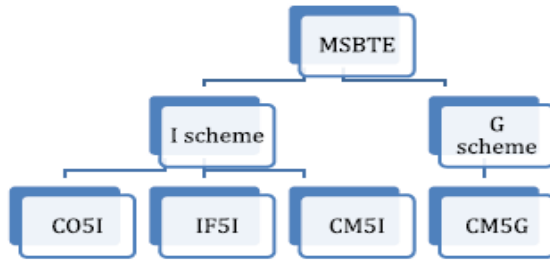❖ Create the following structure.


```
hawaiza@ubuntu-hawaiza:~$ mkdir MSBTE
hawaiza@ubuntu-hawaiza:~$ cd MSBTE
hawaiza@ubuntu-hawaiza:~/MSBTE$ mkdir IScheme
hawaiza@ubuntu-hawaiza:~/MSBTE$ mkdir GScheme
hawaiza@ubuntu-hawaiza:~/MSBTE$ cd IScheme
hawaiza@ubuntu-hawaiza:~/MSBTE/IScheme$ mkdir CO5I
hawaiza@ubuntu-hawaiza:~/MSBTE/IScheme$ mkdir IF5I
hawaiza@ubuntu-hawaiza:~/MSBTE/IScheme$ mkdir CM5I
hawaiza@ubuntu-hawaiza:~/MSBTE/IScheme$ cd..
cd..: command not found
hawaiza@ubuntu-hawaiza:~/MSBTE/IScheme$ cd ..
hawaiza@ubuntu-hawaiza:~/MSBTE$ cd GScheme
hawaiza@ubuntu-hawaiza:~/MSBTE/GScheme$ mkdir CM5G
hawaiza@ubuntu-hawaiza:~/MSBTE/GScheme$ cd ..
hawaiza@ubuntu-hawaiza:~/MSBTE$ cd ..
hawaiza@ubuntu-hawaiza:~$ ls *
a1   a4        capital    form.txt   number   st3         xaa   XXXX.txt
a2   a5        chapter2   hawaiza    st1      state       xab   xz
a3   abc.txt   employee   lesson1    st2      typescript  xac

Desktop:

Documents:

Downloads:

MSBTE:
GScheme   IScheme
```

❖ Create a file fruit using Vi editor and type at least 30 lines in it.
1) Write command to save the file.
2) Write the command to insert text at the end of line.
3) Replace some character into beginning of second line.

❖ Create a file fruit using Vi editor and type at least 30 lines in it.

1) Write a command to move cursor 3 word to the right
 command : in command mode type '3l'

```
raspberry
Lychee
Strawberry
Watermelon
Muskmellon
Olive
Orange
Pine Apple
```
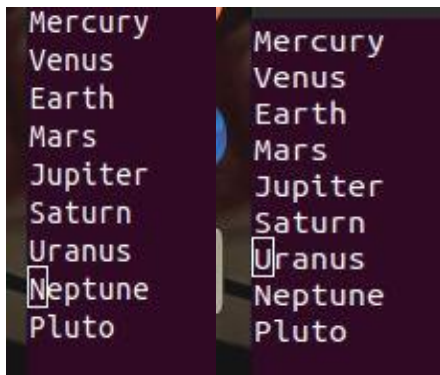
```
Lychee
Strawberry
Watermelon
Muskmellon
Olive
Orange
```

2) Write a command to delete 10 lines at a time.
 command: in command mode type '10dd'

```
Orange

Mango

Grapes

Banana
Chickoo
Blackberry
Blueberry
Guava
Cherry
Coconut
Custard Apple

Jamun
Jujube
Kiwi
Lemon
Raspberry
Lychee
Strawberry
Watermelon
Muskmellon
Olive
Orange
Pine Apple
Pomegranate

~
~
~
~
~
~
10 fewer lines
```
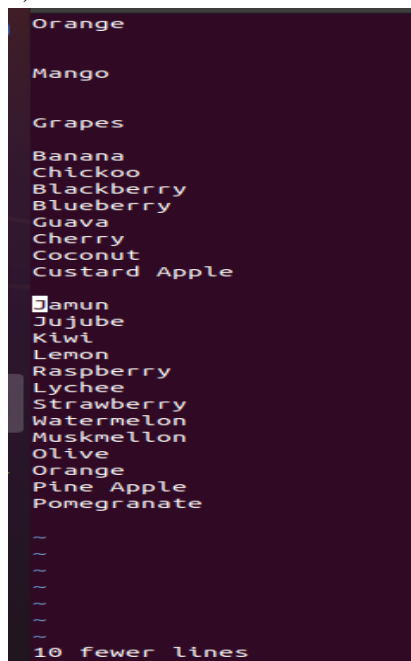
3) Move the cursor up one line press

