CIS 4004: Web Based Information Technology
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Introduction To AJAX – Part 2

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An RSS Headline Reader

- In the previous set of Ajax notes, we developed a wrapper class to deal with the XHR object to handle the request/response to the server.
- We then looked at an example that returned the contents of a text file on the server to the client’s browser window using the asynchronous nature of Ajax.
- In this example, we’ll look at the data coming from the server, not as text, but as XML data.
- Unlike, the text data, which does not require parsing to deal with on the browser-side, we’ll need to parse the XML data in order to do something with it on the browser-side.
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- XML data is made available on the Internet in many forms. One of the most popular is the RSS feed, a particular type of XML source usually containing news or other topical and regularly updated items.

- RSS feeds are available from many sources on the Web, including most broadcast companies and newspaper publishers, as well as specialist sites for all manner of subjects.

- We’ll develop an Ajax application to take a URL for an RSS feed, collect the XML, and list the titles of the news items contained in the feed.

- A typical RSS feed might look similar to the one shown on the next page.
CNN.com - Top Stories
syndicated content powered by FeedBurner

FeedBurner makes it easy to receive content updates in My Yahoo!, Newsgator, Bloglines, and other news readers.

Learn more about syndication and FeedBurner...

Subscribe Now!
...with web-based news readers. Click your choice below:

- My Yahoo!
- Bloglines
- Netvibes

...with other readers:
(Choose Your Reader)

Current Feed Content

- **Frum: Is Iran deal reckless?**
  To assess this weekend's nuclear deal with Iran, here are the key questions that must be answered:
  - Email this
  - Add to del.icio.us
  - Digg This!
  - Share on Facebook
  - Stumble It!

- **Why many parents hate Common Core**
  Posted: Mon, 25 Nov 2013 08:13:20 EST
An RSS Headline Reader

• Notice that the RSS feed shown on page 5 is using RSS version 2.0.

• The versions of RSS differ quite a bit, but for the purposes of our example RSS reader, we only care about the \(<\text{title}\>\) elements for the individual news items. This element remains essentially unchanged from RSS version to version.

• Our page will need to contain an input field (read form) for the user to enter the URL of the RSS feed and a button to instruct the application to collect the data.

• We’ll also use a \(<\text{div}\>\) element in which to display the parsed data.

• This part of the markup is shown on the next page.
An RSS Headline Reader

```html
</script>
<body>
  <h3>An Ajax RSS Reader</h3>
  <form name="form1">
    URL of RSS feed: <input type="text" name="feed" size="50" value="http://"/>
    <input type="button" onclick="getRSS()" value="Get Feed"><br><br>
    <div id="news" class="displaybox"><h4>Feed Titles</h4></div>
  </form>
</body>
</html>
```
An Ajax RSS Reader

URL of RSS feed: http:// Get Feed

Feed Titles
An RSS Headline Reader

• Much of the actual RSS reader JavaScript is very similar to that which we developed in the previous set of notes, so I won’t put all of that code in the notes. Instead, I’ll focus on the parts which are different and involve the XML and server-side helper function.

• This time, since we are not using the `responseText` property of the XHR object, we’ll be using the `responseXML` property.

• We’ll use the data in the `responseXML` property to modify the DOM of our HTML page to show the new item’s titles in a list within the page’s `<div>` element. We’ll put each title into it’s own paragraph element, which we’ll construct dynamically and append to the DOM.
An RSS Headline Reader

• The callback function in this case; will perform the normal duties of checking the XHR object `readyState` and `status` properties, but we’ll also task it with the following responsibilities:
  – Clearing out any elements displayed in the `<div>` from a previous request.
  – Parse the incoming XML to extract the title elements.
  – Construct the DOM elements to hold and display the results.
  – Apply the CSS to these new elements to change how they are displayed in the browser.
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• To remove the DOM elements installed by a previous request, if they exist, we’ll identify the `<div>` element by using its id and then use the `hasChildNodes()` DOM method, looping through and deleting the first child node from the `<div>` element each time until none remain.

