Skill Test	
Course Code: CPE201L	**Program:** BSCpE
Course Title: Data Structures and Algorithms	**Date Performed:** 08/30/25
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1.Objectives

- To apply the concept of linked lists in storing and displaying user input.
- To demonstrate the use of nodes and pointers in building a dynamic data structure.
- To practice validating user input and linking it into a sequential structure.

2. Discussion

This activity focuses on implementing a singly linked list in Python. A linked list is a data structure composed of nodes where each node contains data and a reference (or pointer) to the next node. Unlike arrays, linked lists are dynamic, allowing flexible insertion and deletion without needing continuous memory. In the program, each letter of the user's name is stored as a node. The program asks the user to input letters one by one and appends them to the linked list. When the user enters 0, the process stops, and the list is displayed with arrows connecting each node. This simulates how data is linked together sequentially in memory.

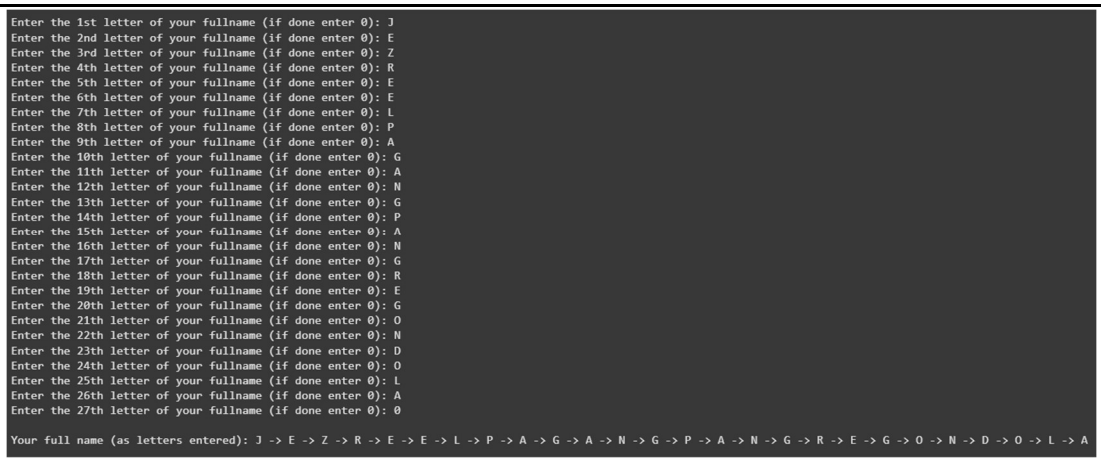
3. Materials and Equipment

- Computer – used to run and test the Python program.
- Python Interpreter (Google Colab) – to execute the program and debug errors.

4. Procedure

1. Open Python or Google Colab.
2. Define a Node class that stores a letter and a pointer to the next node.
3. Create a LinkedList class with methods to append nodes and track the head and tail.
4. Add a function that determines ordinal suffixes (st, nd, rd, th) for user prompts.
5. Write a loop that asks the user to enter each letter of their name one by one.
6. Validate the input to accept only single letters or 0 to end the input process.
7. Append each valid letter into the linked list.
8. Traverse the list and display the full name with arrows (->) between letters.

5. Output



Source Code:
https://colab.research.google.com/drive/1rJq84l6clWskrGYxEYuFWyJmdqHNm09h#scrollTo=7XD8SrACjK0X&line=11&uniqifier=1

7. Conclusion

This skill test helped me improve my understanding of linked lists and how data structures work in Python. By writing the program, I became more familiar with creating nodes, connecting them, and displaying the sequence of data. It also improved my problem solving and coding skills, especially in handling user input and validation. Overall, this task made me more confident in applying data structure concepts to practical programming exercises.