca25ci2110018@kali:~$ sudo su tech1
$ cd /home/techdocs11
$ touch textfile_bu_tech1
touch: cannot touch 'textfile_bu_tech1': Permission denied
$
```

```
mca25ci2110018@kali:~$ sudo chmod 2770 /home/techdocs11
mca25ci2110018@kali:~$ ls -ld /home/techdocs11
drwxrws--- 2 root techdocs11 4096 Dec 12 23:13 /home/techdocs11
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo useradd t1
mca25ci2110018@kali:~$ sudo useradd t2
mca25ci2110018@kali:~$ sudo usermod -aG techdocs11 t1
mca25ci2110018@kali:~$ sudo usermod -aG techdocs11 t2
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo su t1
$ cd /home/techdocs11
$ touch f1.txt
$ echo "Hello" > f1.txt
$ exit
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo su t2
$ cd /home/techdocs11
$ touch f2.txt
$ exit
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo useradd database11
mca25ci2110018@kali:~$ sudo su database11
$ cd /home/techdocs11
sh: 1: cd: can't cd to /home/techdocs11
$ touch fil1.txt
touch: cannot touch 'fil1.txt': Permission denied
$ exyt
sh: 3: exyt: not found
$ exit
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo nano /etc/login.defs
```

```
UMASK           022
```

```
UMASK           007
```

SET : 17

```
mca25ci2110018@kali:~$ sudo nano /etc/login.defs
mca25ci2110018@kali:~$ touch access_log1.txt
mca25ci2110018@kali:~$ chmod 740 access_log1.txt
mca25ci2110018@kali:~$ ls -ld access_log1.txt
-rwxr----- 1 mca25ci2110018 mca25ci2110018 0 Dec 12 23:29 access_log1.txt
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ chmod 740 access_log1.txt
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld access_log1.txt
-rwxr----- 1 mca25ci2110018 mca25ci2110018 0 Dec 12 23:30 access_log1.txt
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo useradd logadmin1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chown logadmin1:opsteam1 access_log1.txt
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld access_log1.txt
-rwxr----- 1 logadmin1 opsteam1 0 Dec 12 23:30 access_log1.txt
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ ls -ld access_log1.txt
-rwxr----- 1 logadmin1 opsteam1 0 Dec 12 23:30 access_log1.txt
mca25ci2110018@kali:~$ sudo chmod g+w access_log1.txt
mca25ci2110018@kali:~$ ls -ld access_log1.txt
-rwxrw---- 1 logadmin1 opsteam1 0 Dec 12 23:30 access_log1.txt
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo mkdir /exam_share1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /exam_share1
drwxr-xr-x 2 root root 4096 Dec 12 23:37 /exam_share1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chmod 777 /exam_share1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /exam_share1
drwxrwxrwx 2 root root 4096 Dec 12 23:37 /exam_share1
mca25ci2110018@kali:~$
```

```
echo "UID: $(id -u)"
echo "uID: $(id -g)"
~
~
~
~
~
~
```

```
[sudo] password for mca25ci2110018:
chmod: cannot access 'usercheck.sh': No such file or directory
mca25ci2110018@kali:~$ sudo chmod u+s usercheck.sh
chmod: cannot access 'usercheck.sh': No such file or directory
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld userchech,sh
ls: cannot access 'userchech,sh': No such file or directory
mca25ci2110018@kali:~$
```

SET : 18

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo useradd -m -s /bin/bash/ examu1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo groupadd team11
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo usermod -aG team11 examu1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ groups examu1
examu1 : examu1 team11
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ sudo chmod 740 /secure
mca25ci2110018@kali:~$ ld -ld /secure
ld: cannot find -ld
ld: cannot find /secure: file format not recognized
mca25ci2110018@kali:~$ ls -ld /secure
drwxr----- 2 root root 4096 Dec 11 11:20 /secure
mca25ci2110018@kali:~$
```

```
45 23 * * 6 echo "system wii reboot soon" >> /var/log/reboot_notice.log
```

