Booleans

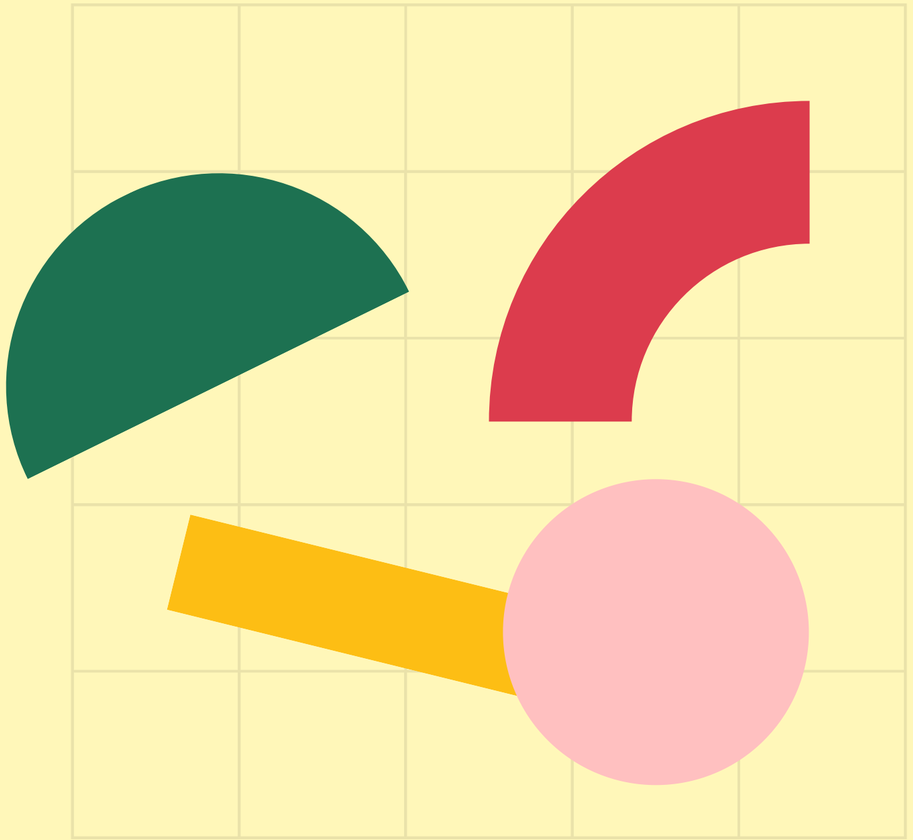
Decision Making with JavaScript

WEB DEVELOPMENT

Unit Goals

what we'll cover

- comparisons
- console.log()
- conditionals
- nesting
- logical operators



COMPARISONS

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

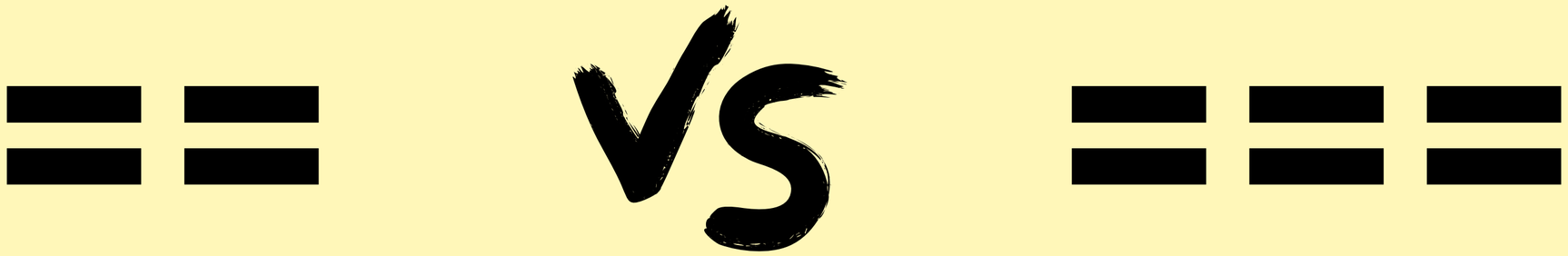
COMPARISONS

