

Interacting with the Web with JavaScript



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Introduction

Where JavaScript came from

What it is

How you can create JavaScript





Where Did JavaScript Come From?



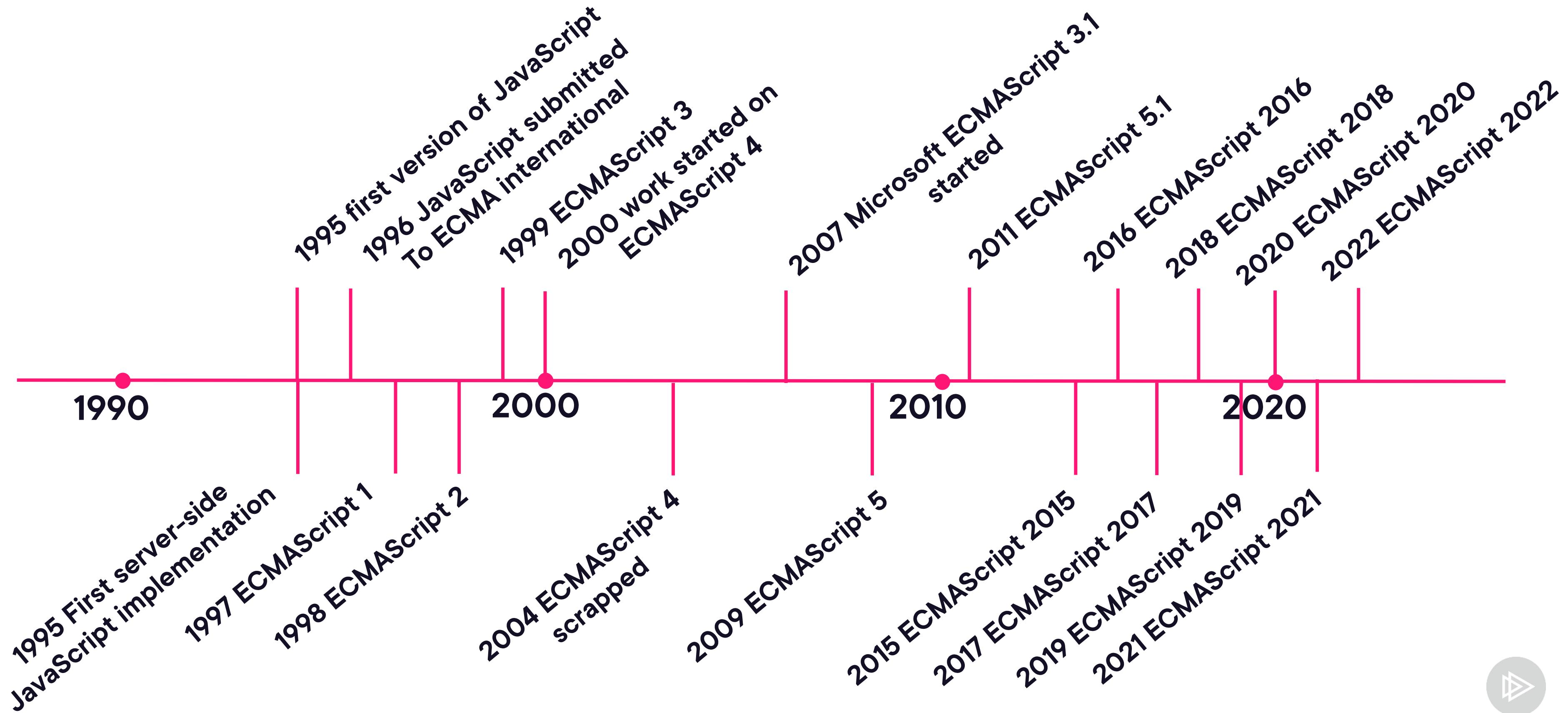
**JavaScript is a high-level,
interpreted programming
language**



JavaScript is not Java!



