Linked Lists with Tail Pointers

Lecture 18
Section 6.5

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Outline

1. Linked Lists with Tail Pointers
2. Assignment
Definition (Linked List with Tail Pointer)

A linked list with tail pointer is a linked list with one additional pointer that points to the last node in the list.

One Additional Data Member

LinkedListNode* tail - A pointer to the last node in the list.

- The name of the class is LinkedListwTail.
Implementing the Member Functions

- The `LinkedListwTail` class is very similar to the `LinkedList` class.
- We need to rewrite only those functions that involve the tail pointer.
- `pushBack()` becomes much more efficient.
- Use a linked list with tail pointer in applications that make extensive use of `pushBack()`.
Validity Requirements

- All the requirements of a `LinkedList`, plus
  - If `mSize == 0`, then `tail == NULL`.
  - If `mSize > 0`, then `tail == ptr`, where `ptr` is a pointer to the last node.
Assignment

Homework

- Read Section 6.5, pages 295 - 300.
- Also, you can google “linked list with tail pointer” and find a number web sites that discuss this.