**IMPLEMENTATION OF STACK USING ARRAY**

#include <stdio.h>

#define MAX 5 // Maximum size of the stack

int stack[MAX];

int top = -1;

void push(int value) {

if (top == MAX - 1) {

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

} else {

stack[++top] = value;

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

}

}

void pop() {

if (top == -1) {

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

} else {

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

}

}

void peek() {

if (top == -1) {

printf("Stack is empty\n");

} else {

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

}

}

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. Peek\n4. Display\n5. 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:

peek();

break;

case 4:

display();

break;

case 5:

return 0;

default:

printf("Invalid choice! Try again.\n");

}

}

}





