**Write a Python program to calculate the mean of a list of number**

a=[10,20,30,40,50]  
  
result=sum(a)/len(a)  
  
print(result)

def Average(lst):   
 return sum(lst) / len(lst)   
lst = [15, 9, 55, 41, 35, 20, 62, 49]   
average = Average(lst)   
print("Average of the list =", round(average, 2))

**Write a Python program to count the frequency of a given number in a list.**

def countX(lst, x):   
 count = 0  
 for ele in lst:   
 if (ele == x):   
 count = count + 1  
 return count   
  
lst = [8, 6, 8, 10, 8, 20, 10, 8, 8]   
x = int(input("Enter number:"))  
print('{} has occurred {} times'.format(x, countX(lst, x)))

**Write a Python program to count the frequency of all the elements of a list.**

import collections  
my\_list = [10,10,10,10,20,20,20,20,40,40,50,50,30]  
print("Original List : ",my\_list)  
ctr = collections.Counter(my\_list)  
print("Frequency of the elements in the List : ",ctr)

**Write a Python program that reverses a Python list.**

def Reverse(lst):   
 return [ele for ele in reversed(lst)]   
  
lst = [10, 11, 12, 13, 14, 15]   
print(Reverse(lst))

**Write a Python program that reads two lists from the user and prints a third list formed by adding the elements of the first list to the second.**

l=[]  
n=int(input("enter num of elements in list"))  
for i in range(0,n,1):  
 temp=input("Enter item")  
 l.append(temp)  
print("first list is",l)  
l1=[]  
n=int(input("enter num of elements in list2"))  
  
for i in range(0,n,1):  
 temp=input("Enter item")  
 l1.append(temp)  
print("first list is",l1)  
l3=[]  
l3=l+l1  
print("after adding two lists l3 is",l3)

a1 = input("Enter first list elements seperated by space ")  
  
a = list(map(int, a1.split()))  
  
b1 = input("Enter second list elements seperated by space ")  
  
b = list(map(int, b1.split()))  
  
b.extend(a)  
  
print(b)

Write a Python program that rotates the elements of a list so that the element at the first index moves to second, the element at the second index moves to third etc., and the element at the last index moves to the first index.

test\_list = [1, 4, 5, 6, 7, 8, 9, 12]  
print ("The original list is : " + str(test\_list))  
  
test\_list = test\_list[-1:] + test\_list[:-1]  
  
print ("The list after shift is : " + str(test\_list))

**Write a Python program to read a list of n strings and print the string having the maximum and minimum length.**

l=[]  
  
l1=[]  
  
n=int(input("enter num of string in list:"))  
  
for i in range(0,n,1):  
  
 temp=input("enter strings")  
  
 l.append(temp)  
  
 l1.append(len(temp))  
  
print("The list is ",l)  
  
print("The list is ",l1)  
  
b=l1.index(max(l1))  
  
print("the maximum len string is:",l[b])  
  
c=l1.index(min(l1))  
  
print("the minimum len string is:",l[c])

def find\_longest\_word(words\_list):  
 word\_len = []  
 for n in words\_list:  
 word\_len.append((len(n), n))  
 word\_len.sort()  
 return word\_len[-1][1]  
  
print(find\_longest\_word(["PHP", "Exercises", "Backend"]))

**Write a Python program to read a nested tuple from the user ( eg ((1,2,3),(4,5,6),(1,5,4,4)) ) and print the mean, variance and the standard deviation of each element of the nested tuple.**

import math  
  
l1=[]  
  
mean=0  
  
count=0  
  
var=0  
  
t1=((1,2,3),(4,5,6),(1,5,4,4))  
  
#leng=int(input("Enter no of list items for list 1:"))  
  
for i in t1:  
  
 count=mean=0  
  
 for j in i:  
  
 mean=mean+j  
  
 count=count+1  
  
 mean=mean/count  
  
 l1.append(mean)  
  
 print("Mean :",mean)  
  
z=0  
  
for i in t1:  
  
 var=count=0  
  
 for j in i:  
  
 var=(var+(j-l1[z])\*(j-l1[z]))  
  
 count=count+1  
  
 var=var/count  
  
 print("Variance :",var)  
  
 print("Standard Deviation :",math.pow(var,0.5))  
  
 z=z+1

**Given a tuple of pairs [eg, ((2,3),(4,5),(6,8))] print all the pairs (a,b) such that both a and b are odd.**

t = ((1,2),(1,3),(7,3),(7,9))  
  
for i in t:  
  
 if (i[0]%2!=0) and (i[1]%2!=0):  
  
 print(i)

**Write a  Python program to read a nested tuple of student marks for three subjects from the user ( eg ((100,72,43),(45,55,67),(91,95,84)) ) and print the average marks obtained by each student.**

l=[]  
  
l1=[]  
  
n=int(input("enter num of students"))  
  
for i in range(0,n,1):  
  
 l=[]  
  
 for j in range(0,3,1):  
  
 temp=int(input("enter marks"))  
  
 l.append(temp)  
  
 t=tuple(l)  
  
 l1.append(t)  
  
 t1=tuple(l1)  
  
print(t1)  
  
for i in t1:  
  
 mean=count=0  
  
 for j in i:  
  
 mean=mean+j  
  
 count=count+1  
  
 mean=mean/count  
  
 print("average marks :",mean)

**Write a Python program that inputs two tuples and prints True if every element of the first tuple is present in the second, otherwise it prints False.**

t = input("enter elements in tuple 1 ")  
  
t1 = tuple(map(int, t.split()))  
  
t = input("enter elements in tuple 2 ")  
  
t2 = tuple(map(int, t.split()))  
  
s1 = set(t1)  
  
s2 = set(t2)  
  
if s1.issubset(s2):  
  
 print("True")  
  
else:  
  
 print("False")