514. Freedom Trail

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In the video game Fallout 4, the quest "Road to Freedom" requires players to reach a metal dial called the "Freedom Trail Ring", and use the dial to spell a specific keyword in order to open the door.
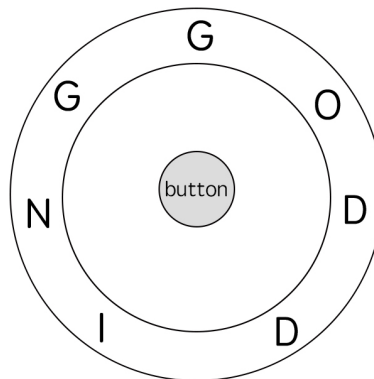
Given a string **ring**, which represents the code engraved on the outer ring and another string **key**, which represents the keyword needs to be spelled. You need to find the **minimum** number of steps in order to spell all the characters in the keyword.

Initially, the first character of the **ring** is aligned at 12:00 direction. You need to spell all the characters in the string **key** one by one by rotating the ring clockwise or anticlockwise to make each character of the string **key** aligned at 12:00 direction and then by pressing the center button.

At the stage of rotating the ring to spell the key character **key[i]**:

1. You can rotate the **ring** clockwise or anticlockwise **one place**, which counts as 1 step. The final purpose of the rotation is to align one of the string **ring's** characters at the 12:00 direction, where this character must equal to the character **key[i]**.

2. If the character **key[i]** has been aligned at the 12:00 direction, you need to press the center button to spell, which also counts as 1 step. After the pressing, you could begin to spell the next character in the key (next stage), otherwise, you've finished all the spelling.

Example:


```
Input: ring = "godding", key = "gd"
Output: 4
Explanation:
 For the first key character 'g', since it is already in place, we just need 1 step to spell this character.
 For the second key character 'd', we need to rotate the ring "godding" anticlockwise by two steps to make it become "ddinggo".
 Also, we need 1 more step for spelling.
 So the final output is 4.
```

Note:

1. Length of both ring and **key** will be in range 1 to 100.

2. There are only lowercase letters in both strings and might be some duplcate characters in both strings.

3. It's guaranteed that string **key** could always be spelled by rotating the string **ring**.

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