

An array is a data structure that stores elements of the same type in a contiguous block of memory. In an array, A , of size N , each memory location has some unique index, i (where $0 \leq i < N$), that can be referenced as $A[i]$ or A_i .

Your task is to reverse an array of integers.

Note: If you've already solved our C++ domain's Arrays Introduction challenge, you may want to skip this.

Example

$A = [1, 2, 3]$

Return $[3, 2, 1]$.

Function Description

Complete the function `reverseArray` with the following

parameter(s):

- `int A[n]`: the array to reverse

Returns

- `int[n]`: the reversed array

Input Format



Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

Sample Test case 0

Input (stdin)

```
1 4
2 1 4 3 2
```

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Your Output (stdout)

```
1 2 3 4 1
```

Expected Output

```
1 2 3 4 1
```

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Given a 6×6 2D array, arr , an hourglass is a subset of values with indices falling in the following pattern:

```
a b c  
d  
e f g
```

There are 16 hourglasses in a 6×6 array. The *hourglass sum* is the sum of the values in an hourglass. Calculate the hourglass sum for every hourglass in arr , then print the *maximum* hourglass sum.

Example

$arr =$

```
-9 -9 -9  1 1 1  
0 -9  0  4 3 2  
-9 -9 -9  1 2 3  
0  0  8  6 6 0  
0  0  0 -2 0 0  
0  0  1  2 4 0
```

The 16 hourglass sums are:

Congratulations!

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Sample Test case 0

Input (stdin)

```
1  1 1 0 0 0  
2  0 1 0 0 0 0  
3  1 1 1 0 0 0  
4  0 0 2 4 4 0  
5  0 0 0 2 0 0  
6  0 0 1 2 4 0
```

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Sample Test case 1

Sample Test case 2

Your Output (stdout)

```
1 19
```

Expected Output

```
1 19
```

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- Declare a 2-dimensional array, `arr`, with n empty arrays, all zero-indexed.
- Declare an integer, `lastAnswer`, and initialize it to 0.

You need to process two types of queries:

1. Query: $1 \ x \ y$

- Compute $idx = (x \oplus lastAnswer)$.
- Append the integer y to $arr[idx]$.

2. Query: $2 \ x \ y$

- Compute $idx = (x \oplus lastAnswer)$.
- Set $lastAnswer = arr[idx][y \% size(arr[idx])]$.
- Store the new value of `lastAnswer` in an answers array.

Notes:

- \oplus is the bitwise XOR operation, which corresponds to the `^` operator in most languages. Learn more about it on [Wikipedia](#).
- $\%$ is the modulo operator.
- Finally, `size(arr[idx])` is the number of elements in `arr[idx]`.

Function Description

Complete the `dynamicArray` function with the following parameters:

- `int n`: the number of empty arrays to initialize in `arr`
- `int queries[q][3]`: 2-D array of integers

Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

Sample Test case 0

Input (stdin)

```
1 2 5
2 1 0 5
3 1 1 7
4 1 0 3
5 2 1 0
6 2 1 1
```

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Your Output (stdout)

```
1 7
2 3
```

Expected Output



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A *left rotation* operation on a circular array shifts each of the array's elements 1 unit to the left. The elements that fall off the left end reappear at the right end. Given an integer d , rotate the array that many steps to the left and return the result.

Example

$d = 2$

$arr = [1, 2, 3, 4, 5]$

After 2 rotations, $arr' = [3, 4, 5, 1, 2]$.

Function Description

Complete the *rotateLeft* function with the following parameters:

- *int d*: the amount to rotate by
- *int arr[n]*: the array to rotate

Returns

- *int[n]*: the rotated array

Input Format

The first line contains two space-separated integers that denote n , the number of integers, and d , the number of left rotations to perform.

The second line contains n space-separated integers that describe $arr[]$.

Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

Sample Test case 0

Input (stdin)

1 5 4
2 1 2 3 4 5

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Your Output (stdout)

1 5 1 2 3 4

Expected Output

1 5 1 2 3 4

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Starting with a 1-indexed array of zeros and a list of operations, for each operation add a value to each array element between two given indices, inclusive. Once all operations have been performed, return the maximum value in the array.

Example

$n = 10$

$\text{queries} = [[1, 5, 3], [4, 8, 7], [6, 9, 1]]$

Queries are interpreted as follows:

a	b	k
1	5	3
4	8	7
6	9	1

Add the values of k between the indices a and b inclusive:

```
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
[3, 3, 3, 3, 3, 0, 0, 0, 0, 0]
[3, 3, 3, 10, 10, 7, 7, 7, 0, 0]
[3, 3, 3, 10, 10, 8, 8, 8, 1, 0]
```

Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

Sample Test case 0

Input (stdin)

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1 5 3

2 1 2 100

3 2 5 100

4 3 4 100

Sample Test case 1

Your Output (stdout)

1 200

Expected Output

1 200

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