Web Developer Bootcamp

Boolean Logic

MAKING DECISIONS WITH JAVASCRIPT

COMPARISONS

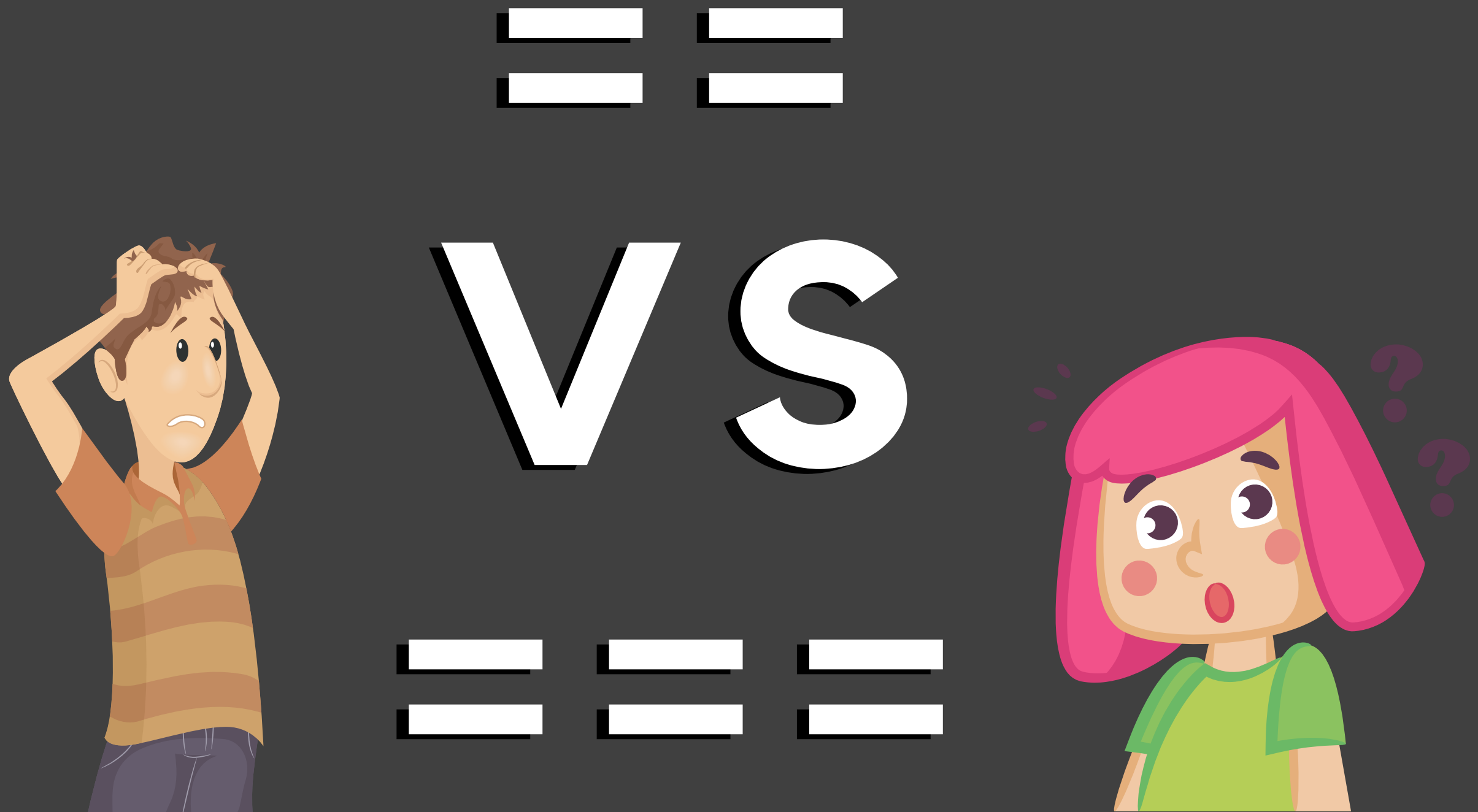
```
> //  greater than
< //  less than
>= // greater than or equal to
<= // less than or equal to
== // equality
!= // not equal
=== // strict equality
!== // strict non-equality
```

SOME EXAMPLES

```
10 > 1;      //true
0.2 > 0.3;   //false
-10 < 0;     //true
50.5 < 5;    //false
0.5 <= 0.5; //true
99 >= 4;     //true
99 >= 99;    //true
'a' < 'b';   //true
'A' > 'a';   //false
```

Notice these all return a Boolean!

