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Prepare Data Structures Arrays Competitive

Returns

- `int[n]:` the rotated array

26 Line: 26 Col: 1

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[]`.

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq d \leq n$
- $1 \leq a[i] \leq 10^6$

Sample Input

STDIN	Function
-----	-----
5 4	$n = 5$ $d = 4$
1 2 3 4 5	<code>arr = [1, 2, 3, 4, 5]</code>

Sample Output

```
5 1 2 3 4
```

Explanation

To perform  $d = 4$  left rotations, the array undergoes the following sequence of changes:

$[1, 2, 3, 4, 5] \rightarrow [2, 3, 4, 5, 1] \rightarrow [3, 4, 5, 1, 2] \rightarrow [4, 5, 1, 2, 3] \rightarrow [5, 1, 2, 3, 4]$

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Congratulations!

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Sample Test case 0

Input (stdin) Download

```
5 4
1 2 3 4 5
```

Your Output (stdout)

```
5 1 2 3 4
```

Expected Output Download

```
5 1 2 3 4
```

HackerRank

Prepare Data Structures Arrays

Sample Input

```
1 1 1 0 0 0  
0 1 0 0 0 0  
1 1 1 0 0 0  
0 0 2 4 4 0  
0 0 0 2 0 0  
0 0 1 2 4 0
```

34

Line: 34 Col: 1

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Sample Output

```
19
```

Explanation

`arr` contains the following hourglasses:

```
1 1 1 0 0 0  
0 1 0 0 0 0  
1 1 1 0 0 0  
0 0 2 4 4 0  
0 0 0 2 0 0  
0 0 1 2 4 0
```

The hourglass with the maximum sum (19) is:

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

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Sample Test case 0

Input (stdin)

Download

Sample Test case 1

1 1 1 0 0 0  
0 1 0 0 0 0

Sample Test case 2

1 1 1 0 0 0  
0 0 2 4 4 0  
0 0 0 2 0 0  
0 0 1 2 4 0

Your Output (stdout)

19

Expected Output

19

HackerRank  Prepare Algorithms Warmup

For example, if the array `ar = [1, 2, 3]`,  $1 + 2 + 3 = 6$ , so return 6.

**Function Description**

Complete the `simpleArraySum` function with the following parameter(s):

- `ar[n]`: an array of integers

**Returns**

- `int`: the sum of the array elements

**Input Format**

The first line contains an integer, `n`, denoting the size of the array.  
The second line contains `n` space-separated integers representing the array's elements.

**Constraints**

$0 < n, ar[i] \leq 1000$

**Sample Input**

STDIN	Function
-----	-----
6	<code>ar[] size n = 6</code>
1 2 3 4 10 11	<code>ar = [1, 2, 3, 4, 10, 11]</code>

**Sample Output**

31

**Explanation**

Print the sum of the array's elements:  $1 + 2 + 3 + 4 + 10 + 11 = 31$ .

Line: 20 Col: 1

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**Sample Test case 0**

Input (stdin)	Your Output (stdout)	Expected Output	Download
1 6 2 1 2 3 4 10 11	1 31	1 31	<a href="#">Download</a>

```
STDIN      Function
-----      -----
3           arr[][] sizes n = 3, m = 3
11 2 4     arr = [[11, 2, 4], [4, 5, 6], [10, 8, -12]]
4 5 6
10 8 -12
```

### Sample Output

15

### **Explanation**

The primary diagonal is:

11  
5  
-12

Sum across the primary diagonal:  $11 + 5 - 12 = 4$

The secondary diagonal is:

4  
5  
10

Sum across the secondary diagonal:  $4 + 5 + 19 = 19$

$$\text{Difference: } |4 - 19| = 15$$

**Note:**  $|x|$  is the absolute value of  $x$ .

```
22         secondary += arr[i][j];
23     }
24 }
25 }
26
27 cout << abs(primary - secondary) << endl;
```

Line: 31 Col: 1

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## Sample Test case 0

Input (stdin)

### **Download**

3  
11 2 4  
4 5 6  
10 8 -

### Your Output (std::cout)

15

### Expected Output

## **Download**

**Sample Output 0**

2

 Upload Code as File Test against custom input Run Code Submit Code**Explanation 0**

The distance between points  $(1, 2)$  and  $(2, 1)$  is  $\rho(1, 2) + \rho(2, 1) = 2$ .

