**#include <stdio.h>**

**#include <stdlib.h>**

**#define SIZE 20**

**int top=0;**

**struct Node**

**{**

**int data;**

**struct Node \*next;**

**};**

**struct Node \*head=NULL;**

**void push()**

**{**

**if(top==SIZE)**

**{**

**printf("Stack overflow. Cannot insert more elements into the stack.");**

**}**

**else**

**{**

**struct Node \*new\_node=malloc(sizeof(struct Node));**

**int data;**

**struct Node \*last=head;**

**printf("Enter the data to be entered ");**

**scanf("%d",&data);**

**(\*new\_node).data=data;**

**(\*new\_node).next=NULL;**

**if(head==NULL)**

**{**

**head=new\_node;**

**}**

**else**

**{**

**while((\*last).next!=NULL)**

**{**

**last=(\*last).next;**

**}**

**(\*last).next=new\_node;**

**}**

**top=top+1;**

**}**

**}**

**void pop()**

**{**

**if(top==0)**

**printf("Stack underflow. You cannot delete from an empty list.");**

**else**

**{**

**int deleted\_node;**

**if((\*head).next==NULL)**

**{**

**deleted\_node=(\*head).data;**

**free(head);**

**head=NULL;**

**}**

**else**

**{**

**struct Node \*ptr1=head;**

**struct Node \*ptr=(\*ptr1).next;**

**while((\*ptr).next!=NULL)**

**{**

**ptr1=(\*ptr1).next;**

**ptr=(\*ptr1).next;**

**}**

**(\*ptr1).next=NULL;**

**deleted\_node=(\*ptr).data;**

**free(ptr);**

**}**

**top=top-1;**

**printf("The deleted element is %d", deleted\_node);**

**}**

**}**

**void display()**

**{**

**if(top==0)**

**{**

**printf("Stack undeflow. Cannot display the contents of an empty stack.");**

**}**

**else**

**{**

**struct Node \*node=head;**

**while(node!=NULL)**

**{**

**printf("%d ",(\*node).data);**

**node=(\*node).next;**

**}**

**}**

**}**

**void main()**

**{**

**while(1)**

**{**

**printf("Enter 1 to push into the stack, 2 to pop from the stack, 3 to display the contents and 4 to exit. ");**

**int ch;**

**scanf("%d",&ch);**

**if(ch==1)**

**{**

**push();**

**}**

**else if(ch==2)**

**{**

**pop();**

**}**

**else if(ch==3)**

**{**

**display();**

**}**

**else if(ch==4)**

**{**

**break;**

**}**

**else**

**{**

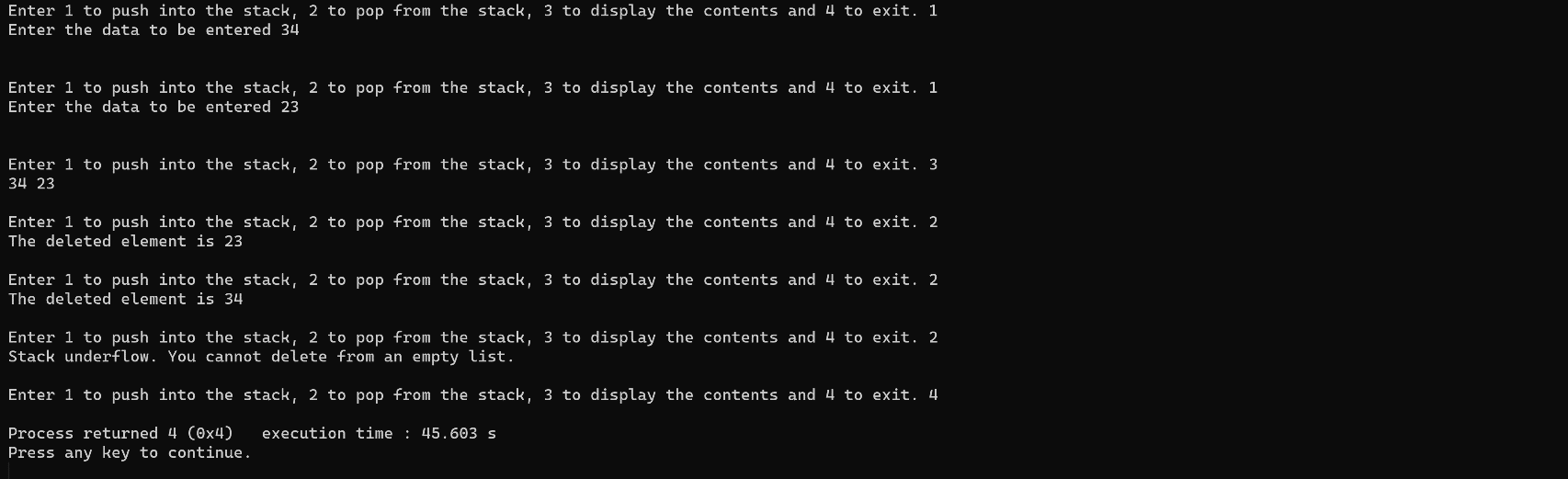
**printf("Invalid character.");**

**}**

**printf("\n\n");**

**}**

**}**

****