Why Study JavaScript?

JavaScript is one of the **3 languages** all web developers **must** learn:

1. **HTML** to define the content of web pages

2. **CSS** to specify the layout of web pages

3. **JavaScript** to program the behavior of web pages

- The Original JavaScript ES1 ES2 ES3 (1997-1999)
- The First Main Revision ES5 (2009)
- The Second Revision ES6 (2015)
- All Yearly Additions (2016, 2017, 2018, 2019, 2020)

JavaScript Can Change HTML Content

One of many JavaScript HTML methods is `getElementById()`.

The example below "finds" an HTML element (with id="demo"), and changes the element content (innerHTML) to "Hello JavaScript":

Example

```
document.getElementById("demo").innerHTML = "Hello JavaScript";
```

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can change HTML content.</p>

<button type="button" onclick='document.getElementById("demo").innerHTML = "Hello
JavaScript!"'>Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can change HTML content.

Click Me!

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can change HTML content.</p>

<button type="button" onclick='document.getElementById("demo").innerHTML = "Hello
JavaScript!"'>Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

Hello JavaScript!

Click Me!

JavaScript Can Change HTML Attribute Values

In this example JavaScript changes the value of the `src` (source) attribute of an `<img>` tag:

The Light Bulb

Turn on the light   Turn off the light

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

<h2>What Can JavaScript Do?</h2>

<p>JavaScript can change HTML attribute values.</p>

<p>In this case JavaScript changes the value of the src (source) attribute of an image.
</p>

<button onclick="document.getElementById('myImage').src='pic_bulbon.gif'">Turn on the
light</button>

<img id="myImage" src="pic_bulboff.gif" style="width:100px">

<button onclick="document.getElementById('myImage').src='pic_bulboff.gif'">Turn off the
light</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can change HTML attribute values.

In this case JavaScript changes the value of the src (source) attribute of an image.

[Turn on the light]   [Turn off the light]

JavaScript Can Change HTML Styles (CSS)

Changing the style of an HTML element, is a variant of changing an HTML attribute:

Example

```
document.getElementById("demo").style.fontSize = "35px";
```

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can change the style of an HTML element.</p>

<button type="button"
onclick="document.getElementById('demo').style.fontSize='35px'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can change the style of an HTML element.

Click Me!

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can change the style of an HTML element.</p>

<button type="button"
onclick="document.getElementById('demo').style.fontSize='35px'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can change the style of an HTML element.

Click Me!

JavaScript Can Hide HTML Elements

Hiding HTML elements can be done by changing the `display` style:

Example

```
document.getElementById("demo").style.display = "none";
```

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can hide HTML elements.</p>

<button type="button"
onclick="document.getElementById('demo').style.display='none'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can hide HTML elements.

Click Me!

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

<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can hide HTML elements.</p>

<button type="button"
onclick="document.getElementById('demo').style.display='none'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

Click Me!

JavaScript Can Show HTML Elements

Showing hidden HTML elements can also be done by changing the `display` style:

Example

```
document.getElementById("demo").style.display = "block";
```

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

<h2>What Can JavaScript Do?</h2>

<p>JavaScript can show hidden HTML elements.</p>

<p id="demo" style="display:none">Hello JavaScript!</p>

<button type="button"
onclick="document.getElementById('demo').style.display='block'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can show hidden HTML elements.

Click Me!

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

<h2>What Can JavaScript Do?</h2>

<p>JavaScript can show hidden HTML elements.</p>

<p id="demo" style="display:none">Hello JavaScript!</p>

<button type="button"
onclick="document.getElementById('demo').style.display='block'">Click Me!</button>

</body>
</html>
```

What Can JavaScript Do?

JavaScript can show hidden HTML elements.

Hello JavaScript!

Click Me!