

JavaScript

Conditions, Loops, Document Object Model

What do we know
about JavaScript?

How to embed a script in HTML

```
<script src="site.js"></script>
```

Data Types

Strings

`'Hello World'`

Numbers

`4, -4, 0.125, -0.125`

Boolean

`true` or `false`

Undefined

Null

Operators

String

+

Arithmetic

+ - / * ++ -- %

Assignment

=

Member

.

Variables

Declare / Set

```
var name = 'Dan';
```

Retrieve

```
name; // 'Dan'
```

Arrays

Declare / Set `var myArray = [42, 'hello', true];`

Retrieve `myArray[0]; // 42`

Functions

Define

```
function getArea(width, height) {  
    return width * height;  
}
```

Call

```
getArea(3, 5);
```


Objects

Define

```
var dog = {  
  name: 'Margo',  
  age: 6,  
  speak: function() {  
    console.log('WOOF')  
  }  
}
```

Access

```
dog.name; // Margo  
dog.speak(); // WOOF
```

Making Decisions

Conditional Statements

If the user's name is "Dan", say
"Hello Dan", otherwise say
"Hello there."

Conditional Statements

- If the user's name is "Dan",
- say "Hello Dan",
- otherwise
- say "Hello there."

Conditional Statements

- **If** the user's name **is** "Dan",
- **say** "Hello Dan",
- **otherwise**
- **say** "Hello there."

Conditional Statements

```
if (userName === "Dan") {  
    say("Hello Dan")  
} else {  
    say("Hello there")  
}
```

Conditional Statements

CONDITION

```
if (userName === "Dan") {  
  
} else {  
  
}
```

Comparison Operators

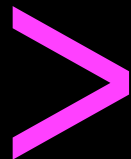
==

Equal To

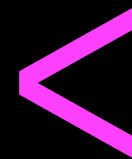
!=

Not Equal To

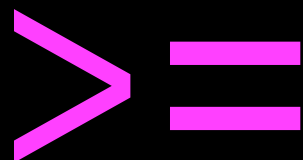
Comparison Operators

A large magenta greater-than symbol (>).

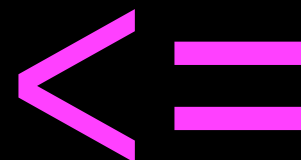
Greater Than

A large magenta less-than symbol (<).

Less Than

A large magenta greater-than or equal-to symbol (>=).

Greater Than
or Equal To

A large magenta less-than or equal-to symbol (<=).

Less Than
or equal to

Example Conditions

`1 + 1 === 2`

`"A" < "B"`

`((5 * 2) + 10) < ((5 * 3) + 5)`

`myVar1 !== myVar2`

Logical Operators

&&

Logical And

||

Logical Or

!

Not

Example Logic

```
if (true && true) {...}
```

```
if (true || false) {...}
```

```
if (!true) {...}
```

What is
true or false
anyway?



“Falsy” Values

Boolean false

false

The number zero

0

An empty string

''

A variable with no value

var x;

“Truthy” Values

Boolean true

true

Numbers other than zero

42

Strings

'Oh hai!'

Anything that's not “falsy”

Loops

- A loop checks a condition and if it is true, repeats until the condition is false.
- Helpful for iterating over arrays and node lists.
- Three types: for, while, do while.

