the Master Course

{CODENATION}

JAVASCRIPT FUNDAMENTALS

Variables

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Learning Objectives

To understand and use variables and operators to store values and manipulate them

To use camelCase when naming variables

To understand how to access data in variables

First Things First!

JS

Display the **8th character** of this sentence in upper case on the console.

All Around the World

Hint: Look at charAt()

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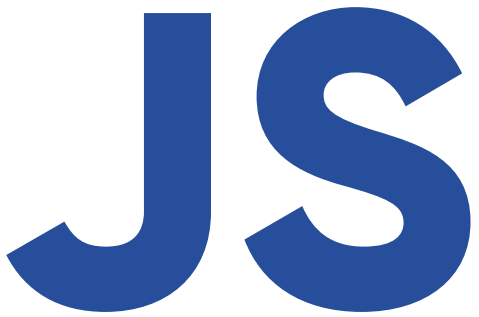
```
console.log("All Around the world".charAt(7).toUpperCase());
```



Introducing

... Variables!

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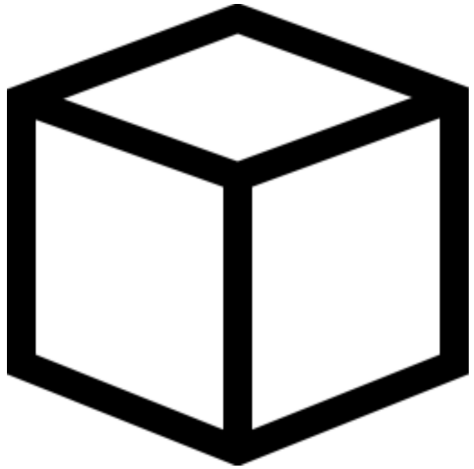
JS

They're like boxes

... not very **technical** is it?



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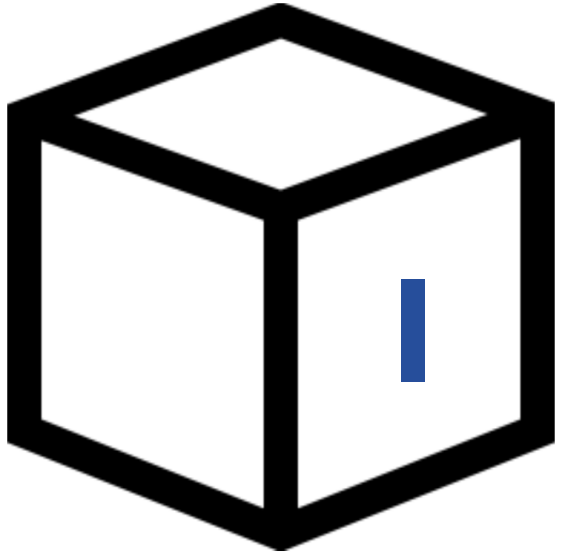
JS



We **store items** in boxes to **retrieve later**.

Different items can be stored in the box at **different times**.

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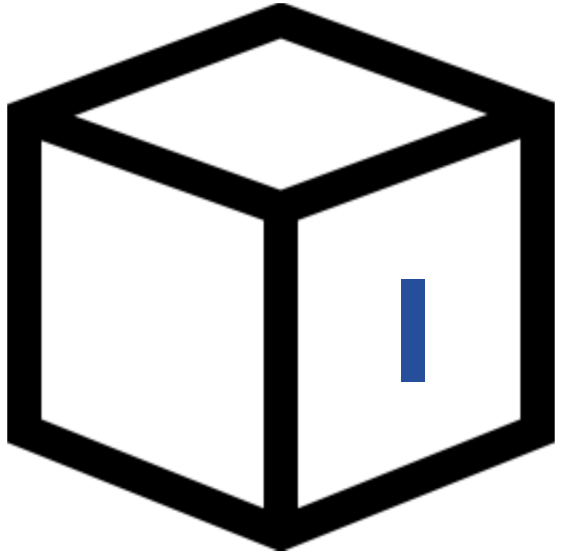
So variables...

