Count of substrings having all distinct characters

Given a string **str** consisting of lowercase alphabets, the task is to find the number of possible substrings (not necessarily distinct) that consists of distinct characters only.

Input: Str = “gffg”
Output: 6
Explanation:
All possible substrings from the given string are,
(“**g**“, “**gf**“, “gff”, “gffg”, “**f**“, “ff”, “ffg”, “**f**“, “**fg**“, “**g**”)
Among them, the highlighted ones consists of distinct characters only.

Input: str = “gfg”
Output: 5
Explanation:
All possible substrings from the given string are,
(“**g**“, “**gf**“, “gfg”, “**f**“, “**fg**“, “**g**”)
Among them, the highlighted consists of distinct characters only.

Detailed steps for this approach are as follows:

- Consider two pointers **i** and **j**, initially both pointing to the first character of the string i.e. **i = j = 0**.
- Initialize an array **Cnt[ ]** to store the count of characters in substring from index **i** to **j** both inclusive.
- Now, keep on incrementing **j** pointer until some a repeated character is encountered. While incrementing **j**, add the count of all the substrings ending at **j**th index and starting at any index between **i** and **j** to the answer. All these substrings will contain distinct characters as no character is repeated in them.
- If some repeated character is encountered in substring between index **i** to **j**, to exclude this repeated character, keep on incrementing the **i** pointer until repeated character is removed and keep updating **Cnt[ ]** array accordingly.
- Continue this process until **j** reaches the end of string. Once the string is traversed completely, print the answer.

```
def countUniqueSubstring(s):
    ans = 0
    i = -1
    j = -1
    freq = {}
    while True:
```

```
        f1, f2 = False, False
        while i < len(s) - 1:
            f1 = True
            i = i + 1
            ch = s[i]
            freq[ch] = freq.get(ch, 0) + 1
            if freq[ch] == 2:
                break
            else:
                ans = ans + (i - j)

        while j < i:
            f2 = True
            j = j + 1
            ch = s[j]
            freq[ch] = freq.get(ch, 0) - 1
            if freq[ch] == 1:
                ans = ans + (i - j)
                break
        if f1 is False and f2 is False:
            break

    return ans


s = "abcdefg"
print(countUniqueSubstring(s))
```