Quiz No. 1 Skill Test	
Course Code: CPE – 201L	**Program: BSCpE**
Course Title: Data Structure and Algorithm	**Date Performed: 08-30-2025**
Section: 2-A	**Date Submitted: 08-30-2025**
Name: Acebedo, Sebastian C.	**Instructor:** Engr. Maria Rizette Sayo

1.Objectives

1. To learn how to implement a singly linked list in Python by creating nodes and connecting them.
2. To practice traversing a linked list and displaying each character of my fullname in a structured format.

2. Discussion

In this activity, I learned about singly linked lists, which are data structures made up of nodes. Each node stores data and a reference to the next node in the sequence. I practiced creating nodes for each character in my fullname and connecting them to form a linked list. I also learned how to traverse the list, which means visiting each node one by one to display its data. This helped me understand how linked lists work and how they are different from arrays, especially in how elements are stored and accessed.

3. Materials and Equipment

For this activity, I used the Python programming language and the Visual Studio Code editor on my laptop. I also utilized Google Colab to compile my code to GitHub and the CodeSnap extension in Visual Studio Code to capture screenshots of my source code.

4. Procedure

For this activity, I created a Python program that uses a linked list to store and display each character of my full name. Firstly, I created a Node class that contains two attributes: data, which holds the character, and next, which points to the next node in the list. After that, I made a LinkedList class with a head attribute initialized as None. Inside this class, I added two methods: append() to insert a new node at the end of the list, and traverse() to display all the characters in sequence.
Next, I stored my full name in a variable called fullname = "SEBASTIAN C. ACEBEDO". Using a loop, I appended each character of my name to the linked list by calling the append() method repeatedly.
Finally, I used the traverse() method to print all the characters of my name in order, connected with arrows (->), which shows how the linked list links each character together.

5. Output

```python
class Node:
    def __init__(self, data):
        self.data = data
        self.next = None

class LinkedList:
    def __init__(self):
        self.head = None

    def append(self, data):
        new_node = Node(data)
        if not self.head:
            self.head = new_node
            return
        last = self.head
        while last.next:
            last = last.next
        last.next = new_node

    def traverse(self):
        current = self.head
        while current:
            print(current.data, end=" ")
            if current.next:
                print("->", end=" ")
            current = current.next

fullname = "SEBASTIAN C. ACEBEDO"
linked_list = LinkedList()

for char in fullname:
    linked_list.append(char)

linked_list.traverse()
```

```
S -> E -> B -> A -> S -> T -> I -> A -> N ->  -> C -> . ->  -> A -> C -> E -> B -> E -> D -> O
```

6. Conclusion

Through this activity, I was able to apply the concept of linked lists in Python by storing and traversing each character of my full name. I learned how a linked list works by creating nodes that are connected to each other through pointers. I also understood the importance of using classes in Python to organize the structure of a program.

This task helped me realize that linked lists are useful when we want to store data in a sequence without relying on arrays. Instead of using fixed indexes, each element points to the next one, which makes insertion and traversal easier to understand. Overall, this activity improved my knowledge of data structures and gave me more confidence in writing object-oriented programs in Python.

Lab Activity Rubric

Criteria	Ratings						Pts
SO 7 PI 1 **Student Outcome 7.1** Acquire and apply new knowledge from outside sources. threshold: 4.8 pts	6 pts Excellent | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently and applies knowledge learned into practice	5 pts Good | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently	4 pts Satisfactory | Look beyond classroom requirements, showing interest in pursuing knowledge independently	3 pts Unsatisfactory | Begins to look beyond classroom requirements, showing interest in pursuing knowledge independently	2 pts Poor | Relies on classroom instruction only	1 pts Very Poor | No initiative or interest in acquiring new knowledge	6 pts
SO 7 PI 2 **Student Outcome 7.2** Learn independently threshold: 4.8 pts	6 pts Excellent | Completes an assigned task independently and practices continuous improvement	5 pts Good | Completes an assigned task without supervision or guidance	4 pts Satisfactory | Requires minimal guidance to complete an assigned task	3 pts Unsatisfactory | Requires detailed or step-by-step instructions to complete a task	2 pts Poor | Shows little interest to complete a task independently	1 pts Very Poor | No interest to complete a task independently	6 pts
SO 7 PI 3 **Student Outcome 7.3** Critical thinking in the broadest context of technological change threshold: 4.8 pts	6 pts Excellent | Synthesizes and integrates information from a variety of sources; formulates a clear and precise perspective; draws appropriate conclusions	5 pts Good | Evaluate information from a variety of sources; formulates a clear and precise perspective.	4 pts Satisfactory | Analyze information from a variety of sources; formulates a clear and precise perspective.	3 pts Unsatisfactory | Apply the gathered information to formulate the problem	2 pts Poor | Gather and summarized the information from a variety of sources but failed to formulate the problem	1 pts Very Poor | Gather information from a variety of sources	6 pts
SO 7 PI 4 **Student Outcome 7.4** Creativity and adaptability to new and emerging technologies threshold: 4.8 pts	6 pts Excellent | Ideas are combined in original and creative ways in line with the new and emerging technology trends to solve a problem or address an issue.	5 pts Good | Ideas are creative and adapt the new knowledge to solve a problem or address an issue	4 pts Satisfactory | Ideas are creative in solving a problem, or address an issue	3 pts Unsatisfactory | Shows some creative ways to solve the problem	2 pts Poor | Shows initiative and attempt to develop creative ideas to solve the problem	1 pts Very Poor | Ideas are copied or restated from the sources consulted	6 pts
							Total Points: 24