Implement a Stack using Array and develop functions to perform push and pop operations.

#include <stdio.h>

#include <stdbool.h>

#define MAX\_SIZE 100

struct Stack {

int array[MAX\_SIZE];

int top;

};

void initStack(struct Stack\* stack) {

stack->top = -1;

}

bool isEmpty(struct Stack\* stack) {

return stack->top == -1;

}

bool isFull(struct Stack\* stack) {

return stack->top == MAX\_SIZE - 1;

}

void push(struct Stack\* stack, int value) {

if (isFull(stack)) {

printf("Error: Stack is full\n");

return;

}

stack->top++;

stack->array[stack->top] = value;

}

int pop(struct Stack\* stack) {

if (isEmpty(stack)) {

printf("Error: Stack is empty\n");

return -1;

}

int value = stack->array[stack->top];

stack->top--;

return value;

}

int main() {

struct Stack stack;

initStack(&stack);

push(&stack, 1);

push(&stack, 2);

push(&stack, 3);

printf("%d\n", pop(&stack)); // Output: 3

printf("%d\n", pop(&stack)); // Output: 2

printf("%d\n", pop(&stack)); // Output: 1

printf("%d\n", pop(&stack)); // Output: Error: Stack is empty

return 0;

}

