

Assignment-1

1. In your home directory, create sets of empty practice files Create 6 files with names of the forms on songsX.mp3. Create 6 files with names of the form snapX.jpg. Create 6 files with names of the form filmX.avi. In each set, replace X with the numbers 1 through 6.

The screenshot shows a desktop environment for CentOS. The top bar includes icons for Home, Applications, Places, Terminal, and system status. The terminal window title is "centOS". The user is logged in as "sachin" at the command line. The terminal history shows the following commands:

```
[sachin@localhost ~]$ touch songsX.mp3
[sachin@localhost ~]$ ls
Desktop Downloads Pictures songsX.mp3 Videos
Documents Music Public Templates
[sachin@localhost ~]$ touch songs1.mp3
[sachin@localhost ~]$ touch songs2.mp3
[sachin@localhost ~]$ touch songs3.mp3
[sachin@localhost ~]$ touch songs4.mp3
[sachin@localhost ~]$ touch songs5.mp3
[sachin@localhost ~]$ touch songs6.mp3
[sachin@localhost ~]$ ls
Desktop Music songs1.mp3 songs4.mp3 songsX.mp3
Documents Pictures songs2.mp3 songs5.mp3 Templates
Downloads Public songs3.mp3 songs6.mp3 Videos
[sachin@localhost ~]$ touch snap{1..6}.jpg
[sachin@localhost ~]$ ls
Desktop Downloads Pictures snap1.jpg snap3.jpg snap5.jpg songs1.mp3 songs3.mp3 songs5.mp3 songsX.mp3 Videos
Documents Music Public snap2.jpg snap4.jpg snap6.jpg songs2.mp3 songs4.mp3 songs6.mp3 Templates
[sachin@localhost ~]$ touch film{1..6}.avi
[sachin@localhost ~]$ ls
Desktop film1.avi film4.avi Music snap1.jpg snap4.jpg songs1.mp3 songs4.mp3 songsX.mp3
Documents film2.avi film5.avi Pictures snap2.jpg snap5.jpg songs2.mp3 songs5.mp3 Templates
Downloads film3.avi film6.avi Public snap3.jpg snap6.jpg songs3.mp3 songs6.mp3 Videos
[sachin@localhost ~]$
```

The terminal window has a scroll bar on the right side. The bottom bar shows the session name "sachin@localhost" and several small icons.

2. From your home directory,

Move songs file into your Music subdirectory.

Move snap file into your Pictures subdirectory.

Move your movie files into Videos subdirectory

The screenshot shows a desktop environment with a window titled "centOS". The window contains a terminal session for the user "sachin" at the host "localhost" in the directory "~/.Videos". The terminal window includes a menu bar with File, Edit, View, Search, Terminal, and Help, and a toolbar with Applications, Places, and Terminal. The status bar shows the date and time as "Wed 11:57". The terminal output shows the user navigating the file system and moving files between Desktop, Documents, Downloads, Music, Pictures, Public, and Videos directories.

```
[sachin@localhost ~]$ ls
Desktop  film1.avi  film4.avi  Music      snap1.jpg  snap4.jpg  songs1.mp3  songs4.mp3  songsX.mp3
Documents film2.avi  film5.avi  Pictures   snap2.jpg  snap5.jpg  songs2.mp3  songs5.mp3  Templates
Downloads film3.avi  film6.avi  Public     snap3.jpg  snap6.jpg  songs3.mp3  songs6.mp3  Videos
[sachin@localhost ~]$ mv songs{1..6}.mp3 /home/sachin/Music
[sachin@localhost ~]$ mv snap{1..6}.jpg /home/sachin/Pictures
[sachin@localhost ~]$ mv film{1..6}.avi /home/sachin/Videos
[sachin@localhost ~]$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  songsX.mp3  Templates  Videos
[sachin@localhost ~]$ cd Music
[sachin@localhost Music]$ ls
songs1.mp3  songs2.mp3  songs3.mp3  songs4.mp3  songs5.mp3  songs6.mp3
[sachin@localhost Music]$ cd Pictures
bash: cd: Pictures: No such file or directory
[sachin@localhost Music]$ cd
[sachin@localhost ~]$ cd Pictures
[sachin@localhost Pictures]$
[sachin@localhost Pictures]$ ls
snap1.jpg  snap2.jpg  snap3.jpg  snap4.jpg  snap5.jpg  snap6.jpg
[sachin@localhost Pictures]$ cd
[sachin@localhost ~]$ cd Videos
[sachin@localhost Videos]$ ls
film1.avi  film2.avi  film3.avi  film4.avi  film5.avi  film6.avi
```

3. Create 3 subdirectories for organizing your files named friends,family,work
4. Copy files (all types) containing numbers 1 and 2 to the friends folder.
Copy files (all types) containing numbers 3 and 4 to the family folder.
Copy files (all types) containing numbers 5 and 6 to the work folder.

The screenshot shows a desktop environment with a window titled "centOS". The window contains a terminal session for the user "sachin". The terminal shows the following command-line history:

```
[sachin@localhost ~]$ ls
Desktop  Downloads  friends  Pictures  songsX.mp3  Videos
Documents  family    Music     Public    Templates   work
[sachin@localhost ~]$ cd family
[sachin@localhost family]$ ls
film3.avi  film4.avi  snap3.jpg  snap4.jpg  songs3.mp3  songs4.mp3
[sachin@localhost family]$ cd
[sachin@localhost ~]$ cd friends
[sachin@localhost friends]$ ls
film1.avi  film2.avi  snap1.jpg  snap2.jpg  songs1.mp3  songs2.mp3
[sachin@localhost friends]$ cd
[sachin@localhost ~]$ cd Videos
[sachin@localhost Videos]$ ls
film1.avi  film2.avi  film3.avi  film4.avi  film5.avi  film6.avi
```

5. Delete all files in family subdirectory.

The screenshot shows a desktop environment with a window titled "centOS". The window contains a terminal session. The terminal title bar says "sachin@localhost:~/family". The menu bar includes "File Edit View Search Terminal Help". The desktop icons include Home, Applications, Places, and Terminal. The system tray shows the date "Wed 12:37" and other status icons. The terminal window displays the following command-line session:

```
[sachin@localhost ~]$ ls
Desktop  Documents  Downloads  family  friends  Music  Pictures  Public  songsX.mp3  Templates  Videos  work
[sachin@localhost ~]$ cd family
[sachin@localhost family]$ ls
film3.avi  film4.avi  snap3.jpg  snap4.jpg  songs3.mp3  songs4.mp3
[sachin@localhost family]$ rm songs{3..4}.mp3
[sachin@localhost family]$ rm snap{3..4}.jpg
[sachin@localhost family]$ rm film{3..4}.avi
[sachin@localhost family]$ ls
[sachin@localhost family]$
```

6. Delete friends subdirectory

The screenshot shows a desktop environment with a window titled "centOS". The window contains a terminal session. The terminal title bar says "sachin@localhost:~/family". The menu bar includes "File Edit View Search Terminal Help". The desktop icons include Home, Applications, Places, and Terminal. The system tray shows the date "Wed 12:37" and other status icons.

```
[sachin@localhost ~]$ ls
Desktop  Documents  Downloads  family  friends  Music  Pictures  Public  songsX.mp3  Templates  Videos  work
[sachin@localhost ~]$ cd family
[sachin@localhost family]$ ls
film3.avi  film4.avi  snap3.jpg  snap4.jpg  songs3.mp3  songs4.mp3
[sachin@localhost family]$ rm songs{3..4}.mp3
[sachin@localhost family]$ rm snap{3..4}.jpg
[sachin@localhost family]$ rm film{3..4}.avi
[sachin@localhost family]$ ls
[sachin@localhost family]$
```

7. rename all snap files in work directory to new name photoX.jpg

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal window is titled "sachin@localhost:~/work". The terminal content shows the following command-line session:

```
[sachin@localhost ~]$ ls
Desktop  Documents  Downloads  family  Music  Pictures  Public  songsX.mp3  Templates  Videos  work
[sachin@localhost ~]$ cd work
[sachin@localhost work]$ ls
film5.avi  film6.avi  snap5.jpg  snap6.jpg  songs5.mp3  songs6.mp3
[sachin@localhost work]$ mv snap5.jpg photo5.jpg
[sachin@localhost work]$ mv snap6.jpg photo6.jpg
[sachin@localhost work]$ ls
film5.avi  film6.avi  photo5.jpg  photo6.jpg  songs5.mp3  songs6.mp3
[sachin@localhost work]$ █
```

