**Lab 5**

1. Write a program to create a linked list with n nodes. Write a program to display the node information and to find number of elements in the list.
2. Write a program to implement stack using linked list.
3. Josepus problem: n students have decided to elect a leader (class representive). They form a circle a number m and a name of the student is picked. Beginning with the student whose name is picked, the begin to count clockwise around the circle. When count reaches $n$, that student is removed from circle and the count begins again with next student. The process continues so that each time the count reaches $n$, another student is removed from the circle. Any student removed from the circle is no longer counted. The last student remaining is the leader. Write a program to determine the order in which students are eliminated from the circle and which student escapes.

For example, the persons in circular list are: 1 2 3 4 5 6 7

Enter the number of persons to be skipped: 3

3 has been killed. 6 has been killed. 2 has been killed. 7 has been killed. 5 has been killed. 1

has been killed. The person to survive is : 4.

**Optional:**

1. Write a program to implement circular queue using linked list.

2. Write a program to insert an element at the end in linked list. Also write a program to delete the last element in linked list.

3. Write a program to reverse a circular linked list.

4. Write a program to implement doubly linked list having facilities to insert a node at any position and to delete a node with particular information.