LISTS

1. Start with the list [8,9,10]. Do the following: Extract the first five elements from the list.
Extract the elements from the 3rd to the 7th position (inclusive).
Extract the last three elements from the list.

(a) Set the second index to 17
(b) Add 4, 5, and 6 to the end of the list
(c) Remove the first entry from the list
(d) Sort the list in descending order
(e) Insert 25 at index 3
(g) Reverse the List
(h) Print the list
(i) Print the count of each element in the list
(j) Find the maximum and minimum element of the list.
(k) Use slicing on the list [1,2,5,3,4,6,7,12,8] and do as below:

- Extract the first five elements from the list.
- Extract the elements from the 3rd to the 7th position (inclusive).
- Extract the last three elements from the list.

2.Take a list as user input, without using inbuilt function, Edit the list by deleting an element from a position pos. Print the new list.

3.Given a list in Python and provided the positions of the elements, write a program to swap the two elements in the list. Input : List = [23, 65, 19, 90], pos1 = 1, pos2 = 3
Output : [19, 65, 23, 90]
4. Write a program to exchange the first half of the elements in the list with second half, assuming that the length of the list is an even number.
5. Given a list of integers. Find a peak element i.e., an element that is **not smaller** than its neighbour's. **Note:** For corner elements, we need to consider only one neighbour.
Input: list= [5, 10, 20, 15] Output: 20 Explanation: The element 20 has neighbour's 10 and 15, both are less than 20.
Input: list= [10, 20, 15, 2, 23, 90, 67] Output: 20 or 90 Explanation: The element 20 has neighbour's 10 and 15, both are less than 20, similarly 90 has neighbour's 23 and 67.
6. Write a program to read a list and split it into two in such a way that elements without duplicates are stored in one list and elements with duplicates are stored in the second list.
7. Write a program that rotates the elements of a list so that the element at the first index moves to the second index, the element in the second index moves to the third index, etc., and the element in the last index moves to the first index.
8. Given two unsorted lists of distinct elements, the task is to find all pairs from both lists whose sum is equal to x.
Input :
list1 = [-1, -2, 4, -6, 5, 7]

list2 = [6, 3, 4, 0]
x = 8
Output : *[(5, 3), (4, 4)]*

9. Write a function to read a matrix and display the matrix. You are given a matrix and find the following. Use functions for each task. Pass input to each task as parameters and return the result.

(a) Sum of the elements in each row
(b) Sum of elements in each column
(c) Add 2 matrices