

## Problem J4: Cyclic Shifts

### Problem Description

Thuc likes finding cyclic shifts of strings. A *cyclic shift* of a string is obtained by moving characters from the beginning of the string to the end of the string. We also consider a string to be a cyclic shift of itself. For example, the cyclic shifts of ABCDE are:

ABCDE, BCDEA, CDEAB, DEABC, and EABCD.

Given some text,  $T$ , and a string,  $S$ , determine if  $T$  contains a cyclic shift of  $S$ .

### Input Specification

The input will consist of exactly two lines containing only uppercase letters. The first line will be the text  $T$ , and the second line will be the string  $S$ . Each line will contain at most 1000 characters.

For 6 of the 15 available marks,  $S$  will be exactly 3 characters in length.

### Output Specification

Output `yes` if the text,  $T$ , contains a cyclic shift of the string,  $S$ . Otherwise, output `no`.

### Sample Input 1

```
ABCCDEABAA
ABCDE
```

### Output for Sample Input 1

```
yes
```

### Explanation of Output for Sample Input 1

CDEAB is a cyclic shift of ABCDE and it is contained in the text ABCC**CDEAB**AA.

### Sample Input 2

```
ABCDDEBCAB
ABA
```

### Output for Sample Input 2

```
no
```

### Explanation of Output for Sample Input 2

The cyclic shifts of ABA are ABA, BAA, and AAB. None of these shifts are contained in the text ABCDDEBCAB.

La version française figure à la suite de la version anglaise.