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 ABC**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.