#include<stdio.h>

#include<stdlib.h>

struct node

{

int data;

struct node\*next;

};

struct node\*top=NULL;

int isEmpty()

{

if (top==NULL)

return 1;

else

return 0;

}

void push(int value)

{

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

newnode->data=value;

newnode->next=NULL;

newnode->next=top;

top=newnode;

printf("Element Inserted Successfull\n");

}

void pop()

{

struct node\*temp;

int value;

if (isEmpty()){

printf("Stack Underflow!!\n");

}

else

{

temp=top;

value=temp->data;

top=temp->next;

free(temp);

temp=NULL;

}

printf("Element deleted successfully\n");

}

int peek()

{

if (isEmpty())

{

printf("Stack Underflow\n");

}

else

{

printf("The topmost element is %d\n",top->data);

}

}

void display()

{

struct node\*temp;

temp=top;

if(isEmpty())

{

printf("Stack Underflow\n");

}

else

{

printf("The stack elements are:\n");

while(temp)

{

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

temp=temp->next;

}

}

}

void search()

{

struct node\*temp;

temp=top;

int found=0;

int value;

if (isEmpty())

{

printf("Stack Underflow\n");

}

else

{

printf("Enter the value to be searched: ");

scanf("%d",&value);

while(temp)

{

if (temp->data==value)

{

found=1;

break;

}

temp=temp->next;

}

if (found==1)

printf("Element Found\n");

else

printf("Element not found\n");

}

}

int main()

{

int value,choice;

while(1)

{

printf("\n1.PUSH\n2.POP\n3.PEEK\n4.DISPLAY\n5.SEARCH\n6.EXIT\nEnter your choice: ");

scanf("%d",&choice);

switch(choice)

{

case 1:

printf("Enter the value to be inserted: ");

scanf("%d",&value);

push(value);

break;

case 2:

pop();

break;

case 3:

peek();

break;

case 4:

display();

break;

case 5:

search();

break;

case 6:

exit(1);

break;

default:

printf("Invalid Choice\n");

break;

}

}

}