Nation

JavaScript Fundamentals

Loops

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- To understand the uses of a for loop
- To understand the uses of a while loop
- To tell the difference between for and while loops
- To write programs using both for and while loops

Learning Objectives

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First thing's first

Create a function for a sub sandwich order: 5 toppings



First thing's first

Create a function for a sub sandwich order: 5 toppings

```
const sandwichOrder = (top1, top2, top3, top4, top5)=>{
    console.log(`We are preparing your sandwich order:
    $\{\top1\}, $\{\top2\}, $\{\top3\}, $\{\top4\}, $\{\top5\}\);
sandwichOrder("ham","cheese","turkey","bacon","tuna");
```



Remember me?

```
for( i = 0 ; i < 10 ; i++ ){
    console.log(i);</pre>
```



Second things second

If we can create a loop to put 0-9 on the screen, how can we count from 9 to 0?

Try it.



Second things second If we can create a loop to put 0-9 on the screen, how can we count from 9 to 0?

```
for (i = 9; i > 0; i-- ){
   console.log(i);
}
```



Second things second

Generate 6 random numbers between 1-50



Second things second

Generate 6 random numbers between 1-50

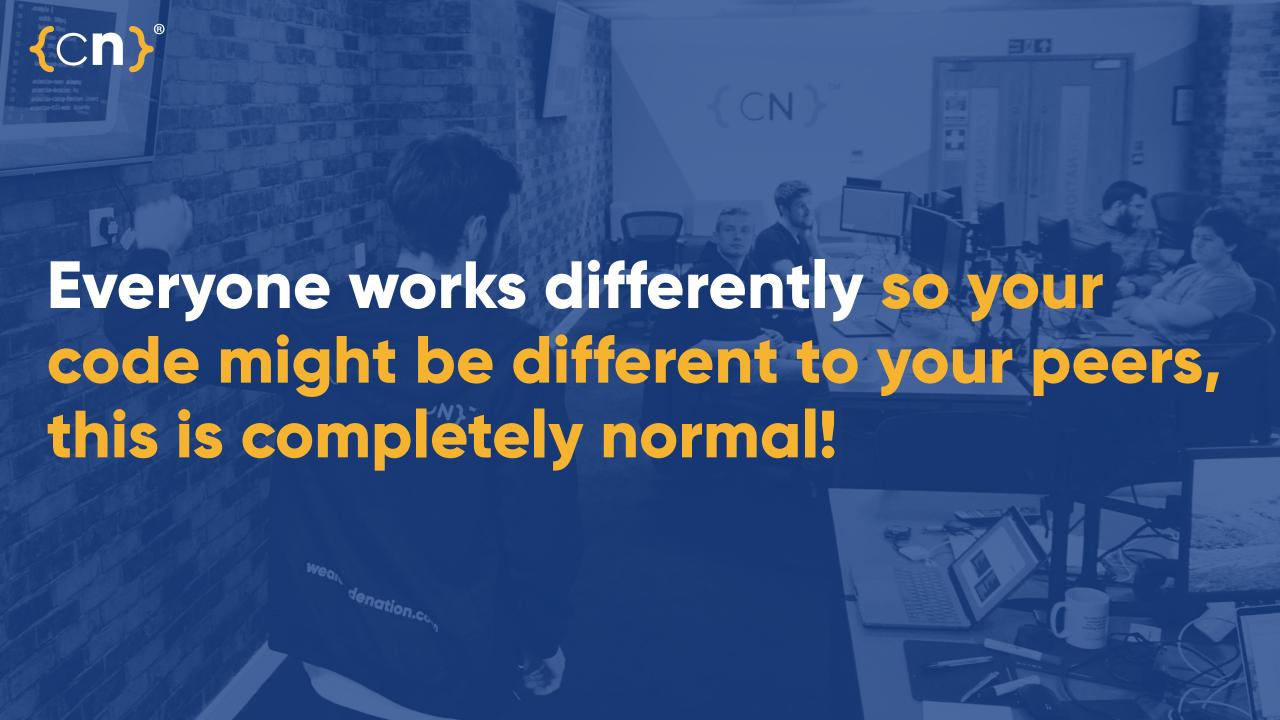
```
for (i = 0; i < 6; i++) {
    console.log(Math.random() * 49 + 1);
}</pre>
```



Second things second

Generate 6 random numbers between 1-50

```
for (i = 0; i < 6; i++)
   console \log(Math random() * 49 + 1);
for (i = 0; i < 6; i++)
    Math.random() * 49 + 1;
```





Moving on. Loop de loop



Imagine doing the same thing over and over again.