JS



We **store items** in boxes to retrieve later.

In code we **give variables names** so we can **access things inside them**!

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Imagine a Cash Machine

... how can we make sure we can **reuse code?**

JS

This is hard coded

WITHDRAW 10_POUNDS
FROM 82929201

Should be

This is dynamic

WITHDRAW AMOUNT
FROM ACCNUM

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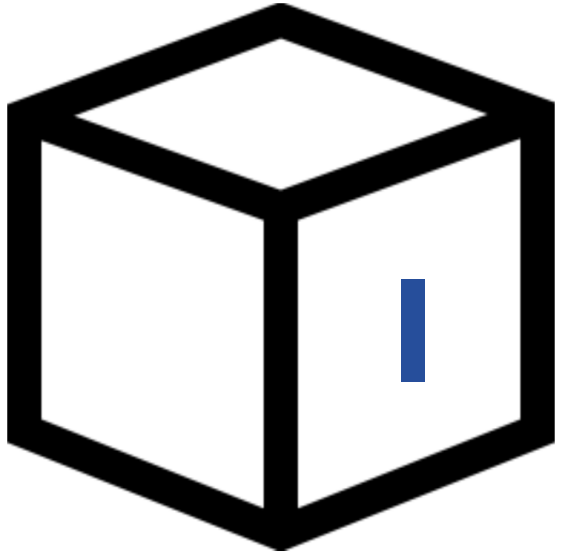
JS



1. Allow us to **store data inside them**
2. Access them **via a name**
3. **Place new data in them** whenever we want

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JS

Javascript is a

... **dynamically typed** language.

We **don't need to tell it** the type of data we are storing in our variable. **It just knows!**

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How can we declare a variable

JS

let

...is used for declaring a value that **CAN** be changed

const

...is used for declaring a value that **CANNOT** be changed. Const = Constant

var

...is used for declaring a value that **CAN** be changed. However, it is considered a legacy command now.

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JS

let

```
let i = 10;
```

const

```
const i = 10;
```

var

```
var i = 10;
```

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JS

let & const = 🤩

var = 👨 ❌

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JS

Lets look at...

Data Types

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Strings

... for representing **text**

Boolean

... for **true** or **false**

Null

... for **nothing**

Symbol

... this data type is used as the key for an object property when the property is intended to be private.

JS

Numbers

... for representing **numbers** (decimals & integers)

Undefined

... for when a data type **isn't determined**

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JS

Time for sum...

MATHS!

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+

−

*

**

/

%

++

−−

JS

Arithmetic Operators

... for **calculations**

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=

*=

+=

/=

-=

++

--

JS

Assignment Operators

... for **storing values**

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Assignment Operator

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Try this...


```
let i = 10;
```

Assigning i to the number 10

Try this...

JS

```
let i = 10;

i = i + 2;
// i = 12
```

*Arithmetic operator

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We can do this better...

JS

```
let i = 10;

i += 2;
// i = 12
```

*Assignment operator

JS

Don't get the hump!

... introducing **camelCase**

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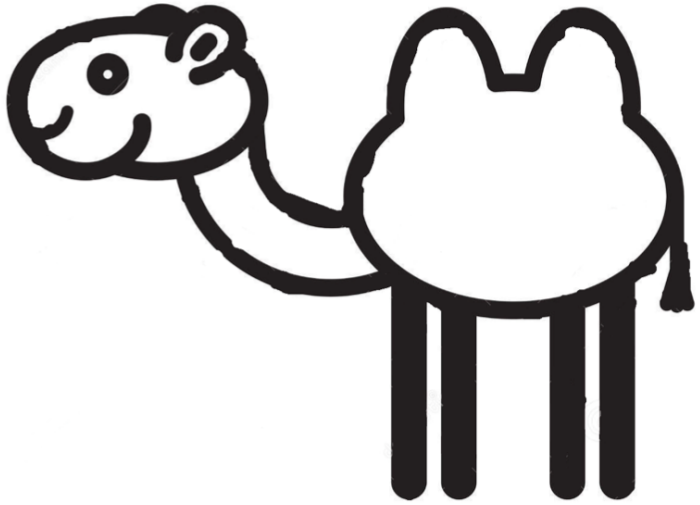
JS



favouriteDrink
thisNumber
firstName

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JS

This is called camelCase

... it is **best practice & industry standard** as it **enhances code readability**

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Lets access some data in variables

Try this...

