codility

Training center

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TASKS DETAILS

EASY

1. CyclicRotation

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

Task Score		Correctness		Performance
	87%		87%	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:

```
def solution(A, 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]
```

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
```

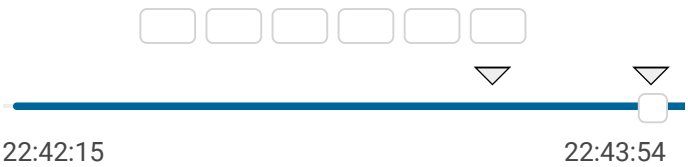
the function should return [1, 2, 3, 4]

Assume that:

Solution

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

Task timeline



22:42:15 22:43:54

Code: 22:43:53 UTC, py, final, score: **87**

show code in pop-up

```
1  def shift_array(array):
2      last = array.pop()
3      array.insert(0, last)
4      return array
5
6
7  def solution(A, K):
8      result = A
9      for i in range(K):
10         result = shift_array(result)
11     return result
```

Analysis summary

The following issues have been detected: runtime errors.

- 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.

For example, for the input `([], 1)` the solution terminated unexpectedly.

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	✘ RUNTIME ERROR tested program terminated with exit code 1

1. 0.036 s **OK**
2. 0.036 s **RUNTIME ERROR**, tested program terminated with exit code 1

stderr:

```
Traceback (most recent call last):
  File "exec.py", line 145, in <module>
    main()
  File "exec.py", line 107, in main
    result = solution( A, K )
```

▶	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