LINKED LIST

Create a linked list using C++ program and insert the elements in linked list. Also display the elements of linked list.

Instruction: -

- Create a structure named Node
- Create a class named LinkedList
  - Create constructor of class
  - Create a insert and display member function.

C++ Code

```cpp
#include <iostream>
using namespace std;

// Node structure
struct Node
{
    int data;
    Node *next;
};

// Linked List class
class LinkedList
{
public:
    Node *head;

    LinkedList()
    {
        head = nullptr;
    }

    // Insert at the end
    void insert(int value)
    {
        Node* newNode = new Node();
        newNode->data = value;
        newNode->next = nullptr;

        if (head == nullptr)
        {
            head = newNode;
            return;
        }

        Node* temp = head;
        while (temp->next != nullptr)
        {
            temp = temp->next;
```

```
        }
        temp->next = newNode;
    }

    // Display the list
    void display()
    {
        Node* temp = head;
        while (temp != nullptr)
        {
            cout << temp->data << " ";
            temp = temp->next;
        }
        cout << endl;
    }
};

int main()
{
    LinkedList list;
    list.insert(10);
    list.insert(20);
    list.insert(30);
    list.insert(40);

    list.display();

    return 0;
}
```

Explanation: -

1. Node structure that holds:
    - data: an integer to store the value.
    - next: a pointer to the next node in the list.
2. head is a pointer that stores the address of the first node.
3. The constructor initializes head to nullptr, meaning the list is initially empty.
4. A new node is created dynamically using new.