Tech Requirements

- Your laptop.
- Download materials from : https://github.com/fmt-js
- A text editor, recommend Sublime Text 3 (It's free and available for Mac/PC/Linux - http://www.sublimetext.com/3
- OR - Download Visual Studio Code.

  https://code.visualstudio.com/

Intro to JavaScript

Denise Nguyen
Consultant, FMT Consultant

Denise Nguyen

CRM Consultant

I graduated from California State University San Marcos with a Bachelor's in both Computer Information Systems and Communication. I started my career as a CRM Consultant at FMT Consultants in San Diego, CA. I enjoy learning everyday on ways to utilize best practices and methodologies to design, customize, integrate, implement and/or upgrade Microsoft Dynamics CRM and associated solutions for clients. I am here today to give you all a fast intro to JavaScript.

Agenda

- Overview of HTML, CSS, and JS
- What you can do with JavaScript
- Script Tags and Files
- Statements and Comments
- Variables, naming variables, and variable values
- Arithmetic Operators
- Strings and Concatenate

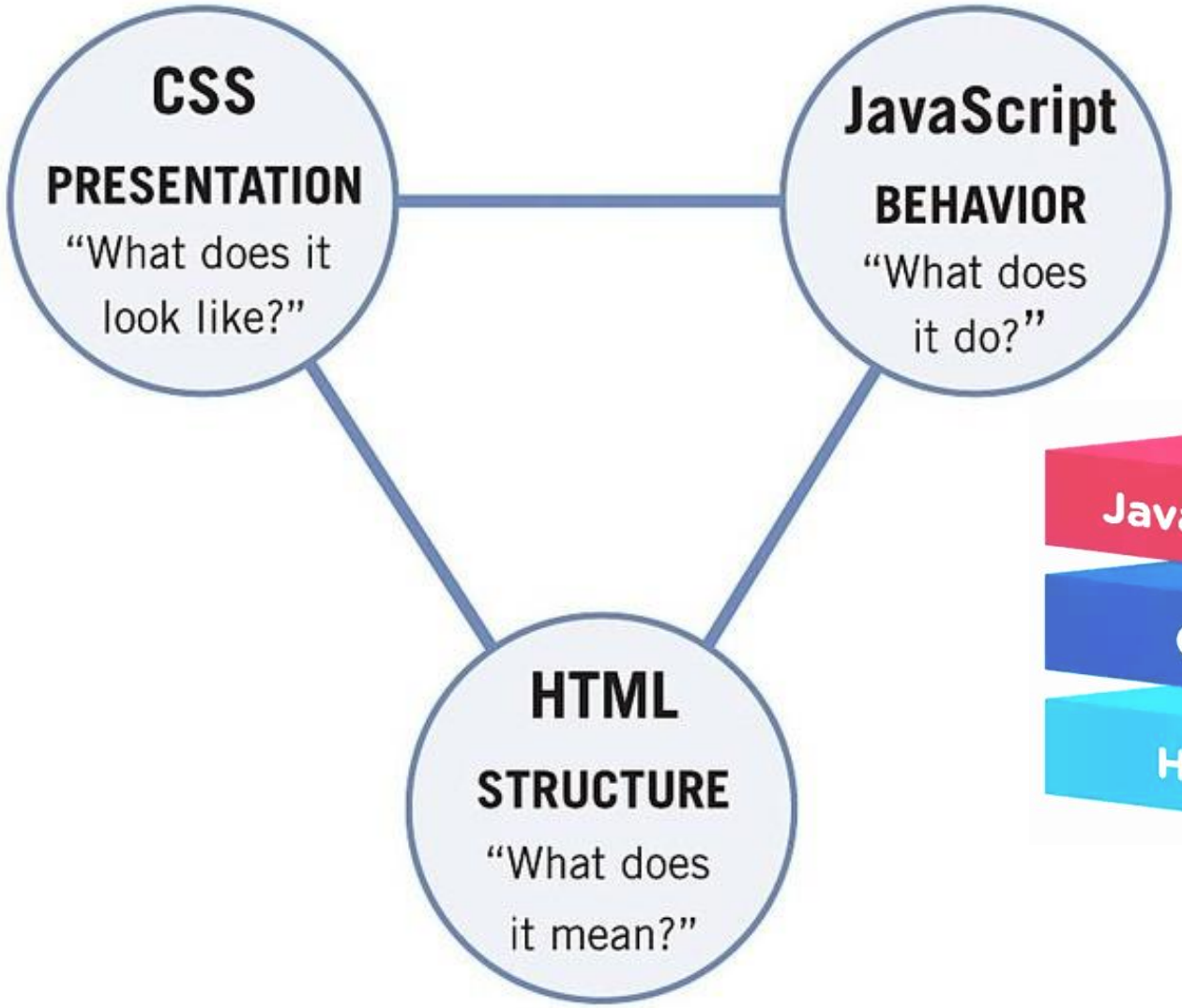
FMT CONSULTANTS

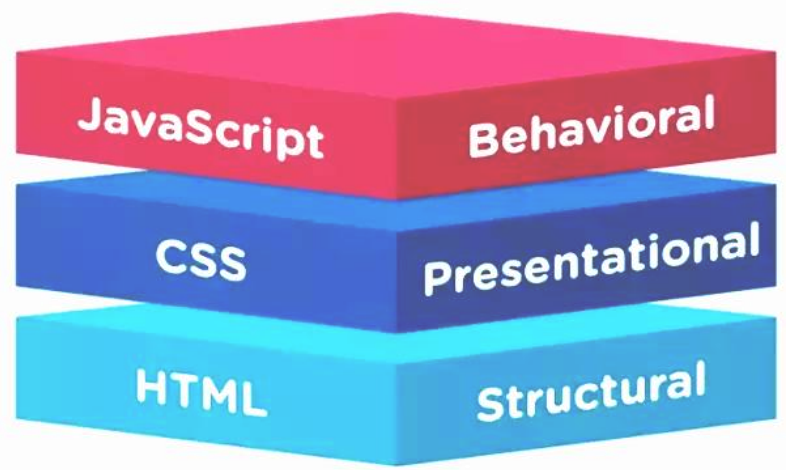
What is JavaScript?

JavaScript is not Java

JavaScript works with HTML & CSS

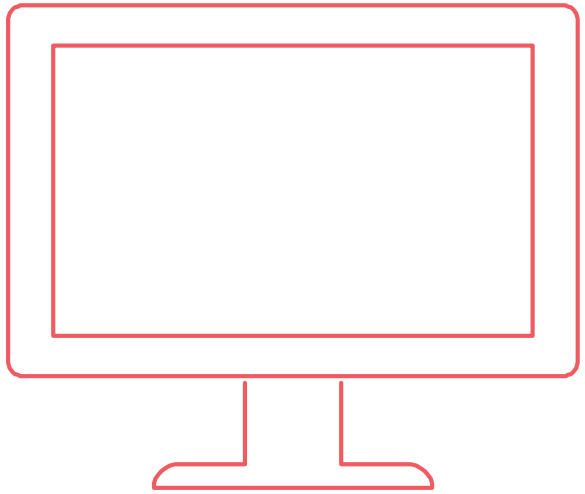
FMT CONSULTANTS





FMT CONSULTANTS

What can JavaScript do?

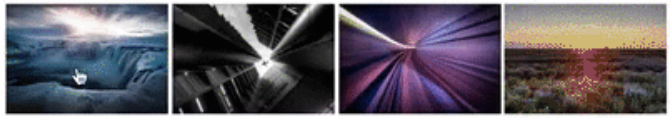


Let's find out!

FMT CONSULTANTS

Note: ID's are single use and are only applied to one element.
Galleries are created from elements who have the same "data-fancybox-group" or "rel" attribute value.

