Ajax

Asynchronous JavaScript and XML

By Rolland Brunec

Introduction

- Netscape's JavaScript and their problems

- Why Asynchronous JavaScript ...?

- What is XMLHttpRequest?

- Use cases for Ajax

  - DOM manipulation/CSS/JavaScript
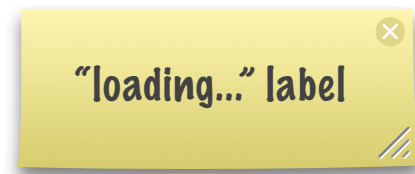
  - {XML/JSON/HTML} as exchange format

XMLHttpRequest is an API for transferring XML and other text data between Client and server

Introduced by Microsoft as a non standard feature for Outlook

DOM=Document Object Model
JSON=JavaScript Object Notation

Advantages

- Bandwidth usage

- Interactive Web Applications

- Rich User Interfaces

Disadvantages

- Browser integration

- "back button" problem

- Network latency

- Search engine optimisation + web analytics

- JS and DOM implementation is not always correct

- Accessibility

"loading..." label

Frameworks

- Why use frameworks?
  - Faster development time
  - Readable source code
  - Disadvantages of JS resolved

Frameworks

- Prototype / script.aculo.us

- GWT (Google Web Toolkit)

- Dojo Toolkit

- YUI (Yahoo! UI Library)

- Sajax

- .Net Ajax

Script.aculo.us

- Extends Prototype by adding

  - Visual effects (Appear/Fade/Shake/etc)

  - Controls (drag&drop, autocompletion, in-place editor)

  - Utilities (Builder, Unit testing)

Appear/Fade

```
<div id="clickme" onclick="
Effect.Appear('hidden_element', { duration: 3.0 });
Effect.Shake('hidden_element');
Effect.Fade('hidden_element', { duration: 3.0 })">
click me pleeeeeease!</div>
<div id="hidden_element" style="display:none">magic!</div>
```

Drag & Drop

```html
<div id="dragable_element">I'm dragable</div>
<script type="text/javascript">
  new Draggable('dragable_element');
</script>
```

In-place Editor

```
<div id="clickme">Click me, click me!</div>
<script type="text/javascript">
 new Ajax.InPlaceEditor('clickme', '/xxx.html');
</script>
```

DOM manipulation

The code:
var element = Builder.node('p', { className:'error' }, 'An error has occurred');

Creates:
<p class="error">An error has occured</p>

Links

- http://www.prototypejs.org/

- http://github.com/madrobby/scriptaculous/wikis

- http://script.aculo.us/

- http://en.wikipedia.org/wiki/AJAX

- http://www.cs.montana.edu/paxton/classes/germany/index.html