

National University of Computer and Emerging Sciences



Laboratory Manual *for* Programming Fundamentals

Course Instructor	Dr, Asma Naseer
Lab Instructor(s)	Ms. Fareeha Ashfaq Ms, Eisha Khan
Section	BCS-1F
Semester	Fall 2023

Department of Computer Science

FAST-NU, Lahore, Pakistan

Objective:

After doing this manual students are able to understand:

- 1D Integer array
- Character Array

Problems

NOTE: Handle invalid conditions otherwise marks will be detected.

Task: 1 Palindrome String using Character Array

Write a C++ program which will take a character array as user input and then check the input array is palindrome or not? Print message accordingly.

Sample Output:

Input array: 12344321

The input string 12344321 is a palindrome

Input array: 12345321

The input string 12345321 is not a palindrome

Input array: Afifa

The input string Afifa is a palindrome

Input array: Atiqa

The input string Atiqa is not a palindrome

Task: 2 Frequency of Array Elements

Write a C++ program which will take a character array as user input and then print the count of each element of an array.

Sample Output:

Input Array: wwwaaawba

Frequency of each element of an array:

4 w

4 a

1 b

Task: 3 Array Sum by passing the constant Array

Write a C++ program, which takes an integer array as user input. Then the array should be updated whose each index value must be equal to the sum of numbers from 1 to the number on each index on the array.

Sample Output:

Input array: 6 4 1 3 0
Output Array: 21 10 1 6 0

Note: Don't create another array for storing sum, change the values of the original array.

Task: 4 Array Sum by passing the constant Array

Write a program that takes an integer array as input from the user and prints the number of zero bits in the binary representation of each number entered by the user.

Sample Output:

Input array: 7 8 3 2 19
Output Array: 0 3 0 1 2

Note: This is because binary representation of 7 is 111, 8 is 1000, 3 is 11, 2 is 10, and 19 is 10011