

75 Days of Code

Day16 Problem no: 1004. Max Consecutive Ones III (leetcode) (leetcode)

Given a binary array `nums` and an integer `k`, return the maximum number of consecutive 1's in the array if you can flip at most `k` 0's.

Example 1:

Input: `nums = [1,1,1,0,0,1,1,1,0]`, `k = 2`

Output: 6

Explanation: [1,1,1,0,1,1,1,1]

Bolded numbers were flipped from 0 to 1. The longest subarray is underlined.

Example 2:

Input: `nums = [0,0,1,1,0,0,1,1,1,0,1,1,0,0,1,1,1,1]`, `k = 3`

Output: 10

Explanation: [0,0,1,1,1,1,1,1,1,1,0,0,1,1,1,1]

Bolded numbers were flipped from 0 to 1. The longest subarray is underlined.

For this problem , we are gonna use sliding window approach

Key terms to know problem can be solved by sliding window :

Question includes : **Array ,SubArray , SubString , Largest , Smallest ,Maximum and Minimum** with window size may or may not present

Solution of the above problem using sliding window

1. Initialize two pointers as start and consOne .
2. Start the loop , when current number is zero then decrease the k
3. If k becomes negative then , start a loop to remove previously flipped zeroes , by increasing the start pointer and k , get out of loop when k is positive
4. At each iteration compare the maximum with largest length from index to where the start pointer is .

```
17
18 function longestOnes(nums: number[], k: number): number {
19     let consecutiveOnes = 0;
20     let startPointer = 0;
21
22     for (let index = 0; index < nums.length; index++) {
23         if (nums[index] === 0) {
24             k--;
25         }
26         while (k < 0) {
27             if (nums[startPointer] === 0) {
28                 k++;
29             }
30             startPointer++;
31         }
32         consecutiveOnes = Math.max(consecutiveOnes, index - startPointer + 1);
33     }
34     return consecutiveOnes;
35 }
36
37 let answer = longestOnes([0,0,1,1,0,0,1,1,1,0,1,1,0,0,0,1,1,1], 3);
38 console.log("Answer :",answer)
```

```
[Running] node "c:\Users\Shubham\Desktop\75daysOfCode\75DaysOfCode\day16.js"
Answer : 10
```