For Loop

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

For Loop

CONDITION COUNTER

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

While Loop

```
while (true) {  
    console.log('Oh my');  
}
```

Do While Loop

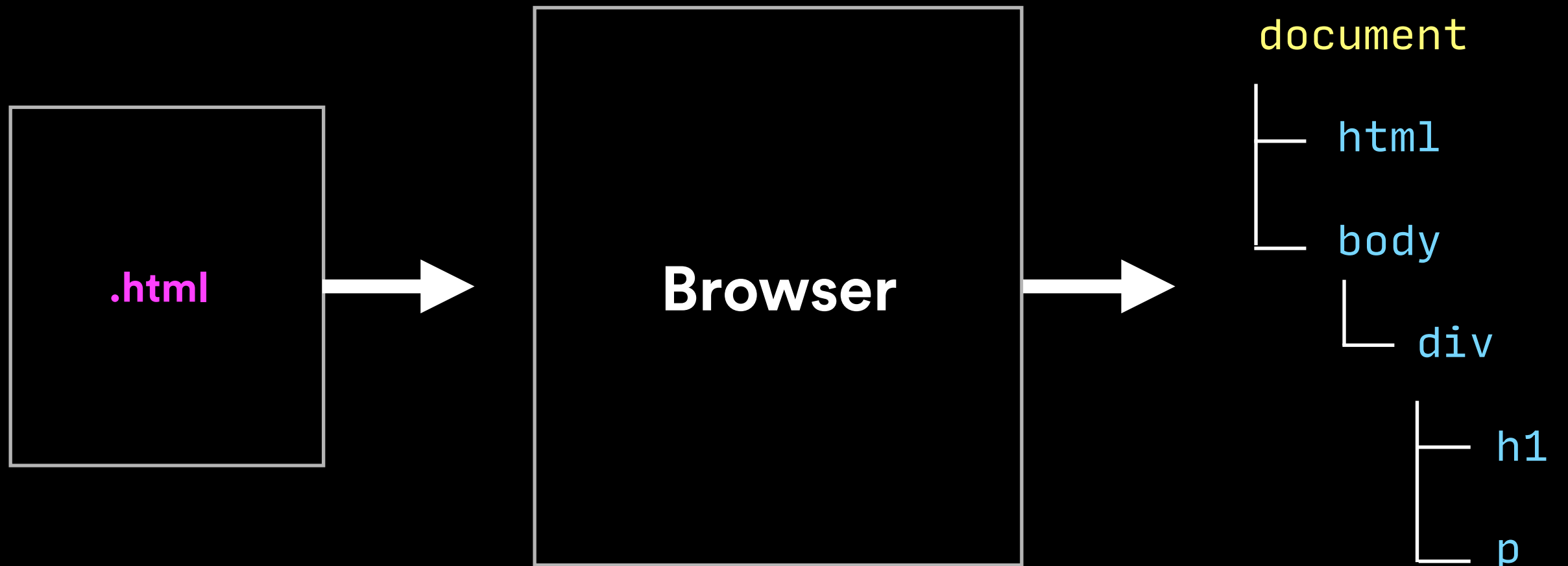
```
do {  
    console.log('This will happen at least once.');
```



```
} while (true);
```

Document Object Model (DOM)

The DOM is how the browser understands your HTML code in outline form.



The DOM is made of nodes

- **Document Node**

Represents the entire page and corresponds to the document object.

- **Element Nodes**

Nodes that represent the elements in your HTML.

- **Attribute Nodes**

Part of an element node that contains information about its attributes. i.e. its class or id.

- **Text Nodes**

A child of an element node that holds text.

Access Elements

Single element

```
document.querySelector('.myClass');
```

Group of elements
(Node List)

```
document.querySelectorAll('.myClass');
```

Update Elements

Style

```
myElem.style.background = 'yellow';
```

Class

```
myElem.classList.add('newClass');
```

Text

```
myElem.textContent = 'OH HAI!';
```

HTML

```
myElem.innerHTML = '<p>Hello!</p>';
```

Traverse the DOM

Get element's parent

```
myElem.parentNode;
```

Get element's siblings

```
myElem.previousSibling;  
myElem.nextSibling;
```

Get element's children

```
myElem.firstChild;  
myElem.lastChild;  
myElem.children;
```

Experiment and
have fun!

Bonus Project

Find an exhibition at a museum and create a multi-page website with two goals in mind:

- entice visitors to attend the exhibition
- give them all of the pertinent information they would need to visit