Assignment 02 Feedback

Written Component

W1

(a)

- The loop should be from 0 to Max Rank -1.

(c)

- There are two types of usages: using ADT operations and augmenting the ADT. There are two types of implementations: contiguous and linked list. So there are $2 \times 2 = 4$ different cases.

- Most of them are $\Theta(n)$. The only special case is the one using ADT operations with ADT implemented by linked list. Each look up operation needs to start from the beginning, so the total time complexity is $\Theta(n^2)$.

W2

- The structure of the linked list in this problem is different from the one in the programming component. There is an extra variable that represents the **desired position** stored in each node, and it may not be equal to the **physical position** of the node. That is why we stated "You cannot make any assumption about the order in which the linked nodes are stored (it affects the **physical positions**)".

(b)

- This problem asks **BEST-CASE** running time. The best case occurs when the condition is met at the first iteration.

(d)

- This problem asks **WORST-CASE** running time. The worst case occurs when the condition is met at the last iteration.

(e)

- Many guys understood this problem in a wrong way. This problem asks "if the introducing of a new variable k affects the formula of the time complexity".

- In this case the running time is affected by n, and the **physical position** of the target node.

Programming Component

P1

- Once you have created the class, any creation or deletion of nodes is not allowed.

- Once you have created the node, changing the value (not the pointer) of the node is not allowed.

- Using Python built-in list is not allowed.