



## Dynamic Array in C ☆

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## Problem

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## Editorial

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

- $1 \leq \text{total\_number\_of\_shelves} \leq 10^5$
- $1 \leq \text{total\_number\_of\_queries} \leq 10^5$
- For each query of the second type, it is guaranteed that a book is present on the  $x^{th}$  shelf at  $y^{th}$  index.
- $0 \leq x < \text{total\_number\_of\_shelves}$
- Both the shelves and the books are numbered starting from 0.
- Maximum number of books per shelf  $\leq 1100$ .

## 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<sup>th</sup>** book on the **2<sup>nd</sup>** shelf is 78.
- 5 The number of books on the **0<sup>th</sup>** shelf is 2.

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C



```
1 > #include <stdio.h> ...
14
15 int main()
16 {
17     int total_number_of_shelves;
18     scanf("%d", &total_number_of_shelves);
19
20     int total_number_of_queries;
21     scanf("%d", &total_number_of_queries);
22
23     while (total_number_of_queries--) {
24         int type_of_query;
25         scanf("%d", &type_of_query);
26
27         if (type_of_query == 1) {
28             /*
29              * Process the query of first type here.
30              */
31             int x, y;
32             scanf("%d %d", &x, &y);
33
34 > } else if (type_of_query == 2) { ...
```

Line: 14 Col: 1

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