Assignment-2

1. Create user tom , bob , sam , prince

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal session is running under the user "sachin" at the command line "sachin@localhost:/home". The terminal window displays the following command-line session:

```
[sachin@localhost home]$ cd /home
[sachin@localhost home]$ sudo useradd tom
[sudo] password for sachin:
[sachin@localhost home]$ sudo useradd bob
[sachin@localhost home]$ sudo useradd sam
[sachin@localhost home]$ sudo useradd prince
[sachin@localhost home]$ tail -n 3 /etc/passwd
bob:x:1002:1002::/home/bob:/bin/bash
sam:x:1003:1003::/home/sam:/bin/bash
prince:x:1004:1004::/home/prince:/bin/bash
[sachin@localhost home]$ █
```

2. Create Group dac , dbda ,ditiss

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal window title is "sachin@localhost:/home". The terminal window contains the following command-line session:

```
[sachin@localhost home]$ cd /home
[sachin@localhost home]$ ls
bob prince sachin sam tom
[sachin@localhost home]$ tail /etc/group
stapdev:x:158:
tcpdump:x:72:
sachin:x:1000:sachin
dac:x:1005:
dbda:x:1006:
ditiss:x:1007:
tom:x:1002:
bob:x:1003:
prince:x:1004:
sam:x:1008:
[sachin@localhost home]$ █
```

3. add user Tom in dac, Bob in dbda, Sam in ditiss

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal window title is "sachin@localhost:/tmp/iacsd". The terminal content shows the following command-line session:

```
[sachin@localhost iacsd]$ sudo usermod -aG dac tom
[sudo] password for sachin:
[sachin@localhost iacsd]$ sudo usermod -aG dbda bob
[sachin@localhost iacsd]$ sudo usermod -aG ditiss sam
[sachin@localhost iacsd]$ tail /etc/group
stapdev:x:158:
tcpdump:x:72:
sachin:x:1000:sachin
dac:x:1005:tom
dbda:x:1006:bob
ditiss:x:1007:sam
tom:x:1002:
bob:x:1003:
prince:x:1004:
sam:x:1008:
[sachin@localhost iacsd]$
```

4. login as prince and create iacsd directory in /tmp and create 4 files in iacsd with name project-1 project-2 upto 4

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal window title is "prince@localhost:/tmp/iacsd". The terminal content shows the following command-line session:

```
[prince@localhost tmp]$ cd /home
[prince@localhost home]$ ls
bob prince sachin sam tom
[prince@localhost home]$ cd ..
[prince@localhost /]$ ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
[prince@localhost /]$ cd tmp
[prince@localhost tmp]$ cd iacsd
[prince@localhost iacsd]$ ls
project-1 project-2 project-3 project-4
[prince@localhost iacsd]$
```

5. assign permissions to project files as below

Project-1 – tom should be owner of this

Project-2 – dac should be owner of this

Project-3 --- others should not have any permission but tom should have rw access

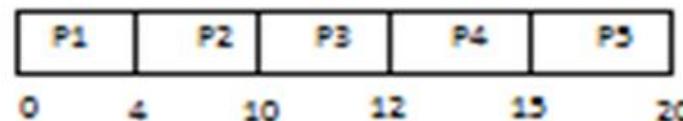
Project-4 – dbda group should have rwx permissions

Assignment-3

1. FCFS SCHEDULING-

Process Id	Arrival time	Burst time
P1	0	4
P2	2	6
P3	3	2
P4	6	1
P5	4	3

Gnatt Chart:-



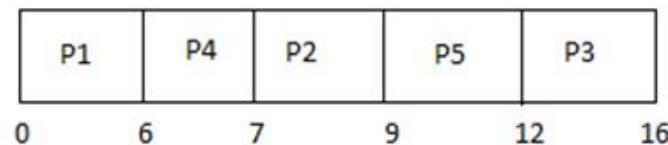
$$\text{Average waiting time} = (0+2+7+9+8)/5$$

$$= 26/5 = 5.2$$

2. SJF non-preemptive

Process Id	Arrival time	Burst time
P1	0	6
P2	3	2
P3	4	4
P4	5	1
P5	2	3

Gnatt Chart:-

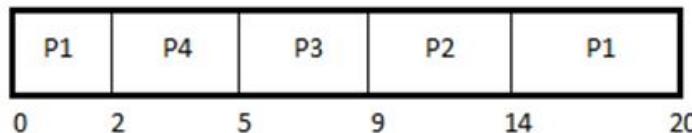


$$\begin{aligned}\text{Average waiting time} &= (0+4+8+1+7)/5 \\ &= 20/4 = 4\end{aligned}$$

3) SJF preemptive -SRTF

Process Id	Arrival time	Burst time
P1	4	6
P2	3	5
P3	2	4
P4	1	3
P5	0	2

Gnatt Chart:-



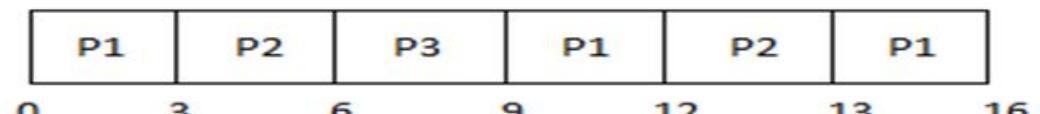
$$\begin{aligned}
 \text{Average waiting time} &= (14-4)+(9-3)+(5-2)+(2-1)+0/5 \\
 &= (10+6+3+1+0)/5 \\
 &= 20/5 = 4
 \end{aligned}$$

4) Round Robin

Q=3

Process Id	Arrival time	Burst time
P1	0	9
P2	1	4
P3	2	3

Gnatt Chart:-



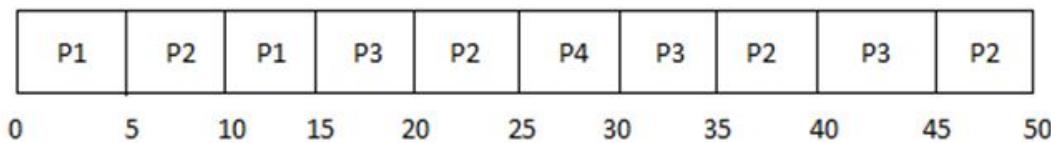
$$\text{Average waiting time} = \frac{(13-6)+(12-1-3)+(6-2)}{3}$$

$$= \frac{7+8+4}{3} = \frac{19}{3} = 6.33$$

Q = 5

Process Id	Arrival time	Burst time
P1	0	10
P2	5	20
P3	10	15
P4	15	5

Gnatt Chart:-



$$\text{Average waiting time} = (10-5-0)+(45-15-5)+(40-10-10)+(25-15)$$

$$= 60/4$$

$$= 15$$

Assignment-4

1) Write a shell script to calculate simple interest.

The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title bar reads "File: si.sh". The terminal content is a shell script for calculating simple interest:

```
#!/bin//bash
echo "Enter Principal Amount, Enter rate of interest and time"
read -p "Enter value of Principal=" p
read -p "Enter value of Rate of interest=" r
read -p "Enter time for which interest to be calculated=" n
si=`echo "($p*$n*$r)/100" | bc`
echo "si=$si"
```

The terminal window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". It also shows the user's session information: "sachin@localhost:~". The bottom of the window contains a series of keyboard shortcuts:

G Get Help	O WriteOut	R Read File	Y Prev Page	K Cut Text	C Cur Pos
X Exit	J Justify	W Where Is	V Next Page	U UnCut Text	T To Spell

The bottom status bar shows the terminal prompt again: "sachin@localhost:~".

