

Visual Studio Code interface showing a C program for a stack implementation.

**File Explorer:** C > STACK.c

**Code Editor:**

```
1  #include <stdio.h>
2  #define size 5
3  int top=-1;
4  void push(int [], int);
5  int pop(int[]);
6  void display(int []);
7  int main()
8  {
9      int stack[size],n=1;
10     int choice,element;
11     char ch;
12     do
13     {
14         printf("\nEnter 1 to Push\n");
15         printf(" Enter 2 to Pop\n");
16         printf(" Enter 3 to Display\n");
17         scanf("%d",&choice);
18         switch(choice)
19         {
20             case 1: printf("Enter the element to be pushed \n");
21                     scanf("%d",&element);
22                     push(stack,element);
23                     break;
24             case 2: element=pop(stack);
25                     if(element== -1)
26                         printf("Stack Underflow");
27                     else
28                         printf("Poped element is %d \n",element);
29                     break;
30             case 3: display(stack);
31                     break;
32             default: printf("Invalid choice");
33         }
34     } while(ch != 'q');
```

**Terminal:**

```
Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
1
Enter the element to be pushed
20

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
1
Enter the element to be pushed
30

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
2
Poped element is 30

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
2
Poped element is 20

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
3
The stack elements are
10

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
```

**Status Bar:** Ln 36, Col 7 Spaces: 4 UTF-8 CRLF C Win32

Visual Studio Code interface showing the implementation of a stack using an array. The code is in C and is titled "STACK.c". The terminal output shows the execution of the program, demonstrating push and pop operations.

```
30     case 3: display(stack);
31         break;
32     default: printf("Invalid choice");
33 }
34
35 } while(n=1);
36 return 0;
37
38
39 void push(int stack[], int no)
40 {
41     if (top==size-1)
42     {
43         printf("Stack overflow");
44     }
45     else
46     {
47         top++;
48         stack[top]=no;
49     }
50 }
51
52 int pop(int stack[])
53 {
54     int popno;
55     if(top== -1)
56     {
57         return -1;
58     }
59     else
60     {
61         popno=stack[top];
62         top--;
```

Terminal Output:

```
Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
1
Enter the element to be pushed
20

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
1
Enter the element to be pushed
30

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
2
Popped element is 30

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
2
Popped element is 20

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
3
The stack elements are
10

Enter 1 to Push
Enter 2 to Pop
Enter 3 to Display
```

Bottom status bar: Ln 36, Col 7 Spaces: 4 UTF-8 CRLF C Win32

