A close-up of a sign

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**Lab Manual: 01**

**Course Code: CSE207**

**Topic: 1D Array**

**Course Title: Data Structures**

**Instructor: Md. Manowarul Islam, Adjunct Faculty, Department of CSE**

**Objective:**

The objective of this lab is to provide a fundamental idea about the sorting element of

an integer array using C/C++ programming. At the end of the lab, students are able to know:

• How to take input into an array.

• How to control the elements of the array.

**Lab Task**

**Exercise 1:**

Write a program to find maximum and minimum number of an integer array. Show the sample input and output clearly.

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| **Sample Input** | **Sample Output** |
| Input array elements: 17 4 5 6 2 10 | Maximum: 17  Minimum: 2 |

**Exercise 2:**

Write a program which can input last seven days temperature into an array and display the highest temperature. How many days that highest is found.

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| **Sample Input** | **Sample Output** |
| Input array elements: 36 35 39 37 38 39 38 | Highest temperature: 39  Total days of highest temperature: 2 |

**Exercise 3:**

Write a program in C to delete an element at desired position from an array.

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| **Sample Input** | **Sample Output** |
| Input array elements: 10 20 30 40 50  Input position to delete: 2 | Array elements: 10, 30, 40, 50 |

**Exercise 4:**

Write a program in C to insert element in array at specified position.

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| **Sample Input** | **Sample Output** |
| Input array elements: 10 20 30 40 50  Input element to insert: 25  Input position where to insert: 3 | Elements of array are: 10 20 25 30 40 50 |

**Exercise 5:**

Find the elements of an array that are greater than a specific Threshold. Create a new array to store all the elements from the original array that exceed a given threshold.

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| **Sample Input** | **Sample Output** |
| Input array elements: 10 25 89 50 100  Threshold: 30 | 89 50 100 |

**Exercise 6:**

Remove duplicate elements from the 1D array and print the modified array.

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| **Sample Input** | **Sample Output** |
| Input array elements: 10 20 10 30 | 10 20 30 |

**Exercise 7:**

Write a program which can input N numbers of rolls into an array and display the odd roll numbers also count how many odd numbers are in the array.

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| **Sample Input** | **Sample Output** |
| Number of elements, N = 6  Input roll numbers: 13 20 30 33 1 7 | Odd roll numbers: 13, 33, 1, 7  Total odd roll numbers: 4 |

**Exercise 8:**

Write a program that can input N numbers of Marks into an array and display the sum of the marks, the average of all marks, and the highest marks in the array.

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| **Sample Input** | **Sample Output** |
| Number of elements, N = 7  Input marks: 88 100 44 76 33 45 79 | Sum of the marks: 465  Avg of the marks: 66.4285  Highest marks: 100 |