11 Implementation of Stack using Array

#include <stdio.h>

#define max 5 // maximum size of stack

int stack[max], top = -1;

// function to push an element

void push (int value) {

if (top == max - 1) {

printf ("stack overflow! cannot push %d\n", value);

} else {

stack[++top] = value;

printf ("%d pushed to stack\n", value);

}

}

// function to pop an element

void pop () {

if (top == -1) {

printf ("stack underflow! no elements to pop\n");

} else {

printf ("%d popped from stack\n", stack[top--]);

}

}

// function to display stack elements

void display () {

if (top == -1) {

printf ("stack is empty\n");

} else {

printf ("stack elements: ");

for (int i = top; i >= 0; i--) {

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

}

printf("\n");

}

}

int main () {

int choice, value;

while (1) {

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

printf ("1. push\n2. pop\n3. display\n4. exit\n");

printf ("enter your choice: ");

scanf ("%d", &choice);

switch (choice) {

case 1:

printf ("enter value to push: ");

scanf ("%d", &value);

push(value);

break;

case 2:

pop ();

break;

case 3:

display ();

break;

case 4:

return 0;

default:

printf ("invalid choice! try again.\n");

}

}

}

