

Nickname Decoder

Filename: decoder

The Problem

You and your friends want to be able to talk about your fellow BHCSI classmates and teachers without them knowing about it. So instead of whispering behind their backs, you decide to have code names for everyone. Write a program that will read in name mappings and use this information to encode messages. In particular, you must substitute the code name any time the real name appears anywhere in the message. For example, if “Dan” is one of the TAs with the code name “FrisbeeGuy” then you must change “Danny” in that message to “FrisbeeGuyny”. Also, names will be case sensitive. Thus, “Brian” will be considered to be different than “brian”, for the purposes of this problem.

The Input

The first line of the input contains a single integer n ($1 \leq n \leq 50$), describing the number of names for which there are nicknames. On each of the n following lines after that, there will be a pair of names, the person’s real name followed by their code name. Each name will only contain alphabetic letters and will be case sensitive.

The following line of input contains a single integer m ($1 \leq m \leq 50$), describing the number of messages to be encoded. Then, for each of the m lines after that, there will be a message to encode. Each message will be no longer than 80 characters long and will contain printable characters only.

The Output

For each message simply output one line saying “Message # m encoded: X”, where m is the number of the message (starting from 1), and X is the encoded message.

Put a blank line between the output for each message.

Sample Input

```
5
Sarah Mystique
Brian Crabby
Dan Frisbee
Arup Bossman
Lisa Rogue
5
I had so much fun in Sarah and Lisa’s class that I stayed awake!
Brian and Dan are really good at programming.
Arup likes it if you pay attention and laugh at his jokes :)
Sarah’s favorite board game is Settler’s of Catan.
Lisa’s favorite language is Python.
```

Sample Output

Message #1 encoded: I had so much fun in Mystique and Rogue's class that I stayed awake!

Message #2 encoded: Crabby and Frisbee are really good at programming.

Message #3 encoded: Bossman likes it if you pay attention and laugh at his jokes :)

Message #4 encoded: Mystique's favorite board game is Settler's of Catan.

Message #5 encoded: Rogue's favorite language is Python.

Note: Each of these messages should be on a single line. The messages above appearing to be on two lines are actually stored in one (there is no '\n' character in between the s in Rogue's and c in class in the first message, for example), and the visual layout above simply reflects word-wrap of the visual display.