A screenshot of a Linux desktop environment, likely Kali Linux, showing a terminal window. The terminal window title is "centOS". The command prompt is "sachin@localhost:~". The terminal content shows the execution of a shell script "si.sh" which calculates Simple Interest. The user enters the principal amount as 10000, the rate of interest as 5, and the time period as 3 years. The calculated Simple Interest (si) is 1500.

```
[sachin@localhost ~]$ ./si.sh
Enter Principal Amount,Enter rate of interest and time
Enter value of Principal=10000
Enter value of Rate of interest=5
Enter time for which interest to be calculated=3
si=1500
[sachin@localhost ~]$
```

2) Write a shell script to calculate salary from given basic.

Salary = basic + dp + da +hra +ma -pf, basic – to be taken as input, dp - 50 % of basic, da - 35 % of (basic + dp)

hra - 8 % of (basic + dp), ma - 3 % of (basic + dp), pf - 10% of (basic + dp).

Home x centOS x

Applications Places Terminal Sun 18:24

sachin@localhost:~

File Edit View Search Terminal Help

GNU nano 2.3.1 File: salary.sh Modified

```
#!/bin/bash
read -p "Enter your basic salary=" basic
#echo "basic=$basic"
dp=`echo "0.50*$basic" | bc`
#echo "dp=$dp"

da=`echo "0.35*($basic+$dp)" | bc`
#echo "da=$da"

hra=`echo "0.08*($basic+$dp)" | bc`
#echo "hra=$hra"

ma=`echo "0.03*($basic+$dp)" | bc`
#echo "ma=$ma"

pf=`echo "0.10*($basic+$dp)" | bc`
#echo "pf=$pf"

salary=`echo "$basic+$dp+$da+$hra+$ma-$pf" | bc`

echo "Gross salary=$salary"
```

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^C Cur Pos
^T To Spell

sachin@localhost:~

Home X | centOS X

Applications Places Terminal Sun 18:23 🔍 ⚡

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./salary.sh
Enter your basic salary=10000
Gross salary=20400.00
[sachin@localhost ~]$ █
```

3) Write a shell script to calculate the average of a 3 number.

The screenshot shows a desktop environment with a window titled "centos". Inside the window, a terminal session is running under the "nano" editor. The terminal title bar says "File: average.sh". The nano status bar at the bottom indicates "[Read 11 lines]". The terminal command line shows the path "sachin@localhost:~". The terminal window contains the following shell script:

```
#!/bin/bash

read -p "Enter first number=" n1
read -p "Enter second number=" n2
read -p "Enter third number=" n3

average=`echo "($n1+$n2+$n3)/3" | bc`

echo "Average of 3 numbers=" $average
```

At the bottom of the terminal window, there is a menu of keyboard shortcuts:

$\wedge G$ Get Help	$\wedge O$ WriteOut	$\wedge R$ Read File	[Read 11 lines]	$\wedge Y$ Prev Page	$\wedge K$ Cut Text	$\wedge C$ Cur Pos
$\wedge X$ Exit	$\wedge J$ Justify	$\wedge W$ Where Is		$\wedge V$ Next Page	$\wedge U$ UnCut Text	$\wedge T$ To Spell

The bottom status bar also displays the terminal prompt "sachin@localhost:~".

Home × centOS ×

Applications Places Terminal Sat 20:14 🔍 ⚡

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./average.sh
Enter first number=10
Enter second number=20
Enter third number=30
Average of 3 numbers= 20
[sachin@localhost ~]$ █
```

4). Write a shell script to create a command line calculator.

e.g. input : mycal 5 + 5 Result : 10 , input : mycal 5 / 5 result : 1

The screenshot shows a desktop environment with a window titled "centOS" in the background. In the foreground, a terminal window is open with the command "sachin@localhost:~". The terminal is running the "nano" text editor, version 2.3.1, on a file named "calculator.sh". The script content is as follows:

```
#!/bin/bash
echo "Type 1 for add"
echo "Type 2 for sub"
echo "Type 3 for mul"
echo "Type 4 for div"

read -p "Enter first number= " n1
read -p "Enter second number= " n2

read -p "Enter choice= " c
case $c in
1) sum=`echo "$n1+$n2" | bc`
   echo "sum=$sum"
   ;;
2) sub=`echo "$n1-$n2" | bc`
   echo "sub=$sub"
   ;;
3) mul=`echo "$n1*$n2" | bc`
   echo "mul=$mul"
   ;;
4) div=`echo "$n1/$n2" | bc`
   echo "div=$div"
   ;;
esac
```

The terminal window also displays the command "sachin@localhost:~" at the bottom. A menu bar is visible above the terminal window, and a toolbar with various keyboard shortcut icons is at the bottom of the screen.

Home x centOS x

Applications Places Terminal Sat 20:44

sachin@localhost:~

- x

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./calculator.sh
Type 1 for add
Type 2 for sub
Type 3 for mul
Type 4 for div
Enter first number= 5
Enter second number= 5
Enter choice=1
sum=10
[sachin@localhost ~]$ ./calculator.sh
Type 1 for add
Type 2 for sub
Type 3 for mul
Type 4 for div
Enter first number= 5
Enter second number= 5
Enter choice=4
div=1
[sachin@localhost ~]$
```

sachin@localhost:~

5) Write a shell script to accept 2 numbers and display which number is greater

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal window is open with the command "sachin@localhost:~". The terminal is running the "nano" text editor, version 2.3.1, with the file "compare.sh" loaded. The script contains a bash script that reads two numbers from the user and prints out which one is greater. The terminal window also displays a set of keyboard shortcuts at the bottom.

```
#!/bin/bash

read -p "Enter first number= " n1
read -p "Enter second number= " n2
if [ $n1 -gt $n2 ]
then
    echo "first Number is greater= " $n1
else
    echo "second number is greater= " $n2
fi
```

[Read 15 lines]

^G Get Help	^O WriteOut	^R Read File	^Y Prev Page	^K Cut Text	^C Cur Pos
^X Exit	^J Justify	^W Where Is	^V Next Page	^U UnCut Text	^T To Spell

sachin@localhost:~

Home × centOS ×

Applications Places Terminal Sat 20:56 🔍 ⚡

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./compare.sh
Enter first number= 20
Enter second number= 10
first Number is greater= 20
[sachin@localhost ~]$ █
```

File Home Applications Places Terminal Terminal

6) Create a script to

Create user , Delete user , Create group , delete Group using case

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal session is running under the user "sachin@localhost". The terminal title bar says "File: case.sh". The terminal window contains the following bash script:

```
#!/bin/bash
echo "Type 1 to create user"
echo "Type 2 to delete user"
echo "Type 3 to create group"
echo "Type 4 to delete group"

read -p "Enter your choice= " c

case $c in
1)echo "Enter username to be created:"
   read name
   sudo useradd $name
   tail -n 3 /etc/passwd
   echo "$name user added"
;;
2)echo "Enter username to be deleted:"
   read name
   sudo userdel $name
   tail -n 3 /etc/passwd
   echo "$name user deleted"
;;
3)echo "Enter groupname to be created:"
   read name
   sudo useradd $name
   tail -n 3 /etc/passwd
   echo "$name group added"
;;
4)echo "Enter username to be deleted:"
   read name
   sudo userdel $name
   tail -n 3 /etc/passwd
   echo "$name user deleted"
;;
esac
```

The terminal window also displays a set of keyboard shortcuts at the bottom:

^G Get Help	^O WriteOut	^R Read File	^Y Prev Page	^K Cut Text	^C Cur Pos
^X Exit	^J Justify	^W Where Is	^V Next Page	^U UnCut Text	^T To Spell

The status bar at the bottom of the terminal window shows "sachin@localhost:~".

