

Tasks summary

Task	Time spent	Score
CyclicRotation Python	61 min	25%

Total score

25%

Tasks Details

Easy	1. CyclicRotation	Task Score	Correctness	Performance
	Rotate an array to the right by a given number of steps.	25%	25%	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:

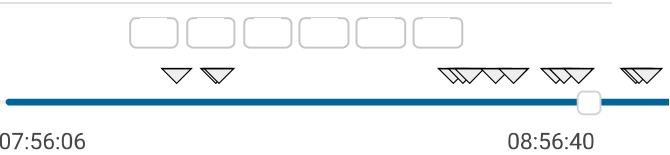
```
[3, 8, 9, 7, 6] -> [6, 3, 8, 9, 7]
[6, 3, 8, 9, 7] -> [7, 6, 3, 8, 9]
[7, 6, 3, 8, 9] -> [9, 7, 6, 3, 8]
```

For another example, given

Solution

Programming language used:	Python	
Total time used:	61 minutes	?
Effective time used:	61 minutes	?
Notes:	not defined yet	

Task timeline



Code: 08:56:40 UTC, py, [show code in pop-up](#)

final, score: 25

```
1 # you can write to stdout for debugging purposes,
2 # print("this is a debug message")
3
4
```

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.

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```
5 # Rotate the array A by K times
6 # e.g.
7 # A = [3, 8, 9, 7, 6]
8 # K = 3
9 # process:
10 # 1). [3, 8, 9, 7, 6]
11 # 2). [6, 3, 8, 9, 7]
12 # 3). [7, 6, 3, 8, 9]
13 # 4). [9, 7, 6, 3, 8]
14 #
15 # <Solution>
16 # - 先找到頭元素 (透過K, len(A))
17 # - 將頭元素後的元素依序加到新陣列中, 最後再將頭元素
18 #
19 # <其他限制>
20 # - N(length of A)和K為介於0~100的整數
21 # - 陣列中的整數介於-1000~1000之間
22
23 def solution(A, K):
24     # write your code in Python 3.6
25     rotated_array = rotate(A, K)
26     return rotated_array
27
28 def rotate( array:list, rotation_times:int) -> lis
29     """ Return a rotated list """
30     array_length = len(array)
31     rotation_times %= array_length
32
33     if rotation_times==0:
34         return array
35
36     if rotation_times == 1:
37         head = [array[array_length-1]]
38     else:
39         head = array[(rotation_times-1):]
40
41     tail = array[: (array_length-rotation_times)]
42
43     rotated_array = head + tail
44
45     return rotated_array
46
```

Analysis summary

The following issues have been detected: wrong answers, runtime errors.

For example, for the input ([], 0) the solution terminated unexpectedly.

Analysis

collapse all		Example tests
▼	example	✓ OK
first example test		
1. 0.036 s OK		
▼	example2	✓ OK
second example test		
1. 0.036 s OK		
▼	example3	✓ OK
third example test		
1. 0.036 s OK		
collapse all		Correctness tests
▼		

extreme_empty empty array	✗ RUNTIME ERROR tested program terminated with exit code 1
1. 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)	
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
1. 0.036 s	OK
2. 0.036 s	OK
3. 0.036 s	OK
▼ double two elements, K <= N	✓ OK
1. 0.036 s	OK
2. 0.036 s	OK
▼ small1 small functional tests, K < N	✗ WRONG ANSWER got [2, 3, 4, 5, 6, 7, 1,.. expected [6, 7, 1, 2, 3, 4, 5]
1. 0.036 s	WRONG ANSWER , got [2, 3, 4, 5, 6, 7, 1,.. expected [6, 7, 1, 2, 3, 4, 5]
2. 0.036 s	WRONG ANSWER , got [-5, -6, -1] expected [-2, -3, -4, -5, -6, -..
▼ small2 small functional tests, K >= N	✗ WRONG ANSWER got [-4, -5, -6, -1, -2] expected [-3, -4, -5, -6, -1, -..
1. 0.036 s	OK
2. 0.036 s	WRONG ANSWER , got [-4, -5, -6, -1, -2] expected [-3, -4, -5, -6, -1, -..
3. 0.036 s	WRONG ANSWER , got [1, 2, 3, 5, 1, 1, 2] expected [3, 5, 1, 1, 2]
▼ small_random_all_rotations small random sequence, all rotations, N = 15	✗ WRONG ANSWER got [6, 0, 0, -2, 10, -4,.. expected [-4, -4, 4, 6, 0, 0, ..
1. 0.036 s	OK
2. 0.036 s	OK
3. 0.036 s	WRONG ANSWER , got [6, 0, 0, -2, 10, -4,.. expected [-4, -4, 4, 6, 0, 0, ..

4.	0.036 s	WRONG ANSWER, got [0, 0, -2, 10, -4, -7.. expected [-8, -4, -4, 4, 6, 0,..
5.	0.036 s	WRONG ANSWER, got [0, -2, 10, -4, -7, -.. expected [-5, -8, -4, -4, 4, 6..
6.	0.036 s	WRONG ANSWER, got [-2, 10, -4, -7, -5, -.. expected [-4, -5, -8, -4, -4, 4..
7.	0.036 s	WRONG ANSWER, got [10, -4, -7, -5, -5, .. expected [-5, -4, -5, -8, -4, ..
8.	0.036 s	WRONG ANSWER, got [-4, -7, -5, -5, -4, -.. expected [-5, -5, -4, -5, -8, -..
9.	0.036 s	OK
10.	0.036 s	WRONG ANSWER, got [-5, -5, -4, -5, -8, -.. expected [-4, -7, -5, -5, -4, -..
11.	0.036 s	WRONG ANSWER, got [-5, -4, -5, -8, -4, .. expected [10, -4, -7, -5, -5, ..
12.	0.036 s	WRONG ANSWER, got [-4, -5, -8, -4, -4, 4.. expected [-2, 10, -4, -7, -5, -..
13.	0.036 s	WRONG ANSWER, got [-5, -8, -4, -4, 4, 6.. expected [0, -2, 10, -4, -7, -..
14.	0.036 s	WRONG ANSWER, got [-8, -4, -4, 4, 6] expected [0, 0, -2, 10, -4, -7..
15.	0.036 s	WRONG ANSWER, got [-4, -4, 4] expected [6, 0, 0, -2, 10, -4,..
<hr/>		
▼ medium_random		✗ WRONG ANSWER
medium random sequence, N = 100		got [-450, -554, 473, 354.. expected [58, 943, 722, 279, -..
<hr/>		
1.	0.036 s	WRONG ANSWER, got [-450, -554, 473, 354.. expected [58, 943, 722, 279, -..
2.	0.036 s	WRONG ANSWER, got [-466, 874, 296, 218, -.. expected [-444, 272, -270, -260,..
<hr/>		
▼ maximal		✗ WRONG ANSWER
maximal N and K		got [155, 0, 710] expected [807, 568, 560, 454, ..
<hr/>		
1.	0.036 s	OK
2.	0.036 s	OK
3.	0.036 s	OK
4.	0.036 s	WRONG ANSWER, got [155, 0, 710] expected [807, 568, 560, 454, ..

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