Though it's uncommon, you can compare strings. Just be careful, things get dicey when dealing with case, special characters, and accents!


VS

== (double equals)

- Checks for equality of value, but not equality of type.
- It coerces both values to the same type and then compares them.
- This can lead to some unexpected results!

== WEIRDNESSS

```
5 == 5;          //true
'b' == 'c';      //false
7 == '7';        //true
0 == '';         //true
true == false; //false
0 == false;      //true
null == undefined; //true
```

TRIPLE EQUALS

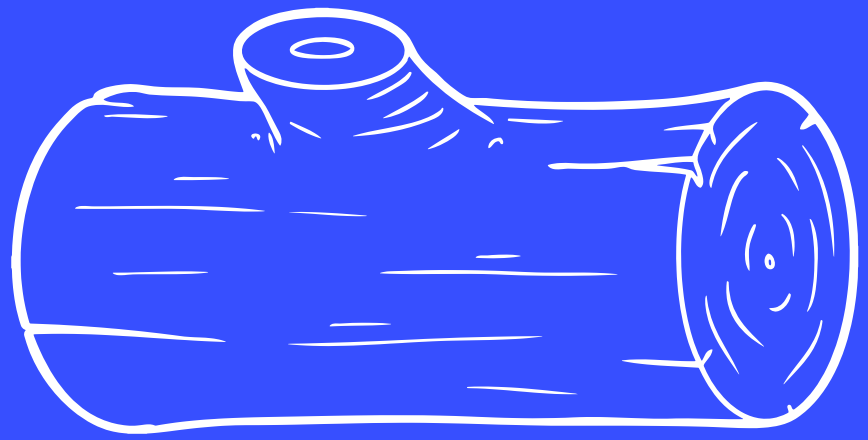
```
5 === 5; //true
1 === 2; //false
2 === '2'; //false
false === 0; //false

//Same applies for != and !==
10 != '10';  //false
10 !== '10'; //true
```

CHECKS FOR EQUALITY OF VALUE AND TYPE

console.log()

prints arguments to the console

(we need this if we're going to start working with files!)



Running Code From a File

app.js

```
//Put your code in the JS File
alert('Hello from JS!');

//Won't show up!!
"hi".toUpperCase();

//Will show up!
console.log("hi".toUpperCase());
```