Image gallery | HTML | JavaScript



Script uses the `href` or `data-fancybox-href` attribute of the matched elements to obtain the location of the content and to figure out content type you want to display. You can specify type directly by adding classname (fancybox.image, fancybox.iframe, etc) or `data-fancybox-type` attribute. Use `title` or `data-fancybox-title` attribute to specify item caption.

Various types | HTML | JavaScript

- Ajax
- Iframe
- Inline
- SWF
- Youtube (iframe)
- Google maps (iframe)
- Non-existing url

Alternatively, you can set content type as an option: `$(".open_ajax").fancybox({type: 'ajax'});`.

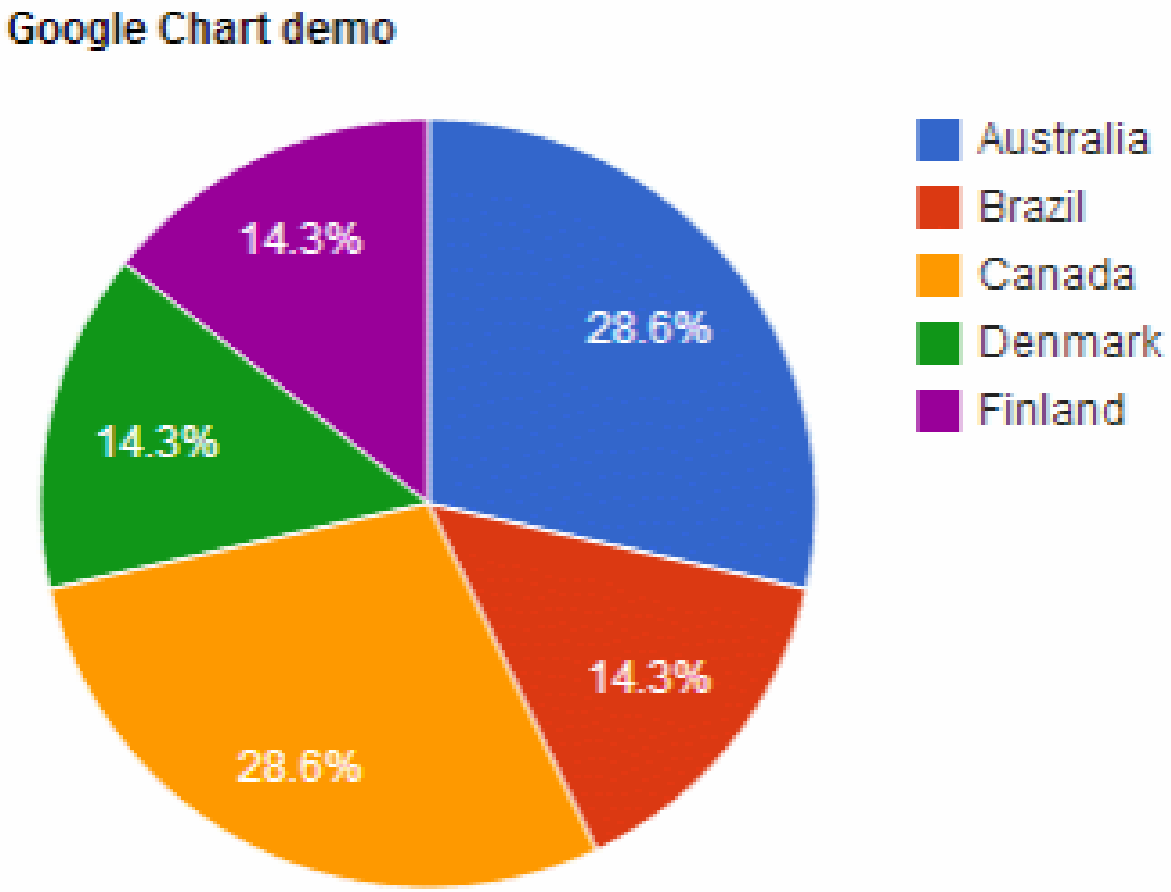
Note, ajax requests are subject to the same origin policy. If fancyBox will not be able to get content type, it will try to guess based on 'href' and will quit silently if would not succeed (this is different from previous versions where 'ajax' was used as default type or an error message was displayed).

