



NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES
FAST - PESHAWAR CAMPUS

Data Structures Lab (CL-2001)

Instructor: Muhammad Saood Sarwar

Lab Task : 1

Question 1:

Write a C++ program that utilizes pointer functions to perform the following operations on an array:

1. **Reverse Array via Pointers:** Implement a function that reverses the order of the elements in the array using only pointer arithmetic (i.e., without using array indexes or temporary variables).
2. **Find Maximum and Minimum Elements:** Write a function that, using pointers, finds the maximum and minimum values in the array and returns them.
3. **Shift Array Elements Circularly:** Create a function that shifts the elements of the array one position to the right in a circular manner using pointers. For example, the last element should move to the first position.

Requirements:

- Each function must be called through pointers rather than direct invocation.