'esc+k'

❖ Create a file fruit using Vi editor and type at least 30 lines in it.
1) Write a command to delete 10 lines at a time.
2) **command: in command mode type '10dd'**

3) Move the cursor to the right one

character position press 'esc+l'

4) Inserts text after the current cursor

location 'esc+a'

5) Move the cursor to the left one

character position press 'esc+h'

Editing Files(Inserting):

6) Inserts text at the end of the

current line 'esc+A'

❖ Shell script to find passing grades of students using Single Decision if statement.

```
echo "Enter your marks to know your grade : "
read marks
if(($marks < 30))
then
    echo "Grade: Fail"
fi
if(($marks >= 30  &  $marks <= 40))
then
    echo "Grade: Pass"
fi
if(($marks > 40 & $marks <= 60))
then
    echo "Grade: Good"
fi
if(($marks > 60 & $marks <= 80))
then
    echo "Grade: Better"
fi
if(($marks > 80 & $marks <= 100))
then
    echo "Grade: Excellent"
fi
```

```
hawaiza@ubuntu-hawaiza:~$ gedit exp10q1.sh
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
bash: ./exp10q1.sh: Permission denied
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp10q1.sh
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
Enter your marks to know your grade :
70
Grade: Better
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
Enter your marks to know your grade :
98
Grade: Excellent
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
Enter your marks to know your grade :
30
Grade: Pass
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
Enter your marks to know your grade :
20
Grade: Fail
hawaiza@ubuntu-hawaiza:~$ ./exp10q1.sh
Enter your marks to know your grade :
50
Grade: Good
```

❖ Shell script to find passing grades of students using Multiple if statements.

```
echo "Enter your marks to know your grade : "
read marks
if(($marks >= 30  &  $marks <= 40))
then
   echo "Grade: Pass"
elif(($marks > 40 & $marks <= 60))
then
   echo "Grade: Good"
elif(($marks > 60 & $marks <= 80))
then
   echo "Grade: Better"
elif(($marks > 80 & $marks <= 100))
then
   echo "Grade: Excellent"
else
   echo "Grade: Fail"
fi
```

❖ Shell script to find greatest number among given three numbers.
```
echo "Enter num1: "
read num1
echo "Enter num2: "
read num2
echo "Enter num3: "
read num3
if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
```

then
   echo "$num1 is the greatest!"
elif [$num2 -gt $num1] && [$num2 -gt $num3]
then
   echo "$num2 is the greatest!"
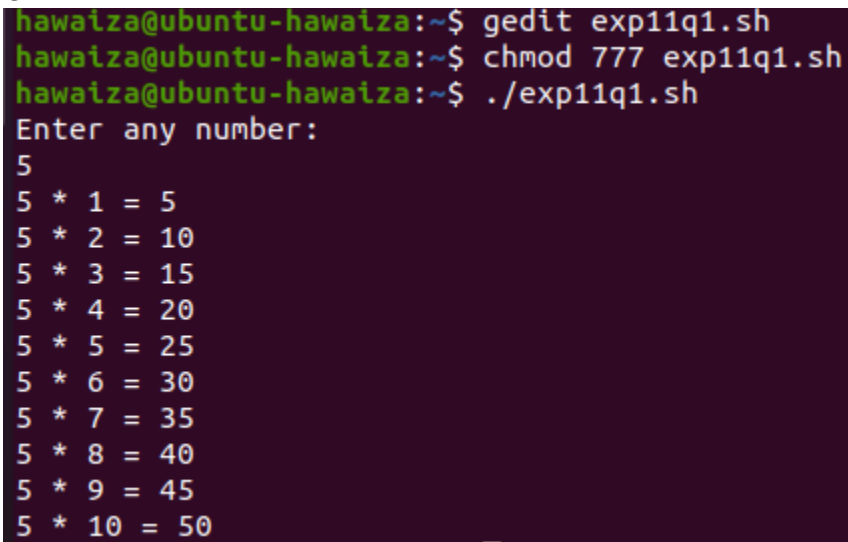else
   echo "$num3 is the greatest!"
fi

❖ Shell script to print table of given number by FOR loop.

```
echo "Enter any number: "
read n
for i in 1 2 3 4 5 6 7 8 9 10
do
echo "$n * $i = `expr $i \* $n`"
done
```

```
hawaiza@ubuntu-hawaiza:~$ gedit exp11q1.sh
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp11q1.sh
hawaiza@ubuntu-hawaiza:~$ ./exp11q1.sh
Enter any number:
5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

❖ Shell script to check number is even or odd.

