

Stack

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The screenshot shows an IDE window titled "Untitled1.c - Embarcadero Dev-C++ 6.3". The code defines a stack with an array of size 10 and a top pointer. It includes functions for checking if the stack is full, empty, and for popping an element. The compilation output at the bottom shows 0 errors and 0 warnings, with the output file named "Untitled1.exe".

```
1 #include<stdio.h>
2 #include<stdbool.h>
3
4 int array_stack[10];
5 int top=-1;
6
7 bool isfull(){
8     if(top==9){
9         return true;
10    }
11    else{
12        return false;
13    }
14 }
15
16 bool isempty(){
17     if(top== -1){
18         return true;
19     }
20     else{
21         return false;
22     }
23 }
24
25 void pop(){
26     if(isempty()){
27         printf("The stack is empty.\n");
28     }
29 }
```

Compiler (1) Resources Compile Log Debug Find Results Console Close

Abort Compilation

Shorten compiler pat

```
- Errors: 0
- Warnings: 0
- Output Filename: E:\SEMESTER 1\C Programming\lab sheet practicals\lab sheet 2 new\Untitled1.exe
- Output Size: 324.759765625 KiB
- Compilation Time: 0.17s
```

E:\SEMESTER 1\C Programming\lab sheet practicals\lab sheet 2 new\Untitled1.c - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit Release

(globals)

Project Class Untitled1.c

```
25 void pop(){
26     if(isempty()){
27         printf("The stack is empty.\n");
28     }
29     else{
30         printf("%d is popped\n",array_stack[top]);
31         --top;
32     }
33 }
34
35 void push(){
36     if(isfull()){
37         printf("The stack is full\n");
38     }
39     else{
40         printf("enter the value you want to push:");
41         int data;
42         scanf("%d",&data);
43         array_stack[++top]=data;
44         printf("%d added to stack.\n",data);
45     }
46 }
47
48 void peek(){
49     if(isempty()){
50         printf("stack is empty");
51     }
52     else{
53         printf("peek value: %d\n", array_stack[top]);
54     }
55 }
```

Compiler (1) Resources Compile Log Debug Find Results Console Close

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☐ Shorten compiler path

Line: 91 Col: 18 Sel: 0 Lines: 97 Length: 1577 Insert Done parsing in 0 seconds

E:\SEMESTER 1\C Programming\lab sheet practicals\lab sheet 2 new\Untitled1.c - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit Release

(globals)

Project Class Untitled1.c

```
48 void peek(){
49     if(isempty()){
50         printf("stack is empty");
51     }
52     else{
53         printf("peek value:%d\n\n",array_stack[top]);
54     }
55 }
56 void main()
57 {
58     printf("1.push()\n");
59     printf("2.pop()\n");
60     printf("3.peek()\n");
61     printf("4.isfull()\n");
62     printf("5.isempty()\n");
63     printf("6.End the programme()\n\n");
64
65     bool colo=true;
66     while(colo){
67         printf("enter the number:");
68         int number;
69         scanf("%d",&number);
70
71         switch(number){
72             case 1:
73                 push();
74                 break;
75             case 2:
76                 pop();
77             case 3:
78                 peek();
79             case 4:
80                 isfull();
81             case 5:
82                 isempty();
83             case 6:
84                 break;
85         }
86     }
87 }
```

Compiler (1) Resources Compile Log Debug Find Results Console Close

Abort Compilation

☐ Shorten compiler pat

```
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File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit Release

(globals)

Project Class Untitled1.c

```
70 |
71 | switch(number){
72 |     case 1:
73 |         push();
74 |         break;
75 |     case 2:
76 |         pop();
77 |         break;
78 |     case 3:
79 |         peek();
80 |         break;
81 |     case 4:
82 |         printf(isfull()?"stack is full":"stack isn't full\n");
83 |         break;
84 |     case 5:
85 |         printf(isempty()?"stack is empty":"stack isn't empty\n");
86 |         break;
87 |     case 6:
88 |         colo=false;
89 |         printf("*****Programme is ended.*****");
90 |         break;
91 |     default:
92 |         printf("your input is invalid! please try again..\n");
93 |         break;
94 | }
95 | printf("\n");
96 | }
97 | }
```

Compiler (1) Resources Compile Log Debug Find Results Console Close

Abort Compilation

☐ Shorten compiler pat

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```

Line: 62 Col: 28 Sel: 0 Lines: 97 Length: 1577 Insert Done parsing in 0 seconds

E:\SEMESTER 1\C Programming\lab sheet practicals\lab sheet 2 new\Untitled1.exe

```
1.push()  
2.pop()  
3.peek()  
4.isfull()  
5.isempty()  
6.End the programme()
```

```
enter the number:1  
enter the value you want to push:34  
34 added to stack.
```

```
enter the number:1  
enter the value you want to push:45  
45 added to stack.
```

```
enter the number:1  
enter the value you want to push:67  
67 added to stack.
```

```
enter the number:1  
enter the value you want to push:89  
89 added to stack.
```

```
enter the number:  
2  
89 is popped
```

```
enter the number:3  
peek value:67
```

E:\SEMESTER 1\C Programming\lab sheet practicals\lab sheet 2 new\Untitled1.exe

enter the number:1

enter the value you want to push:67

67 added to stack.

enter the number:1

enter the value you want to push:89

89 added to stack.

enter the number:

2

89 is popped

enter the number:3

peek value:67

enter the number:4

stack isn't full

enter the number:5

stack isn't empty

enter the number:6

*****Programme is ended.*****

E

Process exited after 25.33 seconds with return value 10

Press any key to continue . . .