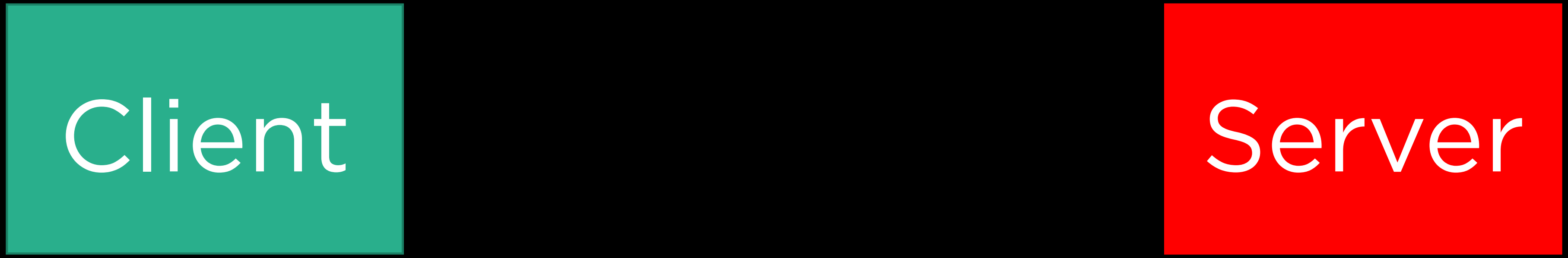
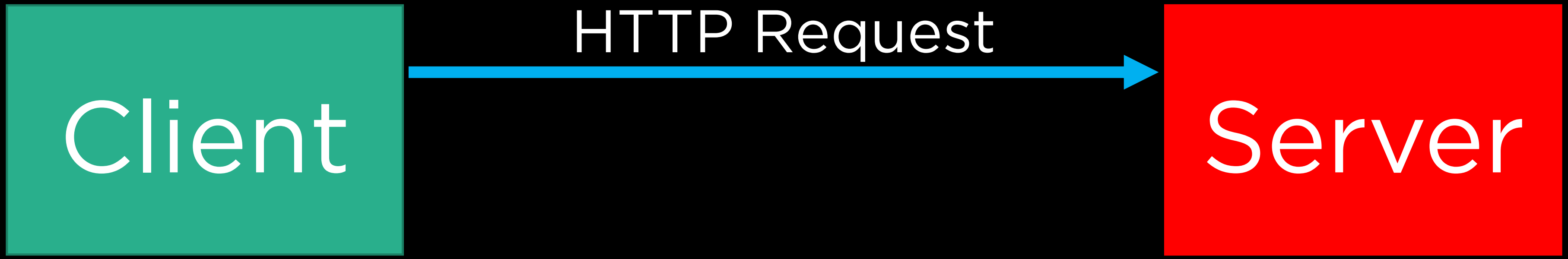
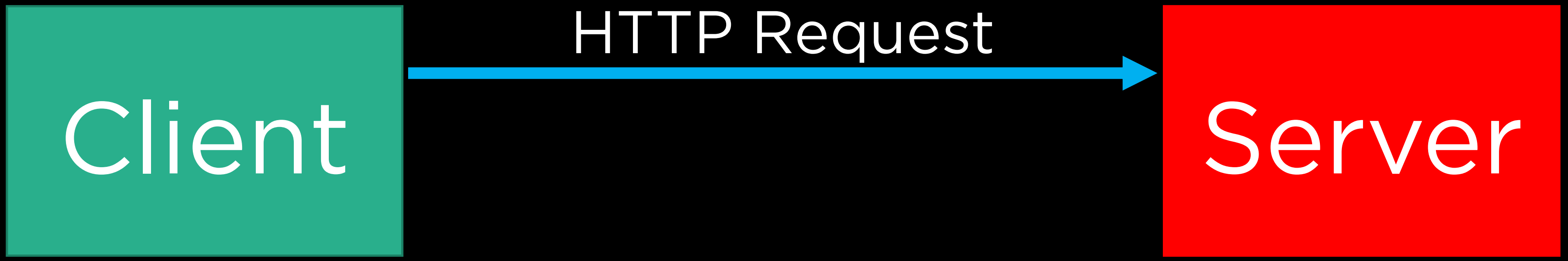
Software Engineering in the Arts and Humanities

