RECENT SUBMISSIONS

VoidAndTwoTSTs **⊘**

Fitri Ayu Cahyan... 🔞

DEVELOPERS

Xinyuan Feng

Mushroom

Mushroom

Mushroom

C

RESULT LANGUAGE

C++17

C++14

C++17

C++17

C++17

Python 3.8

View All

8

ch step. In the end, what will be the stock of each item?

← Problems / Item Stock

Item Stock

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Max. score: 10 Items in Shopee can have their stocks derived from other items. For example, 1 stock of item A can be derived from 2 stock of item B + 3 sto ck of item C. We say that item B and item C are parents of item A. For this problem, we are only interested when an item can only have 1 pa rent item. In this case, we can see the structure of stock derivation will form a rooted tree.

There are 2 kinds of derivations:

1. Dynamic stock derivation. Suppose that 1 stock of item A equals to Qty stock of item B. Then, the stock of item A will be equal to floor (item_B_stock / Qty). 2. Fixed stock derivation. Suppose that 1 stock of item A equals to Qty stock of item B, and we initially have S stock of item A. Then, item A will deduct stocks from its lowest ancestor which is fixed stock, to make sure that item A will have sufficient stock. It can be assumed

that the root of the tree (1st item) will always be fixed stock. Note that the number of reserved stocks depends on the multiplication of the Qty from the path of item A to that ancestor, not just the Qty to item B. Please refer to the example input for clarity. At first, we only have item 1, which initially has M stock. Then, we add N-1 items one-by-one, possibly changing the stock of some items at ea

Input

The first line contains 2 integers N (1 $\leq N \leq$ 100,000) and M (1 $\leq M \leq$ 1,000,000,000), denoting the number of items and the initial stock of t he 1st item.

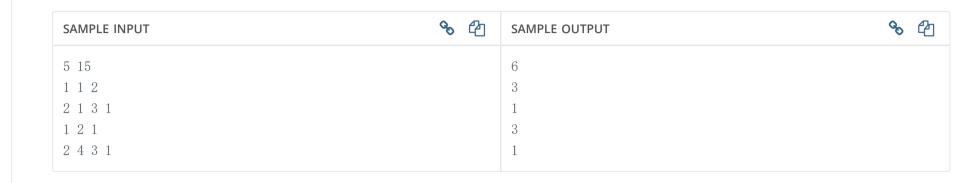
The next N-1 lines contain the description of the i-th item (starting from 2), which can be in one of the 2 following formats:

- 1 P_i Qty_i (1 $\leq P_i$ < i, 1 \leq Qty_i \leq 10), which means the i-th item has dynamic stock with parent item P_i and 1 stock of it equals to Qty_i st ock of its parent
- 2 P_i Qty_i S_i $(1 \le P_i < i, 1 \le Qty_i \le 10, 1 \le S_i \le 1,000,000,000)$, which means the i-th item has fixed stock with parent item P_i , 1 stock of i t equals to Qty_i stock of its parent, and has initial stock of S_i .

It is guaranteed that at the end, the stock for each item will be non-negative.

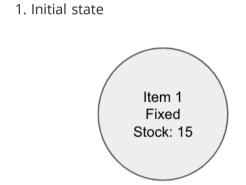
Output

Output N lines, each containing an integer. The integer in the i-th line denotes the stock of the i-th item.

