

## **Data Structure Lab Program - 2016**

### **Lab exercise – 2**

*Note:* All programs must be written in C following coding rules as mentioned on the course website.

1. Using 1D integer array, implement an ADT having following operations defined on it:
  - a. Insertion of an element at specific index.
  - b. Deletion of an element.
  - c. Traversal of elements.
  - d. Searching an input value.
  - e. Counting the number of occurrences of each value in array.
  - f. Finding minimum and maximum element and its location (if multiple find all locations).
  - g. Finding the kth largest element.
2. Solve the following without using `string` library.
  - a. Find length of an input string.
  - b. Reverse an input string.
  - c. Check whether an input string is palindrome or not.
3. 2D Array and Recursion based questions:
  - a. Find the sum of diagonal elements of an input 2D array.
  - b. Transpose a matrix.
  - c. Find multiplication of two input matrices.
  - d. Find the sum of n numbers stored in a 1D array using recursion.
  - e. Recursively find HCF and LCM of two numbers.