

Smallest distinct window

Given a string 's'. The task is to find the **smallest** window length that contains all the characters of the given string at least one time.

For eg. A = “**aabcbcd**bca”, then the result would be 4 as of the smallest window will be “**dbca**”.

Example 1:

```
Input : "AABBBBCBBAC"
Output : 3
Explanation : Sub-string -> "BAC"
```

Example 2:

```
Input : "aaab"
Output : 2
Explanation : Sub-string -> "ab"
```

Example 3:

```
Input : "GEEKSGEEKSFOR"
Output : 8
Explanation : Sub-string -> "GEEKSFOR"
```

Your Task:

You don't need to read input or print anything. Your task is to complete the function **findSubString()** which takes the string **S** as inputs and returns the length of the smallest such string.

Expected Time Complexity: $O(256.N)$

Expected Auxiliary Space: $O(256)$

```
def findSubString(self, s):
    # Your code goes here
    target = set(s)
    ans = 0
    i = -1
    j = -1
    freq = {}
    while True:
        f1, f2 = False, False
```

```
while i < len(s) - 1 and len(freq) < len(target):
    i = i + 1
    ch = s[i]
    freq[ch]=freq.get(ch, 0) + 1
    f1 = True

while j < i and len(freq) == len(target):
    pAns = i-j
    if ans == 0 or pAns < ans:
        ans = pAns
    j = j+1
    ch = s[j]
    if freq.get(ch) == 1:
        del freq[ch]
    else:
        freq[ch] = freq[ch] - 1
    f2 = True

if f1 is False and f2 is False:
    break
return ans
```