Description Solution Discuss (367) Submissions

907. Sum of Subarray Minimums

Medium 2953 180 Add to List Share

Given an array of integers arr, find the sum of `min(b)`, where `b` ranges over every (contiguous) subarray of `arr`. Since the answer may be large, return the answer **modulo** $10^9 + 7$.

Example 1:

```
Input: arr = [3,1,2,4]
Output: 17
Explanation:
Subarrays are [3], [1], [2], [4], [3,1], [1,2], [2,4], [3,1,2],
[1,2,4], [3,1,2,4].
Minimums are 3, 1, 2, 4, 1, 1, 2, 1, 1, 1.
Sum is 17.
```

Example 2:

```
Input: arr = [11,81,94,43,3]
Output: 444
```

Constraints:

- $1 <= arr.length <= 3 * 10^4$
- $1 <= arr[i] <= 3 * 10^4$

Accepted 60,864 Submissions 182,296

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C#

```
public class Solution {
    public int SumSubarrayMins(int[] a
        var mod = 1e9+7
    var n = arr.Length;
    var smallToLeft = Enumerable.Repeat(-1,n); //TRack next smaller the left
    var smallToRight = Enumerable.Repeat(n,n). //TRack next smaller in right

    var stack = new Sta //Just track the index. strictly stores indexes decreasing values
    for(int i=0;i<n;i++
        while(stack.Cou arr[stack.Peek()]>arr[i val at top index is > a top's small to right is Repeat this
            var top = stack.Pop();
            smallToRigh i;
        }
        if(stack.Count> smallToLeft[i] = stack. //If there is a top ind be i's small to the lef
        stack.Push(i);
    }
```

Your previous code was restored from y

Testcase Run Code Result

Accepted Runtime: 116 ms

Your input [3,1,2,4]

Output 17

Expected 17

Console Use Example Testcase

Problems Pick One Prev /0 Next Run Code Subm