

Data Structure and Algorithm Practicum

Chapter



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1.1 Learning Objective

After learning this practicum, students will be able to:

1. Create a linked list data structure
2. Create a program that implements linked list
3. Differentiate the problems that can be solved with linked list

1.2 Lab Activities 1

In this practicum, we will implement how to create single linked list with nodes data representation, accessing the linked list, and adding the data.

1.2.1 Steps

1. Create a new package named week11
2. Add these following classes:
 - (a) Node.java
 - (b) SingleLinkedList.java
 - (c) SLLMain.java
3. Create Node class
4. Add these following attributes in class SingleLinkedList
5. For the next step, we will implement methods that are exist in SingleLinkedList
6. Add method isEmpty()
7. Implement this method to display the data with traverse process
8. Implement method addFirst()
9. Implement method addLast()
10. Implement method insertAfter (), to insert a node that stores data that were inputted by the user after data key
11. Add these following codes to add a node based on defined index
12. In class SLLMain, create main function and instantiate a new object from SingleLinkedList class
13. Add methods for inserting data, as well as displaying the data for each insert process so that we can track the changes