#include <stdio.h>

#define MAX 5

int stack[MAX];

int top = -1;

// Function to push an element

void push(int value) {

if (top == MAX - 1) {

printf("Stack Overflow! Cannot push %d\n", value);

return;

}

stack[++top] = value;

printf("Pushed %d\n", value);

}

// Function to pop an element

void pop() {

if (top == -1) {

printf("Stack Underflow! Cannot pop.\n");

return;

}

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

}

// Function to peek (top element)

void peek() {

if (top == -1) {

printf("Stack is empty.\n");

return;

}

printf("Top element is: %d\n", stack[top]);

}

// Function to display all elements

void display() {

if (top == -1) {

printf("Stack is empty.\n");

return;

}

printf("Stack elements (top to bottom): ");

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

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

printf("\n");

}

// Main function

int main() {

printf("--- Stack Operations Using Array ---\n");

// Push elements

push(10);

push(20);

push(30);

push(40);

push(50);

push(60); // Overflow test

display(); // Display stack

peek(); // Show top element

// Pop elements

pop();

pop();

display(); // Display after popping

peek(); // Show new top element

return 0;

}

