

# if-statements, continued

Learn what truthy and falsey mean in JavaScript. Learn how to make if-statements more powerful.

## “Truthy” and “Falsey”

If-statements don't work only with booleans. We can use any variable type inside the if-statement parentheses.

If we don't use `true` or `false` variables, JavaScript will forcibly coerce whatever we put inside the parentheses to `true` or `false`. It'll then decide whether to run the code or not.

**A value that coerces to `true` is referred to as “truthy”. One that coerces to `false` is “falsey”.**

So how do we determine what a value will coerce to? It's actually pretty simple. The following values are “falsey” and will coerce to `false`, meaning the code in the if-statement won't run.

- `false`
- `null`
- `undefined`
- `''` or `""` (empty, 0-length string)
- `0` (the number zero)
- `NaN`

**All other values are truthy.** This means that all numbers except 0 and `NaN` and all strings that are not empty are truthy.

Try setting `itemToTest` equal to different values in the code block below. Test them out.

```
1 // Change 'true' in the next line
2 let itemToTest = true;
3
```



```

3
4 if(itemToTest) {
5     console.log(itemToTest + '
6 } else {
7     console.log(itemToTest + '
8 }

```



## No Brackets

We can write an if-statement without the curly brackets `{}`. Let's say we want to run a *single line* of code if some condition is true. We could write it like this.

```

1 let trueFlag = true;
2 if(trueFlag) console.log('This will print!');

```



We can do the same thing with the else-block.

```

let falseFlag = false;

if(falseFlag) console.log('This will not print.');
else console.log('This will print!');

```



This happens because **the if-statement technically only runs the next item it sees**. If we write code in a block using `{}`, that entire block is the item.

If we write code without brackets, the statement will run only the next line of code it sees.

This means we can chain else-blocks.


## Chaining else-blocks

We can write complex conditional logic using the rules we've discussed so far. Because the else-block only runs the next item it sees after the condition, the following three code blocks are equivalent. All we're doing as we go down is

following three code blocks are equivalent. All we're doing as we go down is removing brackets.


```
let flag1 = false;
let flag2 = false;
let flag3 = true;

if (flag1) {
  console.log('This will not print.');
```




```

} else {
  if (flag2) {
    console.log('This will not print either.');
```



```

  } else {
    if (flag3) {
      console.log('This will print!');
```




```

    }
  }
}
```




```
let flag1 = false;
let flag2 = false;
let flag3 = true;

if (flag1) {
  console.log('This will not print.');
```




```

} else if (flag2) {
  console.log('This will not print either.');
```



```

} else if (flag3) {
  console.log('This will print!');
```




```

}
```




```
let flag1 = false;
let flag2 = false;
let flag3 = true;

if (flag1) console.log('This will not print.');
```




```

else if (flag2) console.log('This will not print either.');
```



```

else if (flag3) console.log('This will print!');
```



The first code block above is difficult to read and understand. The second and third are much clearer.

## Using Single-Line Statements

If we ever need to convert a single-line if-statement to a multiline block, we'll need to add in the brackets. It's easier to write if-statements with the brackets and keep the brackets there, so that's what I generally prefer.

It doesn't matter too much and it's ultimately your choice.

We'll go deeper into if-statements in the next lesson.

## Quiz

Feel free to test your understanding.

1

What will the following code print?

```
if(5 - 3 - 2) {  
    console.log('A');  
} else {  
    console.log('B');  
}
```

☐ A) A

☐ B) B

☐ C) A

B

2

What will the following code print?

```
if(5) {  
    console.log('A');  
}  
  
console.log('B');
```

☐ A) A

☐ B) B

☐ C) A  
B

3

What will the following code print?

```
if('') {  
    console.log('A');  
} else {  
    if(null) {  
        console.log('B');  
    } else {  
        console.log('C');  
    }  
  
    if(1) {  
        console.log('D');  
    } else {  
        console.log('E');  
    }  
}
```

☐ A) A

B

☐ B) B

C

☐ C) C

D

☐ D) D

E

4

What will the following code print?

```
if('')
  console.log('A');
else
  if(null)
    console.log('B');
    console.log('C');

  if(5 - 100)
    console.log('D');
  else
    console.log('E');
    console.log('F');
```

☐ A) A

☐ B) D

☐ C) D  
F

☐ D) C  
F

☐ E) B  
C  
D

☐ F) C  
D  
F

CHECK ANSWERS