# **JavaScript**

JavaScript is one of the most used languages in the world. It is mostly used for web development and mobile development. JavaScript is usually used on the front end of an application to be executed within a browser. Still, there are implementations of back end JavaScript used to develop entire web applications, like NodeJS.

While HTML and CSS are mainly in charge of how a web page looks, JavaScript is usually used to control any functionality that the front end web page requires. Without JavaScript, a web page would be mostly static and would not have much functionality or interactive elements.

### **Example**

Within the page source code, JavaScript code is loaded with the <script> tag, as follows:

```
Code: html
```

```
<script type="text/javascript">
..JavaScript code..
</script>
```

A web page can also load remote JavaScript code with src and the script's link, as follows:

```
Code: html
```

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

An example of basic use of JavaScript within a web page is the following:

```
Code: javascript
```

```
document.getElementById("button1").innerHTML = "Changed Text!";
```

The above example changes the content of the button1 HTML element. From here on, there are many more advanced uses of JavaScript on a web page. The following shows an example of what the above JavaScript code would do when linked to a button click:

#### Original Text

As with HTML, there are many sites available online to experiment with JavaScript. One example is JSFiddle which can be used to test JavaScript, CSS, and HTML and save code snippets. JavaScript is an advanced language, and its syntax is not as simple as HTML or CSS.

## **Usage**

Most common web applications heavily rely on JavaScript to drive all needed functionality on the web page, like updating the web page view in real-time, dynamically updating content in real-time, accepting and processing user input, and many other potential functionalities.

JavaScript is also used to automate complex processes and perform HTTP requests to interact with the back end components and send and retrieve data, through technologies like Ajax.

In addition to automation, JavaScript is also often used alongside CSS, as previously mentioned, to drive advanced animations that would not be possible with CSS alone. Whenever we visit an interactive and dynamic web page that uses many advanced and visually appealing animations, we are seeing the result of active JavaScript code running on our browser.

All modern web browsers are equipped with JavaScript engines that can execute JavaScript code on the client-side without relying on the back end webserver to update the page. This makes using JavaScript a very fast way to achieve a large number of processes quickly.

## **Frameworks**

As web applications become more advanced, it may be inefficient to use pure JavaScript to develop an entire web application from scratch. This is why a host of JavaScript frameworks have been introduced to improve the experience of web application development.

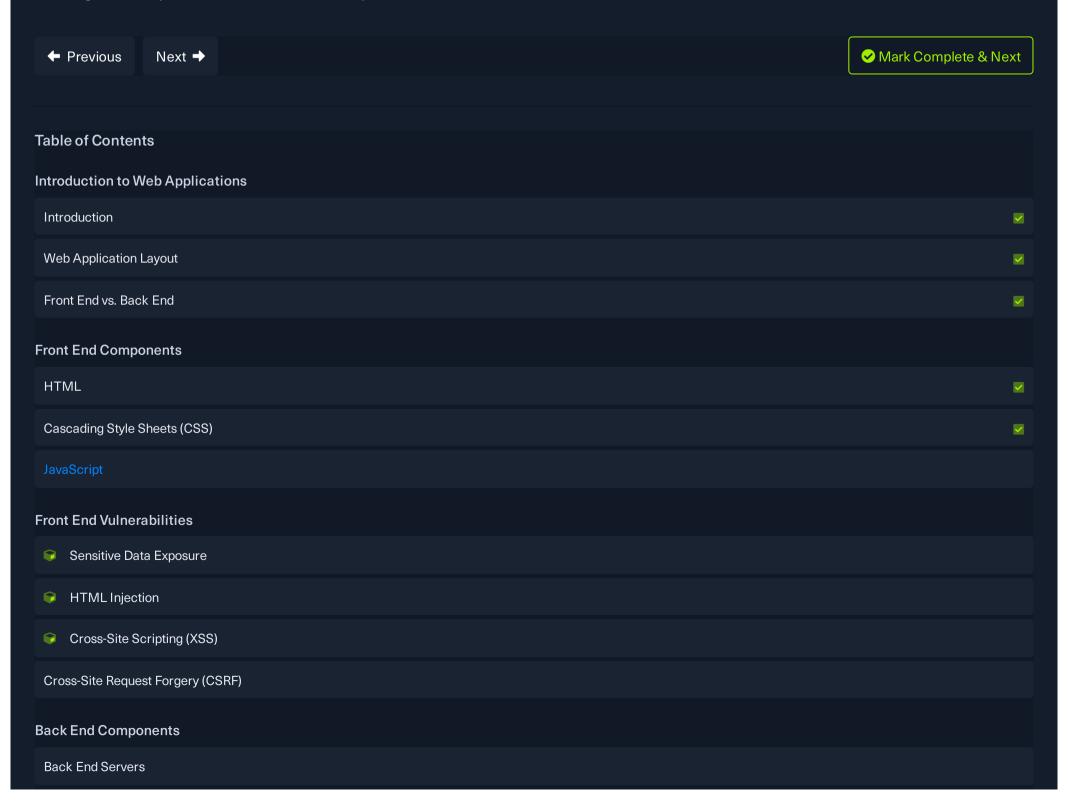
These platforms introduce libraries that make it very simple to re-create advanced functionalities, like user login and user registration, and they introduce new technologies based on existing ones, like the use of dynamically changing HTML code, instead of using static HTML code.

These platforms either use JavaScript as their programming language or use an implementation of JavaScript that compiles its code into JavaScript code.

Some of the most common front end JavaScript frameworks are:

- Angular
- React
- Vue
- jQuery

A listing and comparison of common JavaScript frameworks can be found here.



Web Servers	
Databases	
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Next Steps	
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