Loops

Repeating Things

Objectives

- Understand the purpose of loops
- Define "DRY" code
- Write simple while loops

What if I wanted to print the numbers from 1-10?

```
console.log(1);
console.log(2);
console.log(3);
console.log(4);
console.log(5);
console.log(6);
console.log(7);
console.log(8);
console.log(9);
console.log(10);
```

What about 1-10,000?

This is where loops come in!

DRY: Don't Repeat Yourself

We want to keep our code as DRY as possible. It saves us a lot of time and makes our code cleaner.

```
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
"I Will Not Repeat My Code"
```

While Loops

Repeat code WHILE a condition is true

```
while(someCondition) {
  //run some code
}
```

It's very similar to an if statement, except it repeats a given code block instead of just running it once

While Loops

Printing numbers from 1-5

```
var count = 1;

while(count < 6) {
 console.log("count is: " + count);
 count++;
}

//count is: 1
//count is: 2
//count is: 3
//count is: 4
//count is: 5
```

While Loops

Printing each character in a string

```
//string we're looping over:
var str = "hello";
//first character is at index 0
var count = 0;

while(count < str.length) {
 console.log(str[count]);
 count++;
}

//"h"
//"e"
//"l"
//"l"
//"o"
```

While Loops

Infinite loops occur when the terminating condition in a loop is never true

```
var count = 0;

while(count < 10) {
 console.log(count);
}
```

The above example prints "0" over and over because *count* is never incremented

While Loops

Exercise 1

```
var num = 1;

while(num <= 10) {
  console.log(num);
  num += 2;
}
```

While Loops

Exercise 2

```
var num = 1

while(num <= 20) {
 if(num % 4 === 0){
   console.log(num);
 }
 num++;
}
```

While Loops

Exercise 3

```
var num = 100;

while(num < 150) {
  console.log(num + 1);
  num--;
}
```