Dashboard > Algorithms > Implementation > Circular Array Rotation

Badge Progress (Details)

Points: 126   Rank: 270065

Circular Array Rotation 🔖

by darkshadows

| Problem | Submissions | Leaderboard | Discussions | Editorial 🔒 |

John Watson performs an operation called a *right circular rotation* on an array of integers, $[a_0, a_1, \ldots a_{n-1}]$. After performing one *right circular rotation* operation, the array is transformed from $[a_0, a_1, \ldots a_{n-1}]$ to $[a_{n-1}, a_0, \ldots, a_{n-2}]$.

Watson performs this operation k times. To test Sherlock's ability to identify the current element at a particular position in the rotated array, Watson asks q queries, where each query consists of a single integer, m, for which you must print the element at index m in the rotated array (i.e., the value of a_m).

Input Format

The first line contains 3 space-separated integers, n, k, and q, respectively.
The second line contains n space-separated integers, where each integer i describes array element a_i (where $0 \leq i < n$).
Each of the q subsequent lines contains a single integer denoting m.

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq a_i \leq 10^5$
- $1 \leq k \leq 10^5$
- $1 \leq q \leq 500$
- $0 \leq m \leq n - 1$

Output Format

For each query, print the value of the element at index m of the rotated array on a new line.

Sample Input 0

```
3 2 3
1 2 3
0
1
2
```

Sample Output 0

```
2
3
1
```

Explanation 0

After the first rotation, the array becomes $[3, 1, 2]$.
After the second (and final) rotation, the array becomes $[2, 3, 1]$.

Let's refer to the array's final state as array b. For each query, we just have to print the value of b_m on a new line:

1. $m = 0$, so we print 2 on a new line.

2. $m = 1$, so we print 3 on a new line.

3. $m = 2$, so we print 1 on a new line.

f   ⌾   in

Submissions:90540

Max Score:20
Difficulty: Easy

Rate This Challenge:
☆ ☆ ☆ ☆ ☆

More

Current Buffer (saved locally, editable)   ⑂ ⟲   [Java 7   ⌄]   ⤢   ⚙

```java
 1 ▾ import java.io.*;
 2   import java.util.*;
 3   import java.text.*;
 4   import java.math.*;
 5   import java.util.regex.*;
 6
 7 ▾ public class Solution {
 8
 9 ▾     public static void main(String[] args) {
10          Scanner in = new Scanner(System.in);
11          int n = in.nextInt();
12          int k = in.nextInt();
13          int q = in.nextInt();
14 ▾        int[] a = new int[n];
15 ▾        for(int a_i=0; a_i < n; a_i++){
16 ▾            a[a_i] = in.nextInt();
17          }
18 ▾        for(int a0 = 0; a0 < q; a0++){
19              int m = in.nextInt();
20          }
21      }
22   }
23
```

Line: 1 Col: 1

⬆ Upload Code as File   ☐ Test against custom input   [Run Code]   [Submit Code]

Join us on IRC at #hackerrank on freenode for hugs or bugs.

Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature