Python Training: Week 2 Day 5 (3rd April,2020)  
TASK THREE: DATA STRUCTURES

By: Utkarsh Dandwate

**Q1. Create a list of the 10 elements of four different types of Data Type like int,**

**string, complex and float.**

**🡪** x = [1,2,3.645,4.6589,"utk",5+6j, 7+8j,"utkarsh",9,"10"]

**Q2.** **Create a list of size 5 and execute the slicing structure.   
🡪** x = [1,"2","Three",4,"Five"]

print(x[0:])

print(x[0:len(x):2])

print(x[:4:1])

print(x[::-1])

**Output:**   
[1, '2', 'Three', 4, 'Five']

[1, 'Three', 'Five']

[1, '2', 'Three', 4]

['Five', 4, 'Three', '2', 1]

**Q3.** **Write a program to get the sum and multiply of all the items in a given list.**

**🡪**  x = [1,2,3,5,10]

sum = 0

multi = 1

for i in x:

sum = sum + i

multi = multi \* i

print("Sum of all elements is: ", sum)

print("Product of all elements is: ", multi)

**Q4. Find the largest and smallest number from a given list.**

**🡪** small = x[0]

big = x[0]

for i in range(len(x)):

if x[i] < small:

small = x[i]

if x[i] > big:

big = x[i]

print("Smallest number of the list is: ", small)

print("Largest number of the list is: ", big)

**Q5. Create a new list which contains the specified numbers after removing the**

**even numbers from a predefined list.**

**🡪** x = [123,25,26,46,79,68,36,54,19,27]

y = []

for i in range(len(x)):

if x[i]%2==0:

y.append(x[i])

print(y)

**Q6. Create a list of first and last 5 elements where the values are square of**

**numbers between 1 and 30 (both included).**

**🡪** x = list(range(1,31))

for i in range(len(x)):

x[i] = x[i]\*\*2

print(x)

y = list(x[0:5])

z = list(x[25:30])

print("The list of first 5 elements is: ",y)

print("The list of last 5 elements is: ",z)

**Q7.** **Write a program to replace the last element in a list with another list.**

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

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

**🡪** x = [1,3,5,7,9,10]

y = [2,4,6,8]

x[-1:] = y

print(x)

**Q8. Create a new dictionary by concatenating the following two dictionaries:**

**a={1:10,2:20}**

**b={3:30,4:40}**

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

**🡪** a={1:10,2:20}

b={3:30,4:40}

c = {\*\*a,\*\*b}

print(c)

**Q9. Create a dictionary that contains a number (between 1 and n) in the**

**form(x,x\*x).**

**Sample data (n=5)**

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

**🡪** x = {}

for i in range(1,6):

x[i] = i\*\*2

print(x)

**Q10. Write a program which accepts a sequence of comma-separated numbers**

**from console and generate a list and a tuple which contains every number. Suppose**

**the following input is supplied to the program:**

**34,67,55,33,12,98**

**The output should be:**

**[‘34’,’67’,’55’,’33’,’12’,’98’]**

**(‘34’,’67’,’55’,’33’,’12’,’98’)**

**🡪** x = input("Please enter sequence of numbers separated by comma: ")

a = list(x.split(','))

b = tuple(x.split(','))

print(a)

print(b)