

# JavaScript Week 5

Retrieving Data from a Web Service

# Methods for Retrieving Data

- Get JSON data via a script include
- Get XML data using an XMLHttpRequest

# XHR Security Restrictions

- XMLHttpRequest can only retrieve data from the same domain as your webpage
- for a page at [www.yourdomain.com](http://www.yourdomain.com)  
(none of these will be legal!)
  - yourdomain.com
  - www2.yourdomain.com
  - 123.72.92.13



# JSON - no security restrictions: yay!

- `<script src='http://anywhere.com'></script>`

# JSON vs. XML

- JSON is much easier to read because it can be easily turned into javascript objects (because that's what it is!)
- XML is more widely used, but it more work because you have to parse the resulting XML document.

# Methods for Sending Data

- Same domain
  - You can post data using an XMLHttpRequest, but only to the same domain
- Cross-domain
  - Image tag (for small bits of data)
  - Iframe and form post (for large amounts of data)



# Cross-domain scripting

## - Image Tag

- You can send small bits of data to any domain using an image tag
- `</img>`
- The character limit for a query string is 2083 (the limit imposed by IE)

# Iframes

- Like a frame in a frameset it has it's own window object
- Iframes are subject to the same security restrictions as XHR



# Cross-domain scripting

## - Form Post

- You can send large amounts of data by posting a form
- You can programmatically:
  - append an iframe to your document
  - append a form to your iframe
  - submit the form
- Once your form has been submitted your iFrame's location will be in the other domain

# Cross domain scripting

## - URL Fragment

- You can use a URL fragment to set data on a frame
- Frame locations (in different domains) are *write only*. So you can append a fragment (`#someData`) to another frame to give it data
- You could use the `form post` method from the previous slide with this method to pass back some value

## Step 1: Create the Frame and form

**window**

**www.somedomain.com/myPage.html**

**iFrame**

**src: about:blank**

**form**

**action: www.mydomain.com/somePage.html**



## Step 2: Submit the form

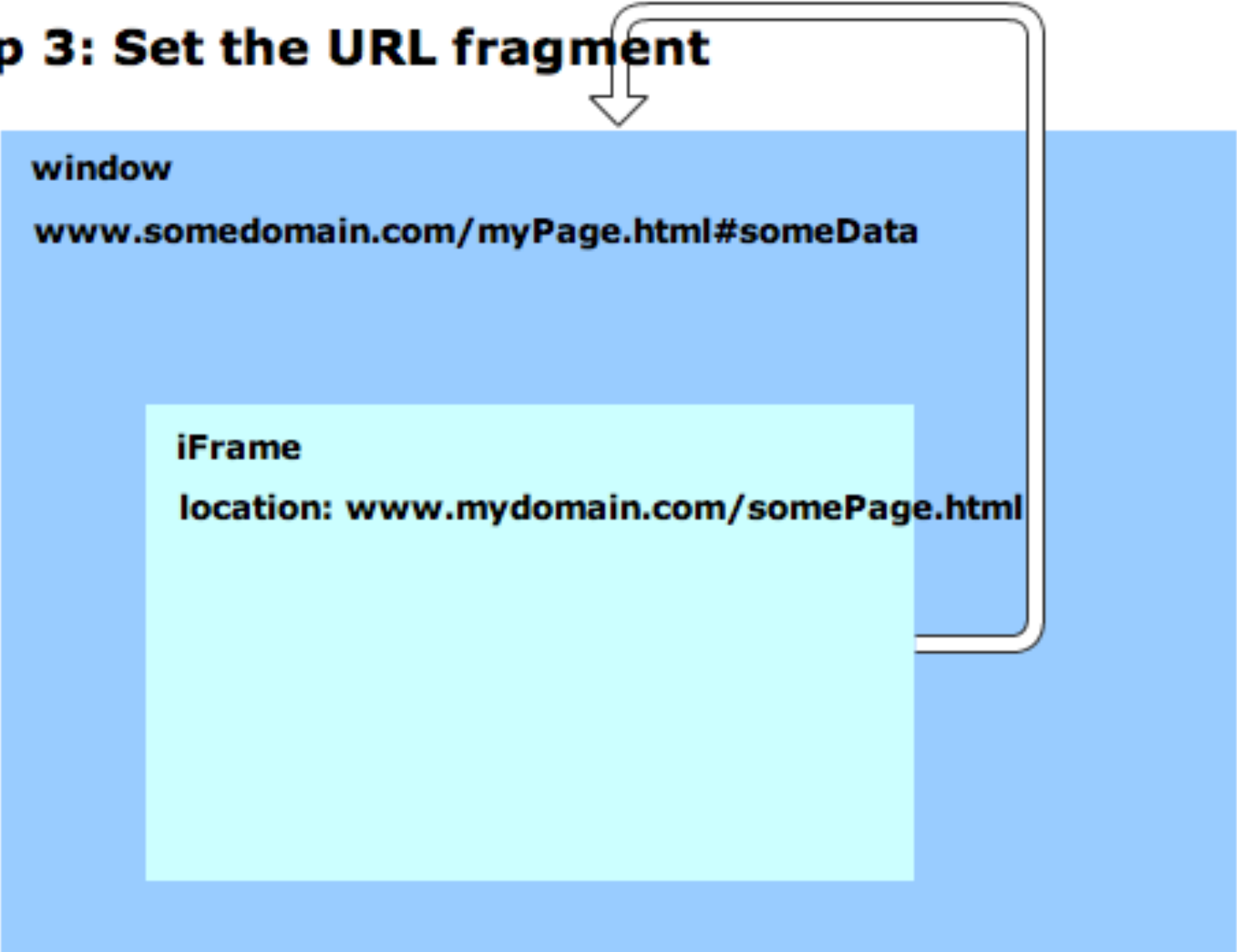
**window**

**www.somedomain.com/myPage.html**

**iFrame**

**location: www.mydomain.com/somePage.html**

### Step 3: Set the URL fragment



The diagram illustrates the relationship between a browser window and an iFrame. A large light blue rectangle represents the 'window'. Inside it, a smaller light cyan rectangle represents the 'iFrame'. A curved arrow originates from the 'iFrame' location property and points to the 'URL fragment' part of the 'window' location property, indicating that the iFrame's location is used to set the fragment of the parent window's URL.

**window**

**www.somedomain.com/myPage.html#someData**

**iFrame**

**location: www.mydomain.com/somePage.html**

# Activity

- Implement a web page that retrieves the data from catalog.xml using an XHR (use the example in the book).
- Generate MagicalItem objects by parsing the XML



# Homework

- Modify the magical store to pull its data from a web service. You may use either JSON or XML.
- Extra credit: Try the two cross-domain scripting methods for sending data to a different domain - the *image tag* and the *form post*

# Makeup Class

- July 12