**Practical No: 9**

**Aim:** Using List: Write a program to: Create a list, add element to list, delete element from the list. Sort the list, reverse the list and counting elements in a list.

**Course Outcome: Develop ‘Python’ programs using List, Tuples and Dictionary.**

**Requirements: Computer, Python 3.3.34, Vs Code.**

**Theory:** Lists are just like dynamically sized arrays, declared in other languages (vector in C++ and Array List in Java). Lists need not be homogeneous always which makes it the most powerful tool in [Python](https://www.geeksforgeeks.org/python-programming-language/). A single list may contain DataTypes like Integers, Strings, as well as Objects. Lists are mutable, and hence, they can be altered even after their creation.

## Create Python Lists

In Python, a list is created by placing elements inside square brackets [], separated by commas.

# list of integers

my\_list = [1, 2, 3]

A list can have any number of items and they may be of different types (integer, float, string, etc.).

We can add one item to a list using the append() method or add several items using the extend() method.

# Appending and Extending lists in Python

odd = [1, 3, 5]

odd.append(7)

print(odd)

odd.extend([9, 11, 13])

print(odd)

We can also use + operator to combine two lists. This is also called concatenation.

The \* operator repeats a list for the given number of times.

# Concatenating and repeating lists

odd = [1, 3, 5]

print(odd + [9, 7, 5])

print(["re"] \* 3)

**Delete List Elements**

We can delete one or more items from a list using the [Python del statement](https://www.programiz.com/python-programming/del). It can even delete the list entirely.

We can use remove() to remove the given item or pop() to remove an item at the given index.

The pop() method removes and returns the last item if the index is not provided. This helps us implement lists as stacks (first in, last out data structure).

And, if we have to empty the whole list, we can use the clear() method.

**Flowchart:**

**Program:**

# Write a peogram to Do Various operation on list

Company = []

Los = 0

while Los != 7:

    print("1. Add Item to list..")

    print("2. Delete Item From list..")

    print("3. Reverse the list..")

    print("4. Sort Items of list..")

    print("5. Count Items in the List..")

    print("6. Clear all Items from list")

    print("7. Print the List")

    print("0. EXIT")

    Choice = int(input("Enter Your Choice 1-7: "))

    if(Choice == 1):

        Com = str(input("Enter the item name: "))

        Company.append(Com)

    elif(Choice==2):

        Com = str(input("Enter the item name: "))

        Company.remove(Com)

    elif(Choice == 3):

        Company.reverse()

    elif(Choice == 4):

        Company.sort()

    elif(Choice == 6):

        Company.clear()

    elif(Choice == 5):

        Com = str(input("Enter the item name: "))

        print("Number of the item specified: ",Company.count(Com))

    elif(Choice == 7):

        print(Company)

    elif(Choice == 0):

        Los = 7

    else:

        print("Enter Appropriate option..")

print(Company)

**Output/Result:**

1. Add Item to list..

2. Delete Item From list..

3. Reverse the list..

4. Sort Items of list..

5. Count Items in the List..

6. Clear all Items from list

7. Print the List

0. EXIT

Enter Your Choice 1-7: 7

['Dhiraj', 'Rohan', 'Rohit']

**Conclusion: Hence, We have performed the various actions on the list.**