



CSCI 165

Introduction to the Internet and the World Wide Web

Lecture 5: Javascript



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Overview

- Focus: Course Introduction
- Architecture: WWW
- Core Ideas:
 1. What is Javascript
 2. Hello World

CSCI165 So Far

- HTML: Markup language for describing the content of a webpage
 - *Markdown*
- CSS: Styling for HTML, make it look pretty
- **Javascript: Dynamic webpages, interactive design, run programmes**

Javascript

- Unlike HTML/CSS, Javascript is a **programming language**
- Javascript is a scripting language, meaning it uses **interpreters** instead of compilers
 - Standard interpreters: your browser
- For Websites, Javascript operates inside a webpage
 - You open an HTML -> .js files are downloaded -> .js files are executed

Javascript

- What can Javascript do?
 - Respond to an event: like mouse clicks, button clicks, keyboard press, etc.
 - Modify web content: animation, send/receive user requests, add/remove/change HTML stuff, etc.

Javascript

- How do we include a javascript programme into your webpage?
- In the `<head>` section of your `.html` file, add
`<script src="script.js"></script>`
- Then, create `script.js` next to your `.html` file, write the following inside:
`alert('Hello world!');`
- Alert is a browser function that creates a pop up alert box
- When the `.html` file is opened by the browser, your browser will download and execute `script.js` on your computer

Javascript

- Is javascript code safe?
- Your browser needs to keep malicious code at bay
- You need to instruct your browser NOT to run Javascript files on malicious code on the internet
- Read **Cryptojacking**: <https://hackerbits.com/programming/cryptojacking-javascript/>

Javascript functions

```
alert("Hello World");
```

- This is called a statement, a statement is a complete code segment that can be executed. A statement always ends with **semicolon**.

```
alert("Hello World");
```

- The above red bit is called **the argument**. In this case our argument is a **String** value, where **String** is a type of data structure. In Javascript, there are many data structures like integer, float numbers, etc. String values are always enclosed in **double quotes** or **single quotes**.

Javascript functions

```
alert("Hello World");
```

- **alert** is the name of the function

```
function_name(arguments...);
```

- This is called a function call. A function call starts with the function_name, then immediately parenthesis, enclosed within your arguments

Call Function Upon Action

- A lot of elements have actions in their attributes that you can use to execute javascript code.
- For example:

```
<p onclick="alert('Hello World! ');">Click me</p>
```
- Attention: notice I am **mixing double and single quotes** here. `'Hello World! '` is enclosed in single quotes, the whole function call is enclosed in double quotes `"alert('Hello World! ');"`
- What happens when you click?

Call Function Upon Action

- For example:

```
<p onclick="alert('Hello World!');">Click me</p>
```

- Your browser's HTML parser and Javascript interpreter work kinda separately

- HTML parser

recognises that `"alert('Hello World!');"` is a string
sends `alert('Hello World!');` to the Javascript interpreter

- Javascript interpreter

recognises that `'Hello World!'` is a string value
sends `'Hello World!'` as an argument to function call `alert`
`alert` prints `Hello World!` on screen

- Careful when mixing quotes!

Exercise

- Use `alert` in a Javascript file, add it to your `index.html`
- Use `alert` in your HTML file directly through `onclick`