JS

```
let favouriteDrink = "coffee";
console.log(favouriteDrink);
```

Notice when we **console.log a variable**,
we **don't need ""** like we do with a string.

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Try this...

JS

```
let favouriteDrink = "coffee";

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

Putting strings together with variables is called **concatenation**. It allows us to produce sensible outputs!

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This can get messy...

JS

```
let name = 'Chris';
let age = 27;
let favDrink = 'Coffee'

console.log("Hi, my name is " +name + ". I am " +age +" and my favourite drink is "
+favDrink+".")
```

Using **'Template Literals'** we can inject variables into strings a lot easier

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This can get messy...

JS

```
let name = 'Chris';
let age = 27;
let favDrink = 'Coffee'

console.log(`Hi my name is ${name}. I am ${age} and my favourite drink is $
{favDrink}.`)
```

Using **'Template Literals'** we can inject variables into strings a lot easier

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Remember

JS

```
let name = 'Chris';
let age = 27;
let favDrink = 'Coffee'

console.log(`Hi my name is ${name}. I am ${age} and my favourite drink is $
{favDrink}.`)

age = 28;
favDrink = 'Tea';

console.log(`Hi my name is ${name}. I am ${age} and my favourite drink is $
{favDrink}.`)
```

We can also **update** our variables (if we use let)

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Learning Objectives

To understand and use variables and operators to store values and manipulate them

To use camelCase when naming variables

To understand how to access data in variables

Activity 1:

JS

Create a program that **stores someone's name**, **age** and **favourite colour** and log it to the console in a complete sentence using **Template Literals**.

Stretch

Update **all of your variables** and **write out a new sentence** underneath your original.

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Activity 2:

Create a program that stores what you eat today for breakfast, lunch and dinner. Log these to the console.

Stretch

Update each of these variables to what you will eat tomorrow. Log these to the console.

Activity 3:

JS

Create a program that **calculates the number of days** from today to your birth date.

Hint

Look for **'Javascript Date'** on MDN

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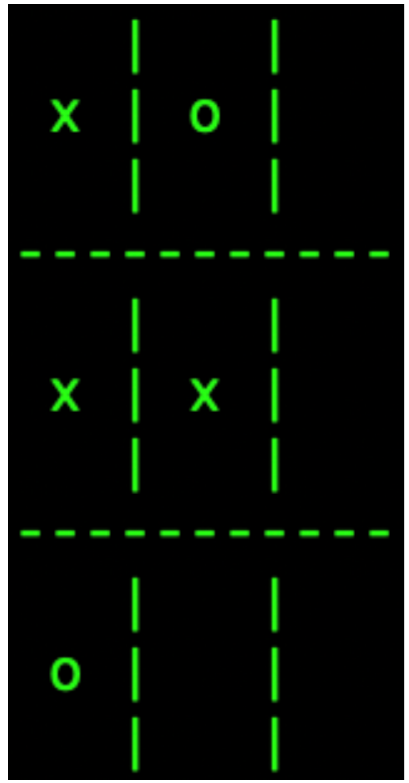
Activity 4:

> Create 9 variables: space1, space2... space9

> Assign either the value ‘x’, ‘o’,’ ’, to each of these variables.

> Insert the variables into your boards using the ${varName} syntax and make it look like the displayed board



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For next time...

... take a look at **selection** and **if/else/switch.**

JS

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/if...else

https://www.youtube.com/watch?v=IsG4Xd6LlsM

Why would we use **if/else?**
What benefit does a **"switch"** have over if/else?

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