



Pair Sums ☆

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Problem

Submissions

Leaderboard

Editorial

Given an array, we define its value to be the value obtained by following these instructions:

- Write down all pairs of numbers from this array.
- Compute the product of each pair.
- Find the sum of all the products.

For example, for a given array, for a given array $[7, 2, -1, 2]$,

Pairs	$(7, 2), (7, -1), (7, 2), (2, -1), (2, 2), (-1, 2)$
Products of the pairs	14, -7, 14, -2, 4, -2
Sum of the products	$14 + (-7) + 14 + (-2) + 4 + (-2) = 21$

Note that $(7, 2)$ is listed twice, one for each occurrence of 2.

Given an array of integers, find the largest value of any of its nonempty subarrays.

Note: A subarray is a contiguous subsequence of the array.

Complete the function `largestValue` which takes an array and returns an integer denoting the largest value of any of the array's nonempty subarrays.

Input Format

The first line contains a single integer n , denoting the number of integers in array A .

The second line contains n space-separated integers A_i denoting the elements of array A .

Constraints

- $3 \leq n \leq 5 \cdot 10^5$
- $-10^3 \leq A_i \leq 10^3$

Subtasks

- $n \leq 5000$ for 20% of the points.
- $n \leq 2 \cdot 10^5$ for 70% of the points.

Output Format

Print a single line containing a single integer denoting the largest value of any of the array's nonempty subarrays.

Sample Input 0

```
6
-3 7 -2 3 5 -2
```

Sample Output 0



41

Explanation 0

In this case, we have $A = [-3, 7, -2, 3, 5, -2]$. The largest-valued subarray turns out to be $[7, -2, 3, 5]$ with value $(7 \cdot -2) + (7 \cdot 3) + (7 \cdot 5) + (-2 \cdot 3) + (-2 \cdot 5) + (3 \cdot 5) = 41$.

Sample Input 1

```
10
5 7 -5 6 3 9 -8 2 -1 10
```

Sample Output 1

```
200
```

Current Buffer (saved locally, editable)  

Java 7



```

1 ▼ import java.io.*;
2 import java.math.*;
3 import java.security.*;
4 import java.text.*;
5 import java.util.*;
6 import java.util.concurrent.*;
7 import java.util.regex.*;
8
9 ▼ public class Solution {
10
11     // Complete the largestValue function below.
12 ▼ static long largestValue(int[] A) {
13     // Return the largest value of any of A's nonempty subarrays.
14
15 }
16
17 private static final Scanner scanner = new Scanner(System.in);
18
19 ▼ public static void main(String[] args) throws IOException {
20     BufferedWriter bufferedWriter = new BufferedWriter(new
FileWriter(System.getenv("OUTPUT_PATH")));
21
22     int n = scanner.nextInt();
23     scanner.skip("(\\r\\n|\\n\\r\\u2028\\u2029\\u0085)?");
24
25 ▼ int[] A = new int[n];
26
27     String[] AItems = scanner.nextLine().split(" ");
28     scanner.skip("(\\r\\n|\\n\\r\\u2028\\u2029\\u0085)?");
29

```

```
30 ▼    for (int i = 0; i < n; i++) {
31 ▼        int AItem = Integer.parseInt(AItems[i]);
32 ▼        A[i] = AItem;
33    }
34
35    long result = largestValue(A);
36
37    bufferedWriter.write(String.valueOf(result));
38    bufferedWriter.newLine();
39
40    bufferedWriter.close();
41
42    scanner.close();
43 }
44 }
45
```

Line: 1 Col: 1

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