JavaScript

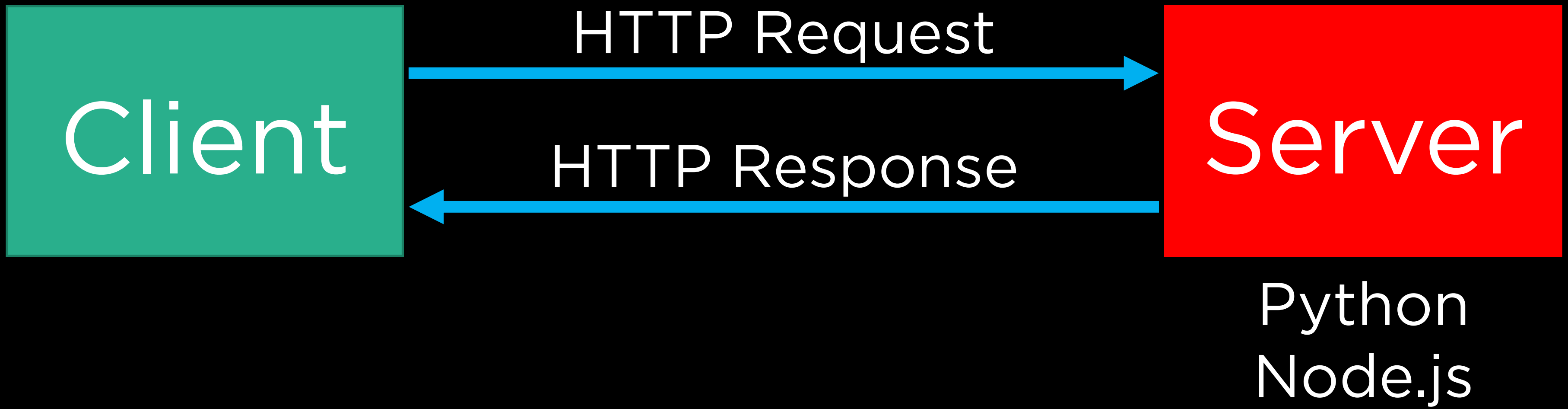
September 11, 2019


Client
Server


Client
HTTP Request
Server



Python
Node.js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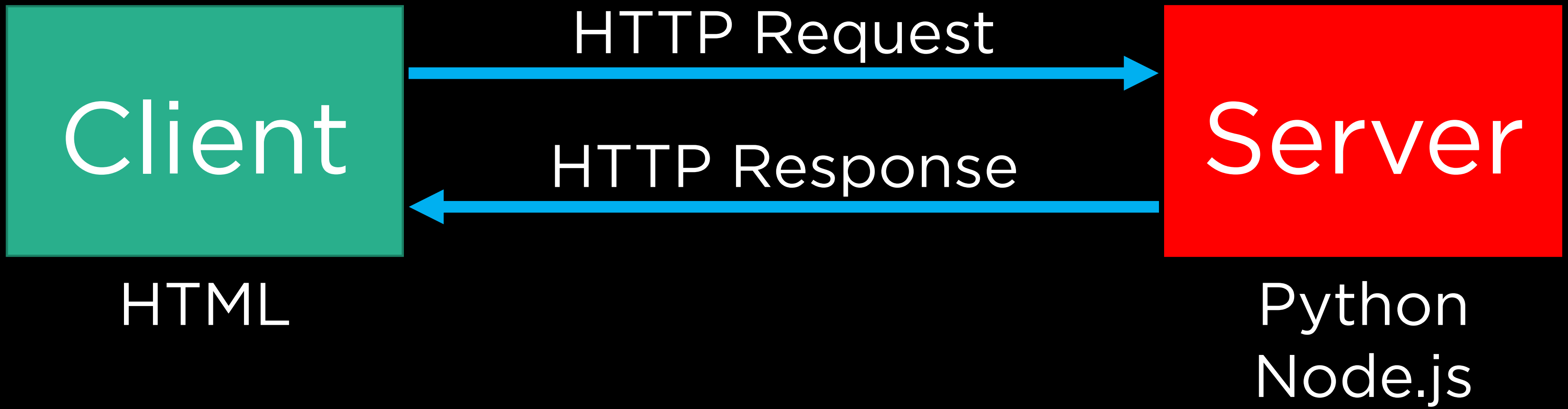
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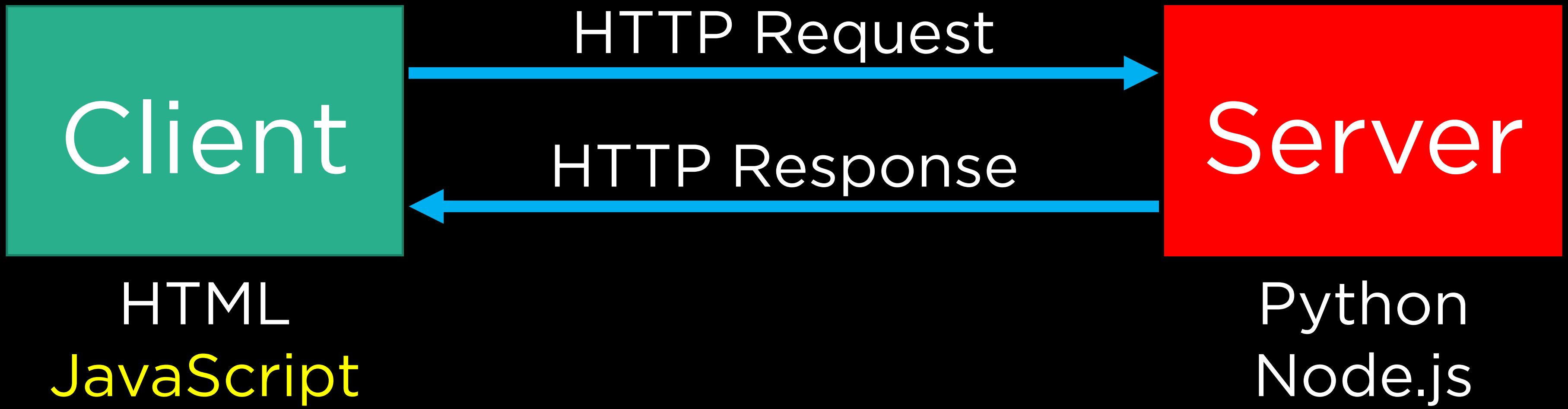
HTTP Request
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HTTP Response
HTML
JavaScript
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JavaScript

