**Problem-1**

**Container with most water**

You are given an integer array height of length n. There are n vertical lines drawn such that the two endpoints of the ith 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

**Constraints-**

* n == height. Length
* 2 <= n <= 105
* 0 <= height [i] <= 104

**Problem-2**

**Zigzag Conversion**

The string "PAYPALISHIRING" is written in a zigzag pattern on a given number of rows like this: (you may want to display this pattern in a fixed font for better legibility)

P A H N

A P L S I I G

Y I R

And then read line by line: "PAHNAPLSIIGYIR"

Write the code that will take a string and make this conversion given a number of rows:

string convert(string s, int numRows);

**Example 1:**

**Input:** s = "PAYPALISHIRING", numRows = 3

**Output:** "PAHNAPLSIIGYIR"

**Example 2:**

**Input:** s = "PAYPALISHIRING", numRows = 4

**Output:** "PINALSIGYAHRPI"

**Explanation:**

P I N

A L S I G

Y A H R

P I

**Example 3:**

**Input:** s = "A", numRows = 1

**Output:** "A"

**Constraints:**

* 1 <= s.length <= 1000
* s consists of English letters (lower-case and upper-case), ',' and '.'.
* 1 <= numRows <= 1000

**Problem-3**

Given an integer array nums, return all the triplets [nums[i], nums[j], nums[k]] such that i != j, i != k, and j != k, and nums[i] + nums[j] + nums[k] == 0.

Notice that the solution set must not contain duplicate triplets.

**Example 1:**

**Input:** nums = [-1,0,1,2,-1,-4]

**Output:** [[-1,-1,2],[-1,0,1]]

**Explanation:**

nums[0] + nums[1] + nums[2] = (-1) + 0 + 1 = 0.

nums[1] + nums[2] + nums[4] = 0 + 1 + (-1) = 0.

nums[0] + nums[3] + nums[4] = (-1) + 2 + (-1) = 0.

The distinct triplets are [-1,0,1] and [-1,-1,2].

Notice that the order of the output and the order of the triplets does not matter.

**Example 2:**

**Input:** nums = [0,1,1]

**Output:** []

**Explanation:** The only possible triplet does not sum up to 0.

**Example 3:**

**Input:** nums = [0,0,0]

**Output:** [[0,0,0]]

**Explanation:** The only possible triplet sums up to 0.

**Constraints:**

* 3 <= nums.length <= 3000
* -105 <= nums[i] <= 105