

### 340. Longest Substring with At Most K Distinct Characters

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Given a string, find the length of the longest substring T that contains at most  $k$  distinct characters.

#### Example 1:

Input:  $s = \text{"eceba"}, k = 2$   
Output: 3  
Explanation: T is "ece" which its length is 3.

#### Example 2:

Input:  $s = \text{"aa"}, k = 1$   
Output: 2  
Explanation: T is "aa" which its length is 2.

```
int lengthOfLongestSubstringKDistinct(string s, int k)
{
    int n = s.length();
    vector<int> freq(128, 0);
    int si = 0, ei = 0, count = 0, len = 0;
    while (ei < n)
    {
        if (freq[s[ei++]]++ == 0) → phle check
            count++;                      होगा phir
        while (count > k)                increment
            if (freq[s[si++]]-- == 1)    होगा.
                count--;
        len = max(len, ei - si);
    }
    return len;
}
```