**TASK THREE**

**DATA STRUCTURES**

**1.** Create a list of 10 elements of four different data types like int, string, complex and float.

complex\_list = [1, 'a', 23.9, True, complex(1, 3), 55, "Ronak", False, 665.99]

print(complex\_list)

OUTPUT:

PS D:\Python\Task 3> python Task3\_q1.py

[1, 'a', 23.9, True, (1+3j), 55, 'Ronak', False, 665.99]

**2.** Create a list of size 5 and execute the slicing structure.

data\_list = [4, 5, 3, 7, 8]

print(data\_list[0:3])

OUTPUT:

PS D:\Python\Task 3> python Task3\_Q2.py

[4, 5, 3]

**3.** Write a program to get the sum and multiply of all the items in a given list.

data = [4, 5, 3, 5, 6, 43]

sum = 0

multiply = 1

for i in data:

    sum += i

    multiply \*= i

print('Sum is :', sum)

print('Multiply is : ', multiply)

OUTPUT:

Sum is : 66

Multiply is : 77400

**4.** Find the largest and smallest number from a given list.

data = [4, 5, 66, 1, 445, 0, -44, -3, 999, 10]

min = data[0]

max = data[0]

for i in data:

    if min > i:

        min = i

    if max < i:

        max = i

print("Smallest is = ", min)

print("Largest is = ", max)

OUTPUT:

Smallest is = -44

Largest is = 999

**5.** Create a new list which contains the specified numbers after removing the even numbers from a predefined list.

predefined\_list = [4, 7, 13, 88, 46, 28, 40, 9, 1, 2]

result = []

for i in predefined\_list:

    if i % 2 != 0:

        result.append(i)

print(result)

OUTPUT:

[7, 13, 9, 1]

**6.** Create a list of elements such that it contains the squares of the first and last 5 elements between 1 and30 (both included).

data\_list = []

for i in range(1, 31):

    if i == 1:

        data\_list.append(i \* i)

    if i > 25:

        data\_list.append(i \* i)

print(data\_list)

OUTPUT:

[1, 676, 729, 784, 841, 900]

**7.** Write a program to replace the last element in a list with another list.

**Sample input:** [1,3,5,7,9,10], [2,4,6,8]

**Expected output:** [1,3,5,7,9,2,4,6,8]

list\_1 = [1, 3, 5, 7, 9, 10]

list\_2 = [2, 4, 6, 8]

list\_1.remove(list\_1[-1])

result = list\_1 + list\_2

print(result)

OUTPUT:

[1, 3, 5, 7, 9, 2, 4, 6, 8]

**8.** Create a new dictionary by concatenating the following two dictionaries:

**Sample input:** a={1:10,2:20} b={3:30,4:40}

**Expected output:** {1:10,2:20,3:30,4:40}

a = {1: 10, 2: 20}

b = {3: 30, 4: 40}

a.update(b)

print(a)

OUTPUT:

{1: 10, 2: 20, 3: 30, 4: 40}

**9.** Create a dictionary that contain numbers in the form(x:x\*x) where x takes all the values between 1 and n(both 1 and n included).

**Sample input:** n=5

**Expected output:** {1:1, 2:4, 3:9, 4:16, 5:25}

n = 5

a = {}

for i in range(1, 6):

    a[i] = i \* i

print(a)

OUTPUT:

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

**10.** Write a program which accepts a sequence of comma-separated numbers from console and generates a list and a tuple which contains every number in the form of string.

**Sample input:** 34,67,55,33,12,98

**Expected output:** [‘34’,’67’,’55’,’33’,’12’,’98’] (‘34’,’67’,’55’,’33’,’12’,’98’)

data = input('Enter sequence of comma-separated numbers: ')

print(data.split(','))

print(tuple(data.split(',')))

OUTPUT:

['34', '67', '55', '33', '12', '98']

('34', '67', '55', '33', '12', '98')

**END OF TASK THREE**