

Quiz No.1 Skill Test	
Course Code: CPE201L	Program: Computer Engineering
Course Title: Data Structures and Algorithm	Date Performed: August 30, 2025
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1. Objectives	
<ol style="list-style-type: none"> 1. Choose only one (1) Data Structure (Array, Linked-list, (Singly, Doubly), Stack, Queue) 2. Create a python program that appends each character of your Fullname and traverses each character. 3. Save your python program as Skil;-Test in your Colab and Github. 	
2. Discussion	
<p>I picked the Singly Linked List to create a python program that appends each character of my full name and traverses each of the characters. I created two classes that hold Node and LinkedList which hold many methods such as insert, traverse. The linked list is a linear data made up of nodes, where each node contains data and a pointer which in my case i named it "name" that connects it to the next node in the sequence. These are not stored in continuous memory locations unlike arrays but are linked together through these pointers. In the last part I used the insert method to append each character on my name and I used the traverse method to go through the linked list starting with the head which represents the first node and the tail which tracks the last node. This quiz highlights the use of data structure on handling sequences of data specifically when insertion and traversal operations are involved.</p>	
3. Materials and Equipment	
Google Colab, Github	
4. Procedure	
<p>Firstly, I copied my previous activities that involved a singly linked list. I modified it and named the data as "name". The code has two classes named LinkedListNode which acts as the node and LinkedList which holds the overall linked list and it keeps track of the head and tail. Next, there is insert method which takes in argument "name" and there is an if-else statement inside it which says that if the head is empty the append character will become the head as it is the first character. Next, I created a traverse method which displays the characters of my full name and I used while statement so that after each character I can put "->" so that I could make it more readable and I used the end function so that it would be on the same line and not end up on new line each character. I named the function LinkedList() as ll for easy use of the class and I used the insert method to append each character of my full name one by one and at the end I called the traverse method.</p>	
5. Output	

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#Singly Linked List

class LinkedListNode:
    def __init__(self, name, nextNode = None):
        self.name = name
        self.nextNode = nextNode

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

    def insert(self, name):
        node = LinkedListNode(name)
        if self.head is None:
            self.head = node
            self.tail = node
        else:
            self.tail.nextNode = node
            self.tail = node

    def traverse(self):
        current = self.head
        while current is not None:
            print(current.name, "->", end = " ")
            current = current.nextNode
        print(None)

ll = LinkedList()
ll.insert("J")
ll.insert("U")
ll.insert("D")
ll.insert("G")
ll.insert("E")

ll.insert("W")
ll.insert("A")
ll.insert("Y")
ll.insert("N")
ll.insert("E")

ll.insert("B")
ll.insert("A")
ll.insert("L")
ll.insert("A")
ll.insert("O")
ll.insert("R")
ll.insert("O")

ll.traverse()

```

J -> U -> D -> G -> E -> W -> A -> Y -> N -> E -> B -> A -> L -> A -> O -> R -> O -> None

6. Supplementary Activity

Include here screenshots of the activity completion test.

7. Conclusion

In this quiz, I was able to apply the use of data structure and algorithm on creating a python program that appends each character of my full name and traverses each character of my full name. I use linked list, specifically the singly linked list as I saw it suitable to use in this case because when you append each character it points it to the next one since its a name and permanent and you don't have to access previous element but just the next one since you append on it. I learned here to handle sequence of handling data and in this case its insertion and traversal operation.

