Dynamic Array in C

Snow Howler is the librarian at the central library of the city of HuskyLand. He must handle requests which come in the following forms:

1 x y : Insert a book with y pages at the end of the x^{th} shelf.

2 x y : Print the number of pages in the y^{th} book on the x^{th} shelf.

3 x : Print the number of books on the x^{th} shelf.

Snow Howler has got an assistant, Oshie, provided by the Department of Education. Although inexperienced, Oshie can handle all of the queries of types *2* and *3*.

Help Snow Howler deal with all the queries of type *1*.

Oshie has used two arrays:

```
int* total_number_of_books;
/*
 * This stores the total number of books on each shelf.
 */

int** total_number_of_pages;
/*
 * This stores the total number of pages in each book of each shelf.
 * The rows represent the shelves and the columns represent the books.
 */
```

Input Format

The first line contains an integer $total\_number\_of\_shelves$, the number of shelves in the library.
The second line contains an integer $total\_number\_of\_queries$, the number of requests.
Each of the following $total\_number\_of\_queries$ lines contains a request in one of the three specified formats.

Constraints

- $1 \leq \ total\_number\_of\_shelves \ \leq 10^5$
- $1 \leq \ total\_number\_of\_queries \ \leq 10^5$
- For each query of the second type, it is guaranteed that a book is present on the x^{th} shelf at y^{th} index.
- $0 \leq \ x \ < n$
- Both the shelves and the books are numbered starting from 0.

Output Format

Write the logic for the requests of type 1. The logic for requests of types 2 and 3 are provided.

Sample Input 0

```
5
5
1 0 15
1 0 20
1 2 78
2 2 0
3 0
```

Sample Output 0

```
78
2
```

Explanation 0

There are 5 shelves and 5 requests, or queries.
- 1 Place a 15 page book at the end of shelf 0.
- 2 Place a 20 page book at the end of shelf 0.
- 3 Place a 78 page book at the end of shelf 2.
- 4 The number of pages in the 0^{th} book on the 2^{nd} shelf is 78.
- 5 The number of books on the 0^{th} shelf is 2.