

Data Structure Lab

Spring 24-25

Homework

1. Initialize an array of 10 elements and print the array elements both in normal and reverse order.

For example,

Input: **12 32 43 1 54 53 15 64 3 13**

Output: **13 3 64 15 53 54 1 43 32 12**

2. Initialize an integer array of 10 elements and print how many numbers are odd and how many numbers are even.

For example,

Input: **12 32 43 1 54 53 15 64 3 13**

Output:

6 odd numbers

4 even numbers

3. Write a function that takes TWO parameters to print all the odd numbers between a given range. Input the starting value of the range and ending value of the range. Then, send them as parameters to your function.

For example,

Output:

Starting value: 12

Ending value: 23

13 15 17 19 21 23

4. Write a program that takes an array of integers as input and calculates the sum of all elements in the array.

Example:

Input: [1, 2, 3, 4, 5]

Output: 15

5. Write a program that finds the largest element in a 1D array of integers.

Example:

Input: [3, 5, 7, 2, 8]

Output: 8

6. Write a program that finds the element that appears the most times in an array. If there are multiple elements with the same frequency, return any one of them.

Example:

Input: [1, 2, 2, 3, 3, 3, 4, 4]

Output: Most frequent element: 3

7. Write a program that finds the difference between the maximum and minimum elements in an array.

Example:

Input: [5, 2, 9, 1, 7]

Output: Difference: 8

Guidelines:

- ***Solve these problems using C++ Programming Language.***
- ***First Understand the problem.***
- ***Take the necessary study to solve the problem.***
- ***Try to solve the problem by yourself.***
- ***Do not write any code without proper understanding.***