1. 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)

```
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % cat sumofalldigits.sh
#! bin/bash

#variable initialization
ini=0
num=0
rem=0
sum=0

#getting i/p from the user

read -p "Enter a number: " ini
num=$ini                                #assigning the value to num variable to ini

#for loop to work till the entered number is greater than 0
for ((i=0; num>0; i++))
do
        rem=`echo $num%10 | bc`         #getting the remainder of the number
        sum=`echo $sum+$rem | bc`       #getting the sum by adding reminder to sum
        num=`echo $num/10 | bc`         #getting the quotient and assigning it to num
done
echo "Sum of the entered number $ini is $sum"                          #printing the total sum of the number
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % bash sumofalldigits.sh
Enter a number: 981239812
Sum of the entered number 981239812 is 43
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 %
```

2. Write a shell script to display the prime numbers from 1 to n (n is a given number) (hint : do it with break)

```
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % cat primenumber.sh
#! /bin/bash

#variable declaration
num=0
rem=0

#geting i/p from customer
read -p "Enter the a number: " num

if [ $num -eq 0 ] || [ $num -eq 1 ]; then
        echo "The number $num is not a prime number"
fi

echo "The prime numbers between 1 and $num are"

for ((i=2; i<=$num; i++)) #for loop to run until i value is same as num
do
        count=0                                                                 #initializing count and assigning it a value
        for((j=2; j<$i; j++))   #inner for loop to run till the conditionis false
        do
                rem=`echo $i%$j | bc`   #gets the remainder to see if the number is prime
                if [ $rem -eq 0 ]; then #checks if remainder is zero
                        count=1                                                 #initializing count and assigning it a value
                        break                                                           #break statement
                fi
        done
        if [ $count -eq 0 ]; then #to check if the count value is zero
                echo "$i"                                                       #printing the prime numbers
        fi
done
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 %
```

```
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % bash primenumber.sh
Enter the a number: 200
The prime numbers between 1 and 200 are
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
101
103
107
109
113
127
131
137
139
149
151
157
163
167
173
179
181
191
193
197
199
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 %
```

3. 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.

```
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$ cat menudrvn.sh
#! /bin/bash

choice=0
option=0

add_user() {
        #getting i/p from the user
        read -p "Enter your name: " name
        read -p "Enter your roll number: " rollno
        read -p "Enter your semister: " sem
        read -p "Enter your subject 1: " sub1
        read -p "Enter your subject 2: " sub2
        read -p "Enter your subject 3: " sub3

        touch student.dat
        echo "$name     $rollno $sem    $sub1   $sub2   $sub3">>student.dat
        #$final >> student.dat
}

search_user() {

        read -p "Enter the name of the student you want to search: " name
        grep "$name" student.dat

}

delete_user() {

        read -p "Enter name of the student you want to delete: " name
        sed -i "/$name/d" student.dat
        echo "Record successfully deleted"

}

exit_prog() {

        echo "Thank you for using the program"
        exit

}

echo "********************Welcome to Studnet Database********************"
```

```
while (( $option == "Y" || $option == "y" ))
do
        echo "******************** Menu ********************"
        echo " 1. Add User"
        echo " 2. Search User"
        echo " 3. Delete User"
        echo " 4. Exit"
        read -p "Please enter your choice: " choice
        case $choice in
                1) add_user;;
                2) search_user;;
                3) delete_user;;
                4) exit_prog;;
                *) echo "Invoice choice!!";;
        esac
        read -p "Do you wish to continue: " option
        if [ $option == "N" ] || [ $option == "n" ]
                then echo "Thank you for using the program"
                        exit
        fi
done
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$
```

```
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$ bash menudrvn.sh
********************Welcome to Studnet Database********************
******************** Menu ********************
 1. Add User
 2. Search User
 3. Delete User
 4. Exit
Please enter your choice: 1
Enter your name: Abhilash
Enter your roll number: 1001
Enter your semister: 1
Enter your subject 1: 68
Enter your subject 2: 72
Enter your subject 3: 74
Do you wish to continue: y
******************** Menu ********************
 1. Add User
 2. Search User
 3. Delete User
 4. Exit
Please enter your choice: 1
Enter your name: Akanksha
Enter your roll number: 1002
Enter your semister: 1
Enter your subject 1: 75
Enter your subject 2: 84
Enter your subject 3: 70
Do you wish to continue: y
```

```
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$ bash menudrvn.sh
********************Welcome to Studnet Database********************
******************** Menu ********************
 1. Add User
 2. Search User
 3. Delete User
 4. Exit
Please enter your choice: 2
Enter the name of the student you want to search: Belal
Belal   1003    1       65      70      80
Do you wish to continue: n
Thank you for using the program
```

```
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$ cat student.dat
Abhilash        1001    1       68      72      74
Akanksha        1002    1       75      84      70
Deeksha 1004    1       80      75      75
Belal   1003    57      80      94      54
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$ bash menudrvn.sh
********************Welcome to Studnet Database********************
******************** Menu ********************
 1. Add User
 2. Search User
 3. Delete User
 4. Exit
Please enter your choice: 3
Enter name of the student you want to delete: Belal
Record successfully deleted
Do you wish to continue: y
******************** Menu ********************
 1. Add User
 2. Search User
 3. Delete User
 4. Exit
Please enter your choice: 4
Thank you for using the program
bibek@bibek-H310M-H-2-0:~/Linux_Practical/Class_7$
```

4. Print Pattern

```
    *
   * * *
  * * * * *
```

Accept row value from user

```
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % cat pyramid.sh
#! /bin/bash

#variable declaration
num=0;
pyr=1

#getting the i/p from user
read -p "Please enter a number: " num

for ((i=0; i<$num; i++))        #for loop to run until the value of i is not greater than the number provided by user
do
        for ((j=0; j<=$num-$i; j++))    #for loop to print exact spaces
        do
                echo -n " "             #printing black space on sceen and new line
        done                            #end of for loop
        for ((k=1; k<=$pyr; k++))       #for loop to print the pyramid
        do
                echo -n "*"             #to print the stars
        done                            #end of for loop
        echo ""                         # to go to the next line
        pyr=$(($pyr+2))                 #incrementing the value of pyr to print stars
done                                    #end of for loop
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 % bash pyramid.sh
Please enter a number: 10
          *
         ***
        *****
       *******
      *********
     ***********
    *************
   ***************
  *****************
 *******************
bibekjyotinath@Bibekjyotis-MacBook-Air Class_7 %
```