#include<stdio.h>

#include<stdlib.h>

#include<conio.h>

#include<malloc.h>

struct stack

{

int data;

struct stack\*next;

};

struct stack\*top = NULL;

struct stack\*push(struct stack\*,int);

struct stack\*display(struct stack\*);

struct stack\*pop(struct stack\*);

int peek(struct stack\*);

int main(int argc,char\*argv[]){

int val,option;

do

{

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

printf("\n 1.PUSH");

printf("\n 2.POP");

printf("\n 3.PEEK");

printf("\n 4.DISPLAY");

printf("\n 5.EXIT");

printf("\n Enter your option:");

scanf("%d",&option);

switch(option)

{

case 1:

printf("\n Enter the number to be pushed on stack:");

scanf("%d",&val);

top=push(top,val);

break;

case 2:

top=pop(top);

break;

case 3:

val=peek(top);

if (val != -1)

printf("\n The value at the top of stack is: %d", val);

else

printf("\n STACK IS EMPTY");

break;

case 4:

top=display(top);

break;

}

}while(option !=5);

return 0;

}

struct stack\*push(struct stack\*top,int val)

{

struct stack\*ptr;

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

ptr -> data = val;

if(top == NULL)

{

ptr -> next = NULL;

top = ptr;

}

else

{

ptr -> next = top;

top = ptr;

}

return top;

}

struct stack\*display(struct stack\*top)

{

struct stack\*ptr;

ptr = top;

if(top == NULL)

printf("\n STACK IS EMPTY");

else

{

while(ptr != NULL)

{

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

ptr = ptr -> next;

}

}

return top;

}

struct stack \*pop(struct stack \*top)

{

struct stack \*ptr;

ptr = top;

if(top == NULL)

printf("\n STACK UNDERFLOW");

else

{

top = top -> next;

printf("\n The value being deleted is: %d", ptr -> data);

free(ptr);

}

return top;

}

int peek(struct stack\*top)

{

if(top==NULL)

return -1;

else

return top ->data;

}

