

Max Product of Next Greater Elements

Assignment 1

Data Structures and Algorithms

Due date: 15 January, 2020

Problem Statement: Given an array A of N elements, find the maximum of the products of Next Greater Elements (NGEs) for each element.

Note

NGEs for an element at index i are two values at valid and closest indices j and k , such that $j < i < k$ and $0 \leq j, k < N$ and $A[j] > A[i]$ and $A[k] > A[i]$. If any of j, k doesn't exist, then that value is considered to be 0.

Input

First line contains N , the number of elements in an array. The next line contains N space separated integers.

Output

Print the maximum product of NGEs.

Constraints

$$1 \leq N \leq 10^6$$

$$1 \leq A_i \leq 10^9$$

Time Limit: 1 sec

Memory Limit: 256 MB

Sample Test Case

Input	Output
4 1 3 2 4	12