#include <stdio.h>

#include <stdlib.h>

void push();

void pop();

void display();

struct node

{

int val;

struct node \*next;

};

struct node \*head;

void main ()

{

int choice=0;

printf("\n\*\*\*\*\*\*\*\*\*Stack operations using linked list\*\*\*\*\*\*\*\*\*\n");

printf("\n----------------------------------------------\n");

while(choice != 4)

{

printf("\n\nChose one from the below options...\n");

printf("\n1.Push\n2.Pop\n3.Show\n4.Exit");

printf("\n Enter your choice \n");

scanf("%d",&choice);

switch(choice)

{

case 1:

{

push();

break;

}

case 2:

{

pop();

break;

}

case 3:

{

display();

break;

}

case 4:

{

printf("Exiting....");

break;

}

default:

{

printf("Please Enter valid choice ");

}

};

}

}

void push ()

{

int val;

struct node \*ptr = (struct node\*)malloc(sizeof(struct node));

if(ptr == NULL)

{

printf("not able to push the element");

}

else

{

printf("Enter the value");

scanf("%d",&val);

if(head==NULL)

{

ptr->val = val;

ptr -> next = NULL;

head=ptr;

}

else

{

ptr->val = val;

ptr->next = head;

head=ptr;

}

printf("Item pushed");

}

}

void pop()

{

int item;

struct node \*ptr;

if (head == NULL)

{

printf("Underflow");

}

else

{

item = head->val;

ptr = head;

head = head->next;

free(ptr);

printf("Item popped");

}

}

void display()

{

int i;

struct node \*ptr;

ptr=head;

if(ptr == NULL)

{

printf("Stack is empty\n");

}

else

{

printf("Printing Stack elements \n");

while(ptr!=NULL)

{

printf("%d\n",ptr->val);

ptr = ptr->next;

}

}

}