3160. Find the Number of Distinct Colors Among the Balls

Solved ●

Medium Hint

You are given an integer `limit` and a 2D array `queries` of size `n x 2`.

There are `limit + 1` balls with **distinct** labels in the range `[0, limit]`. Initially, all balls are uncolored. For every query in `queries` that is of the form `[x, y]`, you mark ball `x` with the color `y`. After each query, you need to find the number of **distinct** colors among the balls.

Return an array `result` of length `n`, where `result[i]` denotes the number of distinct colors *after* `i`th query.

Note that when answering a query, lack of a color *will not* be considered as a color.

Example 1:

> **Input:** limit = 4, queries = [[1,4],[2,5],[1,3],[3,4]]
>
> **Output:** [1,2,2,3]
>
> **Explanation:**
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> 
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>
> - After query 0, ball 1 has color 4.
> - After query 1, ball 1 has color 4, and ball 2 has color 5.
> - After query 2, ball 1 has color 3, and ball 2 has color 5.
> - After query 3, ball 1 has color 3, ball 2 has color 5, and ball 3 has color 4.

Example 2:

> **Input:** limit = 4, queries = [[0,1],[1,2],[2,2],[3,4],[4,5]]
>
> **Output:** [1,2,2,3,4]
>
> **Explanation:**
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> 
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> - After query 0, ball 0 has color 1.
> - After query 1, ball 0 has color 1, and ball 1 has color 2.
> - After query 2, ball 0 has color 1, and balls 1 and 2 have color 2.
> - After query 3, ball 0 has color 1, balls 1 and 2 have color 2, and ball 3 has color 4.
> - After query 4, ball 0 has color 1, balls 1 and 2 have color 2, ball 3 has color 4, and ball 4 has color 5.

Constraints:

- $1 <= limit <= 10^9$
- $1 <= n == queries.length <= 10^5$
- $queries[i].length == 2$
- $0 <= queries[i][0] <= limit$
- $1 <= queries[i][1] <= 10^9$

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Yes No

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Hint 1

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