Extended functionality

Remember to include the necessary files! Each helper is located in separate files.

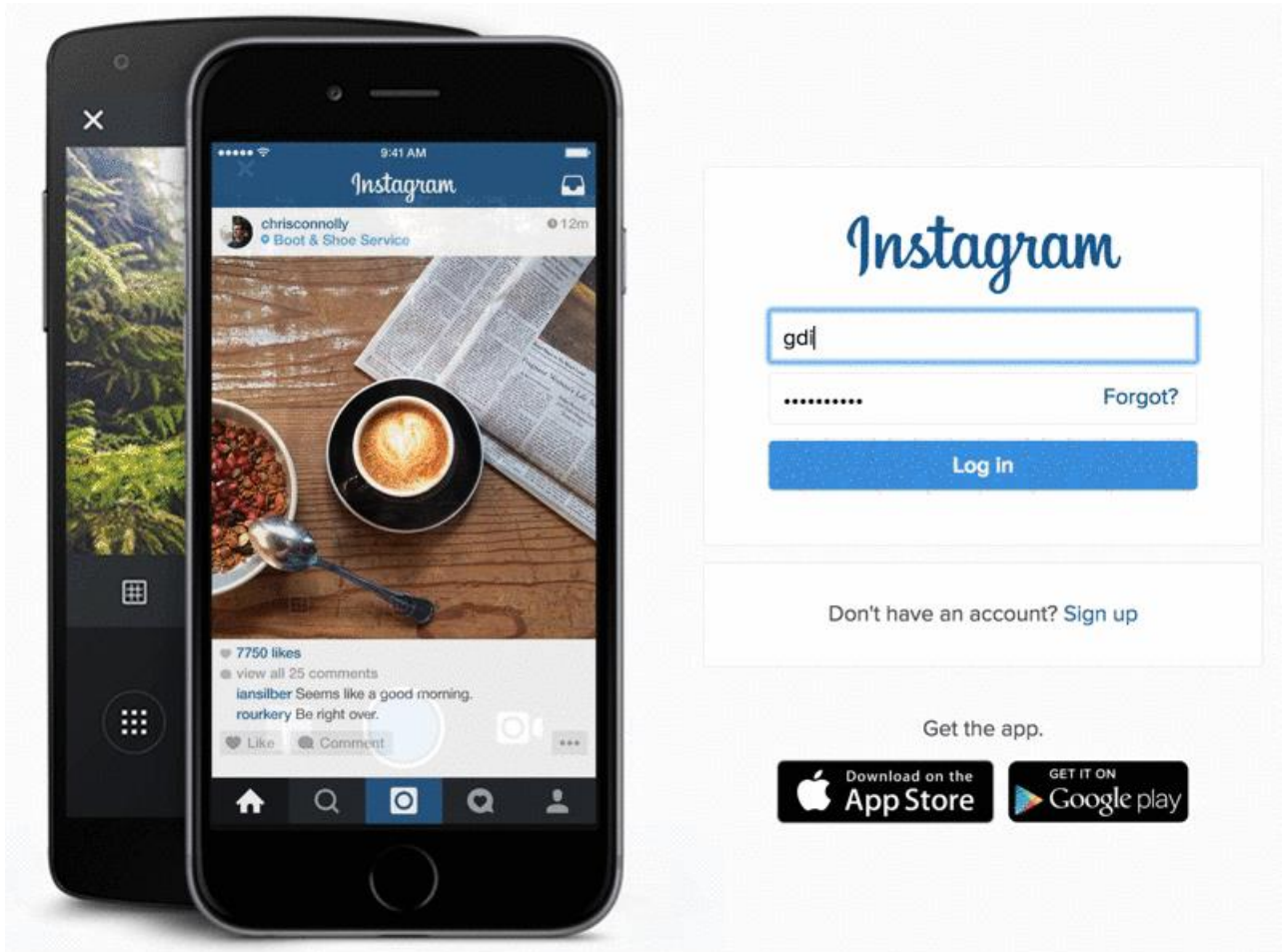
Image Lightboxes