Write your code in a *.js* file

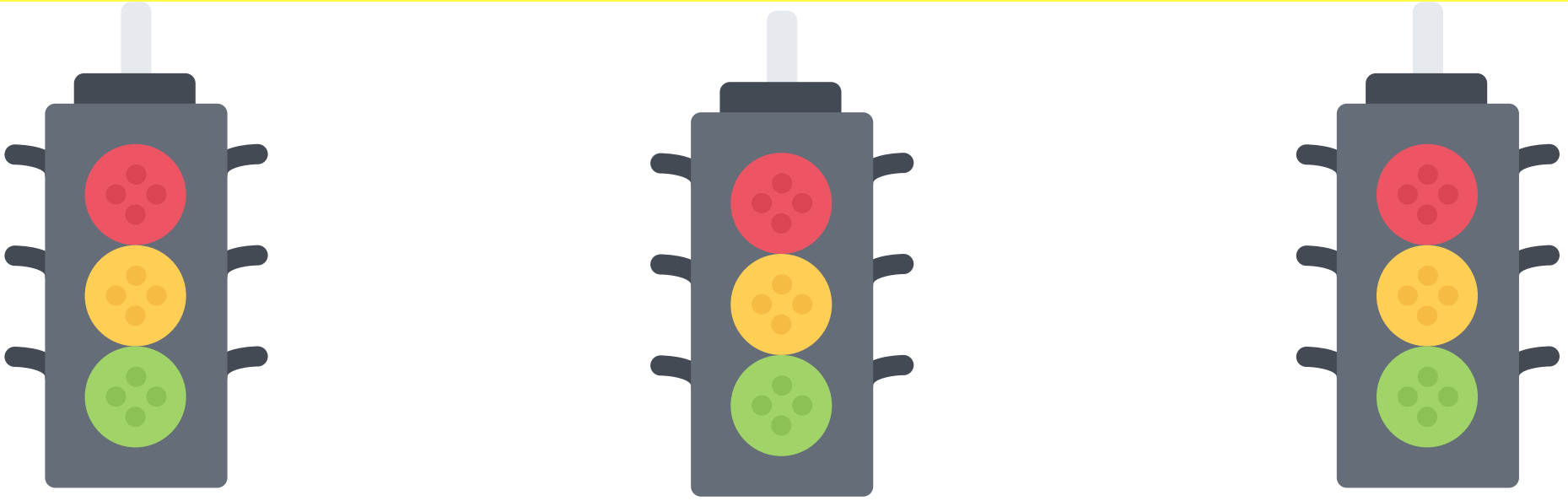
demo.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JS Demo</title>
  <script src="app.js"></script>
</head>
<body>

</body>
</html>
```

Include your script in a *.html* file

Conditionals

MAKING DECISIONS WITH CODE



IF STATEMENT

Only runs code if given condition is true

```
let rating = 3;

if (rating === 3) {
  console.log("YOU ARE A SUPERSTAR!");
}
```

ELSE IF

If not the first thing, maybe this other thing??

```
let rating = 2;

if (rating === 3) {
  console.log("YOU ARE A SUPERSTAR!");
}
else if (rating === 2) {
  console.log("MEETS EXPECTATIONS");
}
```

ELSE IF

We can add multiple else ifs!

```
let rating = 1;

if (rating === 3) {
  console.log("YOU ARE A SUPERSTAR!");
}
else if (rating === 2) {
  console.log("MEETS EXPECTATIONS");
}
else if (rating === 1) {
  console.log("NEEDS IMPROVEMENT");
}
```

ELSE

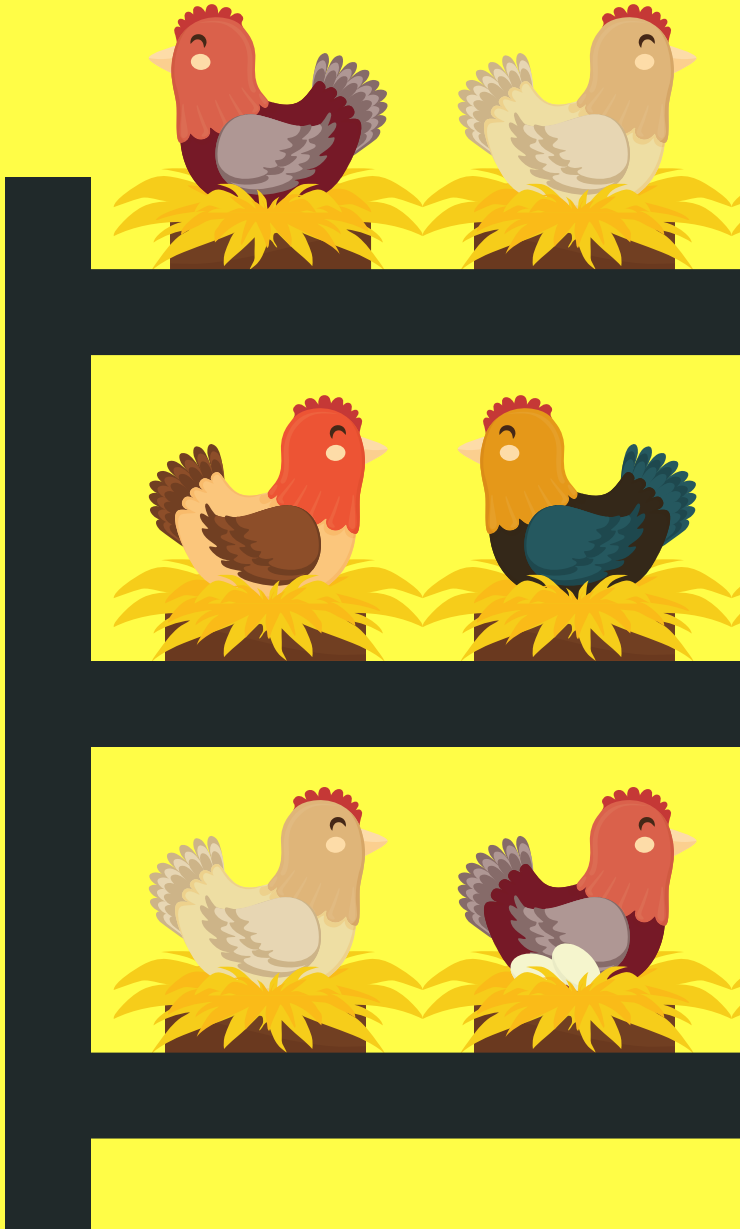
If nothing else was true, do this...

