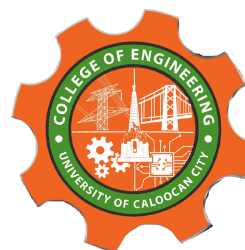




**UNIVERSITY OF CALOOCAN CITY
COMPUTER ENGINEERING DEPARTMENT**



Data Structure and Algorithm

Activity

Single Linked List

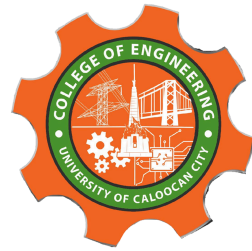
Submitted by:
Balaoro, Judge Wayne B.

Instructor:
Engr. Maria Rizette H. Sayo

August 11, 2025



UNIVERSITY OF CALOOCAN CITY COMPUTER ENGINEERING DEPARTMENT



I. Objectives

Introduction

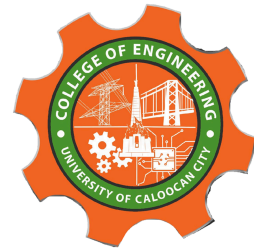
Data Structures are fundamentals of any programming language around which a program is built.

II. Methods

1. What is a singly linked list, and how does it differ from an array?
2. When would you prefer a linked list over an array, and vice versa?
3. How are linked lists used in real-world applications (e.g., browser history, undo functionality)?
4. Cite your reference/s



UNIVERSITY OF CALOOCAN CITY COMPUTER ENGINEERING DEPARTMENT



III. Results

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

- Array stores elements in contiguous memory locations in which faster access to an element at a given index is made possible while the singly linked list are not stored in contiguous memory locations but instead each node contains the next node's address in the list.

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

-I would prefer the linked list over an array if I would insert or delete elements at any position in the list because arrays require shifting of elements when a new element is either added or removed which can be slow.

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

- Linked lists are used in things such as image viewer since images are linked because of the next and previous button, the same thing also happens on web browser history in which to go back to your previous URL you press the back button and to go back to your URL you need to press the next button.



UNIVERSITY OF CALOOCAN CITY COMPUTER ENGINEERING DEPARTMENT



References

- [1] Co Arthur O.. “University of Caloocan City Computer Engineering Department Honor Code,” UCC-CpE Departmental Policies, 2020.
- [2] Prepbytes. (2023, April 25). *Advantage and Disadvantage of linked list over array*. PrepBytes Blog. <https://prepbytes.com/blog/advantage-and-disadvantage-of-linked-list-over-array/>
- [3] GeeksforGeeks. (2025b, July 23). *Singly Linked List definition & meaning DSA*. GeeksforGeeks. <https://www.geeksforgeeks.org/dsa/singly-linked-list-definition-meaning-dsa/>
- [4] GeeksforGeeks. (2025a, July 11). *Applications of linked list data structure*. GeeksforGeeks. <https://www.geeksforgeeks.org/dsa/applications-of-linked-list-data-structure/>