/\* Wap to implement **stack as a linked list** \*/

#include<iostream.h>

#include<conio.h>

#include<process.h>

struct node {

int roll;

node\* next;

}\*top,\*save,\*ptr,\*newptr,\*np;

node \*create(int a)

{

ptr=new node;

ptr->roll=a;

ptr->next=NULL;

return ptr;

}

void push(node \*np)

{

if(top==NULL)

top=np;

else

{

save=top;

top=np;

np->next=save;

}

}

void pop()

{

if(top==NULL)

cout<<"\n Underflow!!!!";

else

{

ptr=top;

top=top->next;

delete ptr;

}

}

void display(node \*np)

{

while(np!=NULL)

{

cout<<np->roll<<" -> ";

np=np->next;

}

}

void main()

{

clrscr();

top=NULL;

int n,m;

char k,ch;

do {

cout<<"\nChoose from the menu :\n"

<<"\n 1. Push."

<<"\n 2. Pop."

<<"\n 3. Display."

<<"\n 4. Quit."

<<"\n\nEnter your choice : ";

cin>>n;

switch(n)

{

case 1: k='y';

while(k=='y'||k=='Y')

{

cout<<"\n Enter element to be inserted .";

cin>>m;

newptr=create(m);

if(newptr==NULL)

cout<<"\n Cannot create !!!!";

push(newptr);

cout<<"\n The Stack formed is : ";

display(top);

cout<<"\n\n Want to enter again ?: ";

cin>>k;

}

break;

case 2: k='y';

while(k=='y'||k=='Y')

{

pop();

cout<<"\n The Stack formed is : \n\n";

display(top);

cout<<"\n\n Want to delete again ?: ";

cin>>k;

}

break;

case 3: cout<<"\n The Stack formed is : ";

display(top);

break;

case 4: exit(0);

break;

default: cout<<"\n Please enter desired keyword : ";

}

cout<<"\n Do you want to continue..? : ";

cin>>ch;

}while(ch=='y'||ch=='Y');

getch();

}

Output:

Choose from the menu :

1. Push.

2. Pop.

3. Display.

4. Quit.

Enter your choice : 1

Enter element to be inserted : 1

The Stack formed is :

1 ->

Want to enter again ?: y

Enter element to be inserted : 2

The Stack formed is :

2 -> 1 ->

Want to enter again ?: y

Enter element to be inserted : 3

The Stack formed is :

3 -> 2 -> 1 ->

Want to enter again ?: n

Do you want to continue..? : y

Choose from the menu :

1. Push.

2. Pop.

3. Display.

4. Quit.

Enter your choice : 2

The Stack formed is :

2 -> 1 ->

Want to delete again ?: y

The Stack formed is :

1 ->

Want to delete again ?: N

Do you want to continue..? : y

Choose from the menu :

1. Push.

2. Pop.

3. Display.

4. Quit.

Enter your choice : 3

The Stack formed is :

1 ->

Do you want to continue..? : y

Choose from the menu :

1. Push.

2. Pop.

3. Display.

4. Quit.

Enter your choice : 4