Home | centOS | Applications | Places | Terminal | Sun 15:07 | Power

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ nano case.sh
[sachin@localhost ~]$ ./case.sh
Type 1 to create user
Type 2 to delete user
Type 3 to create group
Type 4 to delete group
Enter your choice=3
Enter groupname to be created:
king
[sudo] password for sachin:
prince:x:1004:1004::/home/prince:/bin/bash
sam:x:1005:1008::/home/sam:/bin/bash
king:x:1006:1009::/home/king:/bin/bash
king group added
[sachin@localhost ~]$ ./case.sh
Type 1 to create user
Type 2 to delete user
Type 3 to create group
Type 4 to delete group
Enter your choice=4
Enter username to be deleted:
king
useradd: user 'king' already exists
prince:x:1004:1004::/home/prince:/bin/bash
sam:x:1005:1008::/home/sam:/bin/bash
king:x:1006:1009::/home/king:/bin/bash
king user deleted
[sachin@localhost ~]$
```

sachin@localhost:~

Assignment-5

1) Write a script to find out String is palindrome or not.

The screenshot shows a desktop environment with a window titled 'centOS'. Inside the window, a terminal window is open with the command 'sachin@localhost:~'. The terminal title bar says 'File: palindrome.sh'. The script content is as follows:

```
#!/bin/bash

read -p "Enter any number=" n

num=$n
rev=0
while [ $num -gt 0 ];
do
r=`echo "$num%10" | bc`
#echo "r=$r"
rev=`echo "($rev*10)+$r" | bc`
#echo "rev=$rev"
num=`echo "$num/10" | bc`
done
#$num=$temp
if [ $rev -eq $n ];
then
    echo "Entered number $n is  palindrome number"
else
    echo "Entered number $n is not palindrome number"
fi
```

The status bar at the bottom shows various keyboard shortcuts for nano editor functions like Get Help (^G), WriteOut (^O), Read File (^R), Prev Page (^Y), Cut Text (^K), Cur Pos (^C), Exit (^X), Justify (^J), Where Is (^W), Next Page (^V), Uncut Text (^U), To Spell (^T), and a message '[Read 21 lines]'.

Home × centOS ×

Applications Places Terminal Mon 11:17

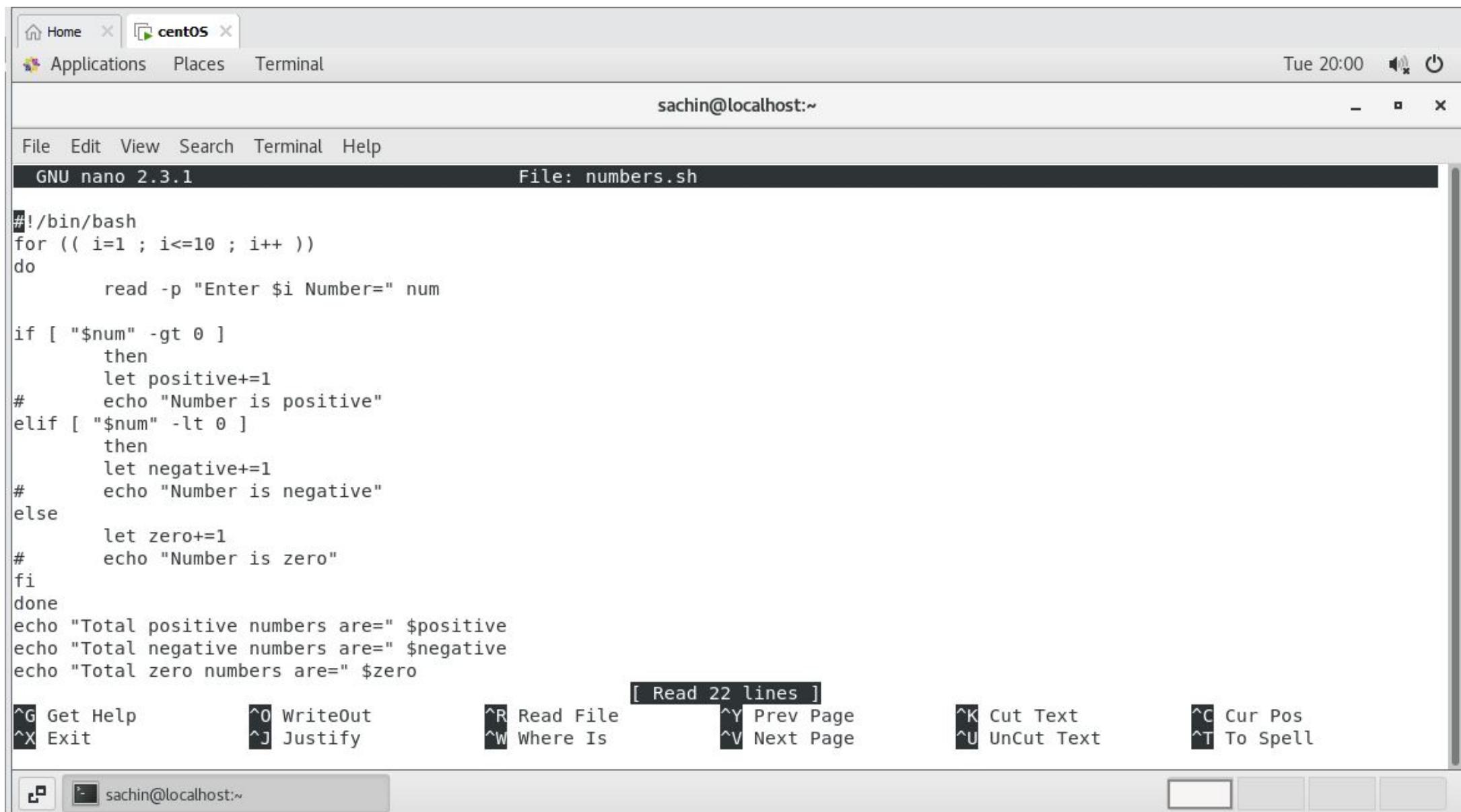
sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./palindrome.sh
Enter any number=121
Entered number 121 is palindrome number
[sachin@localhost ~]$ ./palindrome.sh
Enter any number=1234
Entered number 1234 is not palindrome number
[sachin@localhost ~]$ █
```

sachin@localhost:~

2) Write a shell script to accept 10 numbers and tell how many are +tive, -tive and zero.



The screenshot shows a desktop environment with a window titled "centOS" in the top bar. Below it is a terminal window titled "sachin@localhost:~". The terminal window contains a shell script named "numbers.sh" written in nano editor version 2.3.1. The script reads 10 numbers from the user and counts the number of positive, negative, and zero values. It uses a for loop to iterate through 10 inputs, reads each input with "read -p", and then checks if it's positive, negative, or zero using conditional statements. Finally, it prints the total counts for each category. The terminal window also displays various keyboard shortcuts at the bottom.

```
#!/bin/bash
for (( i=1 ; i<=10 ; i++ ))
do
    read -p "Enter $i Number=" num

if [ "$num" -gt 0 ]
    then
        let positive+=1
#       echo "Number is positive"
elif [ "$num" -lt 0 ]
    then
        let negative+=1
#       echo "Number is negative"
else
    let zero+=1
#       echo "Number is zero"
fi
done
echo "Total positive numbers are=" $positive
echo "Total negative numbers are=" $negative
echo "Total zero numbers are=" $zero
```

[Read 22 lines]

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^C Cur Pos
^T To Spell

sachin@localhost:~

Home X centOS X

Applications Places Terminal

Tue 19:59 🔍 ⚡

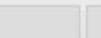
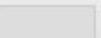
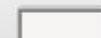
sachin@localhost:~

