

## Count Subarrays with given XOR

Difficulty: Medium

Accuracy: 58.86%

Submissions: 29K+

Points: 4

Given an array of integers `arr[]` and a number `k`, count the number of subarrays having XOR of their elements as `k`.

### Examples:

**Input:** `arr[] = [4, 2, 2, 6, 4]`, `k = 6`

**Output:** 4

**Explanation:** The subarrays having XOR of their elements as 6 are `[4, 2]`, `[4, 2, 2, 6, 4]`, `[2, 2, 6]`, and `[6]`. Hence, the answer is 4.

**Input:** `arr[] = [5, 6, 7, 8, 9]`, `k = 5`

**Output:** 2

**Explanation:** The subarrays having XOR of their elements as 5 are `[5]` and `[5, 6, 7, 8, 9]`. Hence, the answer is 2.

**Input:** `arr[] = [1, 1, 1, 1]`, `k = 0`

**Output:** 4

**Explanation:** The subarrays are `[1, 1]`, `[1, 1]`, `[1, 1]` and `[1, 1, 1, 1]`.

```
1 // } Driver Code Ends
26 class Solution {
27     public long subarrayXor(int arr[], int k) {
28         int res = 0;
29         HashMap<Integer, Integer> mp = new HashMap<>();
30         int prefXOR = 0;
31         for(int val : arr){
32             prefXOR ^= val;
33             res += mp.getDefault(prefXOR ^ k, 0);
34             if(prefXOR == k)
35                 res++;
36             mp.put(prefXOR, mp.getDefault(prefXOR, 0) + 1);
37         }
38         return res;
39     }
40 }
```

