Data Structures and Algorithms Assignment

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TOPIC: LISTS (SINGLE AND DOUBLE)

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Comparison between deletion time complexity in Singly linked lists and Doubly linked lists:

- The space complexity for both singly and doubly linked lists is same and is equal to O(1) as only one extra space is used for a temporary pointer to the node.

- The time complexity in this case of deleting a student id previous to the given (taken as input) student id is almost the same as we are taking the id as the input and not directly the node.

- Generally, the time complexity for deleting a node in singly linked list is O(n) as we do not know which is the preceding node and we have to traverse until we find it.

- But, in case of doubly linked list, the time complexity for deleting a node is O(1) if we know which node is to be deleted as we can just update the links in 2 steps which takes constant time.