

# *National University of Computer and Emerging Sciences*



## *Lab Manual # 9*

### *Programming Fundamentals Lab*

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Section	BCS-1k
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### **Objectives:**

In this lab, students will practice:

- String
- 2d Arrays

- Functions

### Questions:

1. Write a C++ program to input a 3x4 matrix from the user and display the matrix along with the sum of each row.
2. Create a C++ program that initializes a 3x4 matrix and finds the largest element in the matrix. Display the original matrix and the largest element.
3. Develop a C++ program to check if a given 3x3 matrix is an identity matrix or not. Display the matrix and the result of the identity matrix check.
4. Develop a C++ program to search a specific number in the given 3x3 matrix.
5. Write a C++ program to input a 3x4 matrix from the user and display the matrix along with the sum of their diagonal elements.
6. Create a C++ program that initializes a 3x3 matrix and print the transpose of this matrix.
7. Write a C++ program that defines a function to count the number of vowels in a C-string (null-terminated string). The program should take user input for a string and then call the function to display the count of vowels.
8. Create a C++ program that defines a function to check if a given C-string is a palindrome or not. The program should take user input for a string and then call the function to display whether the string is a palindrome or not.
- 9.