For example, if I asked you to make me a cup of tea...



And then asked you again to make everyone in the room a cup of tea...



Then everyone in the building...



Ugh.



Iteration in coding



for loops



If I said to you make an array of your 3 favourite drinks and log each to the console...



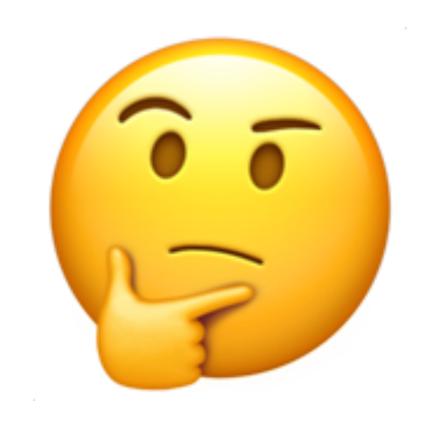
- 1) I'd expect you to have a good time doing it
- 2) I'd expect you to do something like this



```
let favouriteDrinks = ["Coke", "Fanta", "Tonic"];
console.log(favouriteDrinks[0]);
console.log(favouriteDrinks[1]);
console.log(favouriteDrinks[2]);
```



But imagine if I said 1000 drinks





Let's make this code work for us.



```
let favouriteChoco = [
    "Mars",
    "Snickers",
    "Dairy Milk",
    "Picnic"
for (chocoIndex = 0; chocoIndex < favouriteChoco.length;</pre>
chocoIndex++) {
    console log(favouriteChoco[chocoIndex]);
```



```
for (statment1; statment2; statement3){
   //do stuff
}
```



Set the index variable to 0 before the loop starts



```
let favouriteChoco = [
    "Mars",
    "Snickers",
    "Dairy Milk",
    "Picnic"
];

for (chocoIndex = 0 chocoIndex < favouriteChoco.length; hocoIndex++) {
    console.log(favouriteChocoIndex));
}</pre>
```

We define the condition for the loop to run.

As long as the variable is less than the length of the array the loop will continue



```
let favouriteChoco = [
    "Mars",
    "Snickers",
    "Dairy Milk",
    "Picnic"
];

for (chocoIndex = 0; chocoIndex < favouriteChoco.length; chocoIndex++) {
    console.log(favouriteChoco[chocoIndex]);
}</pre>
```

Each time the loop executes, the variable is incremented by one



```
let favouriteChoco = [
    "Mars",
    "Snickers",
    "Dairy Milk",
    "Picnic"
];

for (chocoIndex = 0; chocoIndex < favouriteChoco.length; chocoIndex++) {
    console.log(favouriteChoco[chocoIndex]);
}</pre>
```

Once the variable is no longer less than the array's length, the loop will end



Activity:

Create an array that lists your favourite films, up to 5 elements

Add 2 more using a method

Use a loop to cycle through the array

Hint: for (filmIndex = 0; ...



while loops



for loops run a finite, or limited number of times.

A while loop is a little different



```
while (condition) {
    //do stuff
}
```



for loops

```
for (statment1; statment2; statement3){
   //do stuff
}
```

while loops

```
while (condition){
    //do stuff
}
```



```
let cards = ["Diamond", "Spade", "Heart", "Club"];
let currentCard = "Spade";
while(currentCard != "Spade"){
    console log(currentCard);
    currentCard = cards[Math.floor(Math.random()*4)];
console.log(currentCard);
```



```
let cards = ["Diamond", "Spade", "Heart", "Club"];
let currentCard = "Spade";
while(currentCard !!= !Spade"){
    console.log(currentCard);
    currentCard = cards[Math.floor(Math.random()*4)];
console.log(currentCard);
```



```
let cards = ["Diamond"
let currentCard = " ";
                          "Spade", "Heart", "Club"];
while(currentCard != "Spade"){
    console log(currentCard);
    currentCard = cards[Math.floor(Math.random()*4)];
console.log(currentCard);
```

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Continuing your film for loop

Create a function called filmCheck() that checks if the 3rd film in the array is Ghostbusters.

If it is, it should return "Yay it's Ghostbusters". If it isn't, it should return "Booo, we want Ghostbusters"