

Problem K. Two Strings

Input file: *standard input*
Output file: *standard output*
Time limit: 2.5 seconds
Memory limit: 768 mebibytes

You are given two strings $S = S_0S_1 \cdots S_{|S|-1}$ and $T = T_0T_1 \cdots T_{|T|-1}$ consisting of lowercase letters. Here $|S|$ is the length of the string S .

The substring $S[l, r]$ ($0 \leq l \leq r < |S|$) of the string $S = S_0S_1 \cdots S_{|S|-1}$ is the string $S_lS_{l+1} \cdots S_r$.

Define the function $F(S, l, r)$ for the string S and two integers l, r as follows:

$$F(S, l, r) = r - l - \max(l, |S| - r - 1) + 1.$$

In other words, F is the length of the substring minus the maximum distance from borders of S to the substring.

Your task is to find a substring $S[l, r]$ such that it occurs in T as substring and the value $F(S, l, r)$ is maximum among all pairs (l, r) ($0 \leq l \leq r < |S|$).

Input

The first two lines contain strings S and T , respectively ($1 \leq |S|, |T| \leq 10^6$).

Strings S and T consist of lowercase English letters.

Output

If no substring of string S occurs in the string T , print a single string “-1 -1” (without quotes). Otherwise, print two integers l and r such that $F(S, l, r)$ is maximum among all possible pairs (l, r) ($0 \leq l \leq r < |S|$) and $S[l, r]$ is a substring of T . If there are several possible pairs, print the lexicographically smallest one.

Examples

standard input	standard output
riveragesmalir toaxernaturaln	4 5
aaaaa aaaaa	0 4
amkar zenit	-1 -1

Note

Pair (l_1, r_1) is lexicographically less than pair (l_2, r_2) if either $l_1 < l_2$, or $l_1 = l_2$ and $r_1 < r_2$.