

**University of Engineering & Management, Kolkata Course: B.Tech (CSE)**

**Semester: 3rd**

**Paper Name: Data Structure & Algorithm Laboratory Paper Code: PCC - 391**

**Date of Assignment- 07.07.2025 Date of Submission - 14.07.2025**

**Section: Data Science**

**Assignment – I**

**(All programs to be implemented in C Programming Language)**

**Topic : Dynamic Array**

1. Write a C program to search an element in an Array using dynamic memory allocation.
2. Write a C program to find the 3rd/user defined position based maximum element in an array using dynamic memory allocation.
3. Write a C program to find the minimum element in an array using dynamic memory allocation.
4. Write a C program to search an element in a 2D-Array using dynamic memory allocation.
5. Write a C program to find the maximum element in a 2D-array using dynamic memory allocation.
6. Write a C program to find the minimum element in a 2D-array using dynamic memory allocation.
7. Write a C program to merge two sorted dynamic array.
8. Write a C program to merge two unsorted dynamic array in sorted order.
9. Write a C program to delete a range of data from a dynamic array.
10. Write a C program to modify the size of an array and utilize that during run time.

**ASSIGMENT 1**

**(Python)**

**(All programs to be implemented in Python Programming Language)**

* Write a Python program to create an array of 5 integers and display the array items. Access individual elements through indexes.
* Write a Python program to append a new item to the end of the array.
* Write a Python program to reverse the order of the items in the array.
* Write a Python program to get the number of occurrences of a specified element in an array.
* Write a Python program to create an array containing six integers. Also, print all the members of the array.
* Write a Python program to insert a new item before the second element in an existing array.
* Write a Python program to remove a specified item using the index from an array.
* Write a Python program to remove the first occurrence of a specified element from an array.
* Write a Python program to convert an array to an ordinary list with the same items.
* Write a Python program to find whether a given array of integers contains any duplicate element. Return true if any value appears at least twice in the said array and return false if every element is distinct.
* Write a Python program to find a pair with the highest product from a given array of integers.
* Write a Python program to get the length of an array.
* Write a Python program to remove all duplicate elements from a given array and returns a new array.
* Write a Python program to find the missing number in a given array of numbers between 10 and 20.
* Write a Python program to create a 2D array containing 12 integers. Also print all the members of the array.

**Instruction:**

* Mention the following thing using A4 pages (use one side only):
* Program Objective
* Program Code.
* Output
* Handwritten assignment solutions are required. **No printout is allowed.**
* Submit all the assignments using the channel file.
* One Index page must be attached there.
* **Late submission will not be entertained. Maintain the deadline.**