2022-01-12 Wednesday Day 2: Container with Most Water

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

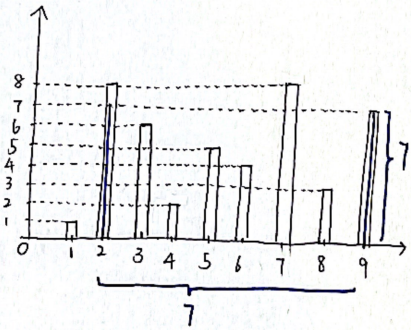
Find two lines that together with the x-axis for a container, such that the container contains the most water. Return the max amount of water a container can store.

Notice: you may not slant the container

Example 1

Height [1,8,6,2,5,4,8,3,7]

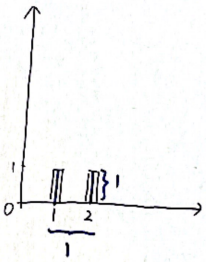
Figure



Volume 7x7=49

Example 2

[1,1]



1x1=1

★ constraints: (1) n == height.length

(2) $2 \le n \le 10^5$

(3) $0 \le height[i] \le 10^4$ → Approach 1: Bruteforce

index i, j

□ = min(height[i], height[j])

□ x △

△ = j - i.

Example 1

Index	Local	Global
[1,2]	1x1=1	1
[1,3]	1x2=2	2
[1,4]	1x3=3	3
[1,5]	1x4=4	4
[1,6]	1x5=5	5
[1,7]	1x6=6	6
[1,8]	1x7=7	7

Index	Local	Global
[1,9]	1x8=8	8
[2,3]	6x1=6	8
[2,4]	2x2=4	8
[2,5]	5x3=15	15
[2,6]	4x4=16	16
[2,7]	8x5=40	40
[2,8]	3x6=18	40

Index	Local	Global
[2,9]	7x7=49	49
[3,4]	2x1=2	49
[3,5]	5x2=10	49
[3,6]	4x3=12	49
[3,7]	6x4=24	49
[3,8]	3x5=15	49
[3,9]	6x6=36	49