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COMPUTER ENGINEERING DEPARTMENT

Data Structure and Algorithm

Singly Linked List

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Activity about Singly Linked List

1. What is a singly linked list, and how does it differ from an array?

   A singly linked list is a data structure composed of nodes, where each node contains data and a reference to the next node in the sequence. Unlike arrays, its elements are not stored in consecutive memory locations, which allows the list to expand or shrink easily. However, accessing elements is slower because you must traverse from the beginning to reach a specific node.

2. When would you prefer a linked list over an array, and vice versa?

   Arrays are fixed in size, provide quick random access, and store elements in continuous memory, making them ideal when the size is predetermined and fast access is important. In contrast, linked lists have a dynamic size and support efficient insertions and deletions, but they require sequential traversal, making them more suitable when frequent modifications are expected.

3. How are linked lists used in real-world applications (e.g., browser history, undo functionality)?

   Linked lists are applied in various areas such as connecting visited pages in browser history, managing undo operations in text editors by tracking changes, and organizing playlists where songs can be added or removed without disrupting the rest of the sequence.

References:

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