1381. Design a Stack With Increment Operation

Hint

Medium 1.5K 82

Companies

Design a stack that supports increment operations on its elements.

Implement the `CustomStack` class:

- `CustomStack(int maxSize)` Initializes the object with `maxSize` which is the maximum number of elements in the stack.
- `void push(int x)` Adds `x` to the top of the stack if the stack has not reached the `maxSize`.
- `int pop()` Pops and returns the top of the stack or `-1` if the stack is empty.
- `void inc(int k, int val)` Increments the bottom `k` elements of the stack by `val`. If there are less than `k` elements in the stack, increment all the elements in the stack.

Example 1:

Input
["CustomStack","push","push","pop","push","push","push","increment","increment","pop","pop","pop","pop"]
[[3],[1],[2],[],[2],[3],[4],[5,100],[2,100],[],[],[],[]]
Output
[null,null,null,2,null,null,null,null,null,103,202,201,-1]
Explanation
CustomStack stk = new CustomStack(3); // Stack is Empty []
stk.push(1); // stack becomes [1]
stk.push(2); // stack becomes [1, 2]
stk.pop(); // return 2 --> Return top of the stack 2, stack becomes [1]
stk.push(2); // stack becomes [1, 2]
stk.push(3); // stack becomes [1, 2, 3]
stk.push(4); // stack still [1, 2, 3], Do not add another elements as size is 4
stk.increment(5, 100); // stack becomes [101, 102, 103]
stk.increment(2, 100); // stack becomes [201, 202, 103]
stk.pop(); // return 103 --> Return top of the stack 103, stack becomes [201, 202]
stk.pop(); // return 202 --> Return top of the stack 202, stack becomes [201]
stk.pop(); // return 201 --> Return top of the stack 201, stack becomes []
stk.pop(); // return -1 --> Stack is empty return -1.

Constraints:

- `1 <= maxSize, x, k <= 1000`
- `0 <= val <= 100`
- At most `1000` calls will be made to each method of `increment`, `push` and `pop` each separately.

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Yes No

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