FMT CONSULTANTS



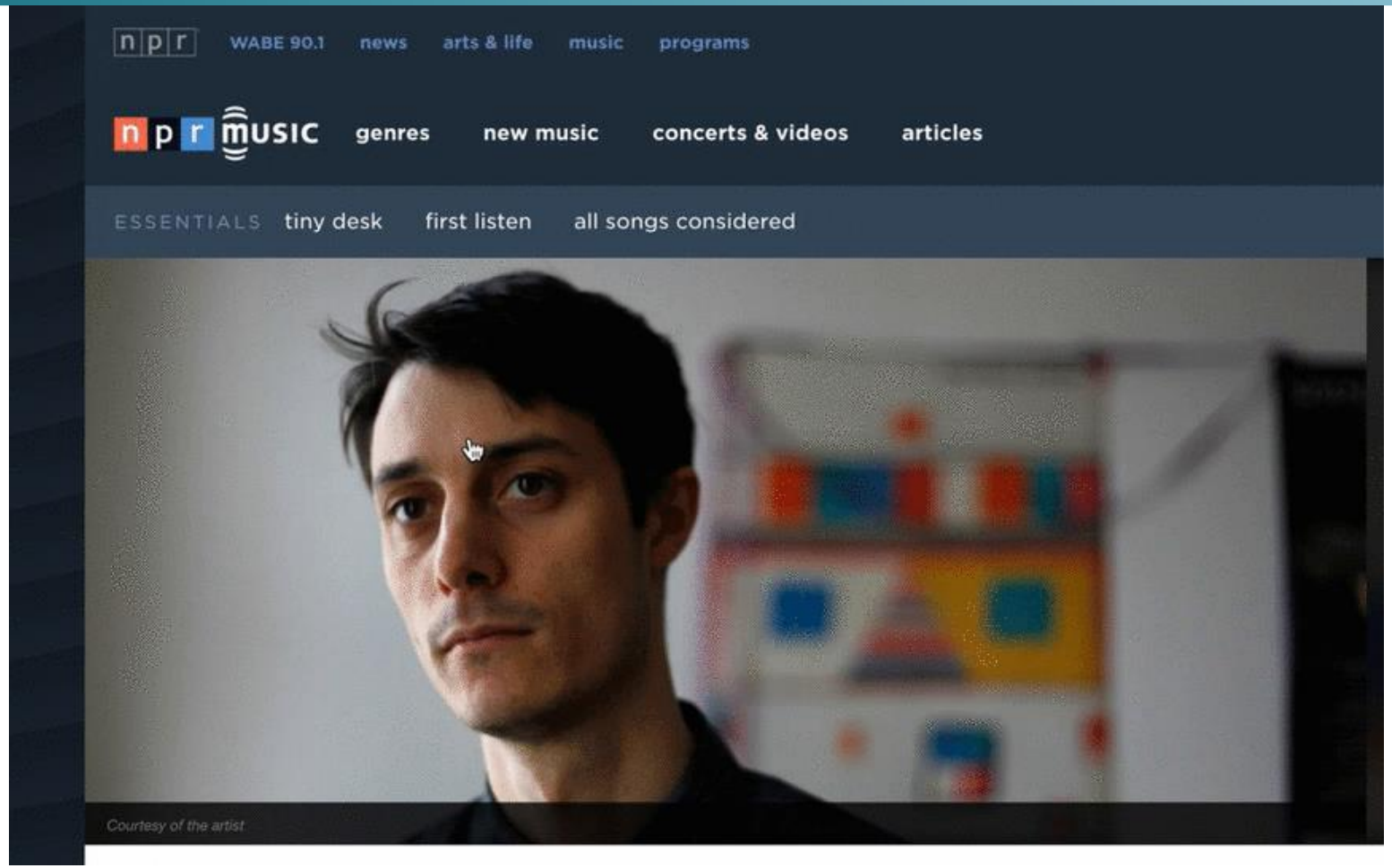
Google Charts API

FMT CONSULTANTS



Keep track of users with Cookies or storing data with local storage.