History of JavaScript



**JavaScript is a high-level,
interpreted programming
language**

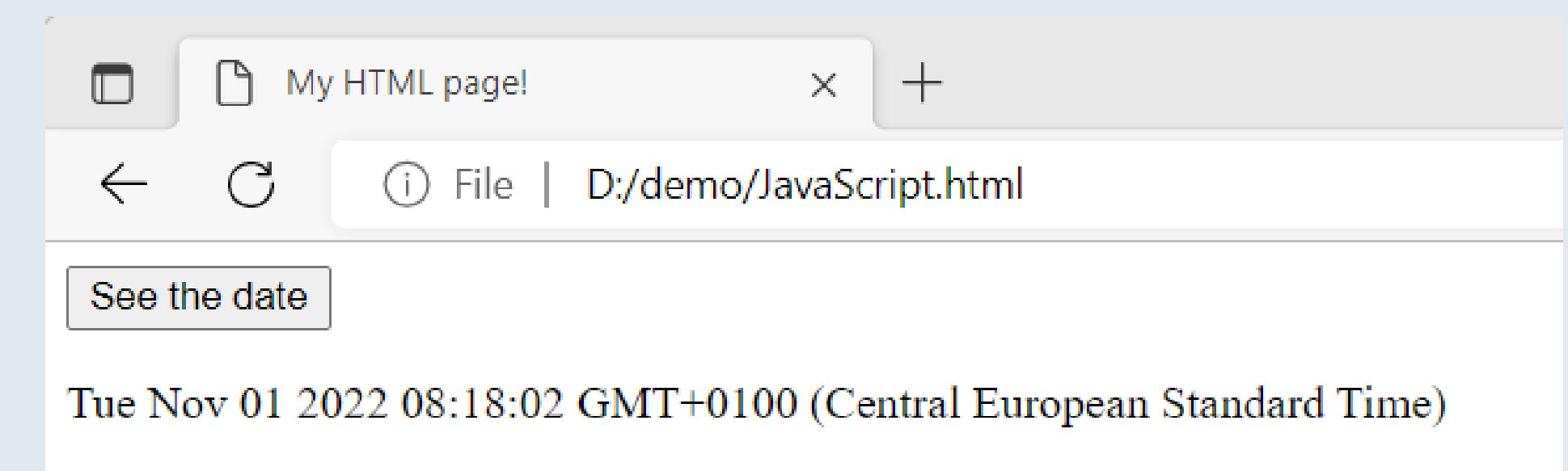


What Is JavaScript?



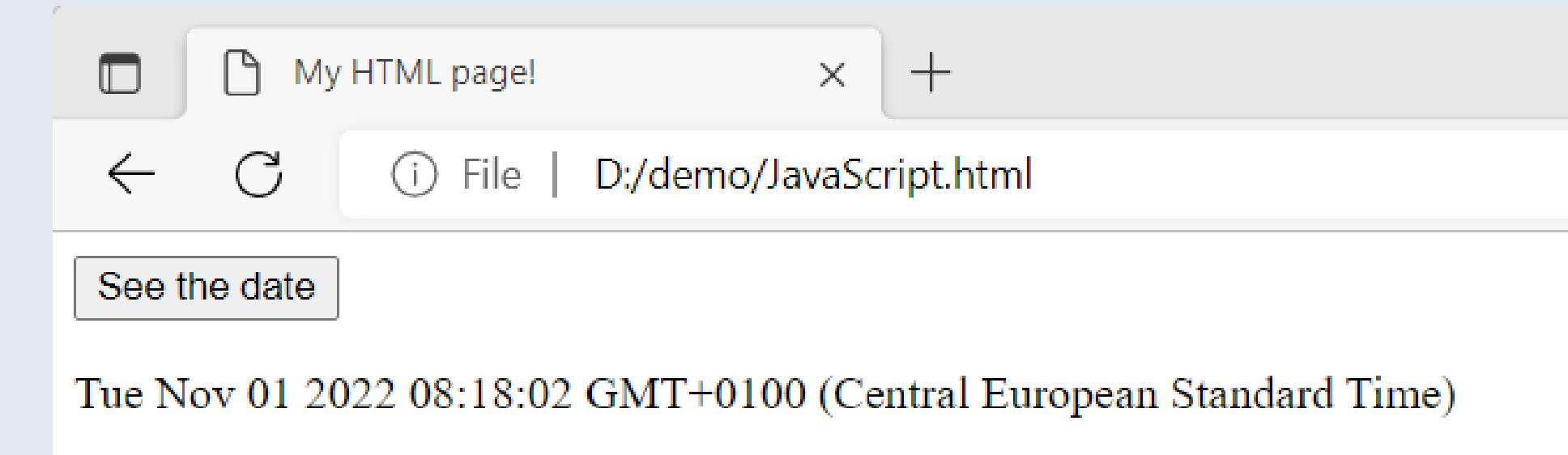
Dynamic Values with JavaScript

```
<!DOCTYPE html>
<html>
<head>
    <title>My HTML page!</title>
</head>
<body>
    <button type="button"
        onclick="document.getElementById('demo').innerHTML = Date()">
        See the date
    </button>
    <p id="demo"></p>
</body>
</html>
```



Dynamic Values with JavaScript

```
<!DOCTYPE html>
<html>
<head>
    <title>My HTML page!</title>
    <script>
        function ShowDate() {
            document.getElementById( 'demo' ).innerHTML = Date();
        }
    </script>
</head>
<body>
    <button type="button"
            onclick="ShowDate();">
        See the date
    </button>
    <p id="demo"></p>
</body>
</html>
```



