EXPERIMENT-7: 1D Arrays & Strings

Objective: To understand the concept of Arrays, manipulating array elements, arrays of unknown or varying size.

List of Lab Activities:

Write algorithm and C program, compile, execute and test the code using Linux C compiler with suitable test cases.

1. Find sum of all array elements using recursion.
2. Create an array 'a1' with 'n' elements. Insert an element in i^{th} position of 'a1' and also delete an element from j^{th} position of 'a1'.
3. Convert uppercase string to lowercase using for loop.

List of Practice Activities:

Write algorithm and C program, compile, execute and test the code using Linux C compiler with suitable test cases.

1. Create an array 'a1' with 'n' elements.
   a. Copy all elements of 'a1' into another array 'a2' using pointers. Display the contents of both the arrays using pointers.
   b. Merge the contents of 'a1' and 'a2' into a new array 'a3'.
2. Find the total number of alphabets, digits or special characters in a string.
3. Find whether the entered string is palindrome or not.
4. Count the number of words in a string.
5. Find the sum of rows and columns of matrix of given order (row x column).
6. Count how many even numbers are there in a given integer array. [Hint: Linear Search]
7. Find out the largest and smallest number in a given array. [Hint: Linear Search]
8. Find the Transpose and Inverse of a matrix.
9. Find the product of two matrices using pointers.
10. Find if the given matrix of order (m x n) is a Sparse matrix or not. [Assume that a matrix can become a sparse matrix if more than half the total number of its elements have the value zero]
11. Pass an array of 'n' integers to a function which sorts them using selection sort algorithm.
12. Store 'n' integers in an array. Find the number of comparisons made while searching a number using Linear and Binary Search techniques.