FMT CONSULTANTS



Interactive elements like tabs, sliders, etc.

Script Tags

FMT CONSULTANTS

You can mix JavaScript and HTML. The script tag tells your browser the stuff inside is code, not content.

```
<script>
  CODE GOES HERE
</script>
```

JavaScript Files

Just like CSS, you can split a long block of JavaScript into its own file.

```
<script src="path/to/file.js"></script>
```

Let’s get setup to start coding (:

FMT CONSULTANTS

Let's Develop It

- Make a folder called `FMT-JS`
- Inside, make a new page called `index.html`
- Write your code

```
<!DOCTYPE html>
<html>
  <head>
    <title>Test Page</title>
  </head>
  <body>
   <p>This is my awesome JavaScript Code.</p>
    <script>
      alert('Hello World!');
      console.log('Secret message');
    </script>
  </body>
</html>
```

Let's Develop It

- Make a folder called `FMT-JS`
- Inside, make a new page called `index.html`
- Write your code

```
<script>
  alert('Hello World!');
  console.log('Secret message');
</script>
```

FMT CONSULTANTS

Computers need simple, clear instructions

- Computers are great at processing. They are bad at understanding.
- When you write a program, you must break down every step into simple pieces.

FMT CONSULTANTS

Example: Make a Sandwich

OVERVIEW OF JAVASCRIPT

FMT CONSULTANTS

How does JavaScript work?

1. You visit a website with JavaScript code on it.
2. Your browser (e.g., Chrome) reads the code line-by-line.
3. The browser runs each line of code as it reads it.
4. Based on these instructions, the browser performs calculations and changes the HTML and CSS on the page.
5. If the browser finds code it doesn't understand, it stops running and creates an error message.

Let's Develop It

Open the console.

In Chrome, use the keyboard shortcut:

Mac: Command + Option + J

Windows: Control + Shift + J

Open your practice page.

Do you see anything in the console?

Try typing in 2 + 2 and hitting enter.

Statements

FMT CONSULTANTS

Each instruction in JS is a "statement", like:

```
console.log('Hello World!');
console.log('I am glad to meet you');
console.log('I am fuzzy');
```

Comments

FMT CONSULTANTS

You can leave comments in your code—notes that people can read but computers will ignore.

```
console.log('Hello World!');
console.log('I am glad to meet you');
console.log('I am fuzzy');
```

Getting results onto your screen

FMT CONSULTANTS

Open a popup box.

```
alert('Hello World!');
```

Display a message in your console.

```
console.log('Hello World!');
```

Add something to the page.

```
document.write('Hello World!');
```

LET’S CODE TOGETHER!

FMT CONSULTANTS

Let's Develop It

- Open `index.html`.
- Add a comment to the code.
- Try different ways of printing a message.
- Create a new file called `mycode.js`.
- Move your code to this file and link it to your page.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Test Page</title>
  </head>
  <body>
   <p>This is my awesome JavaScript Code.</p>
    <script>
      alert('Hello World!');
      console.log('Secret message');
    </script>
  </body>
</html>
```

Variables

Just like 'x' in algebra, a variable is a named container for a value that can change.

Declaring a Variable

- To declare (create) a variable, just type the word var and the variable name.

```
var numberOfKittens;
```

- It is a good idea to give your variable a starting value. This is called initializing the variable.

