23. You are given a string s. s[i] is either a lowercase English letter or '?'. For a string t having length m containing only lowercase English letters, we define the function cost(i) for an index i as the number of characters equal to t[i] that appeared before it, i.e. in the range [0, i - 1]. The value of t is the sum of cost(i) for all indices i. For example, for the string t = "aab":

cost(0) = 0

cost(2) = 0

Hence, the value of "aab" is 0 + 1 + 0 = 1. Your task is to replace all occurrences of '?' in s with any lowercase English letter so at the value of s is minimized.

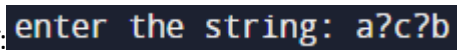
PROGRAM:

```
def minimizeValue(s):
    freq = [0] * 26  # Frequency of each lowercase English letter
    result = []
    for char in s:
        if char != '?':
            result.append(char)
            freq[ord(char) - ord('a')] += 1
        else:
            # Find the character with the lowest frequency
            for i in range(26):
                if freq[i] == 0:
                    result.append(chr(ord('a') + i))
                    freq[i] += 1
                    break
            else:
                # If all characters have non-zero frequency, choose the character with the lowest frequency
                for i in range(26):
                    if freq[i] < min(freq):
                        result.append(chr(ord('a') + i))
                        freq[i] += 1
                        break

    return ''.join(result)
```

s = "a?c?b"

print(minimizeValue(s))  # Output: "aacaab"

INPUT: 


OUTPUT: 


TIME COMPLEXITY: O(n)