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# String Construction

by ma5termind

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Amanda has a string, $s$, of $m$ lowercase letters that she wants to copy into a new string, $p$. She can perform the following operations any number of times to construct string $p$:

- Append a character to the end of string $p$ at a cost of $1$ dollar.

- Choose any substring of $p$ and append it to the end of $p$ at no charge.

Given $n$ strings (i.e., $s_0, s_1, \ldots, s_{n-1}$), find and print the *minimum* cost of copying each $s_i$ to $p_i$ on a new line.

**Input Format**

The first line contains a single integer, $n$, denoting the number of strings.
Each line $i$ of the $n$ subsequent lines contains a single string, $s_i$.

**Constraints**

- $1 \le n \le 5$

- $1 \le m \le 10^5$

**Subtasks**

- $1 \le m \le 10^3$ for $45\%$ of the maximum score.

**Output Format**

For each string $s_i$ (where $0 \le i < n$), print the minimum cost of constructing string $p_i$ on a new line.

**Sample Input**

```
2
abcd
abab
```

**Sample Output**

```
4
2
```

**Explanation**

*Query 0:* We start with $s = $ **"abcd"** and $p = $ **""**.

1. Append character **'a'** to $p$ at a cost of $1$ dollar, $p = $ **"a"**.

2. Append character **'b'** to $p$ at a cost of $1$ dollar, $p = $ **"ab"**.

3. Append character **'c'** to $p$ at a cost of $1$ dollar, $p = $ **"abc"**.

4. Append character **'d'** to $p$ at a cost of $1$ dollar, $p = $ **"abcd"**.
Because the total cost of all operations is $1 + 1 + 1 + 1 = 4$ dollars, we print $4$ on a new line.

*Query 1:* We start with $s = $ **"abab"** and $p = $ **""**.

1. Append character **'a'** to $p$ at a cost of $1$ dollar, $p = $ **"a"**.

2. Append character **'b'** to $p$ at a cost of $1$ dollar, $p = $ **"ab"**.

3. Append substring **"ab"** to $p$ at no cost, $p = $ **"abab"**.

Because the total cost of all operations is $1 + 1 = 2$ dollars, we print $2$ on a new line.

**Note**

A substring of a string $S$ is another string $S'$ that occurs "in" $S$ (Wikipedia). For example, the substrings of the string "$abc$" are "$a$", "$b$","$c$", "$ab$", "$bc$", and "$abc$".

f   ⤫   in

Submissions: 7595
Max Score: 25
Difficulty: Easy

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```csharp
 1   using System;
 2   using System.Collections.Generic;
 3   using System.IO;
 4   using System.Linq;
 5   class Solution {
 6
 7       static void Main(String[] args) {
 8           int n = Convert.ToInt32(Console.ReadLine());
 9           for(int a0 = 0; a0 < n; a0++){
10               string s = Console.ReadLine();
11
12
13               int costo = 0;
14               for (char ch = 'a'; ch <= 'z'; ch++)
15                   if (s.Contains(ch))
16                       costo++;
17
18               Console.WriteLine(costo);
19
20
21
22           }
23       }
24   }
25
```

Line: 22 Col: 10

⬆ Upload Code as File        ☐ Test against custom input                          Run Code      Submit Code

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## Congrats, you solved this challenge!

✔ Test Case #0              ✔ Test Case #1              ✔ Test Case #2

✔ Test Case #3              ✔ Test Case #4              ✔ Test Case #5

✔ Test Case #6              ✔ Test Case #7              ✔ Test Case #8

✔ Test Case #9              ✔ Test Case #10             ✔ Test Case #11

Next Challenge

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