Rank The Permutations

Medium Accuracy: 30.76% Submissions: 1142 Points: 4

Given a string, **S** find the rank of the string amongst all its permutations sorted lexicographically. The rank can be big. So print it modulo **1000003**.
Note: Return 0 if the characters are repeated in the string.

Example 1:

```
Input: S = "abc"
Output: 1
Explaination: It is the smallest
lexicographically string of the permutation.
```

Example 2:

```
Input: S = "acb"
Output: 2
Explaination: This is the second smallest
lexicographically string of the permutation.
```

Your Task:
You do not need to read input or print anything. Your task is to complete the function **rank()** which takes string S as input parameter and returns the rank modulo 1000003 of the string.

Expected Time Complexity: $O(|S|^2)$
Expected Auxiliary Space: $O(|S|)$

Constraints:
$1 \leq |S| \leq 15$

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