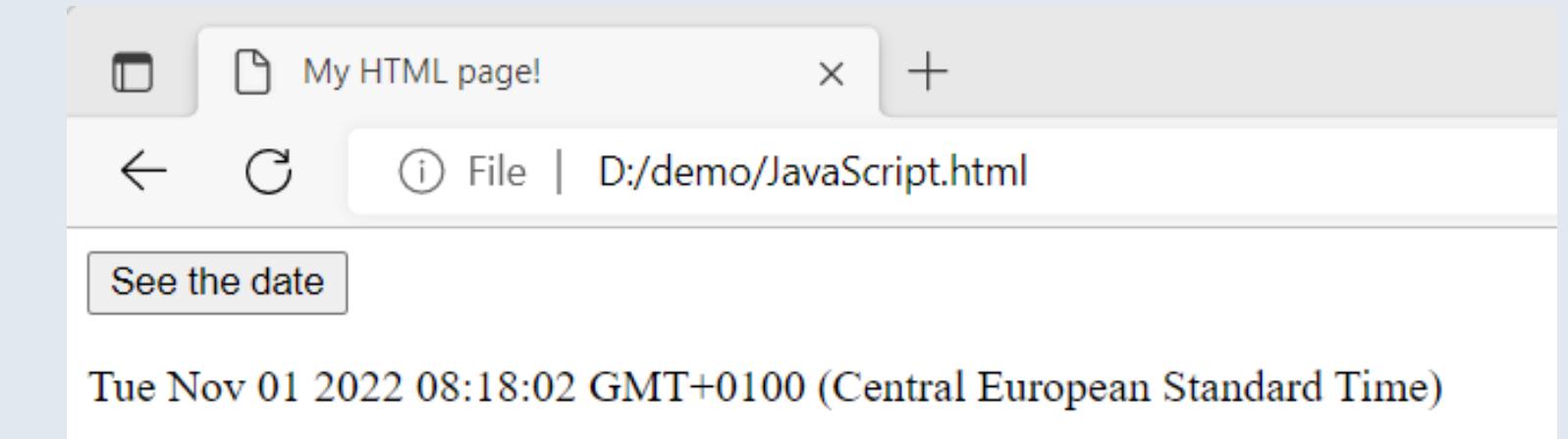
Dynamic Values with JavaScript

```
<!DOCTYPE html>
<html>
<head>
    <title>My HTML page!</title>
</head>
<body>
    <button type="button"
        onclick="ShowDate();">
        See the date
    </button>
    <p id="demo"></p>

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

ScriptFile.js

```
function ShowDate() {
    document.getElementById('demo')
        .innerHTML = Date();
}
```

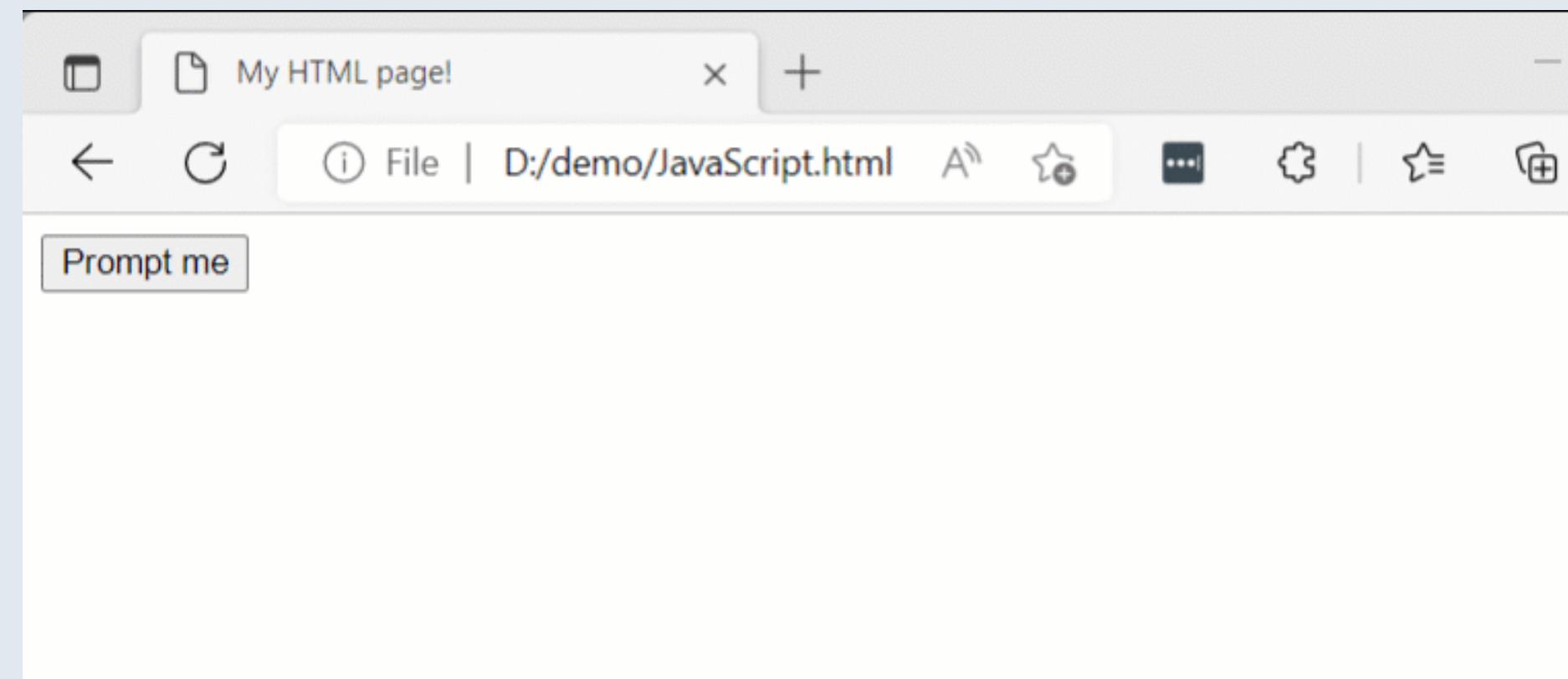


</body>
</html>



Interacting with the Browser