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
===

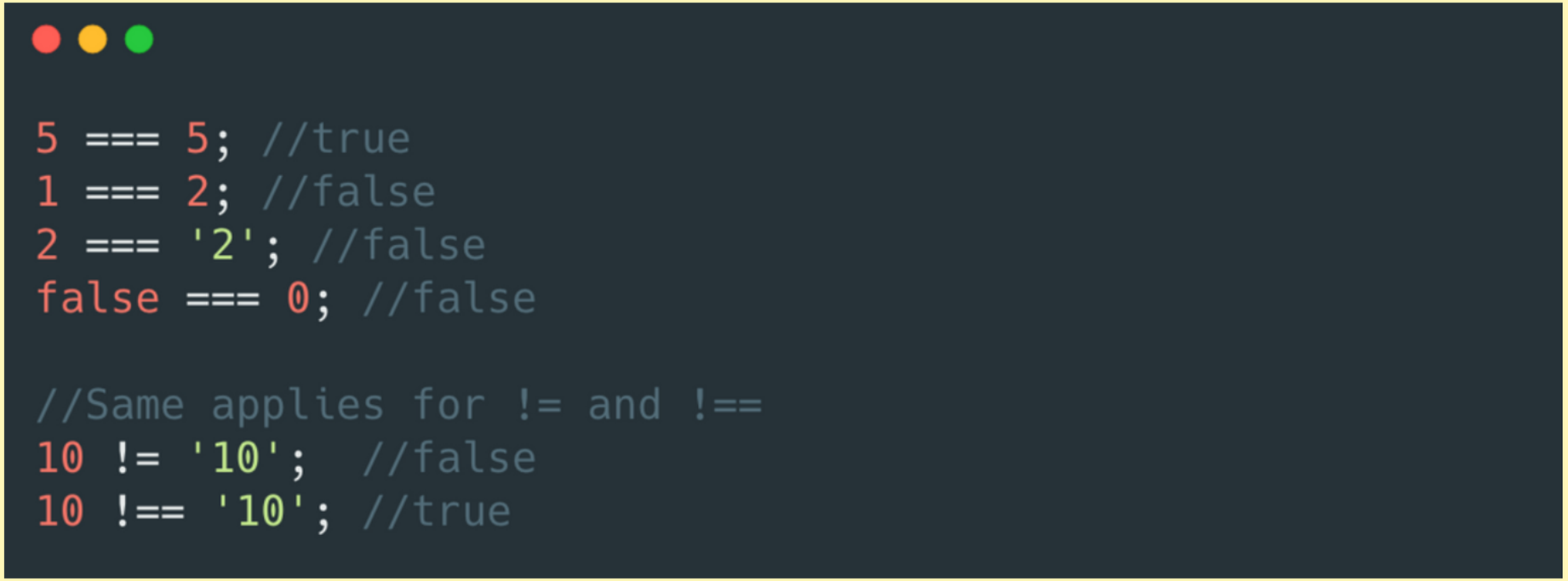
== DOUBLE EQUALS

- 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!

== EXAMPLES

```
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
```

CHECK FOR EQUALITY OF VALUE AND TYPE

`console.log()`

points arguments to the console

(needed later when working with files)