**Sample Input 1**73  
12  
23  
34  
45  
56  
67  
36  
45  
55**Sample Output 1**

3

**Explanation 1**

The best points are  $(3, 6)$  and  $(5, 5)$ , which gives us a distance of  $\rho(3, 5) + \rho(6, 5) = 2 + 1 = 3$ .

**Congratulations!**

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 Sample Test case 0

Input (stdin)

 Download Sample Test case 1

1 2 2

2 1 2

3 1 2

4 2 1

Your Output (stdout)

1 2

Expected Output

1 2

 Download

**Return**

- **long**: the sum of the array elements

**Input Format**

The first line of the input consists of an integer **n**.  
The next line contains **n** space-separated integers contained in the array.

**Output Format**

Return the integer sum of the elements in the array.

**Constraints**

$1 \leq n \leq 10$   
 $0 \leq ar[i] \leq 10^{10}$

**Sample Input**

<pre>STDIN ----- 5 1000000001 1000000002 1000000003 1000000004 1000000005</pre>	<b>Function</b> <pre>arr[] size n = 5</pre>
---	--

---

**Output**

```
5000000015
```

**Note:**

The range of the 32-bit integer is  
 $(-2^{31})$  to  $(2^{31} - 1)$  or  $[-2147483648, 2147483647]$ .

When we add several integer values, the resulting sum might exceed the above range. You might need to use long int C/C++/Java to store such sums.

Line: 20 Col: 1

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**Submit Code**

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**Sample Test case 0**

<input type="button" value="Input (stdin)"/>	<pre>5 1000000001 1000000002 1000000003 1000000004 1000000005</pre>	<a href="#">Download</a>
<hr/>		
<input type="button" value="Your Output (stdout)"/>	<pre>5000000015</pre>	<a href="#">Download</a>
<hr/>		
<input type="button" value="Expected Output"/>	<pre>5000000015</pre>	<a href="#">Download</a>

**HackerRank** Prepare Data Structures Arrays Advanced

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**

The first line contains an integer,  $N$ , the number of integers in  $A$ .  
The second line contains  $N$  space-separated integers that make up  $A$ .

**Constraints**

- $1 \leq N \leq 10^3$
- $1 \leq A[i] \leq 10^4$ , where  $A[i]$  is the  $i^{th}$  integer in  $A$

**Sample Input 1**

3  
1 2 3

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Line: 25 Col: 1

Test against custom input

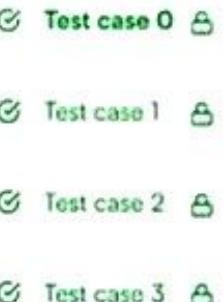
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33% 10/30

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 **Hidden Test Case**  
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the number of queries.

Each of the next  $q$  lines contains three space-separated integers  $a$ ,  $b$  and  $k$ : the left index, right index and number to add.

**Constraints**

- $3 \leq n \leq 10^7$
- $1 \leq m \leq 2 \cdot 10^5$
- $1 \leq a \leq b \leq n$
- $0 \leq k \leq 10^9$

**Sample Input**

```
STDIN      Function
-----      -----
5 3          arr[] size n = 5, queries[] size q = 3
1 2 100     queries = [[1, 2, 100], [2, 5, 100], [3, 4, 100]]
2 5 100
3 4 100
```

**Sample Output**

```
200
```

**Explanation**

After the first update the list is 100 100 0 0 0.

After the second update list is 100 200 100 100 100.

After the third update list is 100 200 200 200 100.

The maximum value is 200.

35

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[Sample Test case 0](#) [Input \(stdin\)](#) [Download](#)

[Sample Test case 1](#) [1 5 3](#) [2 1 2 100](#)

[Sample Test case 2](#) [3 2 5 100](#) [4 3 4 100](#)

Your Output (stdout):  
1 200

Expected Output  
1 200

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## Sample Input 3

Copy Download

30

Line: 30 Col: 1

```
13  
abcde  
sdaklfj  
asdjl  
na  
basdn  
sdaklfj  
asdjl  
na  
asdjl  
na  
basdn  
sdaklfj  
asdjl  
5  
abcde  
sdaklfj  
asdjl  
na  
basdn
```

```
abcde sdaklfj asdjl na basdn
```

Array queries

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## Sample Test case 0

Input (stdin)

Download

```
1 4  
2 aba  
3 baba  
4 aba  
5 xxzb  
6 3  
7 aba  
8 xxzb  
9 ab
```

## Sample Test case 1

## Sample Test case 2

Your Output (stdout)

```
1 2
```

## Sample Output 3

```
1  
3  
4  
3  
2
```

**HackerRank** Prepare Algorithms Warmup Competitions

Print the ratios of positive, negative and zero values in the array. Each value should be printed on a separate line with 6 digits after the decimal. The function should not return a value.

