main.py

```python
#Q1                SID-21107052
#python program for reverse string using loops
#asking user for input string
input_str=input("enter string: ")
#defining new string
new_string=""
#using for loop which starts picking letter from last till first letter
for i in range(len(input_str)-1,-1,-1):
    letter=input_str[i]
    new_string+=letter
print(new_string)
```

```
enter string: hello
olleh


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q2                SID-21107052
#python program for finding numbers divisible in given range
#asking user for number
num=int(input("enter number : "))
#asking for input range as upper and lower limits
ll,ul=map(int,input("enter range: ").split())
#using for loop for going through all values
for i in range(ll,ul):
    if i%num==0:
        print(i)
```

```
enter number : 6
enter range: 5 50
6
12
18
24
30
36
42
48


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q3                SID-21107052
#python program for finding area using heron's formula
#importing math library
import math
#asking user for side lengths
side1=int(input("enter 1st side : "))
side2=int(input("enter 2nd side : "))
side3=int(input("enter 3rd side : "))
#checking if triangle can be formed
if side1<(side2+side3) and side2<(side1+side3) and side3<(side1+side2):
    s=(side1+side2+side3)/2
    #calculating area using formula
    area=math.sqrt(s*(s-side1)*(s-side2)*(s-side3))
    print("area=" , area)
```

```
enter 1st side : 3
enter 2nd side : 4
enter 3rd side : 5
area= 6.0


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q4                SID-21107052
#python program for printing a given triangle
#assigning * to a variable which can later be multiplied
a="* "
#using for loops for getting required muliplier for variable
for i in range(0,6):
    print(i*a)
for z in range(4,0,-1):
    print(z*a)
```

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


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q5                SID-21107052
#python program to print a triangular pattern of the alphabet
#asking user for input the no. of rows
l=int(input("enter number of rows: "))
#assignment english alphabet as a string
alphabet="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
#assigning some values required in loops
i=1
n=1
#running while loop till no. of rows is needed
while n<=l:
    #assigning new string
    final_string=""
    #using for loop to select letters from alphabet and add to new string
    for x in range(i,i+n):
        letter=alphabet[(x-1)%26]
        final_string=final_string+letter
    print(final_string)
    i=i+n
    n += 1
```

```
enter number of rows: 8
A
BC
DEF
GHIJ
KLMNO
PQRSTU
VWXYZAB
CDEFGHIJ


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q6                SID-21107052
#python program to print prime numbers in given range
#asking user for range as input in lower and upper limit
ll,ul=map(int,input("enter range: ").split())
#using a list for collecting all those prime numbers
mylist=[]
# using for loops to check the divisiblity
for i in range(ll,ul):
    for n in range(2,i):
        #using condition that if a number has a factor then loop breaks and new number is checked
        if i%n ==0:
            break
    # if no factor is found then the no. is added to the list
    else:
        mylist.append(i)
#printing the prime no.s
print("prime numbers=", *mylist)
```

input

```
enter range: 4 80
prime numbers= 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q7                SID-21107052
#python program to print numbers multiple of 7 and divisible by 11
#using for loop to check numbers till 500
for i in range(1,500):
    #the number has to be divisible by 77 to satisfy the conditions
    if i%77==0:
        print(i)
```

```
77
154
231
308
385
462


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q8              SID-21107052
#python program to print required set of numbers
#defining lists and dictionaries for respective requirments
postive_numbers=[]
negative_numbers=[]
odd_numbers=[]
even_numbers=[]
mode={}
#using while loop for taking input
i=1
while i<=10:
    a=int(input("enter number: "))
    #after input is taken all the conditions are checked
    #if input satisfies that it is added to the respective list or dictionary
    if a>0:
        postive_numbers.append(a)
    if a<0:
        negative_numbers.append(a)
    if a%2!=0:
        odd_numbers.append(a)
    if a%2==0:
        even_numbers.append(a)
    if a in mode:
        mode[a]+=1
    else:
        mode[a]=1
    i+=1
# the lists are printed
print("postive number:" ,postive_numbers)
print("negative numbers:" ,negative_numbers)
print("odd numbers:" , odd_numbers)
print("even numbers:",even_numbers)
print("no. of occurences:" ,mode)
```

```
enter number: 4
enter number: 6
enter number: 8
enter number: 3
enter number: 4
enter number: -5
enter number: -5
enter number: -9
enter number: 10
enter number: 4
postive number: [4, 6, 8, 3, 4, 10, 4]
negative numbers: [-5, -5, -9]
odd numbers: [3, -5, -5, -9]
even numbers: [4, 6, 8, 4, 10, 4]
no. of occurences: {4: 3, 6: 1, 8: 1, 3: 1, -5: 2, -9: 1, 10: 1}


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#Q9                SID-21107052
#python program to count the number of occurrences of each word in the list
#asking user for input list
input_list=list(map(int,input().split()))
#defining dictionary
dict={}
#using for loop to selecting list elements
for i in range(0,len(input_list)):
    #checking if the elemnet has already occured then ihe value for that key is increased by 1
    if input_list[i] in dict:
        dict[input_list[i]]+=1
    #else the element is added as a new key with value 1 denoting 1st occurence
    else:
        dict[input_list[i]]=1
#print dictionary
print(dict)

```

input

```
4 5 6 9 4 -6 -4 -3 5 4
{4: 3, 5: 2, 6: 1, 9: 1, -6: 1, -4: 1, -3: 1}


...Program finished with exit code 0
Press ENTER to exit console.
```