RUNNING CODE FROM A FILE

```
//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 in a
.js file

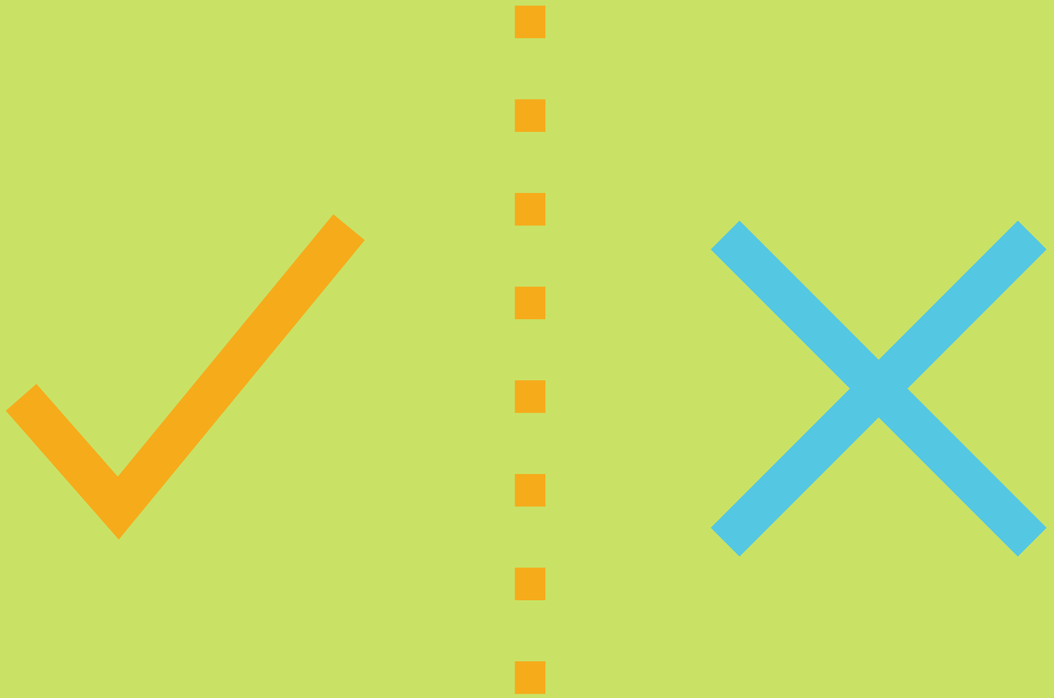
```
<!DOCTYPE html>
<html>
<head>
  <title>JS Demo</title>
  <script src="app.js"></script>
</head>
<body>

</body>
</html>
```

include your script in a
.html file

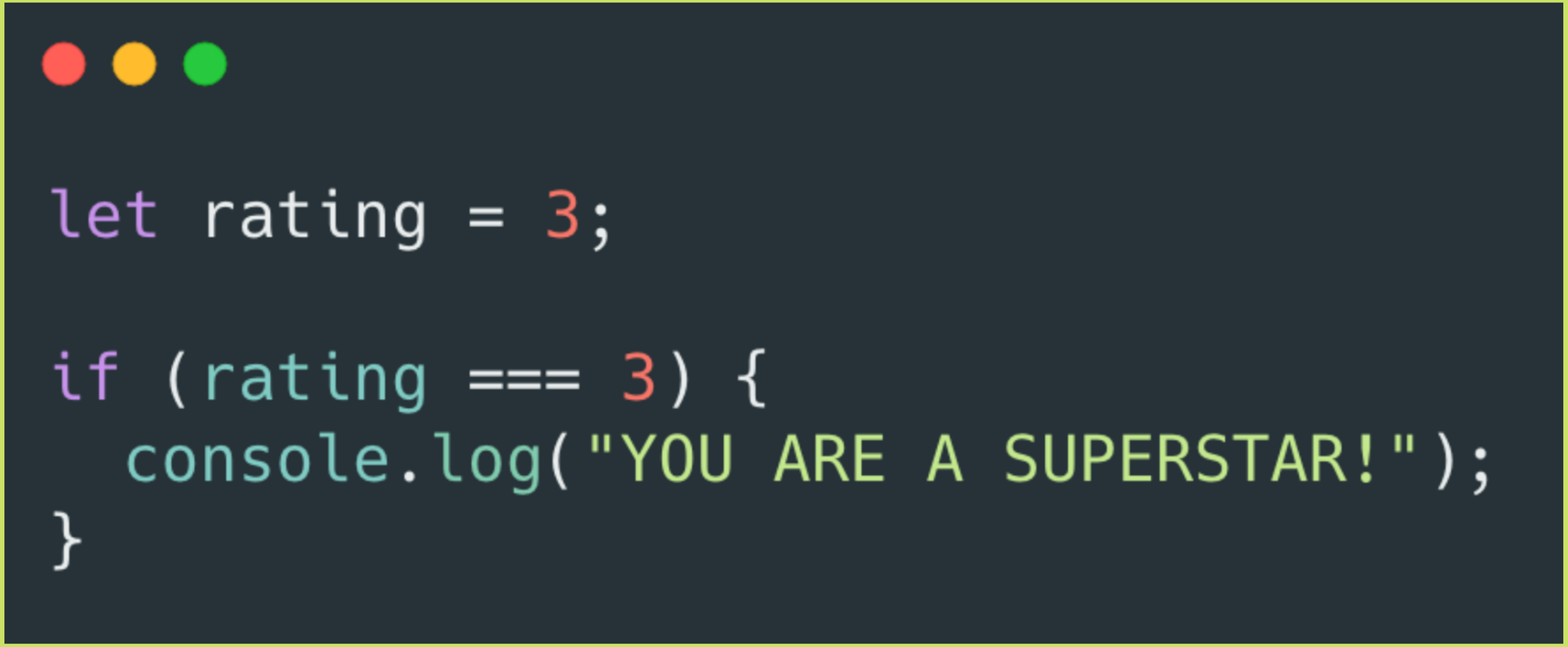
CONDITIONALS

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 ONE?

