Data Structures Lab, B.Tech 2nd Semester

Instructions

1. This is only for practice. No need to submit it.
2. Complete it by 5:00 PM today. Your completion will be reviewed by the Teaching Assistants.

Practice Assignment 1

1. (a) Write a C program to count total number of even and odd elements in an array.
   (b) Write a function in C to move all zeroes to the end of a given array.
   (c) Write a function in C to check whether an array is a subset of another array
   (d) Write a C program to remove duplicates from an array.
   (e) Write a C program that calculates the factorial of a given number using a function.
2. (a) Write a C program that takes a sentence as input. Reverse the letters of the words that are of odd length and are in the even position.
   For instance for input string: "This is an example of a horror movie", the output should be "This is an elpmaxe of a horror eivom"
   (b) Take a two dimentional matrix from the user. Display the matrix. Now take input as a number. Find location of the number in the matrix and display neighbors of the number in sorted order. For example, for the following matrix:
   12 4 8 9
   1 2 88 5
   7 58 6 3

   Neighbors of 2 are 1,12,4,8,88,7,58,6. Neighbors of 3 are 5, 6, 88 These neighbors should be displayed in sorted order. Assume that every number in the matrix is unique (no repetition).
   (c) Consider two integer arrays such that the second array contains more elements as compared to the first array. The first array may contain elements which are not present in the second array. Write a program to reorder elements of the second array by the order of elements as in the first array. The elements that are not there in the first array but present in the second array should be sorted and added at the end of the output array. For example,
   Input:
   first = [5, 7, 3, 1, 11]
   second= [5, 7, 10, 3, 5, 7, 1, 3, 6, 9, 3, 5, 1, 9, 2]
   Output:[5, 5, 5,7,7,3, 3,3,1,1,2,6,9,9,10]