Solution Review: Right Rotate List

This review provides a detailed analysis of the different ways to right rotate the list.

We'll cover the following

Solution #1: Manual Rotation

```python
def right_rotate(lst, k):
    if len(lst) == 0:
        k = 0
    else:
        k = k % len(lst)
    rotatedList = []
    # get the elements from the end
    for item in range(len(lst) - k, len(lst)):
        rotatedList.append(lst[item])
    # get the remaining elements
    for item in range(0, len(lst) - k):
        rotatedList.append(lst[item])
    return rotatedList


print(right_rotate([10, 20, 30, 40, 50], abs(3)))
```

We first take the modulo of `k` by `len(lst)` in this solution.

The intuition behind taking the modulo is that we would get back the same list if we were to rotate the list `len(lst)` times. That's why we only need to rotate the list `k % len(lst)` times and not actually `k`.

Next, we create an empty list. We then iterate through the last k elements of the list and place them at the start of the new list. Lastly, we append the first `length(lst)-k` elements to the new list and return.

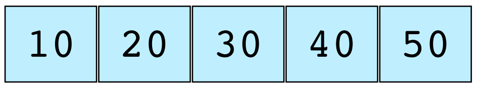
Time Complexity#

Since the entire list is iterated over, the time complexity of this solution is $O(n)$

Solution #2: Pythonic Rotation#

```
def right_rotate(lst, k):
    # get rotation index
    if len(lst) == 0:
        k = 0
    else:
        k = k % len(lst)
    return lst[-k:] + lst[:-k]


print(right_rotate([10, 20, 30, 40, 50], abs(3)))
```



Pythonic rotation where k = 3

1 of 3

This solution simply uses list slicing to join together the last `k` and the first `len(lst) - k` elements and returns.

Time Complexity#

List slicing is in $O(k)$ where k represents the number of elements that are sliced, and since the entire list is sliced, hence the total time complexity is in $O(n)$.

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