File Edit View Search Terminal Help

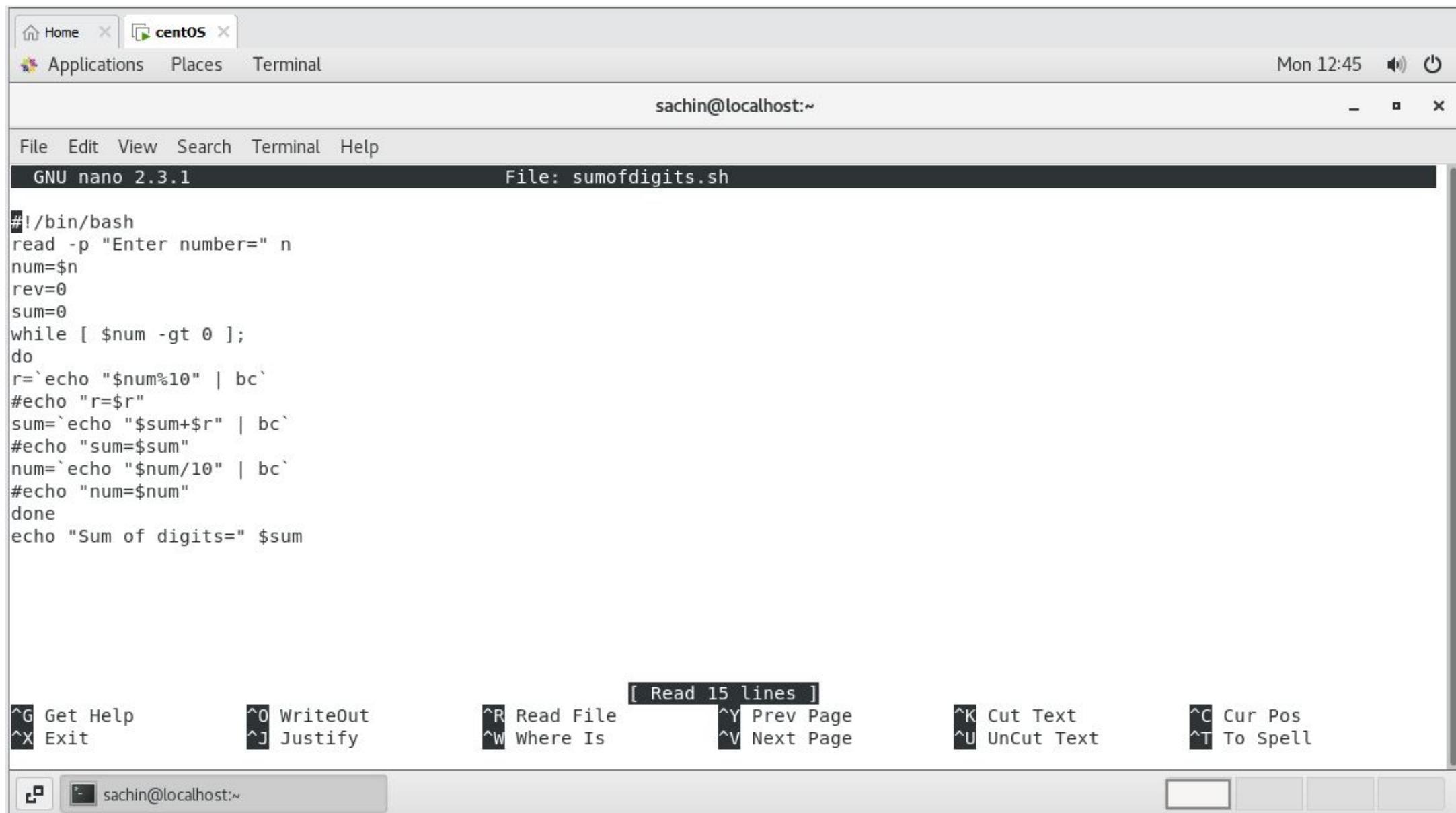
```
[sachin@localhost ~]$ ./numbers.sh
Enter 1 Number=10
Enter 2 Number=20
Enter 3 Number=30
Enter 4 Number=-40
Enter 5 Number=-50
Enter 6 Number=-60
Enter 7 Number=0
Enter 8 Number=0
Enter 9 Number=70
Enter 10 Number=80
Total positive numbers are= 5
Total negative numbers are= 3
Total zero numbers are= 2
[sachin@localhost ~]$ █
```



sachin@localhost:~



3) Write a shell script to print given number's sum of all digits (eg. If number is 123, then it's sum of all digits will be 1+2+3=6)



The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal window is open with the command "sachin@localhost:~". The terminal title bar says "File: sumofdigits.sh". The file content is a Bash script named "sumofdigits.sh" that reads a number from the user, calculates the sum of its digits using bc, and prints the result. The terminal also displays a set of keyboard shortcuts at the bottom.

```
#!/bin/bash
read -p "Enter number=" n
num=$n
rev=0
sum=0
while [ $num -gt 0 ];
do
r=`echo "$num%10" | bc`
# echo "r=$r"
sum=`echo "$sum+$r" | bc`
# echo "sum=$sum"
num=`echo "$num/10" | bc`
# echo "num=$num"
done
echo "Sum of digits=" $sum
```

[Read 15 lines]

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

sachin@localhost:~

Home X | centOS X

Applications Places Terminal Mon 12:44 🔍 ⚡

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./sumofdigits.sh
Enter number=123
Sum of digits= 6
[sachin@localhost ~]$ ./sumofdigits.sh
Enter number=1224
Sum of digits= 9
[sachin@localhost ~]$ █
```

█ sachin@localhost:~

4)Write a shell script to display the prime numbers from 1 to n (n is a given number)

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal session is running under the "nano" text editor. The terminal title bar says "File: prime.sh". The script content is as follows:

```
#!/bin/bash
read -p "Enter any number=" n
echo "n=$n"
for (( i=2; i<=$n; i++))
do
c=0
for (( j=2; j<i; j++))
do
    a=`expr $i % $j`
    if [ $a -eq 0 ]
    then
        c=1
    fi
done
    if [ $c -eq 0 ]
    then
        echo "$i"
    fi
done
```

The status bar at the bottom of the terminal window displays keyboard shortcuts and the current file status: "[Read 19 lines]".

Bottom row of keyboard shortcuts:

- ^G Get Help
- ^O WriteOut
- ^R Read File
- [Read 19 lines]
- ^Y Prev Page
- ^K Cut Text
- ^C Cur Pos
- ^X Exit
- ^J Justify
- ^W Where Is
- ^V Next Page
- ^U UnCut Text
- ^T To Spell

Bottom left corner of the terminal window shows the command prompt: "sachin@localhost:~".

Home centOS

Applications Places Terminal Tue 11:37

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./prime.sh
Enter any number=10
n=10
2
3
5
7
[sachin@localhost ~]$
```

sachin@localhost:~

5) Write a shell script to find whether a given year is leap year or not

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal window is open with the command "sachin@localhost:~". The terminal is running the "nano" text editor version 2.3.1, with the file "leap.sh" loaded. The script content is as follows:

```
#!/bin/bash
read -p "Enter year in YYYY=" y

a=`echo "$y%4" | bc`
b=`echo "$y%100" | bc`
c=`echo "$y%400" | bc`

if [ $a -eq 0 -a $b -eq 0 -o $c -eq 0 ]
then
    echo "$y is a leap year."
else
    echo "$y is not a leap year"
fi
```

At the bottom of the terminal window, there is a menu of keyboard shortcuts:

- ^G Get Help
- ^O WriteOut
- ^R Read File
- [Read 13 lines]
- ^Y Prev Page
- ^K Cut Text
- ^C Cur Pos
- ^X Exit
- ^J Justify
- ^W Where Is
- ^V Next Page
- ^U UnCut Text
- ^T To Spell

The status bar at the bottom of the terminal window shows "sachin@localhost:~".

Home X centOS X

Applications Places Terminal Tue 12:02

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./leap.sh
Enter year in YYYY=2000
2000 is a leap year.
[sachin@localhost ~]$ ./leap.sh
Enter year in YYYY=1992
1992 is not a leap year
[sachin@localhost ~]$
```

sachin@localhost:~

Assignment-6

1. Write a shell script to create a menu driven program for adding, deletion or finding a record in a database. Database should have the field like rollno, name, semester and marks of three subjects. Last option of the menu should be to exit the menu.

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal session is running under the "nano" editor. The file being edited is named "database.sh". The script contains a shell script for a menu-driven program. The code includes a loop for menu selection, options for adding, deleting, finding, and exiting, and logic for reading student information and writing it to a file named "record". The terminal window also displays the user's command-line prompt and various system status icons.

