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# 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  $c_1c_2 \ldots c_P$  (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  $\{c_1, \ldots, c_P\}$ , 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  $\{c_2, \ldots, c_P\}$ , 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  $\{c_3, \ldots, c_P\}$ , and so on until reaching  $c_P$ .

For example, if the password is ABC, then the string HAPPYBIRTHDAYCACEY 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  $D\underline{A}Y$  is not relevant, since we are only looking for a C at this point, and the additional A and C in  $C\underline{AC}EY$  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  $\underline{SOMECHORESARETOUGH}$  is a valid message. In contrast, the string  $\underline{SOMECHEERSARETOUGH}$  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  $3 \le P \le 8$ . The second string has length S, with  $10 \le S \le 40$ . 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