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CS213 Q 1: Lecture 4: Consider the following statements about a doubly linked list with n nodes. Select all that are true.

In a doubly linked list, adding a node at the end requires traversing the entire list, hence taking $O(n)$ time.

In a doubly linked list, deletion of a node can be done in $O(1)$ time if a pointer to the node to be deleted is given.

A doubly linked list requires extra memory space for storing two pointers (prev and next) per node compared to a singly linked list.

The time complexity to find the middle node in a doubly linked list is $O(1)$.

Answer

Note: please be careful before submitting the answer. You will not be able to change the answers.

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CS213 Q 1: Lecture 4: Consider the following statements about a doubly linked list with n nodes. Select all that are true.

You have answered the following:

- ✓ In a doubly linked list, adding a node at the end requires traversing the entire list, hence taking O(n) time. (You are incorrect)
- ✓ In a doubly linked list, deletion of a node can be done in O(1) time if a pointer to the node to be deleted is given. (You are correct)
- ✓ A doubly linked list requires extra memory space for storing two pointers (prev and next) per node compared to a singly linked list. (You are correct)
- ✗ The time complexity to find the middle node in a doubly linked list is O(1). (You are correct)

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