Max Consecutive Ones III (Leetcode 1004)

Whenever there is consecutive or contagious word used in the question always check if there is a possibility of sliding window approach.

Question : Given binary array nums integer k
return max no. of consecutive 1's in the array if can flip at most k 0's.

Approach If we will go with sliding window approach.

Consider example:

nums = [1, 1, 1, 0, 0, 0, 1, 1, 1, 1, 0] k = 2

In these we can see red window and green window are of size 6 after flipping 0's so, our answer is 6.

What will be the criteria for selecting window in the question?

window can have atmost K-zeros. (Max. subarray with at most K-zeros) and then out of all such windows, we will select the one with max. length.

Pseudocode : Do remember sliding window is extended version of two-pointer approach.

So we will set two-pointers for window indexes.

Keep expanding till possible else move forward
j++ i++

till we have at-most K-0

Code:

```
int i=0, j;
for(j=0; j<A.length; j++) {
    if (A[j]==0)
        K--;
    if (K<0 && A[i++]==0)
        K++;
}
return j-i;   // max length ***
}
```

```
int start = 0
int end;
int zeros = 0;
for (end=0; end<nums.length; end++){
    if (nums[end]==0)
        zeros++;
    if (zeros>K && nums[start++]==0){
        zeros--;
    }
}
return end-start;
}
```

How maximum length?

After maximum every window will be either of same length or less.

We can also use Binary Search coz answer lies in Sorted array.