

Subarrays with equal 1s and 0s

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<https://practice.geeksforgeeks.org/problems/count-subarrays-with-equal-number-of-1s-and-0s-1587115620/1/>

11th april -ss

LOGIC - When we have to found, how many groups(continuous (subarray)) in the society.-

1. Then one way is - put -1 to negitive people, and +1 to positive people.
2. Start from the starting of the society to the end of the society, by add their value(-1 or +1) to the variable.
3. Where where we found the instant sum equal, to previous instant sum, it means after that part to current the group is balanced.



```
class Solution
{
    //Function to count subarrays with 1s and 0s.
```

```
    static int countSubarrWithEqualZeroAndOne(int arr[], int n)
    {
        int ans = 0;
        int sum = 0;
        HashMap<Integer, Integer> map = new HashMap<>();
        map.put(sum, 1);

        for(int val: arr){
            sum += (val == 0? -1: 1);

            if(map.containsKey(sum)){
                ans += map.get(sum);
                map.put(sum, map.get(sum) + 1);
            } else {
                map.put(sum, 1);
            }
        }

        return ans;
    }
}
```

1. Make variable ans=0.
2. Make variable sum =0.
3. Create a hashmap, for storing the Frequency of particular kind of sum at instance
4. Initialize that no. To 1.
5. For every element of the array, if it is 0, then add -1 to the 'sum', or if it is 1, then Add 1 to the 'sum'
6. If that sum element already found in hashmap, Then increase its frequency by one. And add it To ans.
7. If it is not found, then add it to hashmap, Then initialize its frequency to one.

DRY RUN

-1 Count of str with equal 0's & 1's

$\begin{matrix} 0 & 1 & 1 & 0 & 0 & 1 \end{matrix}$ | $\begin{matrix} 1 & 0 & 1 & 1 & 0 \end{matrix}$

0 a b c d 0

$\frac{4,5}{2}$

a	ab	b
ab	abc	bc
abc	abcd	cd
abcd	bcd	d

```

int ans = 0;
int sum = 0;
HashMap<Integer, Integer> map = new HashMap<>();
map.put(sum, 1);
for(int val : arr){
    sum += (val == 0 ? 1 : 1);
    if(map.containsKey(sum)){
        ans += map.get(sum);
        map.put(sum, map.get(sum) + 1);
    } else {
        map.put(sum, 1);
    }
}
return ans;

```