```
i=0
while [ "$i" == 0 ]
do
echo "menu selection:"echo "1) Add 2) Delete 3) find 4) exit"
read -p "Enter your choice (1-4)" c
case "$c" in
    1)read -p "Enter the student name :" name
       read -p "Enter Roll number :" rollno
       read -p "Enter semister number :" sem
       read -p "Enter marks of Math :" math
       read -p "Enter marks of Eng :" eng
       read -p "Enter marks of Science:" sci
       echo "name = $name Rollno=$rollno Semister=$sem Math=$math English=$eng Science=$sci" >> record
    ;;
    2)read -p "delete your file:" dfile
       sed -i "/$dfile/d" record
       cat record
    ;;
    3)read -p "find your file:" name
       grep $name record
    ;;
    4) i=1;;
esac
done
```

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^C Cur Pos
[sachin@localhost:~] sachin@localhost:~

Home X centOS X

Applications Places Terminal Thu 12:56

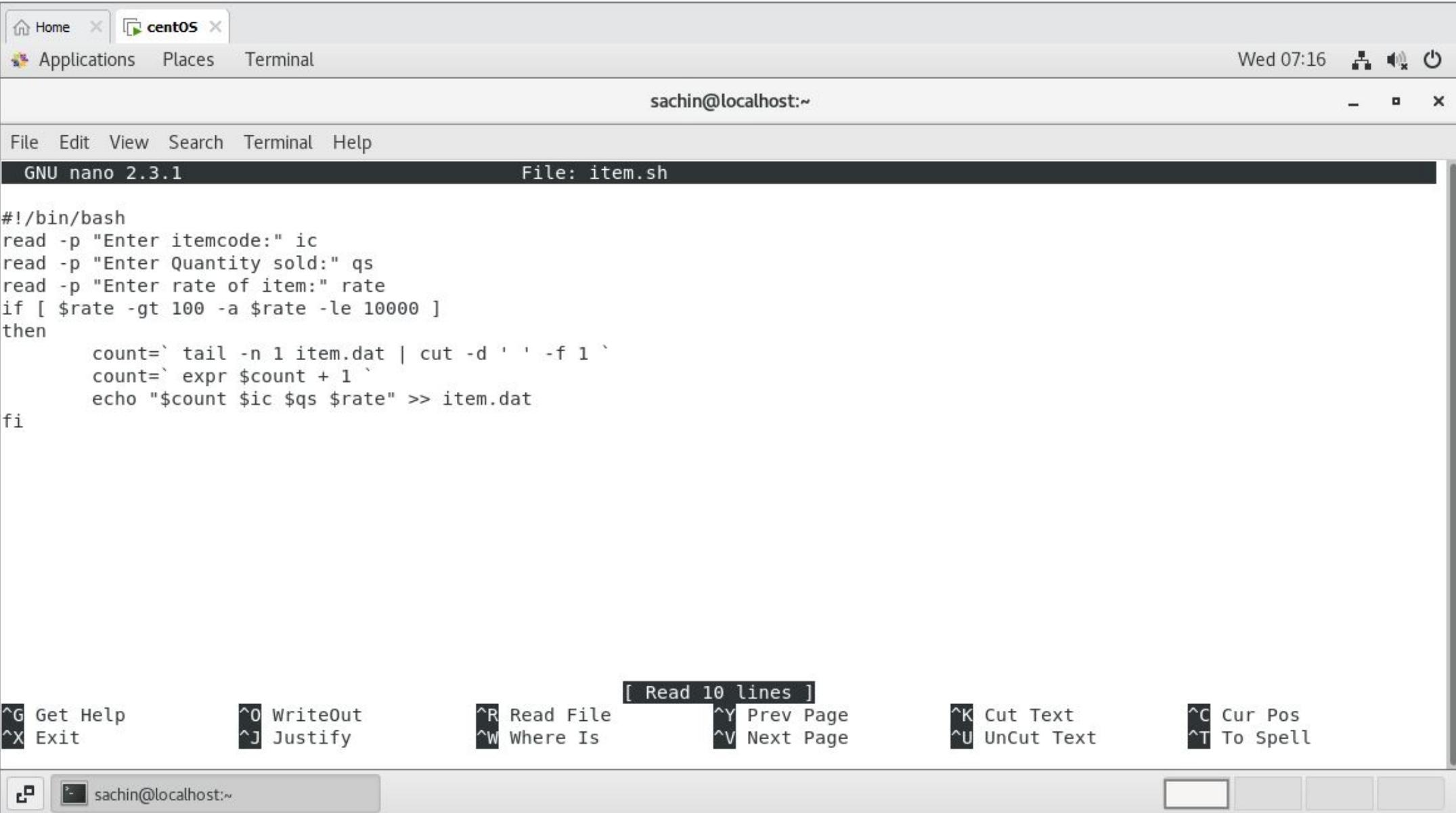
sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ cat record
name = sachin Rollno=1 Semister=2 Math=85 English=83 Science=86
name = palash Rollno=2 Semister=2 Math=80 English=90 Science=85
[sachin@localhost ~]$ ./database.sh
menu selection:echo 1) Add 2) Delete 3) find 4) exit
Enter your choice (1-4)1
Enter the student name :sandeep
Enter Roll number :3
Enter semister number :2
Enter marks of Math : 80
Enter marks of Eng :75
Enter marks of Science:83
menu selection:echo 1) Add 2) Delete 3) find 4) exit
Enter your choice (1-4)2
delete your file:sachin
name = palash Rollno=2 Semister=2 Math=80 English=90 Science=85
name = sandeep Rollno=3 Semister=2 Math=80 English=75 Science=83
menu selection:echo 1) Add 2) Delete 3) find 4) exit
Enter your choice (1-4)3
find your file:palash
name = palash Rollno=2 Semister=2 Math=80 English=90 Science=85
menu selection:echo 1) Add 2) Delete 3) find 4) exit
Enter your choice (1-4)■
```

[sachin@localhost:~] sachin@localhost:~

2. Write a unix shell to add records to a file called item.dat The fields being itemcode, qty, sold and rate
item_code to be generated, qty_sold should be greater than 0, rate between 100 to 10000.



The screenshot shows a desktop environment with a window titled "centOS" in the background. In the foreground, a terminal window is open with the command "sachin@localhost:~". The terminal is running the nano text editor on a file named "item.sh". The script content is as follows:

```
#!/bin/bash
read -p "Enter itemcode:" ic
read -p "Enter Quantity sold:" qs
read -p "Enter rate of item:" rate
if [ $rate -gt 100 -a $rate -le 10000 ]
then
    count=` tail -n 1 item.dat | cut -d ' ' -f 1 `
    count=` expr $count + 1 `
    echo "$count $ic $qs $rate" >> item.dat
fi
```

The terminal window also displays a set of keyboard shortcuts at the bottom:

^{^G} Get Help	^{^O} WriteOut	^{^R} Read File	[Read 10 lines]	^{^Y} Prev Page	^{^K} Cut Text	^{^C} Cur Pos
^{^X} Exit	^{^J} Justify	^{^W} Where Is		^{^V} Next Page	^{^U} UnCut Text	^{^T} To Spell

The bottom status bar shows the user "sachin@localhost:~".

Home centOS

Applications Places Terminal Wed 07:15

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ cat item.dat
1 12 6 100
2 13 4 200
[sachin@localhost ~]$ ./item.sh
Enter itemcode:14
Enter Quantity sold:3
Enter rate of item:300
[sachin@localhost ~]$ cat item.dat
1 12 6 100
2 13 4 200
3 14 3 300
[sachin@localhost ~]$ ./item.sh
Enter itemcode:15
Enter Quantity sold:7
Enter rate of item:5000
[sachin@localhost ~]$ cat item.dat
1 12 6 100
2 13 4 200
3 14 3 300
4 15 7 5000
[sachin@localhost ~]$ █
```

sachin@localhost:~

3. Write a script which copies the content of file1 to file2 without using cp command. It should check if file has a read permissions if not it should print an error message. If file2 exists then it should ask the user whether he wants to overwrite it.

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal session is running under the user "sachin" at the prompt "sachin@localhost:~". The terminal window title bar also displays "File: file1.sh". The terminal content is a shell script named "file1.sh" containing the following code:

```
#!/bin/bash

read -p "Enter filename:" file

if [ -r $file ]
then
echo "File is readable"
else
echo "file is not readable"
fi
if [ $file == file2.sh ]
then
echo "File is available in directory"
else
echo "File not in directory"
fi

echo "Data from file1" >> file2.sh

echo "Name=king Location=pune institute=IACSD" >> file2.sh
```

At the bottom of the terminal window, there is a menu of keyboard shortcuts:

^{^G} Get Help	^{^O} WriteOut	^{^R} Read File	^{^Y} Prev Page	^{^K} Cut Text	^{^C} Cur Pos
^{^X} Exit	^{^J} Justify	^{^W} Where Is	^{^V} Next Page	^{^U} Uncut Text	^{^T} To Spell

The bottom status bar shows the terminal prompt again: "sachin@localhost:~".

Home X centOS X

Applications Places Terminal Wed 12:57

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./file1.sh
Enter filename:file2.sh
File is readable
File is available in directory
[sachin@localhost ~]$ cat file2.sh
Data from file1
Name=king Location=pune institute=IACSD
[sachin@localhost ~]$ █
```

sachin@localhost:~

4. Write a shell scripts that delete all files in current directory with 0 byte.

The screenshot shows a desktop environment with a window titled "centOS". Inside the window, a terminal session is running under the user "sachin" at the host "localhost". The terminal title bar says "File: delzero.sh". The terminal window contains the following shell script:

```
#!/bin/bash
#using file test operator

echo "Files in current directory with 0 byte are: "
find . -maxdepth 1 -type f -size 0

echo "Enter Y to delete files with size 0"
echo "Enter q to quit"

read -p "Enter your choice :" reply
case $reply in
Y|y)    find . -maxdepth 1 -type f -size 0 -delete
        echo "All files with 0 bytes are deleted successfully"
        ;;
Q|q)    echo "operation exit"
        exit
        ;;
*)      echo "Invalid choice!"
        ;;
esac
```

At the bottom of the terminal window, there is a legend of keyboard shortcuts:

^G Get Help	^O WriteOut	^R Read File	^Y Prev Page	^K Cut Text	^C Cur Pos
^X Exit	^J Justify	^W Where Is	^V Next Page	^U UnCut Text	^T To Spell

The terminal prompt at the bottom is "sachin@localhost:~".

Home centOS Applications Places Terminal Fri 12:25

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ls -lh
total 108K
-rwxrwxr-x. 1 sachin sachin 8.3K May 20 05:58 a.out
-rwxrwxr-x. 1 sachin sachin 418 May 15 20:42 calculator.sh
-rwxrwxr-x. 1 sachin sachin 759 May 16 15:05 case.sh
-rwxrwxr-x. 1 sachin sachin 197 May 15 20:55 compare.sh
-rwxrwxr-x. 1 sachin sachin 650 May 20 12:54 database.sh
-rwxrwxr-x. 1 sachin sachin 428 May 21 12:23 delzero.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Desktop
-rwxrwxr-x. 1 sachin sachin 282 May 20 02:59 dirlisting.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Documents
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Downloads
drwxrwxr-x. 2 sachin sachin 6 May 12 12:37 family
-rwxrwxr-x. 1 sachin sachin 329 May 19 12:53 file1.sh
-rw-rw-r--. 1 sachin sachin 56 May 19 12:57 file2.sh
-rw-rw-r--. 1 sachin sachin 235 May 20 05:25 file.c
-rw-rw-r--. 1 sachin sachin 256 May 20 05:32 fork.c
-rw-rw-r--. 1 sachin sachin 56 May 20 14:04 item.dat
-rwxrwxr-x. 1 sachin sachin 274 May 19 07:13 item.sh
-rwxrwxr-x. 1 sachin sachin 225 May 18 12:01 leap.sh
drwxr-xr-x. 2 sachin sachin 114 May 12 11:52 Music
-rwxrwxr-x. 1 sachin sachin 400 May 18 19:58 numbers.sh
-rw-rw-r--. 1 sachin sachin 158 May 20 05:58 orphan.c
-rwxrwxr-x. 1 sachin sachin 342 May 17 11:16 palindrome.sh
drwxr-xr-x. 2 sachin sachin 4.0K May 20 05:25 Pictures
-rwxrwxr-x. 1 sachin sachin 226 May 18 11:37 prime.sh
```

sachin@localhost:~

Home centOS Applications Places Terminal Fri 12:27

sachin@localhost:~

File Edit View Search Terminal Help

```
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Public
-rw-rw-r--. 1 sachin sachin 131 May 20 12:56 record
-rwxrwxr-x. 1 sachin sachin 407 May 16 18:22 salary.sh
-rwxrwxr-x. 1 sachin sachin 406 May 16 18:43 salary.sh.save
-rw-----. 1 sachin sachin 0 May 19 06:44 sedTYDqvt
-rw-----. 1 sachin sachin 0 May 19 06:40 sedW6naNC
-rwxrwxr-x. 1 sachin sachin 272 May 15 19:38 si.sh
-rw-rw-r--. 1 sachin sachin 0 May 12 11:08 songsX.mp3
-rwxrwxr-x. 1 sachin sachin 238 May 17 12:43 sumofdigits.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Templates
drwxr-xr-x. 2 sachin sachin 108 May 12 12:02 Videos
drwxrwxr-x. 2 sachin sachin 112 May 12 12:48 work
-rw-rw-r--. 1 sachin sachin 248 May 20 05:43 zombie.c
[sachin@localhost ~]$ ./delzero.sh
Files in current directory with 0 byte are:
./songsX.mp3
./sedW6naNC
./sedTYDqvt
Enter Y to delete files with size 0
Enter q to quit
Enter your choice :y
All files with 0 bytes are deleted successfully
[sachin@localhost ~]$ ls -lh
total 108K
-rwxrwxr-x. 1 sachin sachin 8.3K May 20 05:58 a.out
-rwxrwxr-x. 1 sachin sachin 418 May 15 20:42 calculator.sh
-rwxrwxr-x. 1 sachin sachin 759 May 16 15:05 case.sh
```

sachin@localhost:~

Home centOS

Applications Places Terminal Fri 12:27

sachin@localhost:~

- File Edit View Search Terminal Help

```
-rwxrwxr-x. 1 sachin sachin 197 May 15 20:55 compare.sh
-rwxrwxr-x. 1 sachin sachin 650 May 20 12:54 database.sh
-rwxrwxr-x. 1 sachin sachin 428 May 21 12:23 delzero.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Desktop
-rwxrwxr-x. 1 sachin sachin 282 May 20 02:59 dirlisting.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Documents
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Downloads
drwxrwxr-x. 2 sachin sachin 6 May 12 12:37 family
-rwxrwxr-x. 1 sachin sachin 329 May 19 12:53 file1.sh
-rw-rw-r--. 1 sachin sachin 56 May 19 12:57 file2.sh
-rw-rw-r--. 1 sachin sachin 235 May 20 05:25 file.c
-rw-rw-r--. 1 sachin sachin 256 May 20 05:32 fork.c
-rw-rw-r--. 1 sachin sachin 56 May 20 14:04 item.dat
-rwxrwxr-x. 1 sachin sachin 274 May 19 07:13 item.sh
-rwxrwxr-x. 1 sachin sachin 225 May 18 12:01 leap.sh
drwxr-xr-x. 2 sachin sachin 114 May 12 11:52 Music
-rwxrwxr-x. 1 sachin sachin 400 May 18 19:58 numbers.sh
-rw-rw-r--. 1 sachin sachin 158 May 20 05:58 orphan.c
-rwxrwxr-x. 1 sachin sachin 342 May 17 11:16 palindrome.sh
drwxr-xr-x. 2 sachin sachin 4.0K May 20 05:25 Pictures
-rwxrwxr-x. 1 sachin sachin 226 May 18 11:37 prime.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Public
-rw-rw-r--. 1 sachin sachin 131 May 20 12:56 record
-rwxrwxr-x. 1 sachin sachin 407 May 16 18:22 salary.sh
-rwxrwxr-x. 1 sachin sachin 406 May 16 18:43 salary.sh.save
-rwxrwxr-x. 1 sachin sachin 272 May 15 19:38 si.sh
-rwxrwxr-x. 1 sachin sachin 238 May 17 12:43 sumofdigits.sh
drwxr-xr-x. 2 sachin sachin 6 May 12 10:40 Templates
drwxr-xr-x. 2 sachin sachin 108 May 12 12:02 Videos
drwxrwxr-x. 2 sachin sachin 112 May 12 12:48 work
-rw-rw-r--. 1 sachin sachin 248 May 20 05:43 zombie.c
```

[sachin@localhost ~]\$ clear

sachin@localhost:~

5. Write a shell script to display a directory listing as follows. Your home directory is <home directory name>

File name date time permission

Filename1 date time permission Filename2 date time permission Filename3 date time permission

Total no. of files : <total number> Total no of normal file : <number> Total no of directory : <number>

The screenshot shows a desktop environment with a window titled "centos" containing a terminal window. The terminal window title is "sachin@localhost:~". The terminal content displays a shell script named "dirlisting.sh" which outputs directory listing information. The script uses echo statements to print the required output format. At the bottom of the terminal window, there is a menu bar with options like File, Edit, View, Search, Terminal, Help, and a status bar showing the file name "File: dirlisting.sh". Below the terminal window, there is a toolbar with various keyboard shortcut icons and labels. The desktop background is visible behind the windows.

