

JavaScript On a Web Page

Agenda

- A crash course on Web programming

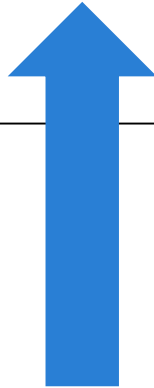
JavaScript On a Web Page

- JavaScript statements can be coded on a web page using three different techniques:
 - Place JavaScript code as part of an HTML element
 - Place JavaScript code between `<script>` tags
 - Place JavaScript code in a separate file
 - and add a reference in the `src` attribute of a `<script>` tag

JavaScript code as part of an HTML element

- Html elements have event-attributes that take JavaScript code as their value

```
<button onclick="alert('Boom!');">  
DO NOT PRESS  
</button>
```



Eventhandler written in JavaScript

**Works but bad
style
- Mixes
presentation with
logic!**

JavaScript: Using The script Element

- The script element
 - A container tag
 - May be placed in either the head or the body section of a web page
 - **It is recommended to place it as the last statement before the closing body tag**

```
<body>
. . .
<script>
  alert("Welcome to Our Site");
</script>
</body>
```

JavaScript: in a separate file

- The script element
 - A container tag
 - May be placed in either the head or the body section of a web page

```
<script src="url" ></script>
```

- The loading and processing of the page pauses while the browser fetches and executes the file
- The content between the `<script src="url">` and the `</script>` should be blank
- It is better to call for the script as late as possible, so that the loading of images and other components will not be delayed
- This can improve the perceived and actual page loading time
- So it is usually best to make all `<script src="url"></script>` the last features before the `</body>`

JavaScript On a Web Page

- Works with the objects associated with a Web page by use of the environment variables like
 - window
 - document
- Executes in a sandbox
 - browsers severely limit the things a JavaScript program may do
 - it can't modify anything not related to the web page it is embedded in

Common Uses of JavaScript

- Display a message box
- Select list navigation
- Edit and validate form information
- Create a new window with a specified size and screen position
- Image Rollovers
- Status Messages
- Display Current Date
- Calculations
- Animations
- **Insert, modify or delete DOM elements**

The open Method

- Takes a URL as an argument, and will open a new window showing that URL

```
var perry = window.open("http://www.pbfcomics.com/257/");
```

- Because open is a method on the window object, the window. part can be left off

```
var perry = open("http://www.pbfcomics.com/257/");
```

- An opened window can be closed with its close method

```
perry.close();
```

The open Method

- The value returned by `window.open` is a new window
 - This is the global object for the script running in that window, and contains all the standard things like the `Object` constructor and the `Math` object
 - But if you try to look at them, most browsers will (probably) not let you!
- The exception to this rule is pages opened on the same domain
 - When a script running on a page from `myDomain.net` opens another page on that same domain, it can do everything it wants to with this page

Prompts

- `prompt()` method
 - Displays a message and accepts a value from the user
`myName = prompt("prompt message");`
 - The value typed by the user is stored in the variable `myName`

JavaScript & Accessibility

- Don't expect JavaScript to always function for every visitor
 - Some may have JavaScript disabled
 - Some may be physically unable to click a mouse
- Provide a way for your site to be used if JavaScript is not functioning
 - Plain text links
 - E-mail contact info

How do I unit test JavaScript Code?

- **Mocha** (with **Chai** as assertion library) and **Jasmine** are two popular testing frameworks for JavaScript
- **Karma** is a test runner that can run both Jasmine and Mocha-style tests
- **Selenium** is a web driver that is often used for integration test
 - Using a browser to actually render and load the page, simulating user interactions, and checking the result

References and Links

- **Eloquent JavaScript** by Marijn Haverbeke
<http://eloquentjavascript.net>

