**•Problem Statement : Write a Python Program to Merge Two Lists and Sort it.**

**•Objectives :**

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**!~s1To learn about the Lists in Python programming language.**

**!~s1To understand the concept of interpreted language working.**

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**•Theory :**

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**•List : In Python programming, a list is created by placing all the items (elements) inside square brackets [], separated by commas. It can have any number of items and they may be of different types (integer, float, string etc.).**

**Thus, the list datatype in python can be used to easily create an iterable sequential collection of data that is very useful in every programming concept.**

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**•Algorithm :**

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**•Problem Solution :**

**!~s2Take in the number of elements for the first list and store it in a variable.**

**!~s2Take in the elements of the list one by one.**

**!~s2Similarly, take in the elements for the second list also.**

**!~s2Merge both the lists using the ‘+’ operator and then sort the list.**

**!~s2Display the elements in the sorted list.**

**!~s2Exit.**

**•Steps for Implementation :**

**!~s3User must enter the number of elements for the first list and store it in a variable.**

**!~s3User must then enter the elements of the list one by one using a for loop and store it in that list.**

**!~s3User must similarly enter the elements of the second list one by one.**

**!~s3The ‘+’ operator is then used to merge both the lists.**

**!~s3The sort function then sorts the list in ascending order.**

**!~s3The sorted list is then printed.**

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**•Platform : Ubuntu**

**•Input :**

**> Enter the Elements of List 1 : 12 9 45**

**> Enter the Elements of List 2 : 8 34**

**•Output:**

**> Sorted list is : [ 8, 9, 12, 34, 45]**

**•Conclusion : Successfully Realised the program to solve the Problem Mentioned.**

**•FAQs :**

**!~s4What is the concept of lists in Python?**

**.> A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements. Each element or value that is inside of a list is called an item. Just as strings are defined as characters between quotes, lists are defined by having values between square brackets [ ].**

**!~s4Comment on applications of lists in Python.**

**.> Python lists, being mutable and iterable can be used to store data in a sequential manner, they are the replacement to arrays in other commonly used OOP languages like C & C++.**

**!~s4List and explain few methods which can be used with lists?**

**.> list.append(elem) - adds a single element to the end of the list. Common error: does not return the new list, just modifies the original.**

**.> list.index(elem) - searches for the given element from the start of the list and returns its index.**

**.> list.reverse() - reverses the list in place.**

**.> list.pop(index) - removes and returns the element at the given index. Returns the rightmost element if index is omitted (roughly the opposite of append()).**

**!~s4What is the principal difference between list and tuple?**

**.> The main difference between lists and tuples is the fact that lists are mutable whereas tuples are immutable.**

**What’s the difference between append() and extend() methods?**

**.> When append() method adds its argument as a single element to the end of a list, the length of the list itself will increase by one. Whereas extend() method iterates over its argument adding each element to the list, extending the list.**

**•Practice Assignments:**

**!~s5Python Program to Swap the First and Last Value of a List.**

**!~s5Python Program to Find the Second Largest Number in a List Using Bubble Sort.**

**!~s5Python Program to create list of Tuples with first element as the number and the Second element as the Square of the Number.**

**!~s5Python Program to put Even & Odd Elements of a list into two seperate lists.**

**!~s5Python Program to remove Duplicate Items from a list.**

**!~s5Python Program to calculate average of Numbers is list.**