**84. Largest Rectangle in Histogram**

Hard

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Given *n* non-negative integers representing the histogram's bar height where the width of each bar is 1, find the area of largest rectangle in the histogram.

图表, 直方图

描述已自动生成  
Above is a histogram where width of each bar is 1, given height = [2,1,5,6,2,3].

图表, 直方图

描述已自动生成  
The largest rectangle is shown in the shaded area, which has area = 10 unit.

**Example:**

**Input:** [2,1,5,6,2,3]

**Output:** 10

**Example 1:**

墙上的钟表

中度可信度描述已自动生成

**Input:** heights = [2,1,5,6,2,3]

**Output:** 10

**Explanation:** The above is a histogram where width of each bar is 1.

The largest rectangle is shown in the red area, which has an area = 10 units.

**Example 2:**

一些文字和图案

描述已自动生成

**Input:** heights = [2,4]

**Output:** 4

**Constraints:**

* 1 <= heights.length <= 105
* 0 <= heights[i] <= 104