Code Nation

JavaScript Fundamentals

Recap

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Command line

$ pwd
/Users/codenation/

This shows where you are now

```
$ ls
Applications    Downloads
Desktop         Library
Documents
…
```

ls gives you a list of what's in this directory, so you can choose where to go next!

$ cd Desktop

If I want to go into Desktop...

$ cd Desktop/demo

You can go direct to a directory inside another directory, for example, in this case, you are going to the demo folder on Desktop, so the path would be Desktop/demo

*Or... you can type cd and then drag and drop the folder into the terminal, it will show the path for you.

$ cd ..

This will take you to go back one directory

$ cd ../..

Or two previous directories, and so on...

$ cd ~

Takes you home

$ exit

Exit and close the terminal

$ exit

Exit and close the terminal

Best practice

Best to name all your files/folder using:

- small letters and
- no space

Using VS Code

Copy anything

- Use the keys `command, c`

Paste

- Use the keys `command, v`

Undo

- Use the keys `command, z`

Save your work

- Use the keys `command, s`

Run the code

- Use the keys `^, fn, F5`
- Or type `node filename.js`

1 - Dot Notation

Dot Notation

Dot notation

```
console.log(i);
```

```
object.property
```

Dot notation

```
console.log("Hello");
```

Parameters

Data Types

These are :

String : for representing text

Number : for representing numbers (decimal and integers)

Boolean : for true and false

Null : for nothing

Undefined : for when a data type isn't determined

Symbol : This data type is used as the key for an object property when the property is intended to be private, for the internal use of a class or an object type

Methods

```
console.log("Hello".length);
```

```
console.log("hello".toUpperCase());
```

Dot notation

```
console.log(Math.random());
```

Parameters

Generates a random number between 0-1 (0.1, 0.2 etc)

Dot notation

```
console.log(Math.random()*10);
```

Parameters

Generates a random number between 0-10

Dot notation

```
console.log(Math.floor(Math.random()*10));
```

Parameters

First thing's first

```
console.log("All Around the
world".toUpperCase().charAt(7));
```

2 - Variables

Variables

```
let i = 10;
```

Create a variable called i which holds values that can be changed whenever the code is running and store a value of 10 in it

```
const i = 10;
```

Create a variable called i which holds values that cannot be changed and store a value of 10 in it. Constant means to constant value and when something is constant, it doesn't change

```
var i = 10;
```

Create a variable called i which holds values that can be changed whenever the code is running and store a value of 10 in it

=

*=

+=

/=

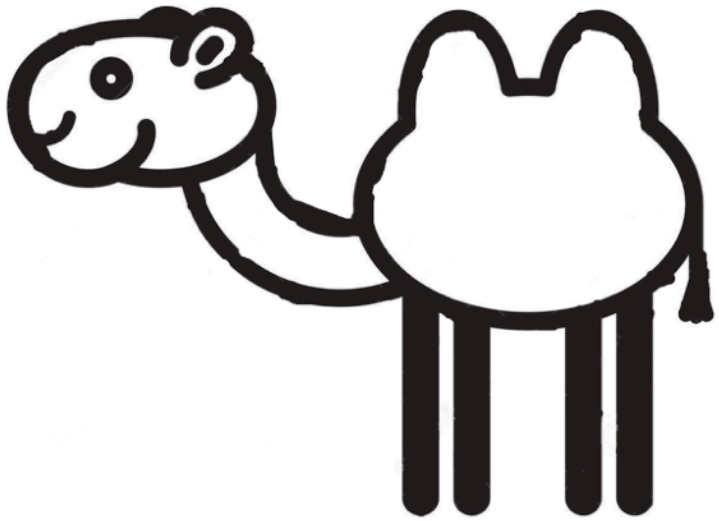
-=

++

--

Operators to store values

Naming Variables



favouriteDrink
thisNumber
firstName

Accessing Variables

```
let favouriteDrink = "coffee";

console.log(favouriteDrink);
```

```
let favouriteDrink = “coffee";

console.log("My favourite drink is" + favouriteDrink);
```

```
let favouriteDrink = "coffee";

console.log(`My favourite drink is
${favouriteDrink}`);
```

3 - if/else

if statement

```
if (condition1) {
    //do this
}
else if (condition2) {
    //do this
}
else {
    //if nothing else matched do this
}
```

