11. Stack Operations

Aim:

To write a C program for stack operations using arrays.

Algorithm:

1. Start program.
2. Define array stack[] and variable top.
3. Implement functions for push, pop, and peek.
4. End.

Code:

```
#include <stdio.h>
#define SIZE 5

int stack[SIZE], top = -1;

void push(int value) {
    if (top == SIZE - 1)
        printf("Stack Overflow\n");
    else
        stack[++top] = value;
}

void pop() {
    if (top == -1)
        printf("Stack Underflow\n");
    else
        printf("Popped %d\n", stack[top--]);
}

void peek() {
    if (top == -1)
```

```
        printf("Stack is empty\n");
    else
        printf("Top element: %d\n", stack[top]);
}

int main() {
    push(10);
    push(20);
    push(30);
    peek();
    pop();
    peek();
    return 0;
}
```

Sample Output:

```
Top element: 30
Popped 30
Top element: 20


=== Code Execution Successful ===
```

Result:

Stack operations were successfully implemented.