

Video Games

Problem ID: videogames

Time limit: 1 second

Alice, Bob, and Charlie share a collection of video game cartridges. This way, only one of them needs to own a game in order for them all to enjoy it. The popular games right now are a fishing game, a golf game, and a hockey game.

Initially, Alice has the fishing game, Bob has the golf game, and Charlie has the hockey game. Over time, the games gets passed around between them and it can be hard to keep track of who currently has each game.

Given a sequence of requests indicating that a particular friend wants to play a particular game, determine who they have to borrow that game from.

Input

The first line of input contains a single integer N ($1 \leq N \leq 100$) indicating the number of requests. Then N lines follow describing the requests, the i -th line contains the text a_i wants to play b_i where a_i is one of alice, bob, or charlie and b_i is one of fishing, golf, or hockey.

After the i -th request, friend a_i is now in possession of game b_i .

Output

For each request i , output a single line containing one of the following messages. If a_i was already in possession of game b_i then output the message " a_i already has b_i " (without quotes). If a_i was not already in possession of b_i then output the message " a_i borrows b_i from c_i " (again without quotes) where c_i is the name of the friend who was in possession of game b_i at this time.

Sample Input 1

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4
alice wants to play golf
bob wants to play golf
charlie wants to play hockey
charlie wants to play fishing
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Sample Output 1

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alice borrows golf from bob
bob borrows golf from alice
charlie already has hockey
charlie borrows fishing from alice
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