Small Chat System

"I demand respectation" - Dudu, 2015

NOTE: This problem is identical to "Large Chat System", but with smaller numbers.

Dudu is chatting with friends about their upcoming trip to Miami to watch Anjunabeats, but his friends don't show him any respectation (sic) and keep changing the topic. To address this problem Dudu developed the "Dudu of Chat" where he can demand respectation at any time.

Dudu of Chat is an instant messenger where whenever Dudu demands respectation all his messages appear as being the most recent ones.

For example, suppose that Dudu, S, and V are chatting, and they send these messages in order:

Dudu: Anjunabeats of gret
S: I almost solved problem
V: What was your mistake
Dudu: I think of buying front row
S: I had a typo in my last formula
Dudu: I demand respectation
S: OK

If someone looks at the chat at this moment he will see:

S: I almost solved problem
V: What was your mistake
S: I had a typo in my last formula
Dudu: Anjunabeats of gret
Dudu: I think of buying front row
S: OK

Note that the message where Dudu demands respectation disappears!

Whenever a new person enters the chat they will see the last K messages (or fewer if not that many messages have been exchanged).

_____^^ ***Dudu when he doesn't get respectation.*** ^^_____

Input Format

The input will begin with a line containing an integer N - the total number of messages and an integer K, the number of messages a new user sees.

Each of the next N lines will follow the format: user: message

where user consists of only upper and lower case characters, and message of upper and lower case characters, and spaces. Message will not start or end with a space.

If Dudu writes "I demand respectation" this message doesn't go to the other participants but it appears as if all of Dudu's messages were the last messages sent.

Constraints

$1 \leq N \leq 50000$
$K = 1$

Output Format

Every time a new user enters the chat (ie. every time a user sends a message for the first time) output what this user will see as the last K messages. Follow the sample's format.

Sample Input 0

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12 1
Dudu: Anjunabeats of gret
S: I almost solved problem
V: What was your mistake
Dudu: I think of buying front row
S: I had a typo in my last formula
Dudu: I demand respectation
J: I am confused
Dudu: No confusion ANJUNABEATS
S: OK
D: Hey
Dudu: I demand respectation
M: I am still here
```

Sample Output 0

```
Dudu sees

S sees
Dudu: Anjunabeats of gret

V sees
S: I almost solved problem

J sees
Dudu: I think of buying front row

D sees
S: OK

M sees
Dudu: No confusion ANJUNABEATS
```

Explanation 0

$K = 1$, so each new participant will see at most 1 message.

When Dudu sends his first message the chat is empty, so he doesn't see anything.

J enters after Dudu demands respectation, the current status of the chat is: S: I almost solved problem
V: What was your mistake
S: I had a typo in my last formula

Dudu: Anjunabeats of gret
Dudu: I think of buying front row

So he sees the last message.

When D enters he sees only S's message.

When M enters he sees only Dudu's message because the current status of the chat is:

S: I almost solved problem
V: What was your mistake
S: I had a typo in my last formula
J: I am confused
S: OK
D: Hey
Dudu: Anjunabeats of gret
Dudu: I think of buying front row
Dudu: No confusion ANJUNABEATS
M: I am still here