```
NUMBERS="1 2 3 4 5 6 7"
for NUM in $NUMBERS
do
Q=`expr $NUM % 2`
if [ $Q -eq 0 ]
then
echo "Number is an even number!!"
continue
fi
echo "Found odd number"
done
```

❖ Shell script to display Fibonacci series for n numbers.

```
echo "Enter value for n: "

read N

a=0

b=1

echo "The Fibonacci series is: "

for (( i=0; i<N; i++ ))

do

echo -n "$a "

fn=$((a + b))

a=$b

b=$fn

done

echo "   "
```

❖ Shell script to accept five-digit number and perform addition of all digits.
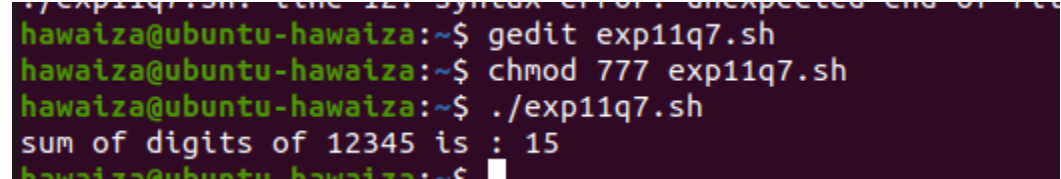
```
Num=12345
g=$Num
s=0
while [ $Num -gt 0 ]
do
k=$(( $Num % 10 ))
Num=$(( $Num / 10 ))
s=$(( $s + $k ))
done
echo "sum of digits of $g is : $s"
```
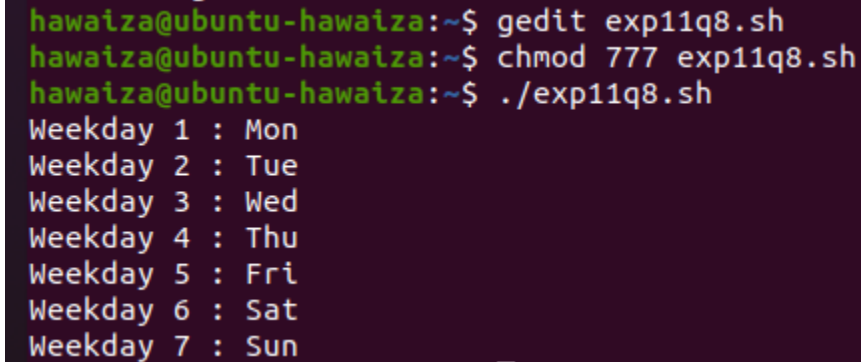
```
hawaiza@ubuntu-hawaiza:~$ gedit exp11q7.sh
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp11q7.sh
hawaiza@ubuntu-hawaiza:~$ ./exp11q7.sh
sum of digits of 12345 is : 15
hawaiza@ubuntu-hawaiza:~$
```

❖ Shell script to print day of week list using For loop.

```
i=1
for day in Mon Tue Wed Thu Fri Sat Sun
do
 echo "Weekday $((i++)) : $day"
done
```

```
hawaiza@ubuntu-hawaiza:~$ gedit exp11q8.sh
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp11q8.sh
hawaiza@ubuntu-hawaiza:~$ ./exp11q8.sh
Weekday 1 : Mon
Weekday 2 : Tue
Weekday 3 : Wed
Weekday 4 : Thu
Weekday 5 : Fri
Weekday 6 : Sat
Weekday 7 : Sun
```

❖ Shell script to print following output
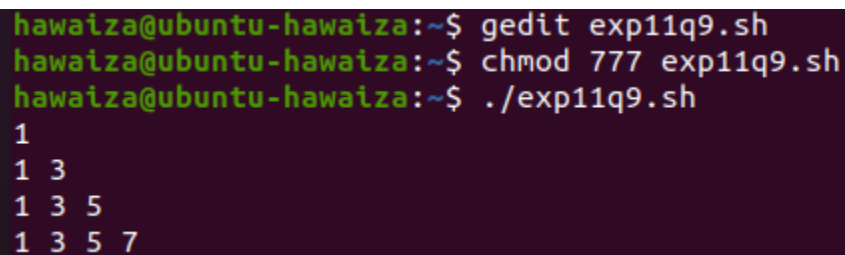
```
        1
        1 3
        1 3 5
        1 3 5 7
```

