

# Rajalakshmi Engineering College

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Batch: 2028

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## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 2\_CY

Attempt : 2

Total Mark : 30

Marks Obtained : 0

### Section 1 : Coding

#### 1. Problem Statement

Imagine you're managing a store's inventory list, and some products were accidentally entered multiple times. You need to remove the duplicate products from the list to ensure each product appears only once.

You have an unsorted doubly linked list of product IDs. Some of these product IDs may appear more than once, and your goal is to remove any duplicates.

#### ***Input Format***

The first line of input consists of an integer  $n$ , representing the number of elements in the list.

The second line of input consists of  $n$  space-separated integers representing the list elements.

### **Output Format**

The output prints the final after removing duplicate nodes, separated by a space.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 10

12 12 10 4 8 4 6 4 4 8

Output: 8 4 6 10 12

### **Answer**

-

**Status :** Skipped

**Marks :** 0/10

## **2. Problem Statement**

Krishna needs to create a doubly linked list to store and display a sequence of integers. Your task is to help write a program to read a list of integers from input, store them in a doubly linked list, and then display the list.

### **Input Format**

The first line of input consists of an integer  $n$ , representing the number of integers in the list.

The second line of input consists of  $n$  space-separated integers.

### **Output Format**

The output prints a single line displaying the integers in the order they were added to the doubly linked list, separated by spaces.

If nothing is added (i.e., the list is empty), it will display "List is empty".

Refer to the sample output for the formatting specifications.

**Sample Test Case**

Input: 5

1 2 3 4 5

Output: 1 2 3 4 5

**Answer**

-

**Status :** -

**Marks :** 0/10

**3. Problem Statement**

You are required to implement a program that deals with a doubly linked list.

The program should allow users to perform the following operations:

Insertion at the End: Insert a node with a given integer data at the end of the doubly linked list. Insertion at a given Position: Insert a node with a given integer data at a specified position within the doubly linked list. Display the List: Display the elements of the doubly linked list.

**Input Format**

The first line of input consists of an integer n, representing the number of elements to be initially inserted into the doubly linked list.

The second line consists of n space-separated integers, denoting the elements to be inserted at the end.

The third line consists of integer m, representing the new element to be inserted.

The fourth line consists of an integer p, representing the position at which the new element should be inserted (1-based indexing).

**Output Format**

If p is valid, display the elements of the doubly linked list after performing the insertion at the specified position.

If p is invalid, display "Invalid position" in the first line and the second line prints

the original list.

Refer to the sample output for formatting specifications.

**Sample Test Case**

Input: 5

10 25 34 48 57

35

4

Output: 10 25 34 35 48 57

**Answer**

-

**Status :** -

**Marks :** 0/10