

211. 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

PROGRAM:-

```
def sumSubarrayMins(arr):
```

```
    MOD = 10**9 + 7
```

```
    stack = []
```

```
    arr = [0] + arr + [0]
```

```
    res = 0
```

```
    for i, val in enumerate(arr):
```

```
        while stack and arr[stack[-1]] > val:
```

```
            j = stack.pop()
```

```
            k = stack[-1]
```

```
            res += arr[j] * (i - j) * (j - k)
```

```
        stack.append(i)
```

```
    return res % MOD
```

```
# Example
```

```
arr = [3, 1, 2, 4]
```

```
print(sumSubarrayMins(arr)) # Output: 17
```

OUTPUT:-



TIME COMPLEXITY:-O(N)