



University of Central Punjab

(Incorporated by Ordinance No. XXIV of 2002 promulgated by Government of the Punjab)

FACULTY OF INFORMATION TECHNOLOGY

Data Structures and Algorithms - Lab

Graded Lab 01			
<u>CLO NO</u>	<u>CLO STATEMENT</u>	<u>Blooms Taxonomy Level</u>	<u>PLO</u>
<u>1</u>	Solve real-world problems skillfully with precision using programming constructs learned in theory with the course toolkit.	P3	5

Task 1

Create a template class **MyArray** using a dynamically allocated array. Your class should support the following operations:

- Insert an element at a given index
- Delete an element from a given index
- Get an element at a given index
- Update an element at a given index
- Return the current size of the array
- Display all elements
- Find the index of a given value

Task 2

Write a function using your custom array that reverses the order of all the elements in the array **in-place**.

Reversing the list **in-place** means that the list's elements should be rearranged within the same array (no new arrays or containers should be created). The function should modify the original array,

Task 3

Write a function that checks whether the elements in the list form a palindrome. A palindrome is a sequence of elements that reads the same backward as forward.

Your function should determine if the sequence of elements in the list is a palindrome by comparing elements symmetrically from both ends toward the middle. If the list is a palindrome, the function should return true; otherwise, it should return false.