SET : 20

```
echo "1. count .txt file ctrrent directory"
echo "2. modified file in last 24 hours"
echo "3. count file with read + write permission for owner"
echo "4. show 5 file most consuming disk space"
echo "5. display newest directory in current location"
echo "6. display sub dir under home (only one deep)"
echo "7. display file who content 'test' in current dir"
echo "8. list all file incurrecnt dir not executable"
echo "9. display total no line in all .sh file"
echo "10. exit"
read -p "enter your choice : " ch
case $ch in
        1)
                echo "Total file with .txt : $(ls -la *.txt | wc -l) ";;
        2)
                ;;
        3)
                echo "count file $(ls -l | grep '^-\(rw\)'| wc -l )";;
        4)
                echo "--show file---"
                echo "$(du -ah . |sort -rh| head -n 5)";;
        5)
                echo "--newest dir--"
                echo "$(ls -td */ |head -1)";;
        6)
                echo "--show sub dir--"
                echo "$(ls -d /home/*/)";;
        7)
                echo "$(ls *test*)";;
                                                                25,2-16       Top
```

```
        7)
                echo "$(ls *test*)";;
        8)
                echo "display not executable file"
                echo "$(ls -l | grep '^-..[^x]')";;
        9)
                echo "$(wc -l *.sh |tail -1)";;
        10)
                echo "exit ..."
                exit
                ;;
        *)
                echo "invalid choice";;
esac
                                                                33,2-16       Bot
```

SET : 21

```
mca25ci2110018@kali:~$ touch project_data1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ chmod 604 project_data1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld project_data1
-rw----r-- 1 mca25ci2110018 mca25ci2110018 0 Dec 12 23:51 project_data1
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo useradd projectu1
mca25ci2110018@kali:~$ sudo groupadd devteam1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chown projectu1:devteam1 project_data1.txt
chown: cannot access 'project_data1.txt': No such file or directory
mca25ci2110018@kali:~$ sudo chown projectu1:devteam1 project_data1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld project_data1
-rw----r-- 1 projectu1 devteam1 0 Dec 12 23:51 project_data1
mca25ci2110018@kali:~$
```

```
mca25ci2110018@kali:~$ ls -ld project_data1
-rwx---r-- 1 projectu1 devteam1 0 Dec 12 23:51 project_data1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo mkdir /team_public11
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /team_public11
drwxr-xr-x 2 root root 4096 Dec 12 23:55 /team_public11
```

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chmod 770 /team_public11
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /team__public11
ls: cannot access '/team__public11': No such file or directory
mca25ci2110018@kali:~$ ls -ld /team_public11
drwxrwx--- 2 root root 4096 Dec 12 23:55 /team_public11
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chmod +t /team_public11
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /team_public11
drwxrwx--T 2 root root 4096 Dec 12 23:55 /team_public11
mca25ci2110018@kali:~$
```

```
echo "current user :: $(whoami)"
echo "Home direcory:: $HOME"
~
```

```
mca25ci2110018@kali:~$ touch showinfo.sh
```

```
mca25ci2110018@kali:~$ sudo chmod u+s showinfo.sh
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /team_public11
drwxrwx--T 2 root root 4096 Dec 12 23:55 /team_public11
```

```
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ sudo chmod g+s /shareddev1
mca25ci2110018@kali:~$
mca25ci2110018@kali:~$ ls -ld /shareddev1
drwxr-sr-x 2 root root 4096 Dec 13 00:01 /shareddev1
mca25ci2110018@kali:~$
```

SET : 23

```
echo "1. No of oddinary file"
echo "2. no of sub dir in cur dir"
echo "3. no of executable file "
echo "4. five largest file "
echo "5. last modification file in curr"
echo "6. display all sub in parent dir"
echo "7. display all subdir in cur dir"
echo "8. display all executable file in cur dir"
echo "9. display all file in cur dir with hidden"
echo "10.exit"
read -p "enter your choice : " ch
case $ch in
        1)
                echo "total ordinary file : $(ls -l | grep '^-' | wc -l)";;
        2)
                echo "total sub dir : $(ls -l | grep '^d'| wc -l)";;

        3)
                echo "total executable file : $(ls -l | grep '^-..x' |wc -l)";;
        4)
                echo "five largest file--"
                echo "$(ls -lS | grep '^-'| head -5)";;
        5)
                echo "Last modify file : $(ls -t |head -1)";;
        6)
                echo "$(ls -d ../*/)";;
        7)
                echo "$(ls -d */)";;
        8)
                echo "display executable file"
                                                                25,3-10       Top
```

```
        8)
                echo "display executable file"
                echo "$(ls -F | grep '*$')";;
        9)
                echo "$(ls -la)";;
        10)
                echo "byee ... "
                exit;;

        *)
                echo "Invalid choice";;
esac
```