

Playlist

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 512 megabytes

Katya listens to music. There are already several songs in the player's queue. The title and length of each song are known.

The player plays the song that is first in the queue and immediately removes it from there. Sometimes Katya comes across a new track that she wants to listen to next, at which point she presses the "Play Next" button. This song becomes the first in the player's queue, but the current song continues to play until the end. If this happens when the current song has finished, the next song to play will be the new track.

Your task is to determine the order in which Katya will listen to the songs and when each of them will start.

Input

The first line contains an integer n — the number of songs in the player at the moment when Katya started listening to music ($1 \leq n \leq 100\,000$).

The next n lines each contain two values: $name_i$, len_i , where $name_i$ — the title of the song, and len_i — the length of the song in seconds ($1 \leq len_i \leq 10^9$).

The following line contains an integer m — the number of events adding songs to the front of the queue ($0 \leq m \leq 100\,000$).

The next m lines each contain three values: t_j , $name_j$, len_j , where t_j — the moment in time the song is added in seconds ($0 \leq t_j \leq 10^9$), $name_j$ — the name of the added song, and len_j — its length in seconds ($1 \leq len_j \leq 10^9$).

It is guaranteed that the times of addition are given in non-decreasing order. The titles of the songs consist only of Latin letters, and their length does not exceed 20.

Output

For each played song, output one line containing two values: $name_k$ and $start_k$, where $name_k$ — the name of the song, and $start_k$ — the moment in time when this song started playing. The songs should be listed in the order in which Katya listened to them.

Example

standard input	standard output
3	Abracadabra 0
Abracadabra 223	STAY 223
Pedro 145	Abracadabra 343
Believer 220	Pedro 566
3	Believer 711
223 Abracadabra 223	Friday 1024
223 STAY 120	
1024 Friday 1234	