28 Line: 28 Col: 1

**Input Format**

The first line contains an integer,  $n$ , the size of the array.  
The second line contains  $n$  space-separated integers that describe  $\text{arr}[n]$ .

**Constraints**

$0 < n \leq 100$   
 $-100 \leq \text{arr}[i] \leq 100$

**Sample Input**

STDIN	Function
-----	-----
6	<code>arr[] size n = 6</code>
-4 3 -9 0 4 1	<code>arr = [-4, 3, -9, 0, 4, 1]</code>

**Sample Output**

```
0.500000
0.333333
0.166667
```

**Explanation**

There are 3 positive numbers, 2 negative numbers, and 1 zero in the array.  
The proportions of occurrence are positive:  $\frac{3}{6} = 0.500000$ , negative:  $\frac{2}{6} = 0.333333$  and zeros:  $\frac{1}{6} = 0.166667$ .

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Sample Test case 0  Input (stdin)  Download  
1 6  
2 -4 3 -9 0 4 1

Sample Test case 1  Your Output (stdout)  Download  
1 0.500000  
2 0.333333  
3 0.166667

Expected Output  Download  
1 0.500000  
2 0.333333  
3 0.166667

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32

Line: 32 Col: 1

Explanation 0

In this example:

- $a = (a[0], a[1], a[2]) = (5, 6, 7)$
- $b = (b[0], b[1], b[2]) = (3, 6, 10)$

Now, let's compare each individual score:

- $a[0] > b[0]$ , so Alice receives 1 point.
- $a[1] = b[1]$ , so nobody receives a point.
- $a[2] < b[2]$ , so Bob receives 1 point.

Alice's comparison score is 1, and Bob's comparison score is 1. Thus, we return the array  $[1, 1]$ .

Sample Input 1

```
17 28 30
99 16 8
```

Sample Output 1

```
21
```

Explanation 1

Comparing the  $0^{\text{th}}$  elements,  $17 < 99$  so Bob receives a point.

Comparing the  $1^{\text{st}}$  and  $2^{\text{nd}}$  elements,  $28 > 16$  and  $30 > 8$  so Alice receives two points.

The return array is  $[2, 1]$ .

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Run Code Submit Code

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Sample Test case 0

Input (stdin)   
Download

Sample Test case 1

1 **5 6 7**  
2 **3 6 10**

Your Output (stdout)

Expected Output   
Download

31

Line: 31 Col: 1

Initial Values:  
 $n = 2$   
 $lastAnswer = 0$   
 $arr[0] = 1$   
 $arr[1] = 1$

Query 0: Append 5 to  $arr[(0 \oplus 0) \% 2] = arr[0]$ .

$lastAnswer = 0$

$arr[0] = [5]$

$arr[1] = 1$

Query 1: Append 7 to  $arr[(1 \oplus 0) \% 2] = arr[1]$ .

$arr[0] = [5]$

$arr[1] = [7]$

Query 2: Append 3 to  $arr[(0 \oplus 0) \% 2] = arr[0]$ .

$lastAnswer = 0$

$arr[0] = [5, 3]$

$arr[1] = [7]$

Query 3: Assign the value at index 0 of  $arr[(1 \oplus 0) \% 2] = arr[1]$  to  $lastAnswer$ . Store  $lastAnswer$  in your answer array.  $lastAnswer = 7$

$arr[0] = [5, 3]$

$arr[1] = [7]$

Query 4: Assign the value at index 1 of  $arr[(1 \oplus 7) \% 2] = arr[0]$  to  $lastAnswer$ . Store  $lastAnswer$  in your answer array.  $lastAnswer = 3$

$arr[0] = [5, 3]$

$arr[1] = [7]$

Return your answer array [7, 3]. The code stub prints its elements on separate lines.

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Test against custom input

Run Code

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## 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
```

Download

Your Output (stdout)

```
1 7
2 3
```

Expected Output

Download