Practical 11

Write a Python function to find the roots of a quadratic equation.

```
a,b,c=map(int,input('enter a, b & c :').split(' '))
d = (b**2) - (4*a*c)
sol1 = (-b-(d**0.5))/(2*a)
sol2 = (-b+(d**0.5))/(2*a)
print('solutions are')
print('sol1 = ',sol1)
print('sol2 = ',sol2)
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProjects/first/venv/prac.py
enter a, b & c :1 4 4
solutions are
sol1 =  -2.0
sol2 =  -2.0
```

Practical 12

Write a Python function to evaluate factorial.

```
def fact(a):
    res=1
    while a>=1:
        res*=a
        a=a-1
    return res

a=int(input('Enter the number : '))
print('Factorial value of ',a,' is : ',fact(a))
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProjects/first/venv/prac.py
Enter the number : 5
Factorial value of  5  is :  120
```

Practical 13

Write a Python function to test whether a given number a is prime or not.

```
def prime(a):
    flag = 0
    if a>1:
        for i in range(2, a // 2):
            if a%i==0:
                flag = 1
                #print(a,' is not prime')
                break
        if flag == 1:
            print(a, ' is not prime')
        else:
            print(a,'is prime')

a=int(input('Enter a : '))
prime(a)
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProjects/first/venv/prac.py
Enter a : 15
15  is not prime
```

Practical 14

Write a Python function to generate Fibonacci series till given number.

```
def fibo(n):
    a=0
    b=1
    if n > 1:

        print(a);
        print(b);
        for i in range(2,n):
            c=a+b
            a=b
            b=c
            print(c)
    else:
        print("Enter correct no.")

n=int(input('how many numbers you want : '));
fibo(n)
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProjects/first/venv/prac.py
how many numbers you want : 5
0
1
1
2
3
```

Practical 15

A python program that helps to know the effects of slicing operations on an array.

```
ash = input("Enter the list: ").split()
print(ash[::3])
print(ash[::-1])
print(ash[0:4:-1])
print(ash[:-7])
print(ash[:2])
print(ash[2:])
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SI
Enter the list: arpan korat a k s scet it
['arpan', 'k', 'it']
['it', 'scet', 's', 'k', 'a', 'korat', 'arpan']
[]
[]
['arpan', 'korat']
['a', 'k', 's', 'scet', 'it']
```

Practical 16

A python program to sort the array elements using bubble sort technique.

```
n=int(input('enter the total value'))
arr=[]
for i in range(0,n) :
    print('enter arr[',i+1,']' )
    k=int(input())
    arr.append(k)

print('array before sorting',arr)
for i in range(0,n):
    for j in range(i+1,n):
        if arr[i]>arr[j]:
```

```
            temp=arr[i]
            arr[i]=arr[j]
            arr[j]=temp

print('array after sorting',arr)
```

Output:-

```
enter the total value3
enter arr[ 1 ]
3
enter arr[ 2 ]
2
enter arr[ 3 ]
1
array before sorting [3, 2, 1]
array after sorting [1, 2, 3]
```

Practical 17

A python program to search for the position of an element in an array using index( ) method.

```
n=int(input('enter the total value : '))
arr=[]
for i in range(0,n) :
    print('enter arr[',i+1,']' )
    k=int(input())
    arr.append(k)

a=int(input('Enter the number of which you want to know the position :'))
print('Index of ',a,'is :',arr.index(a))
```

Output:-

```
enter the total value : 3
enter arr[ 1 ]
10
enter arr[ 2 ]
30
enter arr[ 3 ]
25
Enter the number of which you want to know the position :25
Index of  25 is : 2
```

Practical 18

A python program to accept two matrices and find their product.

```
def matrix(row, column):
    p = []
    print('Enter elements row wise')
    for i in range(row):
        q = []
        for j in range(column):
            k = int(input())
            q.append(k)
        p.append(q.copy())
        q.clear()
    return p

print("1st matrix:")
i, j = map(int, input("enter row and column=").split(" "))
a = matrix(i, j)
print("2st matrix:")
i, j = map(int, input("enter row and column=").split(" "))
b = matrix(i, j)

def product(m, n):
    r = []
    if len(m[0]) == len(n):
        for i in range(len(m)):
            t = []
            for j in range(len(n[i])):
                sum = 0
                for k in range(len(m[i])):
                    sum += m[i][k] * n[k][j]
                t.append(sum)
            r.append(t.copy())
            t.clear()
        return r
    else:
        print("Can't Multiply !!!!")
        print('Column of 1st Matrix and Row od 2nd Martix should be same')
        pass
c = product(a, b)
print(c)
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProjects/first/ver
1st matrix:
enter row and column=2 2
Enter elements row wise
1
2
4
5
2st matrix:
enter row and column=2 2
Enter elements row wise
7
8
9
6
[[25, 20], [73, 62]]
```

Practical 19

A python program to find the number of words in a string.

```
ash=input('Enter the String : ')
print ("The original string is : " +ash)
total = str(len(ash.split(' ')))
print ("The number of words in string are : " +total)
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/Pych
Enter the String : arpan korat
The original string is : arpan korat
The number of words in string are : 2
```

Practical 20

A python program to insert a sub string in a string in a particular position.

```
mainstr=input('Enter main string : ')
sub=input('Enter sub string : ')
N=int(input('Enter the position where you want to insert : '))
print("The original string : " +mainstr)
print("The add string : " +sub)

finalstr = list(mainstr)
finalstr.insert(N,sub)
finalstr = ''.join(finalstr)
```

```
# print finalstrult
print("The final string after performing addition : " + str(finalstr))
```

Output:-

```
C:\Users\SIR\PycharmProjects\first\venv\Scripts\python.exe C:/Users/SIR/PycharmProject
Enter main string : arpan korat
Enter sub string :  a s k
Enter the position where you want to insert : 6
The original string : arpan korat
The add string :  a s k
The final string after performing addition : arpan  a s k korat
```