

Assignment Questions 4



Question 1

Given three integer arrays arr1, arr2 and arr3 sorted in strictly increasing order, return a sorted array of **only** the integers that appeared in **all** three arrays.

Example 1:

Input: arr1 = [1,2,3,4,5], arr2 = [1,2,5,7,9], arr3 = [1,3,4,5,8]

Output: [1,5]

Explanation: Only 1 and 5 appeared in the three arrays.



Question 2

Given two 0-indexed integer arrays `nums1` and `nums2`, return a list answer of size 2 where:

`answer[0]` is a list of all **distinct** integers in `nums1` which are **not** present in `nums2`.

`answer[1]` is a list of all **distinct** integers in `nums2` which are **not** present in `nums1`.

Note that the integers in the lists may be returned in **any** order.

Example 1:

Input: `nums1 = [1,2,3]`, `nums2 = [2,4,6]`

Output: `[[1,3],[4,6]]`

Explanation:

For `nums1`, `nums1[1] = 2` is present at index 0 of `nums2`, whereas `nums1[0] = 1` and `nums1[2] = 3` are not present in `nums2`. Therefore, `answer[0] = [1,3]`.

For `nums2`, `nums2[0] = 2` is present at index 1 of `nums1`, whereas `nums2[1] = 4` and `nums2[2] = 6` are not present in `nums1`. Therefore, `answer[1] = [4,6]`.

Question 3

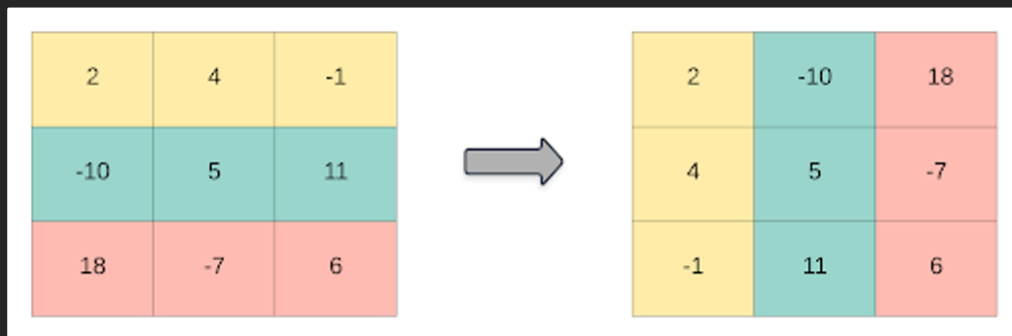
Given a 2D integer array matrix, return *the transpose of matrix*.

The **transpose** of a matrix is the matrix flipped over its main diagonal, switching the matrix's row and column indices.

Example 1:

Input: matrix = [[1,2,3],[4,5,6],[7,8,9]]

Output: [[1,4,7],[2,5,8],[3,6,9]]



Question 4

Given an integer array nums of 2n integers, group these integers into n pairs (a1, b1), (a2, b2), ..., (an, bn) such that the sum of min(ai, bi) for all i is **maximized**. Return *the maximized sum*.

Example 1:

Input: nums = [1,4,3,2]

Output: 4

Explanation: All possible pairings (ignoring the ordering of elements) are:

1. (1, 4), (2, 3) -> min(1, 4) + min(2, 3) = 1 + 2 = 3

2. (1, 3), (2, 4) -> min(1, 3) + min(2, 4) = 1 + 2 = 3

3. (1, 2), (3, 4) -> min(1, 2) + min(3, 4) = 1 + 3 = 4

So the maximum possible sum is 4.



Question 5

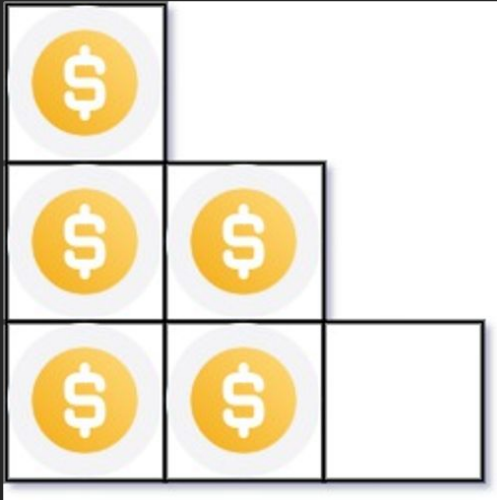
You have n coins and you want to build a staircase with these coins. The staircase consists of k rows where the i th row has exactly i coins. The last row of the staircase **may** be incomplete.

Given the integer n , return *the number of **complete** rows of the staircase you will build.*

Example 1:



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Input: $n = 5$

Output: 2

Explanation: Because the 3rd row is incomplete, we return 2.



Question 6

Given an integer array `nums` sorted in **non-decreasing** order, return *an array of the squares of each number sorted in non-decreasing order*.

Example 1:

Input: `nums = [-4,-1,0,3,10]`

Output: `[0,1,9,16,100]`

Explanation: After squaring, the array becomes `[16,1,0,9,100]`.
After sorting, it becomes `[0,1,9,16,100]`



Question 7

You are given an $m \times n$ matrix `M` initialized with all 0's and an array of operations `ops`, where `ops[i] = [ai, bi]` means `M[x][y]` should be incremented by one for all $0 \leq x < ai$ and $0 \leq y < bi$.

Count and return *the number of maximum integers in the matrix after performing all the operations*

Example 1:

0	0	0		1	1	0		2	2	1
0	0	0	⇒	1	1	0	⇒	2	2	1
0	0	0		0	0	0		1	1	1

Input: `m = 3, n = 3, ops = [[2,2],[3,3]]`

Output: 4

Explanation: The maximum integer in `M` is 2, and there are four of it in `M`.
So return 4.



Question 8

Given the array `nums` consisting of $2n$ elements in the form $[x_1, x_2, \dots, x_n, y_1, y_2, \dots, y_n]$.

Return the array in the form $[x_1, y_1, x_2, y_2, \dots, x_n, y_n]$.

Example 1:

Input: `nums = [2,5,1,3,4,7]`, `n = 3`

Output: `[2,3,5,4,1,7]`

Explanation: Since $x_1=2$, $x_2=5$, $x_3=1$, $y_1=3$, $y_2=4$, $y_3=7$ then the answer is `[2,3,5,4,1,7]`.