CSE2217: Data Structures and Algorithms II (DSA2)

Divide and Conquer Practice Sheet

CT-1 Preparation

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Problem 1 Find the Minimum and Maximum Elements

Given an array of integers, find both the minimum and maximum elements using the Divide and Conquer approach.

Input

Array = [12, 5, 19, 3, 8, 14]

Output

Minimum = 3
Maximum = 19

Problem 2 Count Even and Odd Elements

Given an array of integers, determine the total number of even and odd elements using Divide and Conquer.

Input

Array = [2, 5, 8, 3, 4, 7]

Output

Even Count = 3
Odd Count = 3

Problem 3 Count Occurrences of Two Given Values

Given an array of integers and two target values X and Y, determine the total number of occurrences of each target value using Divide and Conquer. Count both values independently.

Input

Array = [4, 2, 5, 4, 7, 5]
$X = 4$
$Y = 5$

Output

Occurrences of X (4) = 2
Occurrences of Y (5) = 2

Problem 4 Calculate the Sum of Even and Odd Elements

Given an array of integers, calculate the sum of all even elements and the sum of all odd elements separately using Divide and Conquer.

Input

Array = [2, 5, 8, 3, 4, 7]

Output

Sum of Even Elements = 14
Sum of Odd Elements = 15

Problem 5 Find the Sum of Positive and Negative Elements Separately

Given an array of integers, calculate the sum of all positive elements and the sum of all negative elements separately using Divide and Conquer.

Input

Array = [−5, 8, 0, −2, 4, −7]

Output

Positive Sum = 12
Negative Sum = −14