JavaScript ES6

```
<script>
   alert('Hello, world!');
</script>
```

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Functions

```
function hello() {
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DOM

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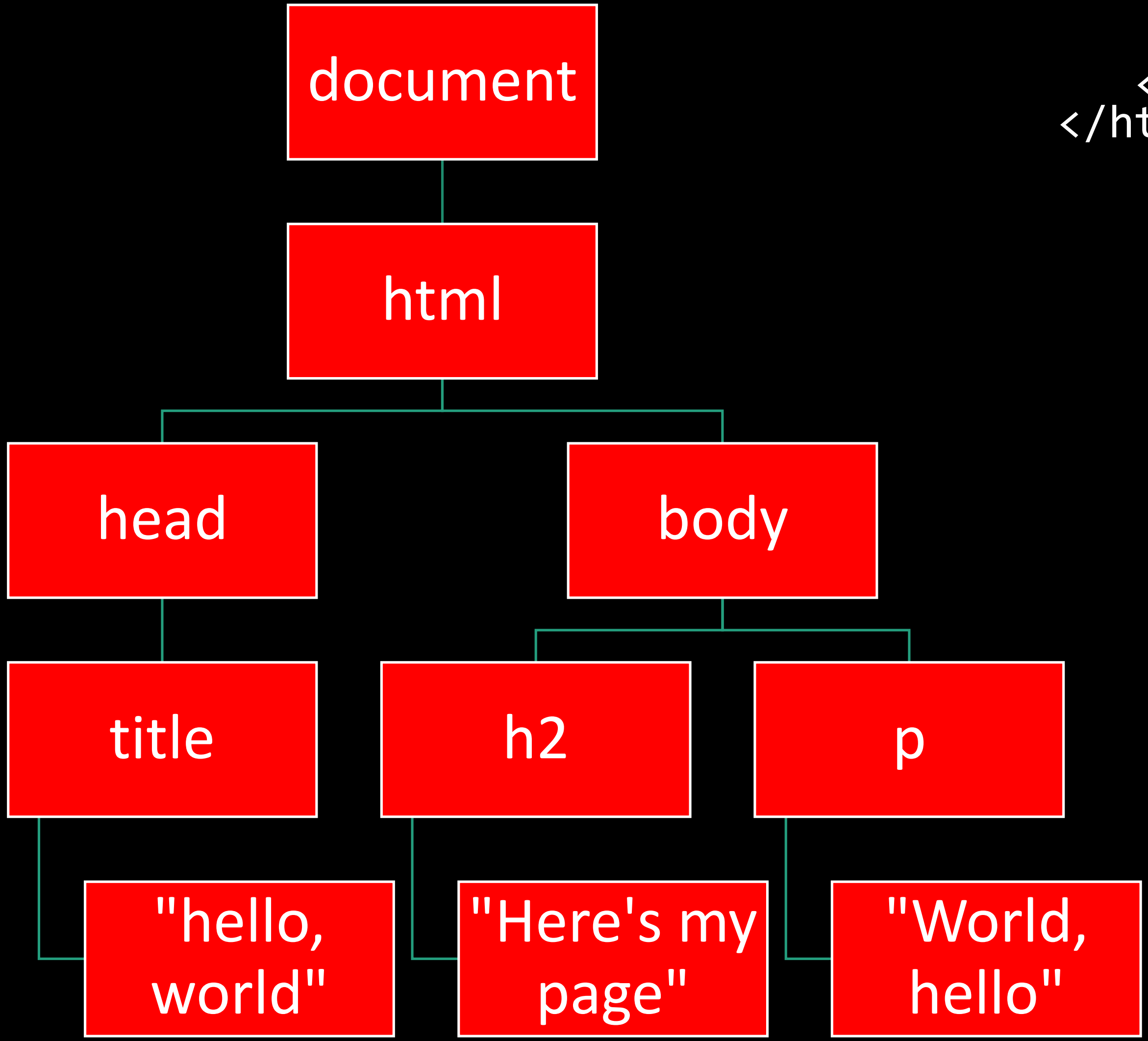

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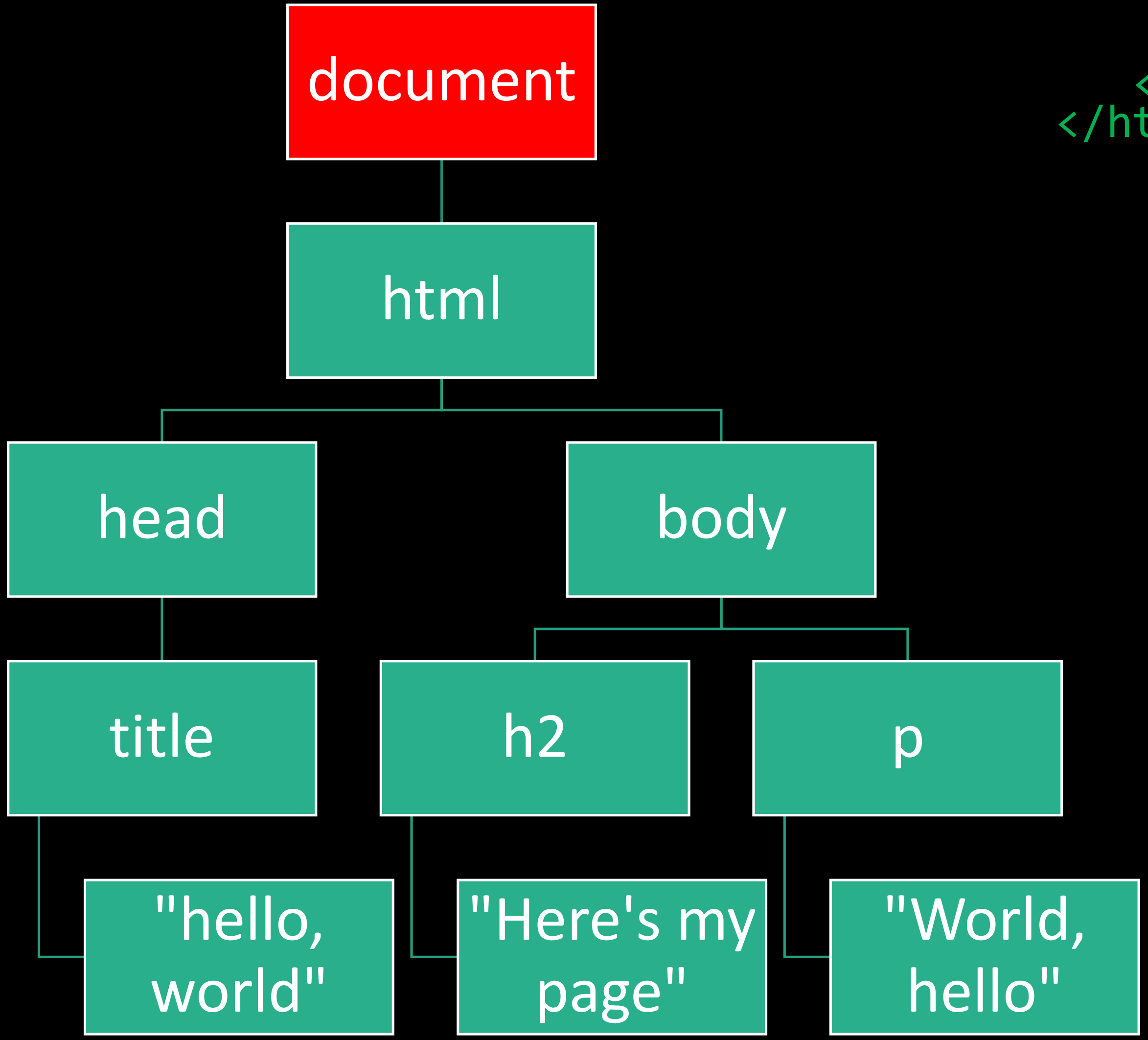

