Largest Rectangle in Histogram

Try to solve the Largest Rectangle in Histogram problem.

Statement

Given an array of integers, `heights`, which represents the histogram's bar height, find the area of the largest rectangle in the histogram, where the width of each bar is constant (such as, 1).
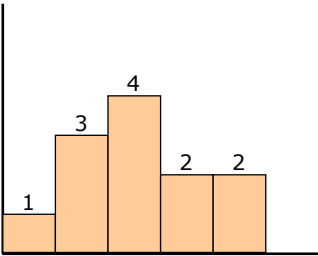
Constraints

- $1 \leq$ `heights.length` $\leq 10^5$
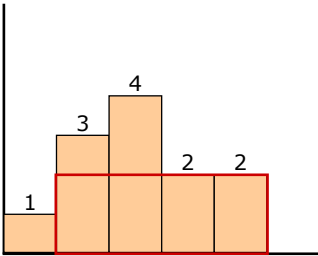- $0 \leq$ `heights[i]` $\leq 10^4$

Examples

Sample example 1

Input

heights	1	3	4	2	2

Explanation

Output

8
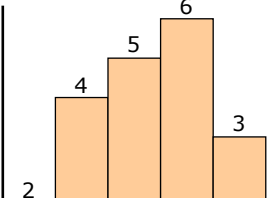
Explanation
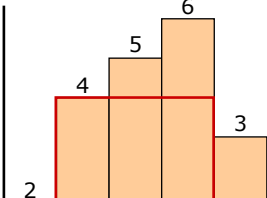
Sample example 2

Input

heights	2	4	5	6	3

Explanation

Output

12

Explanation

Understand the problem

Let's take a moment to make sure you've correctly understood the problem. The quiz below helps you check if you're solving the correct problem:

Largest Rectangle in Histogram

1
What is the output if the following array of heights is given as input?

heights = [1, 2, 5, 7, 3, 9]

A) 21

B) 27

C) 10

D) 12

Submit Answer

Question 1 of 3
0 attempted

Reset Quiz ↺

Try it yourself

Implement your solution in the following coding playground:

☕ Java

usercode > LargestRectangle.java

```java
1  import java.util.*;
2  public class LargestRectangle{
3      public static int largestRectangle(int[] heights) {
```

```java
7          return 0;
8      }
9  }
```

Powered by AI | Submit

Test Cases | Results

Case 1 | Case 2 | Case 3

Input #1

[6,2,5,4,5,1,6,4,2]

Largest Rectangle in Histogram

Hide Hint

You might want to go over the Stacks pattern again.

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Meeting Rooms

Next →

Subtree of Another Tree

☑ Mark as Completed