```
let rating = 2;

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

ELSE IF

MULTIPLE ELSE IF'S CAN BE ADDED

```
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

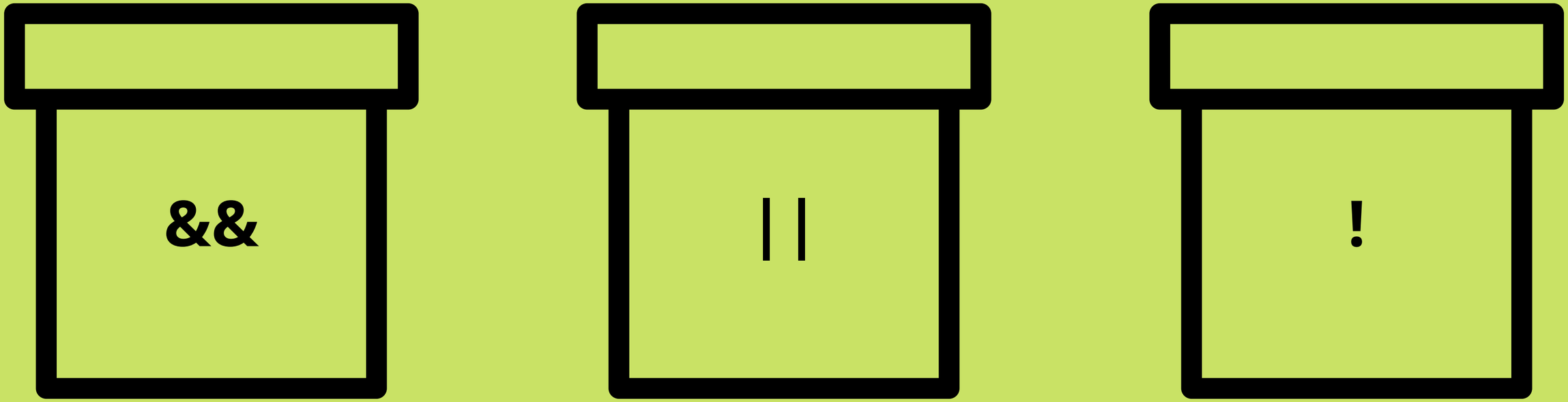
```
let password = "cat dog";
if (password.length >= 6) {
  if (password.indexOf(' ') !== -1) {
    console.log("Password cannot include spaces");
  }
  else {
