



The Web Developer Bootcamp

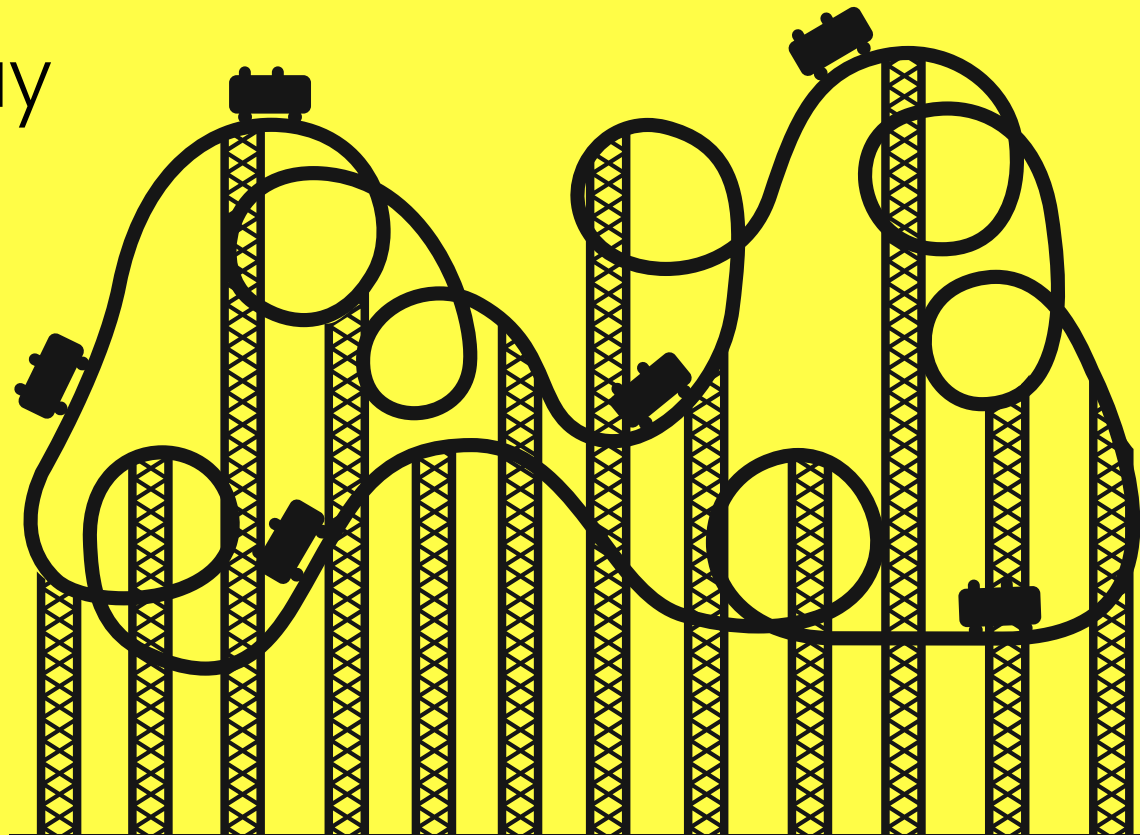
# Js Loops

REPEAT STUFF. REPEAT STUFF. REPEAT STUFF.



# LOOPS

- Loops allow us to repeat code
  - "Print 'hello' 10 times
  - Sum all numbers in an array
- There are multiple types:
  - for loop
  - while loop
  - for...of loop
  - for...in loop



**For  
Loops  
Buckle Up!**



# For Loop Syntax

```
for (  
    [initialExpression];  
    [condition];  
    [incrementExpression]  
)
```

# Our First For Loop



```
start at 1      stop at 10      add 1 each time  
for (let i = 1; i <= 10; i++) {  
  console.log(i);  
}
```

# Another Example

```
for (let i = 50; i >= 0; i -= 10) {  
  console.log(i);  
}  
//50  
//40  
//30  
//20  
//10  
//0
```

- Start  $i$  at 50
- Subtract 10 each iteration
- Keep going as long as  $i \geq 0$

# Infinite Loops



```
//DO NOT RUN THIS CODE!  
for (let i = 20; i >= 0; i++) {  
  console.log(i);  
} //BADD!!!
```



# Looping Over Arrays

```
const animals = [ 'lions', 'tigers', 'bears' ];

for (let i = 0; i < animals.length; i++) {
  console.log(i, animals[i]);
}

//0 'lions'
//1 'tigers'
//2 'bears'
```

To loop over an array, start at index 0 and continue looping to until last index (length-1)



# NESTED LOOPS

```
let str = 'LOL';  
for (let i = 0; i <= 4; i++) {  
  console.log("Outer:", i);  
  for (let j = 0; j < str.length; j++) {  
    console.log('  Inner:', str[j]);  
  }  
}
```

```
Outer: 0  
  Inner: L  
  Inner: O  
  Inner: L  
Outer: 1  
  Inner: L  
  Inner: O  
  Inner: L  
Outer: 2  
  Inner: L  
  Inner: O  
  Inner: L  
Outer: 3  
  Inner: L  
  Inner: O  
  Inner: L  
Outer: 4  
  Inner: L  
  Inner: O  
  Inner: L
```

# While Loops

```
let num = 0;  
while (num < 10) {  
  console.log(num);  
  num++;  
}
```

0  
1  
2  
3  
4

While loops continue running as long as the test condition is true.

# A Common Pattern

```
let targetNum = Math.floor(Math.random() * 10);
let guess = Math.floor(Math.random() * 10);

while (guess !== targetNum) {
  console.log(`Guessed ${guess}...Incorrect!`);
  guess = Math.floor(Math.random() * 10);
}
console.log(`CORRECT! Guessed: ${guess} & target was: ${targetNum}`);
```

# The Break Keyword

```
let targetNum = Math.floor(Math.random() * 10);
let guess = Math.floor(Math.random() * 10);

while (true) {
  guess = Math.floor(Math.random() * 10);
  if (guess === targetNum) {
    console.log(`CORRECT! Gussed: ${guess} & target was: ${targetNum}`);
    break;
  }
  else {
    console.log(`Gussed ${guess}...Incorrect!`);
  }
}
```

# FOR...OF

A nice and easy way of  
iterating over arrays  
(or other iterable objects)



No Internet  
Explorer Support

# For...Of

```
for (variable of iterable) {  
    statement  
}
```

# An Example

```
let subreddits = [ 'soccer', 'popheads', 'cringe', 'books' ];  
for (let sub of subreddits) {  
  //Do this for every item in subreddits array:  
  console.log(`${sub} - www.reddit.com/r/${sub}`);  
}
```

# Nested For...Of

```
const magicSquare = [
  [ 2, 7, 6 ],
  [ 9, 5, 1 ],
  [ 4, 3, 8 ]
];

for (let row of magicSquare) {
  let sum = 0;
  for (let num of row) {
    sum += num;
  }
  console.log(`Row of ${row} sums to ${sum}`);
}
```