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Unique Subarrays (G23)

Problem

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A contiguous subarray is defined as unique if all the integers contained within it occur exactly once. There is a unique weight associated with each of the subarray. Unique weight for any subarray equals it's length if it's unique, 0 otherwise. Your task is to calculate the sum of unique weights of all the contiguous subarrays contained within a given array.

Input : $arr[] = \{1, 2, 3\}$

Output: 10

{1, 2, 3} is a subarray of length 3 with distinct elements. Total length of length three = 3.

 $\{1, 2\}, \{2, 3\}$ are 2 subarray of length 2 with distinct elements. Total length of lengths two = 2 + 2 = 4

 $\{1\}, \{2\}, \{3\}$ are 3 subarrays of length 1 with distinct element. Total lengths of length one = 1 + 1 + 1 = 3

Sum of lengths = 3 + 4 + 3 = 10

Input: $arr[] = \{1, 2, 1\}$

Output: 7

Input: $arr[] = \{1, 2, 3, 4\}$ Output: 20

Input Format

- First line of the input contains an integer T, denoting the number of testcases
- T lines follow, where first line of each testcase contains an integer N denoting array size.
- Last line of each testcase then contains N single space separated integers

Constraints

- $1 \le T, N \le 10^5$
- $0 \le A_i \le 10^9$
- Summation of N for all T does not exceed 10⁵

Output Format

1. Print the summation of unique weights of all the subarrays for each testcase in a separate line.

Sample Input 0

1 5 1 2 3 4 5

Sample Output 0

35

Explanation 0

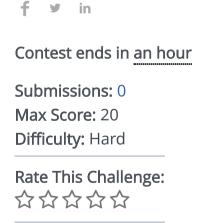
Since, all integers are distinct within any contiguous subarray, therefore the unique weight will be the summation of lengths of all subarrays. Hence, this sums upto (5*1) + (4*2) + (3*3) + (2*4) + (1*5) = 35

Sample Input 1

```
1
8
1 2 3 4 4 6 7 7
```

Sample Output 1

31





More





```
1 ▼#include <cmath>
   #include <cstdio>
   #include <vector>
   #include <iostream>
   #include <algorithm>
   #include<bits/stdc++.h>
   using namespace std;
   int subarray(int a[],int n)
9 ▼{
10
        unordered_set<int> s;
        int j=0,r=0;
11
        for(int i=0;i<n;i++)</pre>
12
13 ₹
            while(j<n && s.find(a[j])==s.end())</pre>
14 ▼
15 ▼
                 s.insert(a[j]);
16 ▼
17
                 j++;
18
19
            r+=((j-i)*(j-i+1))/2;
20
            s.erase(a[i]);
21 🔻
22
23
        return r;
24
   }
25
26 vint main() {
27
           int t;
28
        cin>>t;
        while(t-->0)
29
30 ▼
31
            int n;
32
            cin>>n;
33 ▼
            int a[n];
            for(int i=0;i<n;i++)</pre>
34
35 ▼
                     cin>>a[i];
```

<u>Upload Code as File</u> Test against custom input

Run Code

Submit Code

Testcase 0 ✓

Testcase 1 ✓

Congratulations, you passed the sample test case.

Click the **Submit Code** button to run your code against all the test cases.

Input (stdin)

```
1
5
1 2 3 4 5
```

Your Output (stdout)

35

Expected Output

35

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