    console.log("Valid password!!")
  }
}
else {
  console.log("Password too short!");
}
```

TRUTHY & 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!

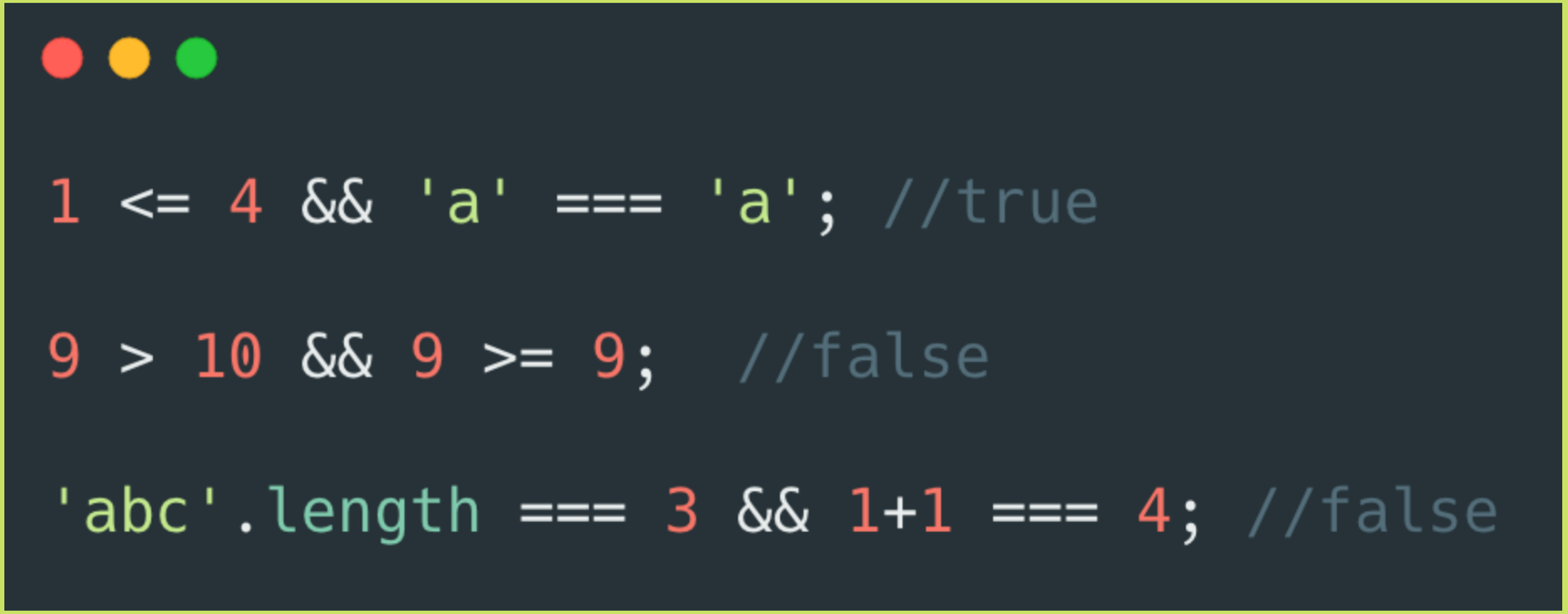
LOGICAL OPERATORS

COMBINING EXPRESSIONS



AND

BOTH SIDES MUST BE TRUE, FOR THE ENTIRE THING TO BE TRUE



AND

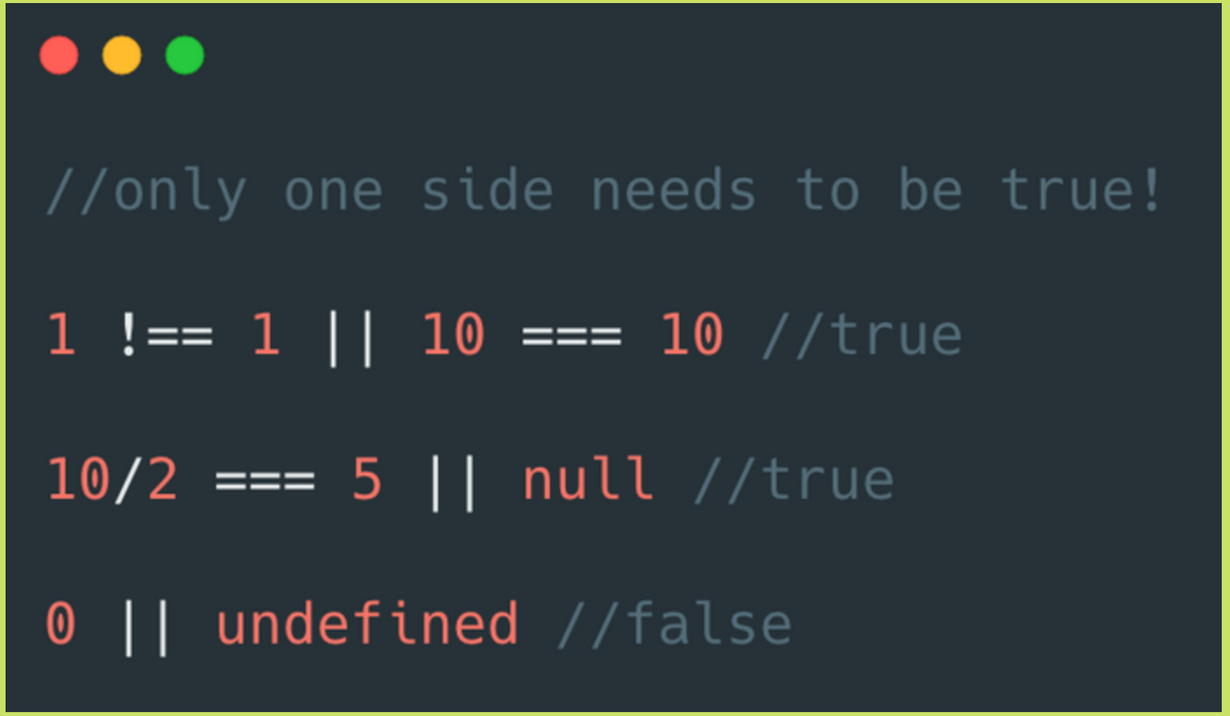
BOTH SIDES MUST BE TRUE, FOR THE ENTIRE THING TO BE TRUE

