CODEFORCES
Sponsored by TON

🔔 | 🇬🇧 🇷🇺
edmondium | Logout

HOME   TOP   CATALOG   CONTESTS   GYM   PROBLEMSET   GROUPS   RATING   EDU   API   CALENDAR   HELP

PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   STANDINGS   CUSTOM INVOCATION

E. Holes

time limit per test: 1 second

memory limit per test: 64 megabytes

Little Petya likes to play a lot. Most of all he likes to play a game «Holes». This is a game for one person with following rules:

There are N holes located in a single row and numbered from left to right with numbers from 1 to N. Each hole has it's own power (hole number i has the power a_i). If you throw a ball into hole i it will immediately jump to hole $i + a_i$, then it will jump out of it and so on. If there is no hole with such number, the ball will just jump out of the row. On each of the M moves the player can perform one of two actions:

- Set the power of the hole a to value b.
- Throw a ball into the hole a and count the number of jumps of a ball before it jump out of the row and also write down the number of the hole from which it jumped out just before leaving the row.

Petya is not good at math, so, as you have already guessed, you are to perform all computations.

Input

The first line contains two integers N and M ($1 \le N \le 10^5$, $1 \le M \le 10^5$) — the number of holes in a row and the number of moves. The second line contains N positive integers not exceeding N — initial values of holes power. The following M lines describe moves made by Petya. Each of these line can be one of the two types:

- $0\ a\ b$
- $1\ a$

Type 0 means that it is required to set the power of hole a to b, and type 1 means that it is required to throw a ball into the a-th hole. Numbers a and b are positive integers do not exceeding N.

Output

For each move of the type 1 output two space-separated numbers on a separate line — the number of the last hole the ball visited before leaving the row and the number of jumps it made.

Examples

input	Copy

```
8 5
1 1 1 1 1 2 8 2
1 1
0 1 3
1 1
0 3 4
1 2
```

output	Copy

```
8 7
8 5
7 3
```

Codeforces Beta Round 13

Finished

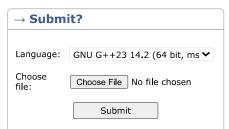Practice

⭐

→ **Virtual participation** ⌄

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.
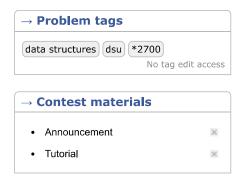
[Start virtual contest]

→ **Clone Contest to Mashup** ⌄

You can clone this contest to a mashup.

[Clone Contest]

→ **Submit?**

Language: [GNU G++23 14.2 (64 bit, ms ⌄]

Choose file: [Choose File] No file chosen

[Submit]

→ **Last submissions**

Submission	Time	Verdict
326027876	Jun/25/2025 18:26	Accepted

→ Contest materials

- Announcement ✖
- Tutorial ✖