DSA_College\stack.cpp

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

// implementation of stack using linked list
struct node
{
    int data ;
    struct node* next ;
};

struct node* top= 0;
void push(int x)
{
    struct node* newnode ;
    newnode= (struct node*)malloc(sizeof(struct node)) ;
    newnode->data = x ;
    newnode->next = top ;
    top= newnode ;
}

void display()
{
   struct node* temp ;
   temp = top ;
   if(top == NULL)
   {
    cout<<"stack is empty"<<endl;
   }
   else{
    cout<<"displaying the stack: ";
    while(temp!= NULL)
    {
        cout<<temp->data<<" ";
        temp = temp->next ;
    }
   }
   cout<<endl;
}

void peek()
{
    if(top == NULL)
    {
        cout<<"stack is empty"<<endl;
    }
    else{
        cout<<"top element is= "<<top->data<<endl;
    }
}

```

```
52 void pop()
53 {
54     struct node* temp ;
55     temp = top ;
56     if(top == NULL)
57     {
58         cout<<"there is no node in the stack"<<endl;
59     }
60     else{
61         cout<<"popped element is= "<<top->data<<endl;
62         top= top->next ;
63         free(temp) ;
64     }
65 }
66 
67 int main()
68 {
69     push(10);
70     push(20);
71     push(30);
72 
73     display();  // Output: 30 20 10
74 
75     peek();     // Output: Top element is: 30
76 
77     pop();      // Output: Popped element is: 30
78     display();  // Output: 20 10
79 
80     return 0;
81 }
```