## 日閶 ACM-ICPC Live Archive

## 7353 Hidden Password

Insecure Inc. has decided to shift directions after a failed attempt at developing a new encryption standard. Their new effort is a password system used to hide a password inside another string of characters we denote as a message. However, it is important that the message has a certain property relative to the hidden password.

Let us assume that we denote the characters of the password as $c_{1} c_{2} \ldots c_{P}$ (although those characters need not be distinct). To be a valid message for the password, if you start from the beginning of the message and search for any character from the set $\left\{c_{1}, \ldots, c_{P}\right\}$, it must be that $c_{1}$ is the first that you find. Subsequently, if you continue looking from that point of the message for any character from the set $\left\{c_{2}, \ldots, c_{P}\right\}$, it must be that $c_{2}$ is the next that you find. Continuing in that manner, $c_{3}$ must be the next character from the set $\left\{c_{3}, \ldots, c_{P}\right\}$, and so on until reaching $c_{P}$.

For example, if the password is ABC, then the string HAPPYBIRTHDAYC्CACEY is a valid message.

- Notice that A is the first of the set A, B, C to appear in the message. (The initial H is not relevant.)
- Following the A that was found, the next occurrence from the set B, C is B.
- Following the B that was found, the next occurrence from the set C is indeed C. (Note that the A in DAY is not relevant, since we are only looking for a C at this point, and the additional A and C in CACEY are not relevant, because we have already completed the password with the first C.)

However, for the password ABC, the string TRAGICBIRTHDAYCACEY is not a valid message.

- While the $A$ is the first of the set $A, B, C$ to appear in the string, the next occurrence from the set $B, C$ is $C$ rather than $B$.

Also, the string HAPPYBIRTHDAY is not a valid message for the password ABC because the $C$ never appears.

As an example with duplicate letters in the password, consider the password SECRET. For this password, the string SOMECHORESARETOUGH is a valid message. In contrast, the string SOMECHEERSARETOUGH is not a valid message, because an extraneous $E$ is found at the point when an $R$ is first expected.

## Input

The input file contains several test cases, each of them as described below.
The input consists of a single line containing two strings. The first string is the password, having length $P$, with $3 \leq P \leq 8$. The second string has length $S$, with $10 \leq S \leq 40$. Both strings will consist solely of uppercase letters. (That is, neither string can include whitespace, lowercase letters, digits, or other special characters.)

## Output

For each test case, output a single line with the word 'PASS' if the second string is a valid message for the password, or 'FAIL' otherwise.

## Sample Input

ABC HAPPYBIRTHDAYCACEY
ABC TRAGICBIRTHDAYCACEY
ABC HAPPYBIRTHDAY
SECRET SOMECHORESARETOUGH
SECRET SOMECHEERSARETOUGH

## Sample Output

PASS
FAIL
FAIL
PASS
FAIL