```
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



OR

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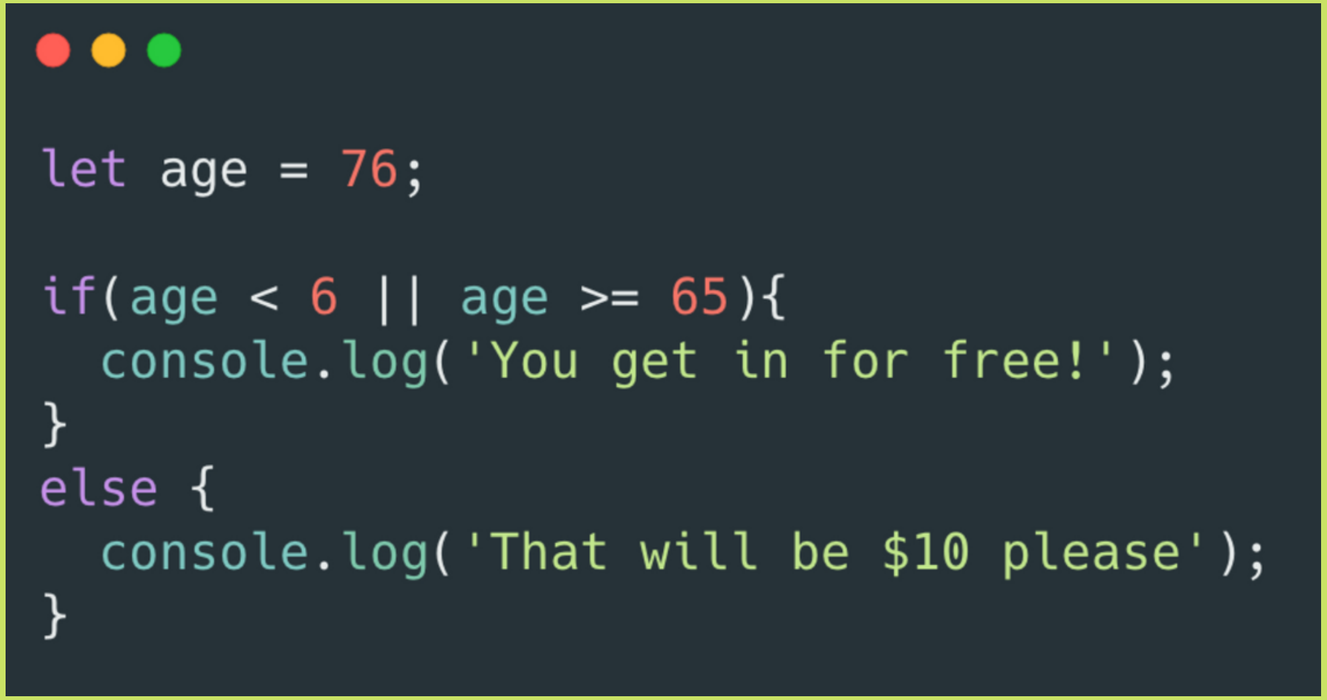

```
let age = 76;

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