```
r=1
while [ $r -le 4 ]
do
count=1
c=1
while [ $c -le $r ]
do
echo -n "$count "
count=$(( $count + 2 ))
c=$(( $c + 1 ))
done
echo
r=$(( $r + 1 ))
done
```

```
hawaiza@ubuntu-hawaiza:~$ gedit exp11q9.sh
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp11q9.sh
hawaiza@ubuntu-hawaiza:~$ ./exp11q9.sh
1
1 3
1 3 5
1 3 5 7
```

❖ The case statement for performing various mathematical operations.

```
echo "Enter two numbers: "
read a
read b
echo "Enter Choice: "
echo "1. Addition"
echo "2. Subtraction"
echo "3. Multiplication"
echo "4. Division"
read ch
case $ch in
1)res=`echo $a + $b | bc`
;;
2)res=`echo $a - $b | bc`
;;
3)res=`echo $a \* $b | bc`
;;
4)res=`echo "scale=2; $a / $b" | bc`
;;
esac
echo "Result: $res"
```

```
hawaiza@ubuntu-hawaiza:~$ ./exp11q10.sh
Enter two numbers:
20
30
Enter Choice:
1. Addition
2. Subtraction
3. Multiplication
4. Division
1
Result: 50
hawaiza@ubuntu-hawaiza:~$ ./exp11q10.sh
Enter two numbers:
20
30
Enter Choice:
1. Addition
2. Subtraction
3. Multiplication
4. Division
2
Result: -10
hawaiza@ubuntu-hawaiza:~$ ./exp11q10.sh
Enter two numbers:
20
30
Enter Choice:
1. Addition
2. Subtraction
3. Multiplication
4. Division
3
Result: 600
hawaiza@ubuntu-hawaiza:~$ ./exp11q10.sh
Enter two numbers:
20
30
Enter Choice:
1. Addition
2. Subtraction
3. Multiplication
4. Division
4
Result: .66
hawaiza@ubuntu-hawaiza:~$
```

❖ Write a shell script to copy source file into destination file.

```
echo -n "Enter soruce file name : "
read src
```

```
echo -n "Enter target file name : "
read targ

if [ ! -f $src ]
then
 echo "File $src does not exists"
 exit 1
elif [ -f $targ ]
then
 echo "File $targ exist, cannot overwrite"
 exit 2
fi

cp $src $targ

status=$?
if [ $status -eq 0 ]
then
 echo 'File copied successfully'
else
 echo 'Problem copying file'
fi
```


❖ Write Shell Script to find out whether file has read, write and execute permission.
```
echo  "Enter the File name"
read file1


if [ -r $file1 ]
then
    echo "File has Read permission"
```

fi

```
if [ -w $file1 ]
then
    echo "File has Write permission"
fi

if [ -x $file1 ];
then
    echo "File has Execute permission"
fi
```
OUTPUT:


```
hawaiza@ubuntu-hawaiza:~$ gedit exp13q1.sh
hawaiza@ubuntu-hawaiza:~$ chmod 777 exp13q1.sh
hawaiza@ubuntu-hawaiza:~$ ./exp13q1.sh
Enter the File name
abc.txt
File has Read permission
File has Write permission
File has Execute permission
hawaiza@ubuntu-hawaiza:~$ chmod ugo=rw abc.txt
hawaiza@ubuntu-hawaiza:~$ ./exp13q1.sh
Enter the File name
abc.txt
File has Read permission
File has Write permission
hawaiza@ubuntu-hawaiza:~$
```

❖ Create a file 'data.txt' using Vi editor and type at least 20 lines in it.
   Write the commands for:
   1) Counting number of words in the 'data.txt'
   2) Counting number of lines in the 'data.txt'
   3) Counting all characters in the 'data.txt'

❖ Create four files a1, a2, a3 and a4 and apply different commands like ls, mv, cp, rm, join, split, and check the list of files at the end.

❖ Create two files chapter1 and chapter2 by and perform the following operations.
   1) Copy contents of chapter1 to chapter2 by asking the user before overwrite.
   2) Display i nodes of two files.
   3) Rename the file "chapter1" to "Lesson1".

❖ Write command and output of following questions
   1) What is process id of your login shell?
   2) Give PID of all processes.
   3) Display full listing of all the processes running on your terminal.

4) Print Today's Date
5) Give command for present working directory.
6) State currently login users by command.