

LIST MANIPULATION

PROGRAMS

#To Add Two Matrices

```
X = [[1,2,3],
     [4 ,5,6],
     [7 ,8,9]]
Y = [[9,2,1],
     [4,7,3],
     [6,5,9]]
result = [[0,0,0],
          [0,0,0],
          [0,0,0]]
# iterate through rows
for i in range(len(X)):
    # iterate through columns
    for j in range(len(X[0])):
        result[i][j] = X[i][j] + Y[i][j]
for r in result:
    print(r)
```

#To Transpose a Matrix

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

```
result = [[0,0,0],  
          [0,0,0],  
          [0,0,0]]
```

```
# iterate through rows
```

```
for i in range(len(X)):
```

```
    # iterate through columns
```

```
    for j in range(len(X[0])):
```

```
        result[j][i] = X[i][j]
```

```
for r in result:
```

```
    print(r)
```

#Numbers in a list within a given range

```
list1 = [60, 10, 50, 70, 50, 10, 40, 70, 10]
```

```
l = 50
```

```
r = 80
```

```
c = 0
```

```
# traverse in the list1
```

```
for x in list1:
```

```
    # condition check
```

```
    if x >= l and x <= r:
```

```
        c += 1
```

```
print(c)
```

#Get unique values from a list

```
list1 = [100, 120, 100, 130, 140, 140]
```

```
unique_list = []
```

```
# traverse for all elements
```

```
for x in list1:
```

```
    # check if exists in unique_list or not
```

```
    if x not in unique_list:
```

```
        unique_list.append(x)
```

```
# print list
```

```
for x in unique_list:
```

```
    print (x)
```

#Maximum and minimum element's position in a list

```
x = [5, 3, 7, 3, 4, 1]
```

```
minpos = a.index(min(x))
```

```
# inbuilt function to find the position of maximum
```

```
maxpos = a.index(max(x))
```

```
# printing the position
```

```
print("The maximum is at position", maxpos + 1)
```

```
print("The minimum is at position", minpos + 1)
```

#to swap the first and last value of a list

```
lst=[]
```

```
n= int(input("Enter the number of elements in list:"))
```

```
for x in range(0,n):
```

```
    element=int(input("Enter value"))
```

```
    lst.append(element)
```

```
temp=lst[0]
```

```
lst[0]=lst[n-1]
```

```
lst[n-1]=temp
```

```
print("New list is:")
```

```
print(a)
```

`#to Sort a List According to the Length of the Elements`

```
lst=[]
n=int(input("Enter number of elements:"))
for i in range(1,n+1):
    b=input("Enter element:")
    lst.append(b)
lst.sort(key=len)
print(a)
```

`#append two lists`

```
a = [101,102,103]
b = [104,105,106]
```

`# Add all elements in list "b" to list "a."`

```
a.extend(b) #a=a+b
```

`# List "a" now contains six elements.`

```
print(a)
```

#Split Even and Odd elements into two different lists

```
lst = [12, 15, 18, 17, 51, 52, 73, 74, 85]
```

```
ev_li = []
```

```
od_li = []
```

```
for i in lst:
```

```
    if (i % 2 == 0):
```

```
        ev_li.append(i)
```

```
    else:
```

```
        od_li.append(i)
```

```
print("Even lists:", ev_li)
```

```
print("Odd lists:", od_li)
```

#sequence of comma-separated numbers from console
and generate a list

```
values=input("enter comma separated numbers")
```

```
l=values.split(",")
```

```
print(l)
```