**S.Y. B. Tech. Academic Year 2018-19 Trimester: IV**

**Data Structure-I**

**LABORATORY WRITE UP**

###### Experiment Number: 06

### **TITLE: Singly Linked List operations.**

**PROBLEM STATEMENT**:

Write a C program to implement Singly Linked List and perform following operations on it.

1. Insert a node
2. Delete a node
3. Display linked list
4. Reverse a linked list(Using Pointers)
5. Sort a list(Using Pointers)
6. Merging of two lists(Using Pointers)

**OBJECTIVE:**

1.To study data structure: Singly Linked List

2.To Study different operations that could be performed on SLL

3.To Study Applications of Singly Linked list

**THEORY: *//To be Written by Students***

***// Write theory by elaborating below points***

Write in brief about Data structure:

* Singly Linked List
* Purpose of Head Node in Singly Linked List
* Various operations on SLL.

**IMPLEMENTATION:**

* **PLATFORM:** 
  + 64-bit Open source Linux or its derivatives.
  + Open Source C Programming tool like gcc/Eclipse Editor.
* I**INPUT & OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TEST CASE NO** | **INPUT** | **OUTPUT** |
|  |  |  |
|  |  |  |
|  |  |  |

* **TEST CONDITIONS:-**

1. Input at least five nodes.
2. Insert an element at all positions .
3. Delete an element from all positions.

* **PSEUDO CODE: *//To be Written by Students***

Write pseudo code for create ,display,insert,delete,reverse,sort and merge.

* **TIME COMPLEXITY: *//To be Written by Students***

Find out time complexity of above operations

* **CONCLUSION:**

Thus, implemented different operations on SLL.

* **FAQs *//To be Written by Students***
  1. Write an ADT for SLL.
  2. What are disadvantages of SLL?
  3. Explain an application of SLL.
* **PRACTICE ASSIGNMENTS**

###### Write a program to concate two SLL.

###### Write a program to sort elements of SLL by data.