```
<script>
    function PromptUser() {
        var txt;
        var name = window.prompt("Enter your name");
        if (name != null || name != "") {
            txt = "Hello " + name;
        }
        document.getElementById("name").innerHTML = txt;
    }
</script>
```

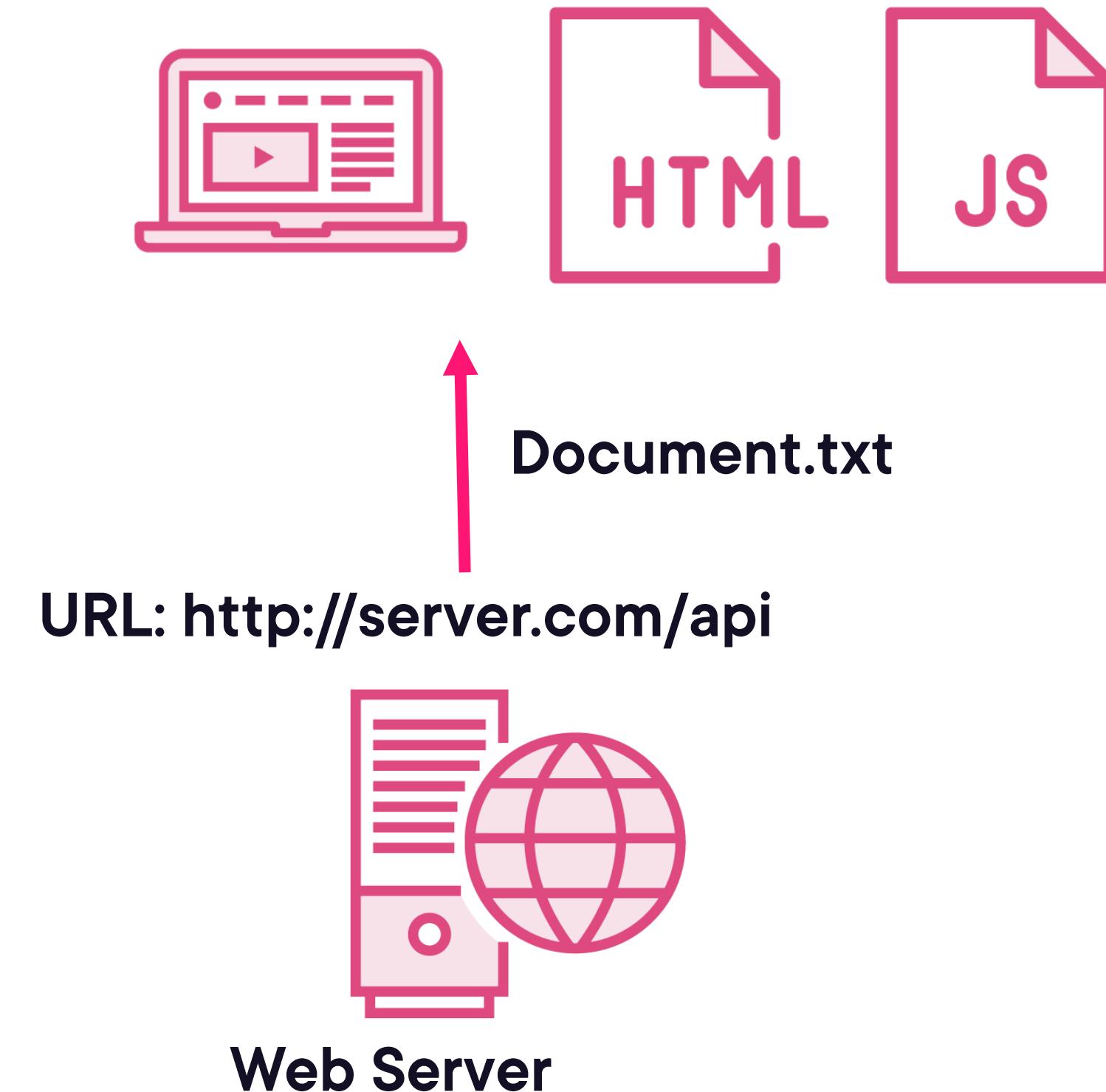


Making AJAX Calls

Asynchronous JavaScript And XML



Making AJAX Calls



W3Schools Tryit Editor

https://www.w3schools.com/xml/tryit.asp?filename=tryajax_first

Ad closed by Google

Run >

Result Size: 753 x 639

Get your own website

```
<!DOCTYPE html>
<html>
<body>

<div id="demo">
<h1>The XMLHttpRequest Object</h1>
<button type="button" onclick="loadDoc()">Change Content</button>
</div>

<script>
function loadDoc() {
  var xhttp = new XMLHttpRequest();
  xhttp.onreadystatechange = function() {
    if (this.readyState == 4 && this.status == 200) {
      document.getElementById("demo").innerHTML =
      this.responseText;
    }
  };
  xhttp.open("GET", "ajax_info.txt", true);
  xhttp.send();
}
</script>

