42. Trapping Rain Water ★

Total Accepted: **78470**   Total Submissions: **232504**   Difficulty: **Hard**

Given *n* non-negative integers representing an elevation map where the width of each bar is 1, compute how much water it is able to trap after raining.

For example,

Given `[0,1,0,2,1,0,1,3,2,1,2,1]` , return `6` .

The above elevation map is represented by array [0,1,0,2,1,0,1,3,2,1,2,1]. In this case, 6 units of rain water (blue section) are being trapped. **Thanks Marcos** for contributing this image!

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C++   ⟳   </>

```cpp
1  class Solution {
2  public:
3      int trap(vector<int>& height) {
4          vector<int> maxFL2R, maxFR2L;
5          maxFL2R.reserve(height.size());
6          maxFR2L.reserve(height.size());
7          int maxL = 0, maxR = 0, totoal = 0;
8          for (int i = 0, n = height.size(); i < n; ++i) {
9              if (height[i] > maxL) maxL = height[i];
10             if (height[n - 1 - i] > maxR) maxR = height[n - 1 - i];
11             maxFL2R.push_back(maxL);
12             maxFR2L.push_back(maxR);
```

```
13              }
14          reverse(maxFR2L.begin(), maxFR2L.end());
15          for (int i = 0, n = height.size(); i < n; ++i) {
16              totoal += min(maxFL2R[i]-height[i], maxFR2L[i]-height[i]);
17          }
18          return totoal;
19      }
20  };
```

Custom Testcase ☐

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