Heaven's Light is Our Guide
Rajshahi University of Engineering & Technology
Department of Computer Science & Engineering

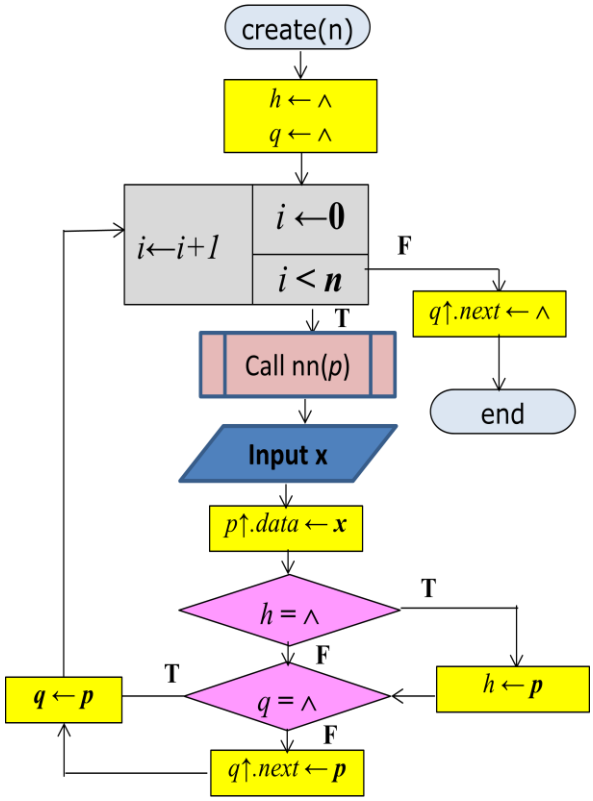
Lab Manual

Course Code: **CSE 1203 (Sec A)**
Course Title: Sessional based on CSE 1201

CSE 1202 (Data Structure Lab)
Module 4 [Linked List]: (for Week 4)

Topic 1: [Creating a Single Linked List]

i) Draw a flowchart create a linked list with 5 integer data. The new node addresses and the **x** values are found in Table 1. Then fill up the following Table 2 for each iteration of **i**. Also draw the linked list after each iteration of **i** showing all the node nodes and pointers.



i	x	New Node Address
1	10	1120
2	30	1130
3	50	1240
4	25	1350
5	15	1650

Talbe 1:

i	h	q	p	p↑.data	q↑.data
1					
2					
3					
4					
5					

Talbe 2:

Topic 2: [Menu Program]: Write a menu program using C++ to automate the operations of a single linked list with the following constraints:

i) Create menu creates a new link with specified number of nodes

ii) Insert menu inserts a new node in an existing linked list. Insertion should be done after an existing node.

iii) Delete menu deletes a node from an existing linked list. Delete multiple nodes if the specified data matches with multiple nodes.

iv) Update menu updates data element of a node. Update multiple nodes if required.

v) Display menu displays all the node data of the existing linked list.

vi) Use the following classes nodes and linked list

```
class Node{
     int data;
     Node *next;
};

 class LinkedList{

  private:
     //declare data members if required

 public:
 void Create(){
 }
 void Insert(){
 }
 void Delete(){
 }
 void Update(){
 }
 void Display(){
 }
 //Write more methods if required.
};
```

********* Menu ********

1. Create
2. Insert
3. Delete
4. Update
5. Display
6. Exit

Enter your option[1-6]:

Topic 3: Repeat Topic 2 using Circular linked list.

Topic 4: Repeat Topic 2 using Double Circular linked list.