

More AJAX

SET09103 Advanced Web Technologies

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Javascript development tools

In order to develop and debug complicated Javascript (including remote scripts, AJAX, etc), one should use tools:

- ▶ Firefox: Firebug, Web Developer Extension
- ▶ Internet Explorer Developer Toolbar, Visual Web Developer 2008 Express Edition, Visual Studio
- ▶ Safari: Web Inspector
- ▶ Opera: Dragonfly

Remote content

The XMLHttpRequest API allows to include remote content in Javascript. This uses the HTTP protocol and is used for data.

Other possibilities: include remote Javascript code (see next slide) or use IFrame.

Including a remote script

```
<script src='http://servername/username/scriptinclude'  
type='text/javascript'></script>
```

The file 'scriptinclude' contains Javascript functions etc, but no html and no <script> tags.

Security: cross-site scripting attacks

- ▶ In PHP, `htmlentities()` should be applied to all requested content.
- ▶ Including content via `XMLHttpRequest`: remote site could potentially request local page, which is outside sandbox (especially for older IE versions).
- ▶ If malicious URL is embedded in a genuine page and the user clicks on the malicious URL, a script from the malicious page could run as if it came from the genuine page.

Defence: same origin policy (SOP)

Scripts from one IP prevented from accessing data/properties of documents from different IP.

But, this does not apply to scripts loaded via `<script src= ...>` which are treated as same origin as the loading page.

(Mashups often use `<script src= ...>`.)

Search engine APIs

- ▶ In order to issue search engine queries from within a program, an API is needed.
- ▶ The program can then display the results in a custom manner or it can use the results to issue more queries.
- ▶ Google's API used to be based on SOAP. But the current version is using AJAX.
- ▶ Other search engines have similar APIs. For example, Yahoo has APIs mostly using REST.

Google's API

```
<script src='http://www.google.com/jsapi' type='text/javascript'  
...  
google.load('search', '1.0');  
function OnLoad() {  
var searchControl = new google.search.SearchControl();  
searchControl.addSearcher(new google.search.WebSearch());  
searchControl.draw(document.getElementById('searchcontrol'));  
searchControl.execute('VW GTI');  
}  
google.setOnLoadCallback(OnLoad, true);  
...  
<body><div id='searchcontrol'>Loading</div></body>
```