```
let rating = -99;

if (rating === 3) {
  console.log("YOU ARE A SUPERSTAR!");
}
else if (rating === 2) {
  console.log("MEETS EXPECTATIONS");
}
else if (rating === 1) {
  console.log("NEEDS IMPROVEMENT");
}
else {
  console.log("INVALID RATING!");
}
```

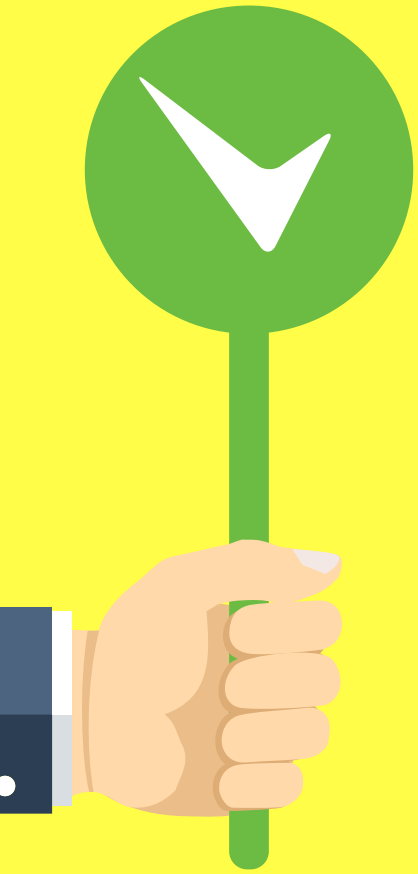
NESTING

We can nest conditionals inside conditionals

