

11. Container With Most Water

Difficulty	medium
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Finished	@July 9, 2023
Problem	array
Previously asked company	Amazon Facebook Google
website	leetcode

Question:

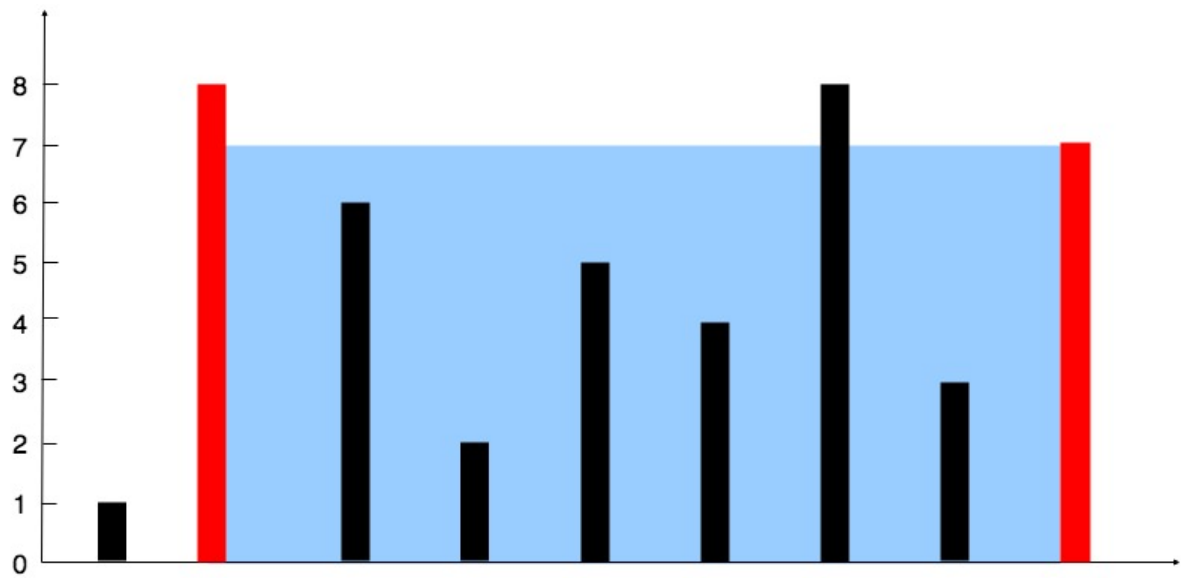
You are given an integer array `height` of length `n`. There are `n` vertical lines drawn such that the two endpoints of the `i` th line are `(i, 0)` and `(i, height[i])`.

Find two lines that together with the x-axis form a container, such that the container contains the most water.

Return the maximum amount of water a container can store.

Notice that you may not slant the container.

Example 1:



Input: `height = [1,8,6,2,5,4,8,3,7]`
Output: 49
Explanation: The above vertical lines are represented by array `[1,8,6,2,5,4,8,3,7]`. In this case, the max area of water (blue section) the container can contain is 49.

Example 2:

Input: `height = [1,1]`
Output: 1

Optimal solution:

Time complexity: $O(n)$

Space complexity: $O(1)$

```
class Solution(object):
    def maxArea(self, height):
        n = len(height)
        l, r = 0, n-1
        maxArea = 0
        while l < r:
            area = (r - l) * min(height[l], height[r])
            maxArea = max(maxArea, area)
            if height[l] < height[r]:
                l += 1
            else:
                r -= 1
        return maxArea
```