```
var numberOfKittens = 5;
```

Variable Values

- When you first create a variable, it does not have a value (it is `undefined`).
- You can set a value for a variable.
- Variables can hold different types of data.
- The value of a variable can change over time.

Naming Variable

- The variable name is case-sensitive.
- A new variable should have a unique name.
- Variable names need to start with a letter, $, or _.
- Avoid reserved words.
- Choose clarity and meaning for humans to read later.

Using Variables

Once you have created a variable, you can use it in your code. Just type the name of the variable.

Using a Variable

- To declare (create) a variable, just type the word var and the variable name.

```
var numberOfKittens = 5;
console.log(numberOfKittens);
```

Let's Develop It

- In your JavaScript file, create a variable and give it a valid name and value. Then, display the value.
- You can run it in `mycode.js`.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Test Page</title>

  </head>
  <body>
   <p>This is my awesome JavaScript Code.</p>

        <!-- LINK FOR JS FILE -->
    <script src="mycode.js"></script>
  </body>
</html>
```

Data Types

string string of characters

```
var userName = 'Jane Lane';
```

number integer or floating point

```
var myAge = 30;
```

boolean true or false

```
var myAge = true;
```

null an explicitly empty value

```
var goodPickupLines = null;
```

Arithmetic Operators

- Once you have numbers, you can do math with them!

```
var numberOfKittens = 5;
var numberOfPuppies = 4;
var numberOfAnimals = numberOfKittens + numberOfPuppies;
```

Arithmetic Operators

FMT CONSULTANTS

Example	Name	Result
`-a`	Negation	Opposite of `a`
`a+b`	Addition	Sum of `a` and `b`
`a-b`	Subtraction	Difference of `a` and `b`.
`a*b`	Multiplication	Product of `a` and `b`.
`a/b`	Division	Quotient of `a` and `b`.
`a%b`	Modulus	Remainder of `a` divided by `b`.

Let’s Develop It

- Create two variables and try some arithmetic operators. Don't forget to display your results!
- You can run it in `mycode.js`.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Test Page</title>
       <!-- LINK FOR JS FILE -->
     <script src="mycode.js"></script>
  </head>
  <body>
    <p>This is my awesome JavaScript Code.</p>
  </body>
</html>
```

Strings

Variables can be strings (groups of characters). You put your string in single or double quotes.

```
var kittensName = 'Fluffy';
```

If you want to use a quote in your string, you'll need to escape it with a backslash.

```
console.log('I\'d like to use an apostrophe');
```

String Operators

FMT CONSULTANTS

You can put strings together with a +, the concatenation operator.

```
var kittensName = 'Fluffy ';
var fullName = kittensName + 'McDougle';
console.log(fullName); // Outputs 'Fluffy McDougle'
```

String Operators

FMT CONSULTANTS

You can also use `+=` to add things to the end of a string.

```
var kittensName = 'Admiral ';
kittensName += 'Snuggles';
console.log(kittensName); // Outputs 'Admiral Snuggles'
```

ConCATenate

Concatenate

- + operator. The + operator does string concatenation as soon as one of its operands is a string. Then the other operand is converted to string.
- Joining an array of strings. Collect the strings to be concatenated in an array and join it afterwards.

```
var kittensName = 'Admiral ';
kittensName += 'Snuggles';
console.log(kittensName); // Outputs 'Admiral Snuggles'
```

Let's Develop It

- Create two variables, a first name and a last name, and then put them together to make a full name. Don't forget to display your results!
- You can use concatenation to mix strings and numbers. When you do this, JavaScript will treat the number like a string.
- You can run it in `mycode.js`.

```
var numberOfFruit = 6;
var typeOfFruit = 'bananas';
var allTheFruit = 'I have ' + numberOfFruit + ' ' + typeOfFruit + '!';
console.log(allTheFruit);
```

More Practice

Create a program to calculate the tip at a restaurant. It should:

- Have variables for the bill pre-tip and the tip percentage.
- Calculate the total bill.
- Output a sentence like "Your total bill, with tip, is $14.75".
- **Bonus**: Use `toFixed()` to round the bill total to 2 decimals.

Thank You!

Denise Nguyen
dnguyen@fmtconsultants.com