```
#!/bin/bash

echo
echo "your home directory is $HOME"
echo

echo "date    time    permission   file name"
echo "-----"
ls -l | while read perm bsize user group size month day time file;
do echo "$month $day $time $perm $file";
done

echo "-----"
echo "total number of files:"
find . -maxdepth 1 | wc -l

echo "total number of normal files ="
find . -maxdepth 1 -type f | wc -l

echo "total number of directories:"
find . -maxdepth 1 -type d | wc -l
```

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page
^X Exit ^J Justify ^W Where Is ^V Next Page ^K Cut Text
^C Cur Pos ^T To Spell
^U UnCut Text

sachin@localhost:~

Home centOS

Applications Places Terminal Fri 13:03

sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ ./dirlisting.sh
your home directory is /home/sachin
date      time      permission   file name
-----
total
May 20 05:58 -rwxrwxr-x. a.out
May 15 20:42 -rwxrwxr-x. calculator.sh
May 16 15:05 -rwxrwxr-x. case.sh
May 15 20:55 -rwxrwxr-x. compare.sh
May 20 12:54 -rwxrwxr-x. database.sh
May 21 12:23 -rwxrwxr-x. delzero.sh
May 12 10:40 drwxr-xr-x. Desktop
May 21 13:02 -rwxrwxr-x. dirlisting.sh
May 12 10:40 drwxr-xr-x. Documents
May 12 10:40 drwxr-xr-x. Downloads
May 12 12:37 drwxrwxr-x. family
May 19 12:53 -rwxrwxr-x. file1.sh
May 19 12:57 -rw-rw-r--. file2.sh
May 20 05:25 -rw-rw-r--. file.c
May 20 05:32 -rw-rw-r--. fork.c
May 20 14:04 -rw-rw-r--. item.dat
May 19 07:13 -rwxrwxr-x. item.sh
May 18 12:01 -rwxrwxr-x. leap.sh
May 12 11:52 drwxr-xr-x. Music
```

sachin@localhost:~

Home centOS

Applications Places Terminal Fri 13:04

sachin@localhost:~

File Edit View Search Terminal Help

```
May 12 11:52 drwxr-xr-x. Music
May 18 19:58 -rwxrwxr-x. numbers.sh
May 20 05:58 -rw-rw-r--. orphan.c
May 17 11:16 -rwxrwxr-x. palindrome.sh
May 20 05:25 drwxr-xr-x. Pictures
May 18 11:37 -rwxrwxr-x. prime.sh
May 12 10:40 drwxr-xr-x. Public
May 20 12:56 -rw-rw-r--. record
May 16 18:22 -rwxrwxr-x. salary.sh
May 16 18:43 -rwxrwxr-x. salary.sh.save
May 15 19:38 -rwxrwxr-x. si.sh
May 17 12:43 -rwxrwxr-x. sumofdigits.sh
May 12 10:40 drwxr-xr-x. Templates
May 12 12:02 drwxr-xr-x. Videos
May 12 12:48 drwxrwxr-x. work
May 20 05:43 -rw-rw-r--. zombie.c
-----
total number of files:
46
total number of normal files =
30
total number of directories:
16
[sachin@localhost ~]$
[sachin@localhost ~]$
[sachin@localhost ~]$
```

sachin@localhost:~

Assignment-7

1. Create Child process using fork()

The screenshot shows a desktop environment with a window titled "centOS" containing a terminal session. In the foreground, a "nano" text editor window is open, displaying C code for creating a child process using the `fork()` function. The code checks if the fork operation was successful and prints "parent" or "child" accordingly. The terminal window in the background shows the user "sachin" at the prompt "sachin@localhost:~".

```
#include<stdio.h>
#include<sys/types.h>
#include<unistd.h>

int main()
{
    pid_t p;
    p=fork();
if (p== -1)
{
printf("child not created\n");
}
if(p==0)
{
printf("successfully created child process\n");
}
else
{
printf("parent\n");
}
return 0;
```

[Read 22 lines]

^G Get Help ^O WriteOut [Read 22 lines] ^Y Prev Page ^K Cut Text
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^C Cur Pos
^T To Spell

sachin@localhost:~ [Application Installer]

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sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ gcc fork.c
[sachin@localhost ~]$ ./a.out
parent
successfully created child process
[sachin@localhost ~]$ █
```

sachin@localhost:~ [Application Installer]

2. Create orphan process

The screenshot shows a desktop environment for CentOS. The window title is "centOS". The terminal window title is "sachin@localhost:~". The menu bar includes File, Edit, View, Search, Terminal, and Help. The nano editor version is 2.3.1, editing the file "orphan.c". The code in the editor is:

```
#include<stdlib.h>
#include<sys/types.h>
#include<unistd.h>

int main()
{
int pid=fork();

if(pid>0)
{
exit(0);
}
else if(pid==0)
{
sleep(120);
}
return 0;
}
```

The status bar at the bottom shows keyboard shortcuts for various functions like Get Help (^G), WriteOut (^O), Read File (^R), Prev Page (^Y), Cut Text (^K), Cur Pos (^C), Exit (^X), Justify (^J), Where Is (^W), Next Page (^V), Uncut Text (^U), To Spell (^T), and Application Installer.

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sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ nano orphan.c
[sachin@localhost ~]$ gcc orphan.c
[sachin@localhost ~]$ ./a.out &
[1] 45568
[1]+ Done                  ./a.out
[sachin@localhost ~]$ pstree 45568
[sachin@localhost ~]$ ps -aux | grep a.out
sachin    45574  0.0  0.0    4212     88 pts/0      S      05:59   0:00 ./a.out
sachin    45593  0.0  0.0 112812    988 pts/0      S+     05:59   0:00 grep --color=auto a.out
[sachin@localhost ~]$ ps -o ppid=45574
45574
4259
 1
 4266
[sachin@localhost ~]$ [sachin@localhost ~]$
```

sachin@localhost:~ [Application Installer]

3. Create Zombie process

The screenshot shows a desktop environment with a window titled "centOS". The window contains a terminal session for the user "sachin" at "localhost". The terminal title bar says "File: zombie.c". The terminal window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The nano editor interface is visible, showing the source code for a C program named "zombie.c". The code creates a child process using fork(), sleeps for 120 seconds, and then exits. The terminal status bar shows the command "sachin@localhost:~" and the application "Application Installer".

```
#include<stdlib.h>
#include<sys/types.h>
#include<unistd.h>

int main()
{
int pid=fork(); //create child process
if(pid>0)
{
sleep(120); //parent sleep for 120 sec so child is running after termination hence zombie.
}
else
{
exit(0);
}
return 0;
}
```

[Read 17 lines]

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U Uncut Text ^T To Spell

sachin@localhost:~ [Application Installer]

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sachin@localhost:~

File Edit View Search Terminal Help

```
[sachin@localhost ~]$ gcc zombie.c
[sachin@localhost ~]$ ./a.out &
[1] 45393
[sachin@localhost ~]$ pstree -p 45393
a.out(45393)—a.out(45397)
[sachin@localhost ~]$ ps -aux | grep 45397
sachin  45397  0.0  0.0      0    0 pts/0    Z    05:50   0:00 [a.out] <defunct>
sachin  45468  0.0  0.0 112812   972 pts/0    S+   05:51   0:00 grep --color=auto 45397
[sachin@localhost ~]$
```

sachin@localhost:~ Application Installer