

An LCS Challenge

Time Limit : 3.0 sec

Memory Limit : 512 MB

Limon and Rafee are good friends. Oneday Limon gives him a challenge. Limon will give him two sequences. Rafee needs to find the length of longest common subsequence. NOTE, longest common subsequence (LCS) of 2 sequences is a subsequence, with maximal length, which is common to both the sequences.

Help Rafee to find the length and also print the longest common subsequence.

Input

The input contains two strings S1 and S2. The strings will contain only uppercase English letter. The length of the both strings shouldn't exceed 100.

Output

Print the length of the longest common subsequence in the first line and the subsequence in the second line.

Examples

Input
ABBCDADFTA BTZDCAAFKL
Output
4 BCAF

Input
AGGTATAGAAGT GAATATGAGGAA
Output
8 ATATAGAA

Input
KLLMNNMKKLKN LMNNMLKKLLNN
Output
9 LMNNMKKLN