Weekly Contest - 6

404. Sum of Left Leaves

Solved

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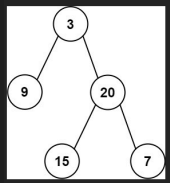
Given the `root` of a binary tree, return *the sum of all left leaves.*

A **leaf** is a node with no children. A **left leaf** is a leaf that is the left child of another node.

Example 1:




```
Input: root = [3,9,20,null,null,15,7]
Output: 24
Explanation: There are two left leaves in the binary tree, with values 9
and 15 respectively.
```

Example 2:

```
Input: root = [1]
Output: 0
```

Leaf → No left, No Right


```
public static int sumOfLeftLeaves(TreeNode root) {
    if (root == null) return 0;
    if (root.left != null && root.left.left
            == null && root.left.right == null)
        sum += root.left.val;

    sumOfLeftLeaves(root.left);
    sumOfLeftLeaves(root.right);
    return sum;
}
```

405. Convert a Number to Hexadecimal

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Given a 32-bit integer `num`, return *a string representing its hexadecimal representation*. For negative integers, two's complement method is used.

All the letters in the answer string should be lowercase characters, and there should not be any leading zeros in the answer except for the zero itself.

Note: You are not allowed to use any built-in library method to directly solve this problem.

Example 1:

```
Input: num = 26
Output: "1a"
```

Example 2:

```
Input: num = -1
Output: "ffffffff"
```

```
public static String toHex(int num) {  2 usages
    if (num == 0) return "0";

    // Handle negative number
    long n = num < 0 ? num + (long) Math.pow(2, 32) : num;
    char[] hex = {'0','1','2','3','4','5','6','7','8','9','a','b','c','d','e','f'};
    StringBuilder sb = new StringBuilder();

    while (n != 0) {
        int rem = (int) (n % 16);
        sb.append(hex[rem]);
        n /= 16;
    }
    return sb.reverse().toString();
}
```

Not Solved

406. Queue Reconstruction by Height

Medium · Topics · Companies · Hint

You are given an array of people, `people`, which are the attributes of some people in a queue (not necessarily in order). Each `people[i] = [hi, ki]` represents the i^{th} person of height h_i with **exactly** k_i other people in front who have a height greater than or equal to h_i.

Reconstruct and return *the queue that is represented by the input array* `people`. The returned queue should be formatted as an array `queue`, where `queue[j] = [hj, kj]` is the attributes of the j^{th} person in the queue (`queue[0]` is the person at the front of the queue).

Example 1:

```
Input: people = [[7,0],[4,4],[7,1],[5,0],[6,1],[5,2]]
Output: [[5,0],[7,0],[5,2],[6,1],[4,4],[7,1]]
Explanation:
Person 0 has height 5 with no other people taller or the same height in front.
Person 1 has height 7 with no other people taller or the same height in front.
Person 2 has height 5 with two persons taller or the same height in front,
which is person 0 and 1.
Person 3 has height 6 with one person taller or the same height in front, which
is person 1.
Person 4 has height 4 with four people taller or the same height in front,
which are people 0, 1, 2, and 3.
Person 5 has height 7 with one person taller or the same height in front, which
is person 1.
Hence [[5,0],[7,0],[5,2],[6,1],[4,4],[7,1]] is the reconstructed queue.
```

Example 2:

```
Input: people = [[6,0],[5,0],[4,0],[3,2],[2,2],[1,4]]
Output: [[4,0],[5,0],[2,2],[3,2],[1,4],[6,0]]
```

(7,0), (4,4), (7,1), (5,0), (6,1), (5,2)

→ (7,0), (5,0), (7,1), (6,1), (5,2), (4,4)

Sort p[1] increasing

p[0] decreasing

insert p at index p[1]

→ (5,0), (7,0), (6,1), (7,1), (5,2), (4,4)

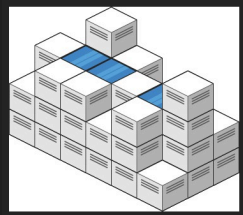
```
public static int[][] reconstructQueue(int[][] people) {
    Arrays.sort(people, (int[] a, int[] b) -> {
        // For same height -> smaller k first
        if (a[0] == b[0]) return a[1] - b[1];
        return b[0] - a[0];
    });
    List<int[]> answer = new ArrayList<>();
    for (int[] p : people)
        answer.add(p[1], p);

    return answer.toArray(new int[people.length][2]);
}
```

407. Trapping Rain Water II

Hard · Topics · Companies

Given an `m x n` integer matrix `heightMap` representing the height of each unit cell in a 2D elevation map, return *the volume of water it can trap after raining.*

Example 1:



```
Input: heightMap = [[1,4,3,1,3,2],[3,2,1,3,2,4],[2,3,3,2,3,1]]
Output: 4
Explanation: After the rain, water is trapped between the blocks.
We have two small ponds 1 and 3 units trapped.
The total volume of water trapped is 4.
```