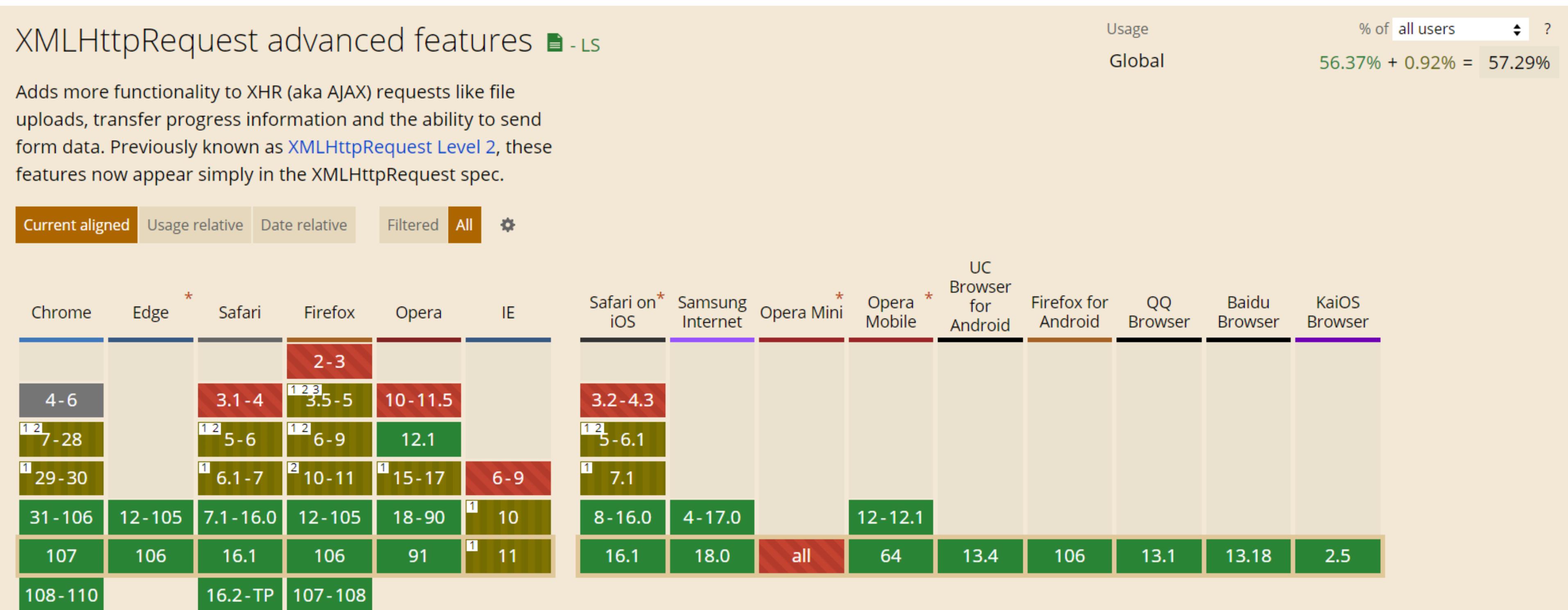
</body>
</html>
```

The XMLHttpRequest Object

Change Content

Browser Support of JavaScript

<https://caniuse.com/>

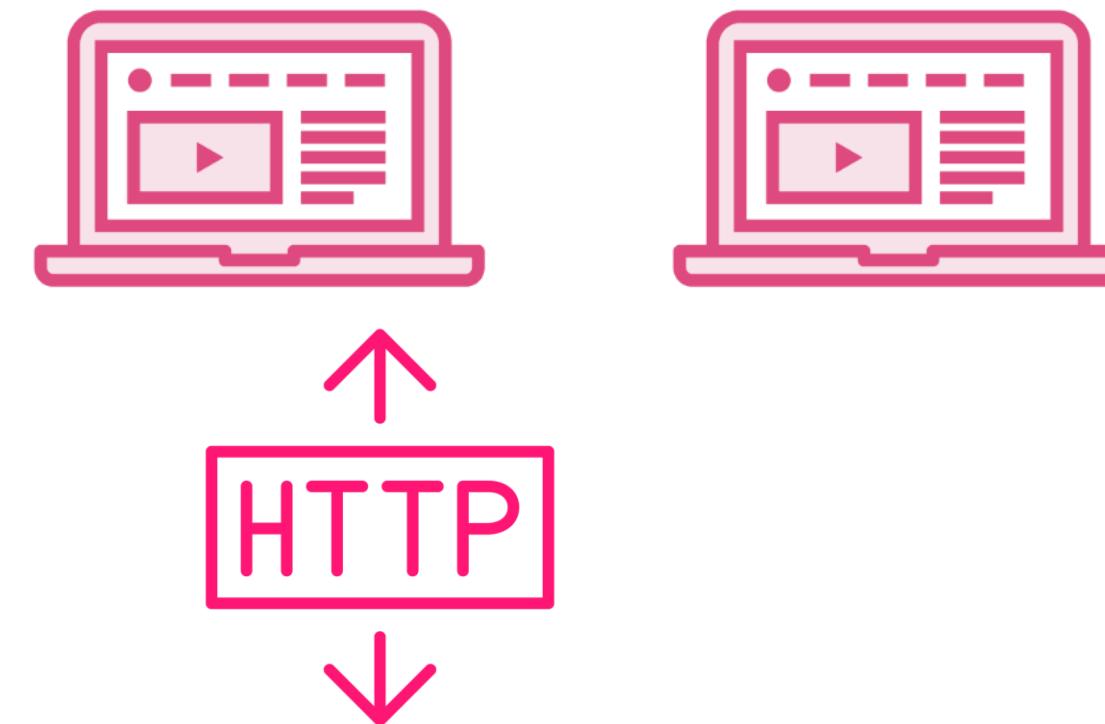


Working with JavaScript

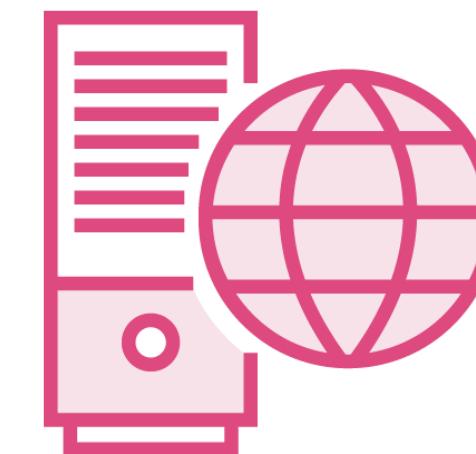


Ingredients for the Web

Clients
(Web browsers)



URL: <http://server.com/document1.html>
<http://server.com/stylesheets.css>
<http://server.com/javascript.js>



