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 2

1. (a) Write a C program to find the maximum and minimum elements in an array.
   (b) Write a function in C to move all the odd numbers to the end of a given array.
   (c) Write a function in C to reverse the elements of an array.
   (d) Write a C program to count the frequency of each element in an array..
   (e) Write a function in C to merge two sorted arrays into one sorted array
2. (a) Write a C program that takes a sentence as input. Reverse the letters of the words that are of even length and are in the odd position.
   For instance for input string: ”This is an example of a horror movie”, the output should be ”siht is na example fa a rorroh movie”
   (b) Given two integer arrays, where the second array contains more elements than the first, write a program to filter and arrange the elements. The program should first retain only the common elements between the two arrays, arranging them in the order they appear in the first array. Any duplicates of these elements in the second array should be removed. Elements from the second array that are not present in the first array should then be sorted in descending order and appended to the end of the output.
   Example Input: first = [4, 2, 8, 5]
   second = [5, 2, 9, 8, 7, 4, 5, 6, 8, 2]

   Expected Output: [4, 2, 8, 5, 9, 7, 6]
   (c) Given an N×N matrix of non-negative integers, find the path from the top-left to the bottom-right corner that minimizes the sum of the elements along the path. You can only move down or right at any step. Display the path and the minimum sum.
   Example: Consider the matrix
   1 3 1
   1 4 1
   1 2 1

   output: 1,1,1,2,1=6