

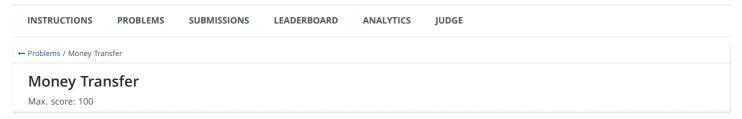


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Shopee Code League 2022 - Qualification Round

LIVE INVITE ONLY ACCESS

Mar 19, 2022, 02:00 PM WIB - Mar 19, 2022, 05:00 PM WIB



SeaMoney has a feature to transfer money between users. Let's imagine a simple scenario.

N usernames—consisting of lowercase Latin characters—each starts with a balance b. Amongst them, T transactions happened, where user u_a transfers x amount of money to u_b . If x is larger than the u_a 's balance when the transaction happens, the transaction is automatically rejected.

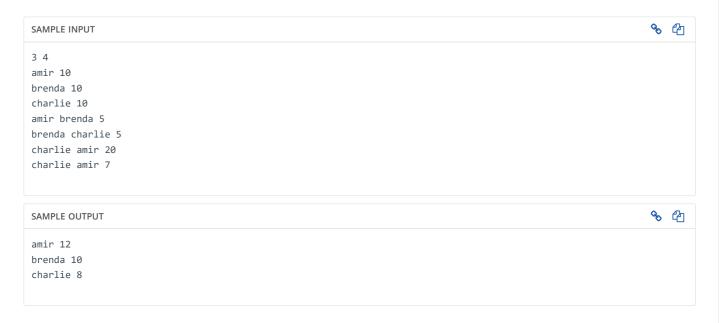
Output the final balance of each user.

Input

The first line contains two numbers N and T $(1 \le N, T \le 1000)$. Each of the next N following lines contain username u_i $(1 \le |u_i| \le 10)$ and integer b_i $(1 \le b_i \le 10^9)$, denoting the balance of user u_i . Following that are T lines, each containing two usernames u_a and u_b $(u_a \ne u_b)$ followed by an integer x $(1 \le x \le 10^9)$, denoting the amount of money transferred from u_a to u_b .

Output

Output the balance of all users in alphabetical order.



Explanation

NA

Time Limit:	1.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Score is assigned when all the testcases pass.
Allowed Languages:	Bash, C, C++, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, Java 14, JavaScript(Rhino), JavaScript(Node.js), Julia, K^+lin,
	Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, Racket, Ruby, Rust, Scala, Swift-4.1, Swii

TypeScript, Visual Basic

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