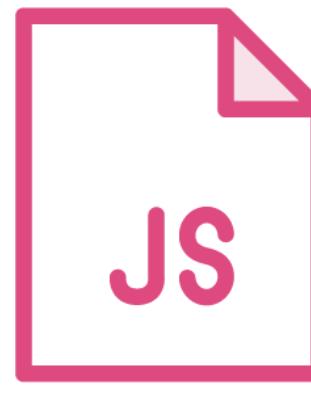
Web Server



Document



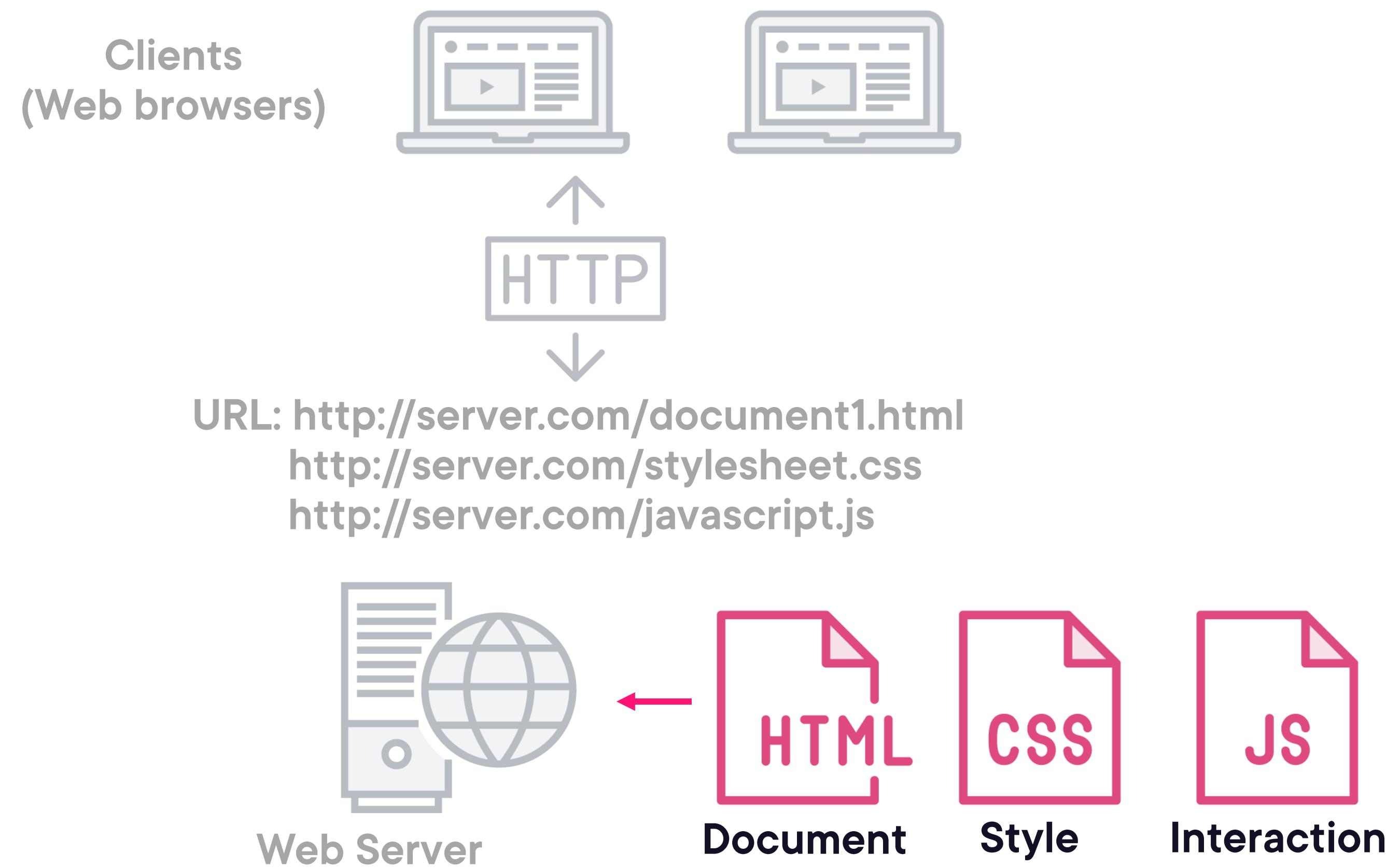
Style



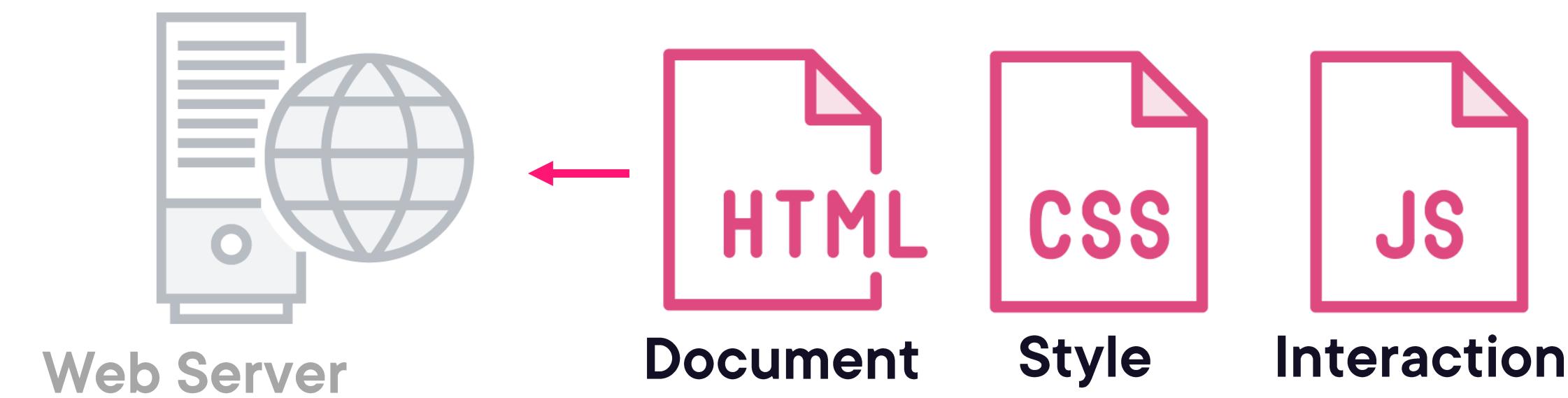
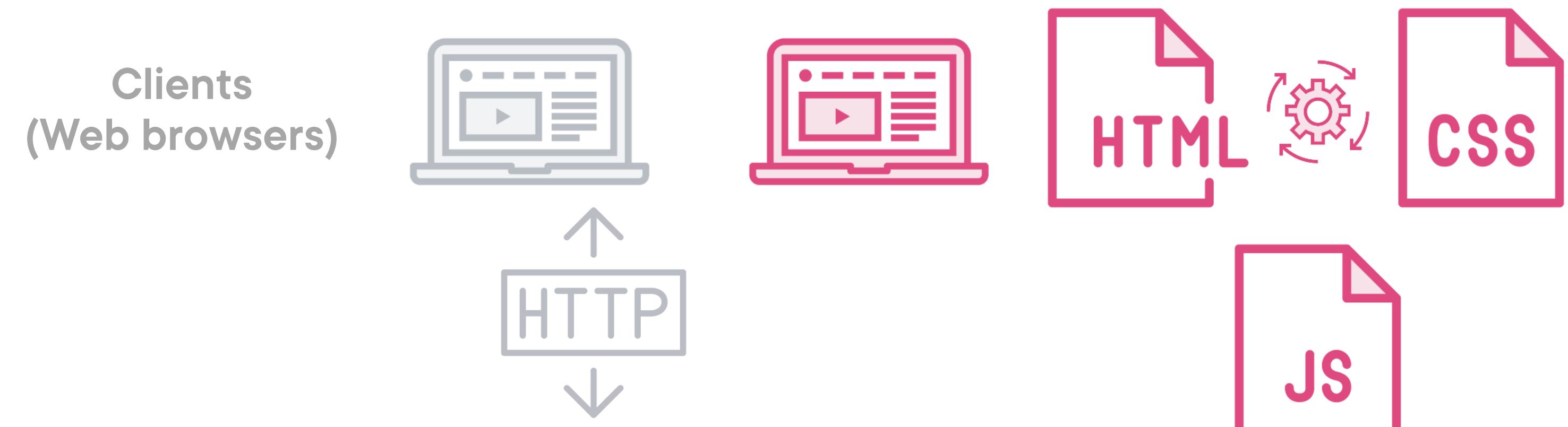
Interaction



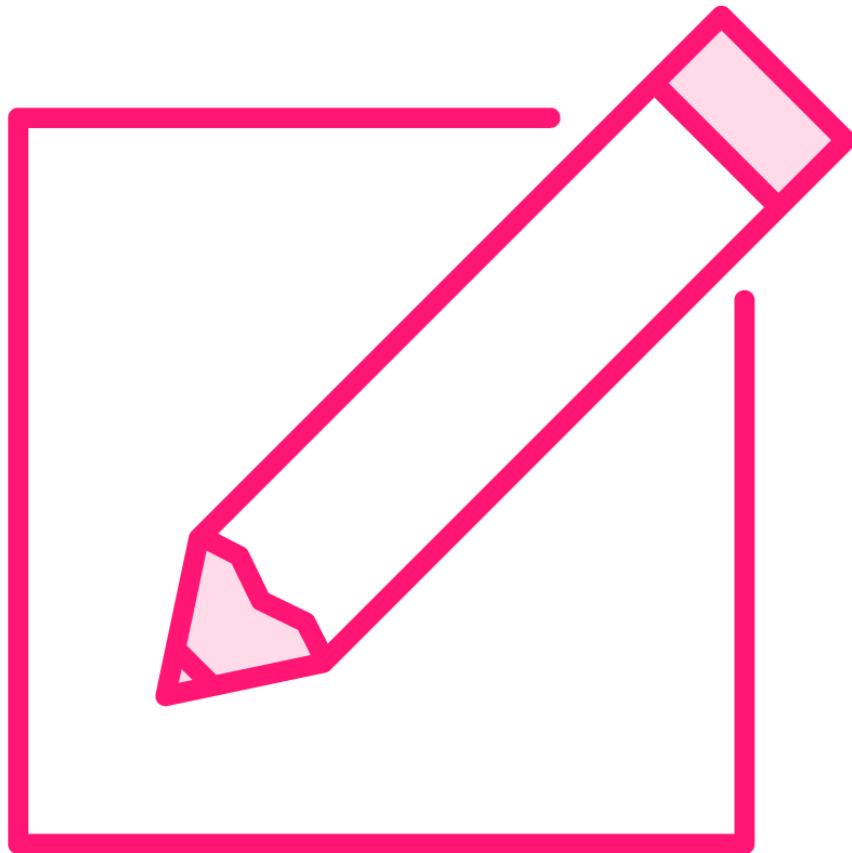
Ingredients for the Web



Ingredients for the Web

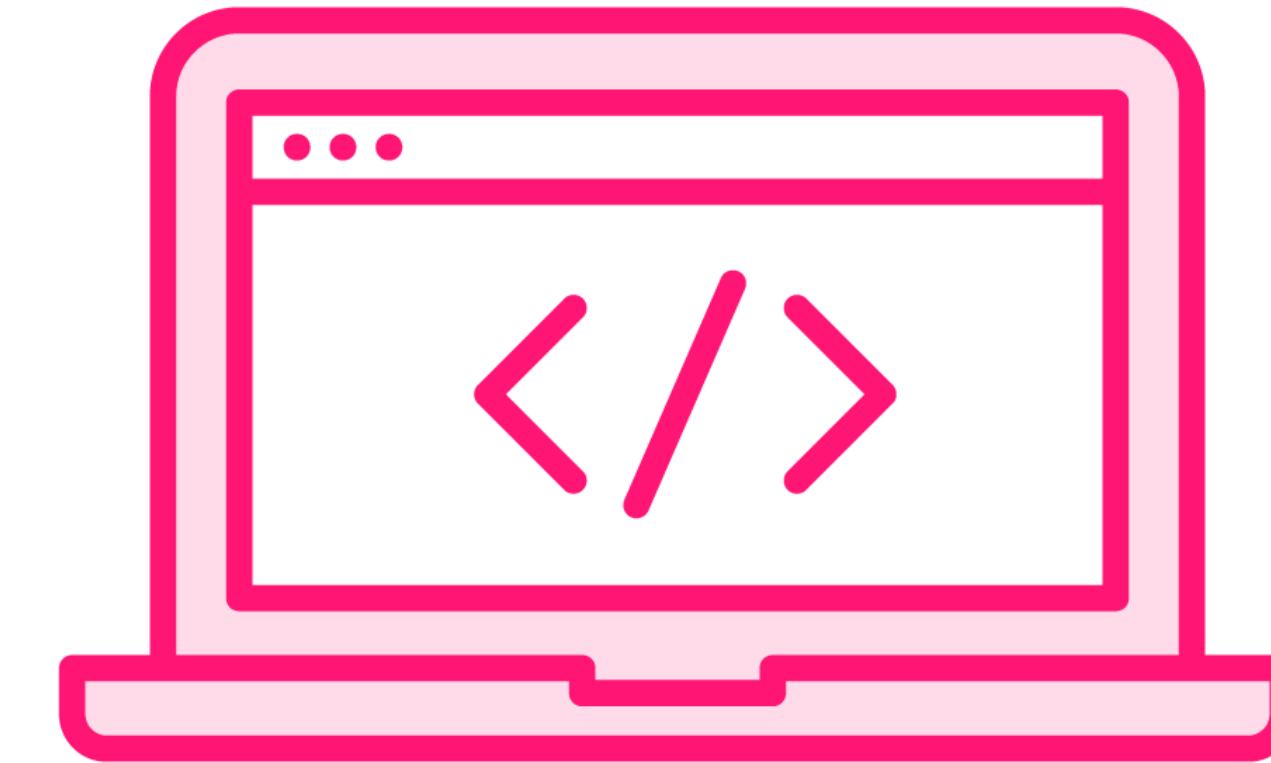


How to Write JavaScript from Scratch



Text editor

- Notepad
- Notepad++



Integrated Development Environment (IDE)

- Visual Studio
- Eclipse
- Atom



JavaScript Libraries and Frameworks

JQuery
Dojo Toolkit
Prototype.js
Bootstrap
Velocity.js
D3.js

Angular
Backbone.js
Ember.js
Knockout
Node.js
Vue.js
React
TypeScript



AngularJS Example

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js">
</script>

<body>
  <div ng-app="">
    <p>Name: <input type="text" ng-model="name"></p>
    <p>You wrote: {{ name }}</p>
  </div>
</body>

</html>
```

Name:

You wrote:





Things to Remember

JavaScript is the “glue” of the web

JavaScript is not derived from Java

It is a language that you can use to

- Interact with HTML
- Interact with the web browser
- Interact with other systems (like APIs)

The language is a standard (ECMAScript)

- Interpreted by web browsers

You can use JavaScript

- By writing it from scratch
- By using a library (like Angular)

