// Program to demonstrate stack operation

#include <stdio.h>

#include "stackopr1.c"

int arr[10];

void push();

void pop();

void display();

void asort();

void dsort();

void reverse();

void search();

void main()

{

int choice;

do

{

system("CLS");

printf("Menu\n==========================\n");

printf("1. Add\n2. Delete\n3. Display\n4. Ascending Sort\n5. Descending Sort\n6. Reverse\n7. Search\n8. Exit\n\n");

printf("Enter your choice : ");

scanf("%d", &choice);

switch(choice)

{

case 1:

system("CLS");

push();

break;

case 2:

system("CLS");

pop();

getch();

break;

case 3:

system("CLS");

display();

getch();

break;

case 4:

system("CLS");

asort();

getch();

break;

case 5:

system("CLS");

dsort();

getch();

break;

case 6:

system("CLS");

reverse();

getch();

break;

case 7:

system("CLS");

search();

getch();

break;

case 8:

exit(1);

default:

system("CLS");

printf("Invalid Choice");

getch();

}

}while(1);

}

extern int arr[10];

int top = -1;

void push()

{

if (top == 9)

{

printf("Stack Overflow");

getch();

}

else

{

printf("Enter the element : ");

scanf("%d", &arr[++top]);

}

}

void pop()

{

if (top == -1)

{

printf("Stack Underflow");

getch();

}

else

{

arr[top] = 0;

--top;

}

printf("Data Deleted");

}

void display()

{

int i;

printf("Array Elements are....................\n");

for (i = 0; i <= top; i++)

{

printf("%d ", arr[i]);

}

}

void asort()

{

int i, j, temp;

for (i = 0; i < top; i++)

{

for (j = i + 1; j <= top; j++)

{

if (arr[j] < arr[i])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

printf("Data Sorted");

}

void dsort()

{

int i, j, temp;

for (i = 0; i < top; i++)

{

for (j = i + 1; j <= top; j++)

{

if (arr[j] > arr[i])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

printf("Data Sorted");

}

void reverse()

{

int i, count, temp;

count = top;

for (i = 0; i <= top / 2; i++) // Reverse operation will take place half of the total element

{

temp = arr[i];

arr[i] = arr[count];

arr[count] = temp;

count--;

}

printf("Data Reversed");

}

void search()

{

int i, search;

printf("Enter the data to be search : ");

scanf("%d", &search);

for (i = 0; i <= top; i++)

{

if (search == arr[i])

{

printf("%d is at %d position", search, (i + 1));

}

}

if (i > top)

{

printf("Data Not Found");

}

}