==

Checks if the values are equal regardless of type

===

Checks if the values and type are equal

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`!=`

Checks if the values are not equal regardless of type

`!==`

Checks if the values and type are not equal

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>=

<=

>

<

%

```
if (1 === "1") {
    console.log(true);
}
else {
    console.log(false);
}
```

What is logged?

```
if (1 != "1") {
    console.log(true);
}
else {
    console.log(false);
}
```

What is logged?

```
let place = "Manc";
let weather = "Cloudy";

if (place == "Manc" && weather == "Sunny") {
    console.log("Check again");
}
else if (place == "Manc" && weather == "Rain") {
    console.log("Obvs");
}
else {
    console.log("What it isn't raining?");
}
```

logic operator

```
let day = "Saturday";
```

true or false

```
if (day == "Saturday" || day == "Sunday"){
    console.log("It's weekend!”);
}
else {
    console.log("When's weekend?”);
}
```

```
if (true || false) {
    console.log(true);
}
else {
    console.log(false);
}
```

And

&&

True and True –> True

True and False –> False

False and False –> False

Or

||

True or True —> True

True or False —> True

False or False —> False

4 - Functions

Functions

```
let coffeeIsGrinding = false;

const pressGrindBeans = () => {
    if (coffeeIsGrinding) {
        console.log("Stopping the grind");
        coffeeIsGrinding = false;
    } else {
        console.log("Grinding is about to begin");
        coffeeIsGrinding = true;
    }
}

pressGrindBeans();
```

```
const cashWithdrawal = (amount, accnum) => {

    console.log(`Withdrawing ${amount} from account ${accnum}`);

}

cashWithdrawal(300, 50449921);
cashWithdrawal(30, 50449921);
cashWithdrawal(200, 50447921);
```

Let's take this in

```
const multiplyByNineFifths = (celsius) => {
    return celsius * (9/5);
};

const getFahrenheit = (celsius) => {
    return multiplyByNineFifths(celsius) + 32;
};

console.log("The temperature is " + getFahrenheit(15) + "°F");

// Output: The temperature is 59°F
```

Arrow function syntax

```
const square = (number) => {
    return number * number;
};

square(5);

// Output: 25
```

Declaration

```
function square(number) {
    return number * number;
};

square(5);

// Output: 25
```

Expression/anonymous function

```
const square = function(number) {
    return number * number;
};

square(5);

// Output: 25
```

Arrow function syntax

```
const functionName=(parameters)=>{
    // do code
};
```

Declaration

```
function functionName(parameters){
    // do code
};
```

Expression/anonymous function

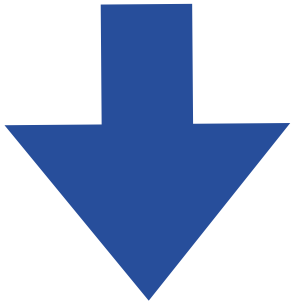
```
const functionName=function(parameters){
// do code
};
```

5 - Arrays

```
let coffeeOrder = [
    "Alex - Cortado",
    "Ben - Cortado",
    "Charlie - Whatever's new"
];

console.log(coffeeOrder);
```

```
console.log(coffeeOrder[2]);
```



Charlie - whatever's new

But wasn't that the 3rd item?

```
let coffeeOrder = [
    "Alex - Cortado",
    "Ben - Cortado",
    "Charlie - Whatever's new"
];

coffeeOrder[1] = "Ann - Vanilla latte";
```

*Replace 2nd item

```
let coffeeOrder = [
    "Alex - Cortado",
    "Ben - Cortado",
    "Charlie - Whatever's new"
];

console.log(coffeeOrder.length);
```

*check no. of items in the list

```
let coffeeOrder = [
    "Alex - Cortado",
    "Ben - Cortado",
    "Charlie - Whatever's new"
];

coffeeOrder.push("Donna - espresso");
```

*add Donna to the end of list

```
let coffeeOrder = [
    "Alex - Cortado",
    "Ben - Cortado",
    "Charlie - Whatever's new"
];

coffeeOrder.pop();
```

*remove last item

```
.shift()
.unshift()
.slice()
.splice()
```

so many...

Check out the Mozilla Developer Network for more.

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array

6 – Arrays

for loop

Random number generator

Generate 6 random numbers between 1-50

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

Or

```
for (i = 0; i < 6; i++ ){
    Math.random() * 49 + 1;
}
```

Backward

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 > -1; i-- ){
    console.log(i);
}
```

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

Iteration in coding using for loops

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

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

*i stands for index, which is widely used in for loops.

while loop

```
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);
```