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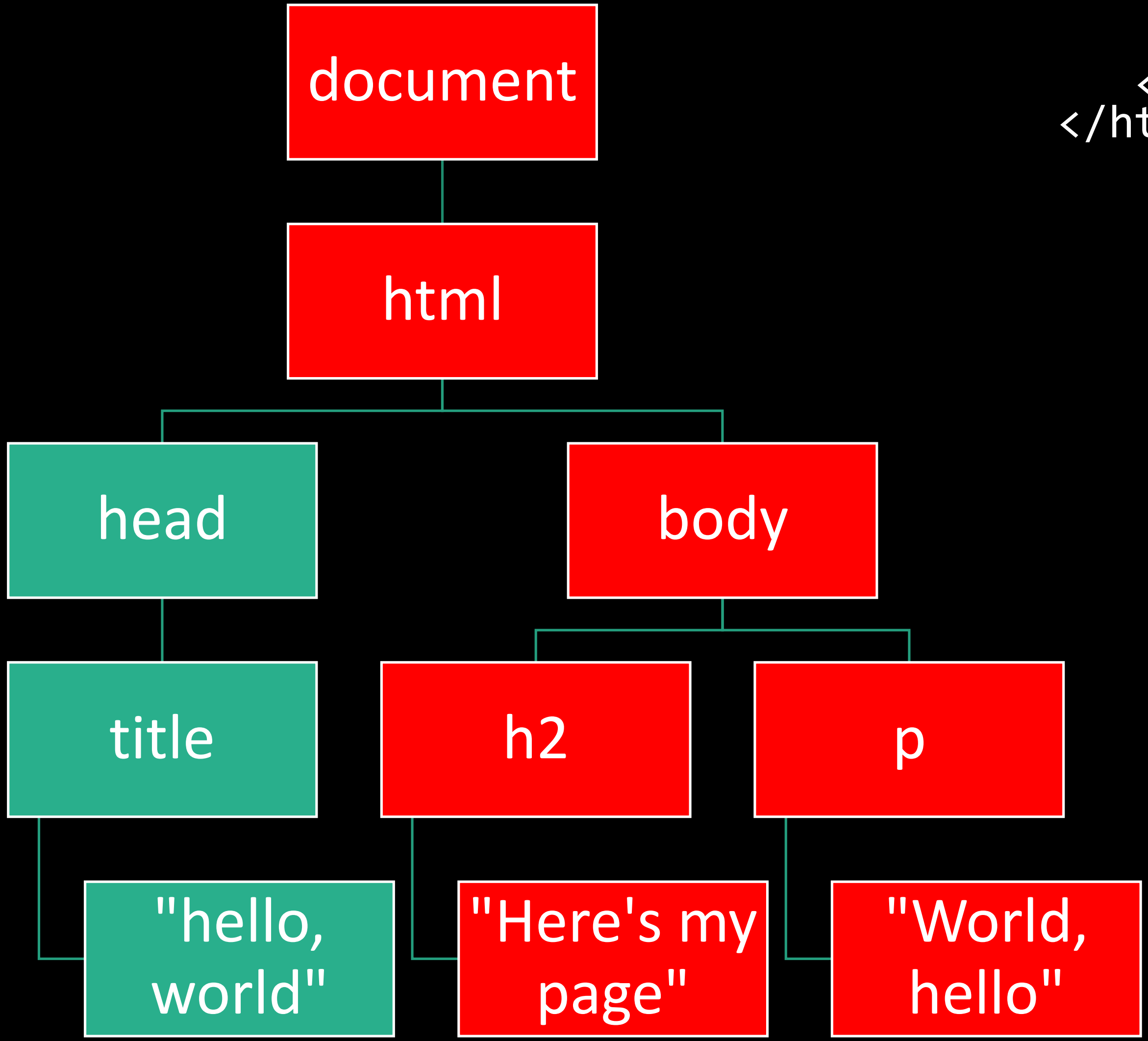

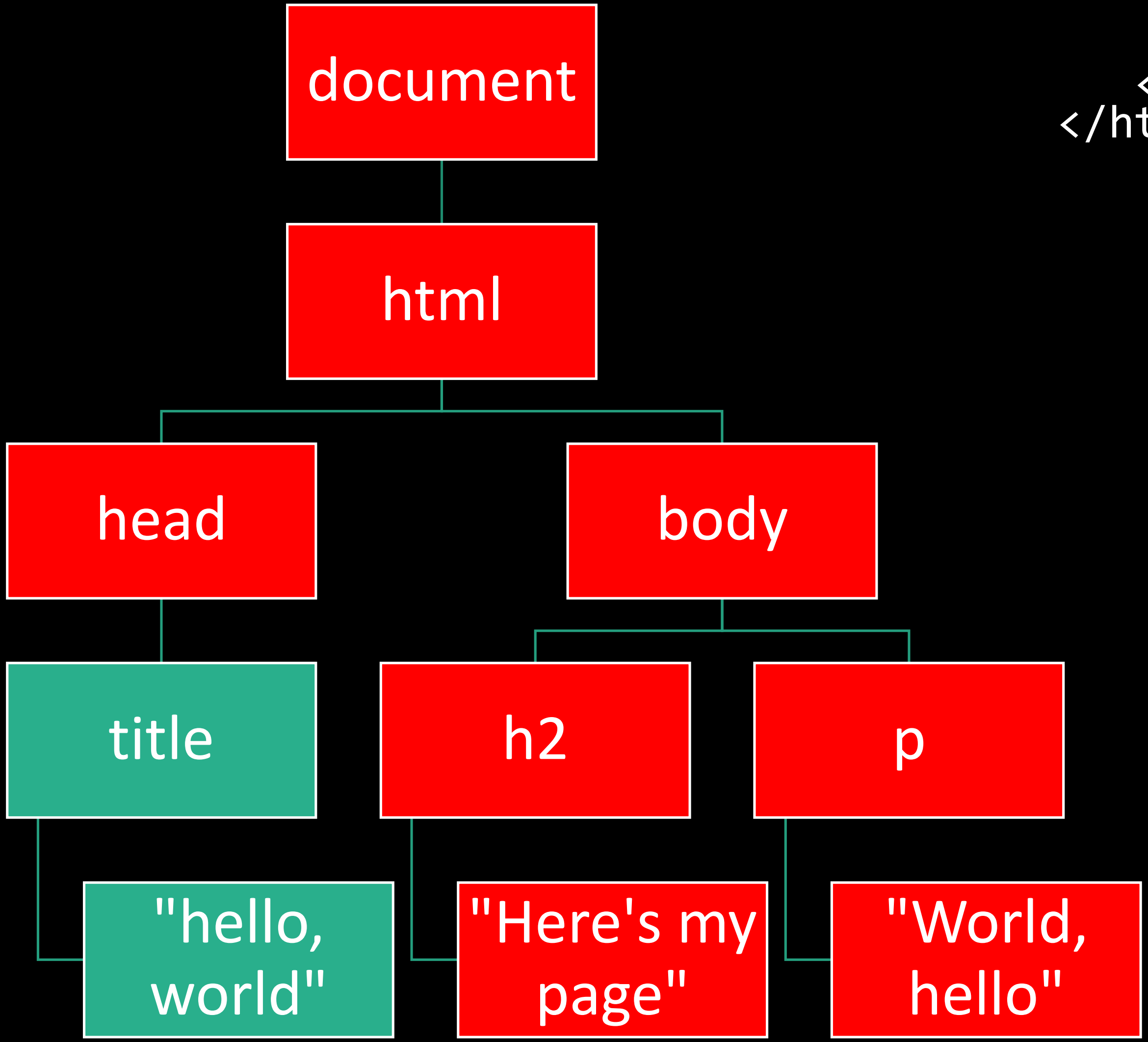

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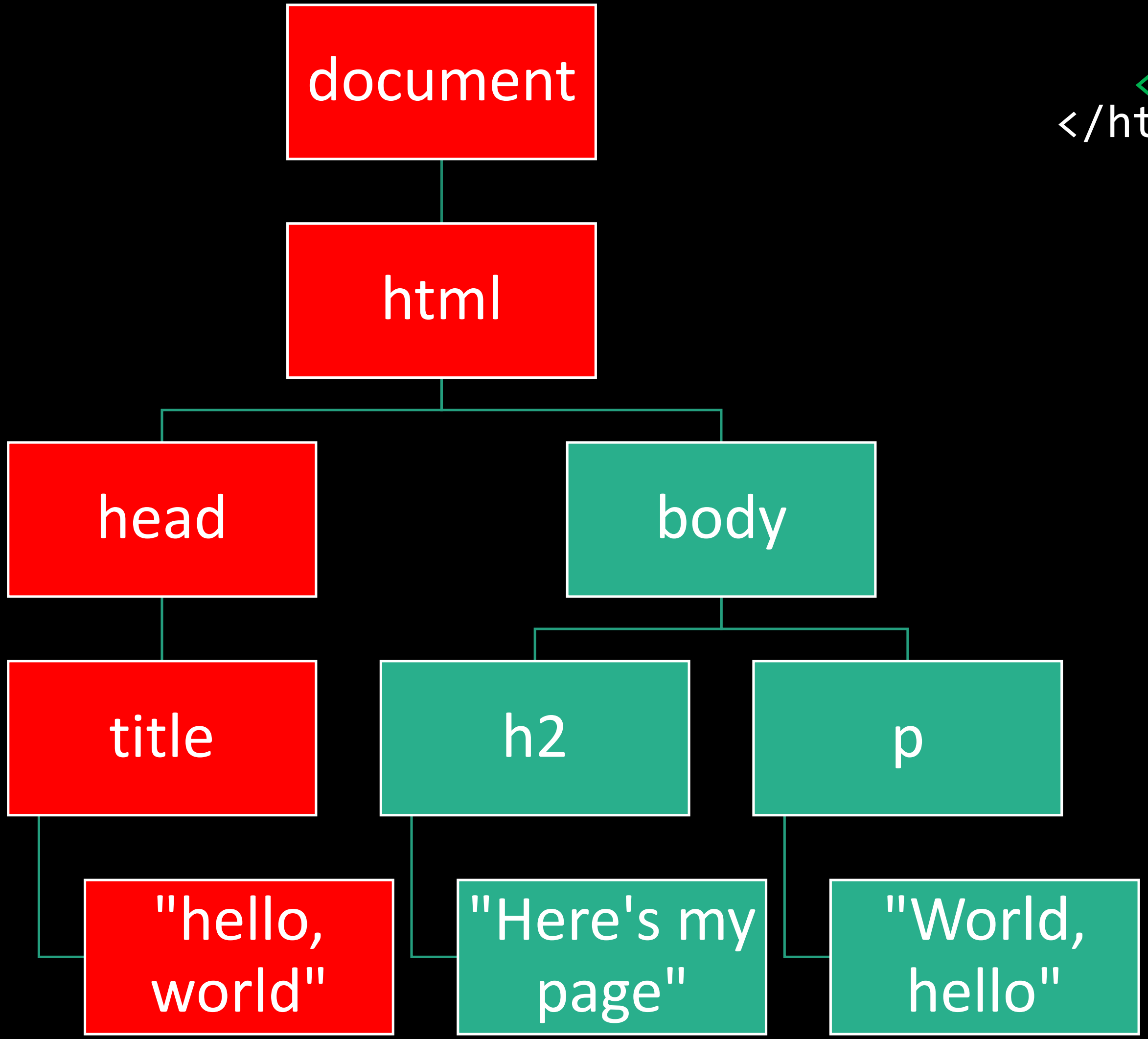

DOM

- The document object is the means by which we can interact with and manipulate web sites using JavaScript.

Query Selector

- `document.querySelector('tag')`
- `document.querySelector('#id')`
- `document.querySelector('.class')`

Conditionals

- `if`
- `else`
- `switch`
- `?:`

Loops

- `while`
- `do ... while`
- `for`
- `for ... in`
- `for ... of`

Template Literals

