Chutes and SPACE-LADDERS

While exploring the future, Seymore Time Traveler discovered a new technology — the LASER-AIDED-DIMENSIONAL-DRIFT-ENERGY-RIDER!

Description

Our hero is, yet again, in a predicament of laziness. He has discovered many exciting new worlds, connected together by *SPACE WORMHOLES*! He would love to travel through them... but he doesn't want to travel through *too* many wormholes (because that sounds hard).

Your task, should you choose to accept it, is to find the shortest path from the starting world to the destination of Seymore's choice.

Example Input/Output

Each of the first n lines of input will be a world name (a single upper-case character), followed by a list of each connected world. . The $n+1$'th line will be a single upper-case letter, designating the desired destination. You must output a sequence of letters that represents the shortest path to the destination. Assume you start at the first given world. You can assume a path will always exist. There will be less than 10 worlds given. If multiple valid paths exist, any will be accepted.

```
input:
A B D
B C D
C
output:
A B C
```

```
input:
A B D
B C D
A
output:
A
```

```
input:
A B C D
B F
D B C
F E
E
output:
A B C E
```