

National University of Computer and Emerging Sciences



Laboratory Manual *for* Programming Fundamentals

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Section	1N
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Objectives:

After performing this lab, students will be able to

1. Understand integer and character arrays.
2. Solve problems based on alphanumeric input.
3. 2D arrays Manipulation.

Problem 1:

Write a function ***“Counter”*** that receives a character array and calculates Total characters, uppercases, lowercases and spaces then print them all. (In this question, all characters except spaces are counted as letters).

Sample Run:

<p><u>Character Array:</u> Hello, I am a student of FAST University.</p> <p><u>Values returned:</u> No. of letters are: 34 No. of spaces are: 7 No. of uppercase letters are: 7 No. of lowercase letters: 25</p>
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Problem 2:

Write a C++ function which will read the contents of 2D integer array from the interactive user .The dimensions of the array will be 5 x 2. Let’s say the user inputs are 1,2,3,4,5,6,7,8,9,0.

Sample Output should be:

1	2
3	4
5	6
7	8
9	0

Problem 3:

Take a 3x3 matrix from the user. Now find out the trace of the matrix. Trace is the sum of elements in the main diagonal. Pass the matrix in the form of a two day array to the function which will find the trace.

Sample run:

Input: 1 2 3 4 5 6 7 8 9

Output:

1 2 3

4 5 6

7 8 9

Trace: 15

Problem 4:

Create a C++ function which will take an array of strings in its parameters. Now your function should reverse the string in that array.

Sample Input: Hello
World

Sample Output: olleH
dlroW