CSE 106
Online on Divide and Conquer and Greedy Algorithms

Time: 40 minutes

Problem Statement

Given an array of integers $A[]$ of size n, the task is to find the **maximum difference** between two elements in the array such that the **larger element appears after the smaller element** in the array.

Input

The size of the array, n An array A of integers.

Output

A single integer representing the maximum difference $A[j] - A[i]$ such that $j > i$ and $A[j] > A[i]$.

Constraints

- $1 \leq n \leq 10^5$
- $-10^9 \leq A[i] \leq 10^9$

Approach

You must solve this problem using the **Divide and Conquer** technique.

Examples

- **Input:** [9, 8, 1, 6, 3, 2]
  Output: 5   (6 - 1)

- **Input:** [1, 4, 9, 5, 3, 7]
  Output: 8   (9 - 1)