Codility_

CodeCheck Report: trainingZT3B4W-7RG

Test Name:

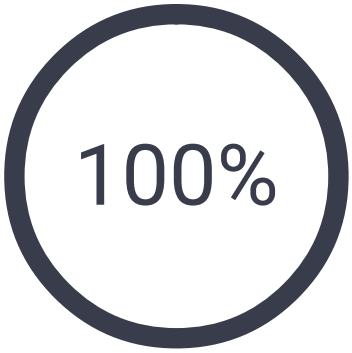
Check out Codility training tasks

Summary Timeline AI Assistant Transcript

Tasks summary

Task	Time spent	Score
CyclicRotation C++	2 min	100%

Total score



Tasks Details

Easy

1. CyclicRotation

Rotate an array to the right by a given number of steps.

Task Score	Correctness	Performance
100%	100%	Not assessed

Task description

An array A consisting of N integers is given. Rotation of the array means that each element is shifted right by one index, and the last element of the array is moved to the first place. For example, the rotation of array A = [3, 8, 9, 7, 6] is [6, 3, 8, 9, 7] (elements are shifted right by one index and 6 is moved to the first place).

The goal is to rotate array A K times; that is, each element of A will be shifted to the right K times.

Write a function:

```
vector<int> solution(vector<int> &A, int K);
```

that, given an array A consisting of N integers and an integer K, returns the array A rotated K times.

For example, given

```
A = [3, 8, 9, 7, 6]
K = 3
```

the function should return [9, 7, 6, 3, 8]. Three rotations were made:

```
[3, 8, 9, 7, 6] -> [6, 3, 8, 9, 7]
[6, 3, 8, 9, 7] -> [7, 6, 3, 8, 9]
[7, 6, 3, 8, 9] -> [9, 7, 6, 3, 8]
```

Solution

Programming language used:	C++
Total time used:	2 minutes
Effective time used:	2 minutes
Notes:	*not defined yet*

Task timeline

10:36:13 10:38:12

Code: 10:38:12 UTC, cpp, final, score: **100** show code in pop-up

```
1  // you can use includes, for example:
2  // #include <algorithm>
3  #include <iostream>
```

For another example, given

```
A = [0, 0, 0]
K = 1
```

the function should return [0, 0, 0]

Given

```
A = [1, 2, 3, 4]
K = 4
```

the function should return [1, 2, 3, 4]

Assume that:

- N and K are integers within the range [0..100];
- each element of array A is an integer within the range [−1,000..1,000].

In your solution, focus on **correctness**. The performance of your solution will not be the focus of the assessment.


```
4
5  // you can write to stdout for debugging purpo
6  // cout << "this is a debug message" << endl;
7  using namespace std;
8  void rotateArray(vector<int> &A, int K) {
9    while (K--) {
10     int e = A.back();
11     A.pop_back();
12     A.insert(A.begin(), e);
13   }
14   return;
15 }
16 vector<int> solution(vector<int> &A, int K) {
17   int arrayLength = A.size();
18
19   if (arrayLength == 0) {
20     return A;
21   }
22
23   K %= arrayLength;
24   rotateArray(A, K);
25   return A;
26 }
```

Analysis summary

The solution obtained perfect score.

Analysis

expand all	Example tests	
▶	example first example test	✔ OK
▶	example2 second example test	✔ OK
▶	example3 third example test	✔ OK
expand all	Correctness tests	
▶	extreme_empty empty array	✔ OK
▶	single one element, 0 <= K <= 5	✔ OK
▶	double two elements, K <= N	✔ OK
▶	small1 small functional tests, K < N	✔ OK
▶	small2 small functional tests, K >= N	✔ OK
▶	small_random_all_rotations small random sequence, all rotations, N = 15	✔ OK
▶	medium_random medium random sequence, N = 100	✔ OK
▶	maximal maximal N and K	✔ OK