An Introduction to JavaScript

PGDCA Sem-II

Arshdeep Singh, University Computer Centre

JavaScript was initially created to "make web pages alive".

The programs in this language are called *scripts*. They can be written right in a web page's HTML and run automatically as the page loads.

Scripts are provided and executed as plain text. They don't need special preparation or compilation to run.

You don't have to get or download JavaScript. JavaScript is already running in your browser on your computer, on your tablet, and on your smart-phone. Free to use for everyone.

What can in-browser JavaScript do?

Modern JavaScript is a "safe" programming language. It does not provide low-level access to memory or CPU, because it was initially created for browsers which do not require it.

JavaScript's capabilities greatly depend on the environment it's running in. For instance, Node.js supports functions that allow JavaScript to read/write arbitrary files, perform network requests, etc.

In-browser JavaScript can do everything related to webpage manipulation, interaction with the user, and the webserver.

For instance, in-browser JavaScript is able to:

- Add new HTML to the page, change the existing content, modify styles.
- React to user actions, run on mouse clicks, pointer movements, key presses.
- Send requests over the network to remote servers, download and upload files (so-called AJAX and COMET technologies).
- Get and set cookies, ask questions to the visitor, show messages.
- Remember the data on the client-side ("local storage").

There are at least *three* great things about JavaScript:

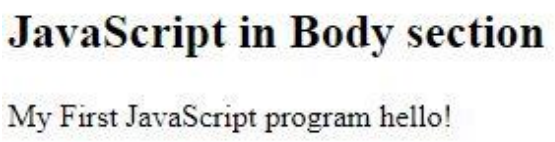
- Full integration with HTML/CSS.
- Simple things are done simply.
- Support by all major browsers and enabled by default.

In HTML, JavaScript code is inserted between <script> and </script> tags.

Example:

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

<h2>JavaScript in Body section</h2>

<p id="demo"></p>

<script>
document.getElementById("demo").innerHTML = "My First JavaScript program hello!";
</script>

</body>
</html>
```

Output in browser:



JavaScript Can Change HTML Content

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

This example uses the method to "find" an HTML element (with id="demo") and changes the element content (innerHTML) to "Hello JavaScript":

Example:

```
<!DOCTYPE html>
<html>
<body>
<h2>JavaScript demo??</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>
```

Output in browser:

After Clicking on Click Me! Button output will be like below:

JavaScript Can Show HTML Elements

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

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

Example:

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

<h2>What Can JavaScript Do?</h2>
<p>JavaScript showing 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>
```

Output:

After Clicking on Click Me! Button output will be like below:

What Can JavaScript Do?

JavaScript can show hidden HTML elements.

Hello JavaScript!

Click Me!