```
alert(`Counter is at ${counter}!`);
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Variables

- `const`
- `let`
- `var`

Arrow Functions

```
() => {
    alert('Hello, world!');
}
```

Arrow Functions

```
x => {
   alert(x);
}
```

Arrow Functions

```
x => x * 2
```

Asynchronicity

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Asynchronicity

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- Normally this isn't a problem, but it can be a problem if one of the functions we need to execute might take a long time (e.g., a network call).

Asynchronicity

```
const data = fulfillRequest();

console.log(data);
...
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Asynchronicity

```
fulfillRequest()
.then(data => data.parse())
.then(results => console.log(results))
...
```

Asynchronicity

```
fulfillRequest().then(data => data.parse()).then(results => console.log(results))

...
```

Asynchronicity

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.then(data => data.parse())
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If you see a structure like this somewhere, this is indicative of what's known as a JavaScript **promise**, a mechanism for ensuring orderly execution of asynchronous code.

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- This technique is commonly known as Ajax, and you may have done it before using `XMLHttpRequests`.
- In ES6, one of the main mechanisms we'll use to achieve this with a promise is `fetch()`.

APIs

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- Learning to parse API docs will be a crucial skill!

Google Books

Lab 1

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- https://github.com/harvardartmuseums/api-docs

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- Post public questions (i.e., those not containing large code snippets) on Piazza using the **lab1** tag!