```
let password = "cat dog";
if (password.length >= 6) {
  if (password.indexOf(' ') !== -1) {
    console.log("Password cannot include spaces");
  }
  else {
    console.log("Valid password!!")
  }
}
else {
  console.log("Password too short!");
}
```



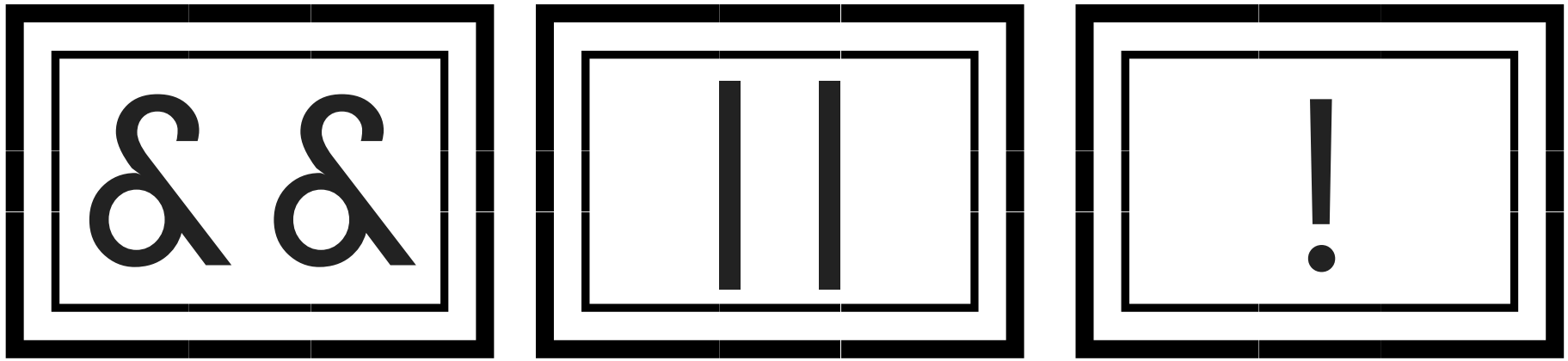
TRUTHY AND FALSY VALUES



- All JS values have an inherent truthyness or falsyness about them
- Falsy values:
  - false
  - 0
  - "" (empty string)
  - null
  - undefined
  - NaN
- Everything else is truthy!

Logical Operators

COMBINING EXPRESSIONS



AND

Both sides must be true, for the entire thing to be true

```
1 <= 4 && 'a' === 'a'; //true

9 > 10 && 9 >= 9;  //false

'abc'.length === 3 && 1+1 === 4; //false
```

AND

Both sides must be true, for the entire thing to be true

```
let password = 'taco tuesday';

if(password.length >= 6 && password.indexOf(' ') === -1){
  console.log("Valid Password!");
}
else {
  console.log("INVALID PASSWORD!");
}
```

OR

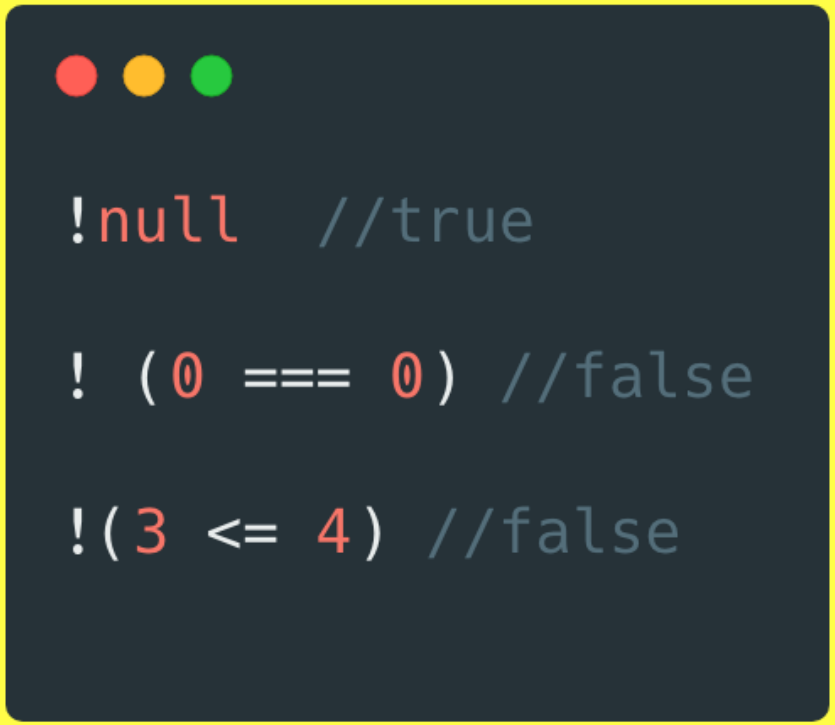
If one side is true, the entire thing is true

```
//only one side needs to be true!

1 !== 1 || 10 === 10 //true

10/2 === 5 || null //true

0 || undefined //false
```

OR

If one side is true, the entire thing is true

```
let age = 76;

if(age < 6 || age >= 65){
  console.log('You get in for free!');
}
else {
  console.log('That will be $10 please');
}
```

NOT

!expression returns true if expression is false