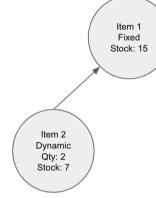


Explanation

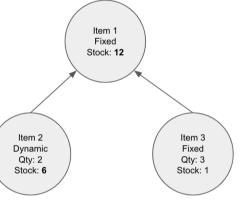
Below are the states after each item additions:



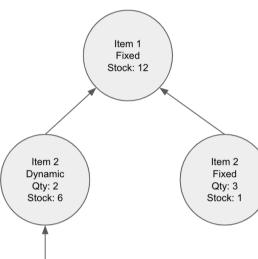
2. Adding 2nd item, stock is floor(15/2) = 7



3. Adding 3rd item, taking 1 * 3 stock from the 1st item. Note that Item 2 stock is also changed because of this.

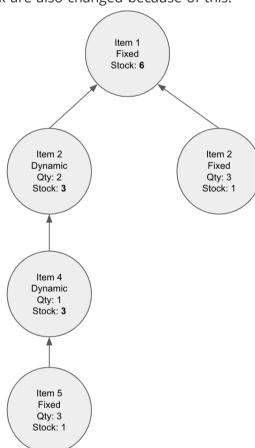


4. Adding 4th item, stock is floor(6/1) = 6



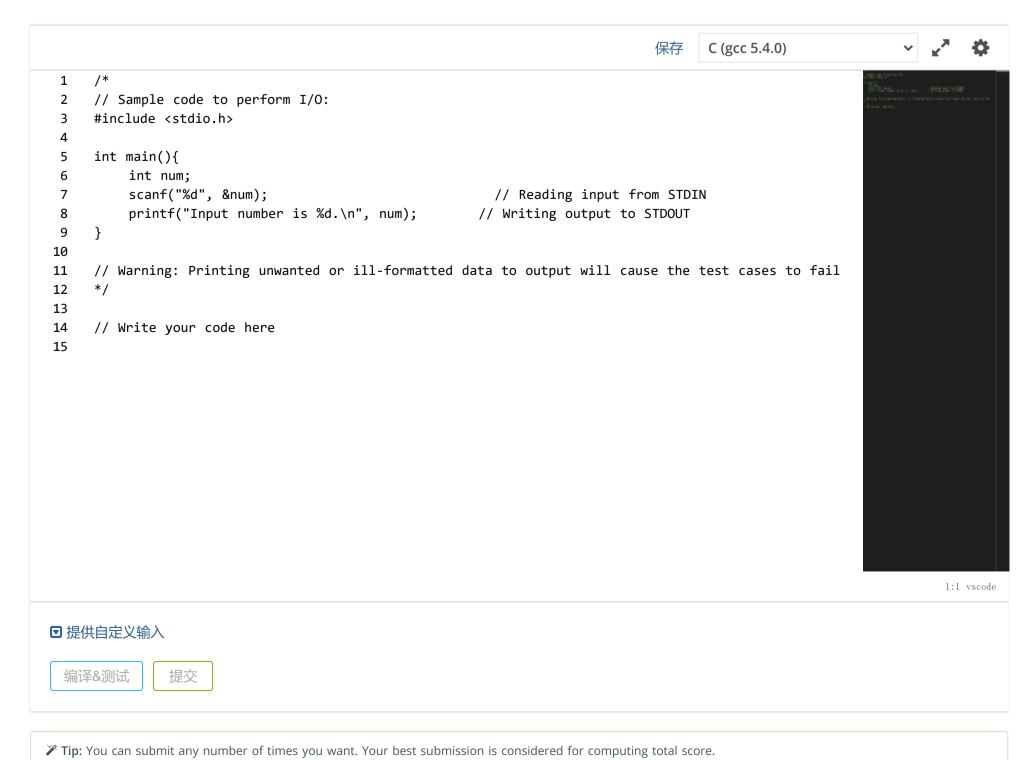
Stock: 6

5. Adding 5th item, taking 2*1*3 (Qty) *1 (stock) stock from the 1st item as it is its lowest fixed stock ancestor. Note that Item 2 and item 4 stock are also changed because of this.



1.0 sec(s) for each input file. Time Limit: 256 MB Memory Limit: 1024 KB Source Limit: **Marking Scheme:** Score is assigned if any testcase passes. 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, Kot lin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, R(RScript), Racket, Ruby, Rust, Scala, Swi ft-4.1, Swift, TypeScript, Visual Basic

CODE EDITOR



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