UNIVERSITY OF CALOOCAN CITY
COMPUTER ENGINEERING DEPARTMENT

Linked lists

Seatwork Activity

Object-oriented Programming

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Activity about Singly Linked List

1. What is a singly linked list, and how does it differ from an array?
    - An array keeps all elements in one block of memory, making it fast to access any item, but adding or removing elements can be tricky since you often have to shift everything. A singly linked list stores each element in its own node, pointing to the next one, so it's slower to access a specific item but much easier to insert or delete nodes (AK Coding, n.d.).
2. When would you prefer a linked list over an array, and vice versa?
    - Use an array when you need quick access by index, memory efficiency, or fast iteration and sorting. Choose a linked list when your data size changes a lot and you need to insert or remove items frequently, especially in the middle or front, since you don't have to shift elements (Design Gurus, 2025).
3. How are linked lists used in real-world applications (e.g., browser history, undo functionality)?
    - Linked lists are useful when data changes frequently and needs easy navigation. Browsers use them for history, letting you go back and forward between pages, while text editors use them for undo and redo, storing each action as a node. This makes adding or removing steps simple without reorganizing everything (GeeksforGeeks, n.d.).

4. Cite your reference/s

AK Coding. (n.d.). *Singly linked list: Explained, examples, and applications*. https://akcoding.com/dsa/linear-data-structures/singly-linked-list/

Design Gurus. (2025, July 27). *Array vs linked list*. https://www.designgurus.io/blog/array-vs-linked-list

GeeksforGeeks. (n.d.). *Applications of linked list data structure*. https://www.geeksforgeeks.org/dsa/applications-of-linked-list-data-structure/