Experiment 6

Program to implement Stack using Linked List.

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

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

class Stack {
private:
   Node* top;

public:
   Stack() {
      top = nullptr;
   }

   void push(int value) {
      Node* newNode = new Node();
      newNode->data = value;
      newNode->next = top;
      top = newNode;
   }

   void pop() {
      if (isEmpty()) {
         cout << "Stack Underflow\n";
         return;
```

```
        }
        Node* temp = top;
        top = top->next;
        delete temp;
    }

    int peek() {
        if (isEmpty()) {
            cout << "Stack is empty\n";
            return -1;
        }
        return top->data;
    }

    bool isEmpty() {
        return top == nullptr;
    }

    void display() {
        Node* temp = top;
        while (temp != nullptr) {
            cout << temp->data << " ";
            temp = temp->next;
        }
        cout << endl;
    }
};

int main() {
    Stack stack;
    stack.push(10);
```

```
    stack.push(20);
    stack.push(30);
    cout << "Stack elements: ";
    stack.display();

    stack.pop();
    cout << "Stack after pop: ";
    stack.display();

    cout << "Top element: " << stack.peek() << endl;

    return 0;
}
```

OUTPUT

```
Stack elements: 30 20 10
Stack after pop: 20 10
Top element: 20
```