

Data Structures Week 3: Leetcode

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Question: Given a string s containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

An input string is valid if:

1. Open brackets must be closed by the same type of brackets.
2. Open brackets must be closed in the correct order.
3. Every close bracket has a corresponding open bracket of the same type.

Code:

```
#include<string.h>
```

```
bool isValid(char* s) {
```

```
    int len = strlen(s);
```

```
    char stack[len];
```

```
    int top = -1;
```

```
    for(int i = 0; i < len; i++) {
```

```
        if(s[i] == '(' || s[i] == '{' || s[i] == '[') {
```

```
            top++;
```

```
            stack[top] = s[i];
```

```
        } else {
```

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

```
                return false;
```

```
            }
```

```
            if((s[i] == ')' && stack[top] == '(') ||
```

```
                (s[i] == '}' && stack[top] == '{') ||
```

```

        (s[i] == ']' && stack[top] == '[')) {
            top--;
        } else {
            return false;
        }
    }
}

return top == -1;
}

```

Output:

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3 • Case 4

Input

s =
"()"

Output

true

Expected

true

♥ Contribute a testcase

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3 • Case 4

Input

s =
"() [] {}"

Output

true

Expected

true

♥ Contribute a testcase

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3 • Case 4

Input

s =
"()]"

Output

false

Expected

false

♥ Contribute a testcase

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3 • Case 4

Input

s =
"([)]"

Output

true

Expected

true

♥ Contribute a testcase