• Next, we’ll process the `<title>` XML elements. To parse the XML content to extract the item titles from the RSS feed, we’ll build an array `titleNodes` from the XML data stored in the XHR object’s `responseXML` property.

• The code snippets for both of these tasks are illustrated on the next two pages.
An RSS Headline Reader

```javascript
function cbGetRSS() {
    if (http.readyState == 4) {
        if (http.status == 200) {
            // first remove the childnodes presently in the DM
            while (document.getElementById('news').hasChildNodes()) {
                document.getElementById('news').removeChild(document.getElementById('news').firstChild);
            }

            var titleNodes = http.responseXML.getElementsByTagName("title");
            var descriptionNodes = http.responseXML.getElementsByTagName("description");
        }
    }
}
```
An RSS Headline Reader

```javascript
var descriptionNodes = http.responseXML.getElementsByTagName("description");
var linkNodes = http.responseXML.getElementsByTagName("link");
for(var i = 0; i < titleNodes.length; i++) {
    var newtext = document.createTextNode(titleNodes[i].childNodes[0].nodeValue);
    var newpara = document.createElement('p');
    newpara.className = "title";
    var para = document.getElementById('news').appendChild(newpara);
    newpara.appendChild(newtext);
}
</script>
```
An RSS Headline Reader

• Because of security constraints built into the XHR object, you cannot call an RSS feed directly. Rather you must use a script, have a URL on your own server, and have this script collect the remote XML file and deliver it to the Ajax application.

• In this case, we don’t require the server-side script to modify the XML file, but simply route it back to us via the `responseXML` property of the XHR object.

• The server-side script is acting as a proxy because it is retrieving the remote resource on behalf of the Ajax application.

• The next page illustrates this PHP script.
An RSS Headline Reader

```php
<?php
$mySession = curl_init($_GET['feed']);
curl_setopt($mySession, CURLOPT_HEADER, false);
curl_setopt($mySession, CURLOPT_RETURNTRANSFER, true);
$out = curl_exec($mySession);
header("Content-Type: text/xml");
echo $out;
curl_close($mySession);
?>
```
An RSS Headline Reader

- The PHP script uses the cURL PHP library. This is a set of routines for making Internet file transfer easier to program. Note that this library is not automatically installed in most PHP installations, so you will need to activate this library manually. (See the next page.)

- A description of cURL is way beyond what we want to get into here, suffice to say that this short script first retrieves the URL of the requested RSS feed by referring to the `feed` variable sent by the Ajax application.

- The two lines that call the `curl_setopt()` function declare, respectively, that we don’t want the headers sent with the remote file, but we do want the file contents.

- The `curl_exec()` function then handles the data transfer.

- Once that’s done, we simply add an appropriate header using the PHP `header()` command and return the data to the Ajax application.
To load the curl extension library in PHP, edit your php.ini file and locate this line and activate it by removing the semi-colon (the comment delimited). Then restart your Apache server.
CNN's top stories RSS feed.

CNN.com - Top Stories

From: Is Iran deal reckless?

Why many parents hate Common Core

Man breaks woman's 40-foot fall

Jailers, inmates allegedly had sex

Bear crashes birthday party

Singer Wayne Mills dies in bar shooting

'SNL' mocks the 'Hunger Games'

School chief faces obstruction counts

How the rape case came to light

Weight effect for morning-after pill

James Franco meets impersonator
Cyclingnews.com top stories RSS feed.

Kazakhstan to launch new UCI Continental team

Kocjan signs with SmartStop

Peloton pays its respects to Arnaud Coyot

Euskadi team applies for UCI license despite budget gap

Gallery: Procycling's Season Review of 2013

Gesink targets Tour de France in 2014

Lampre-Merida team hit by robbery

Colombia want Sánchez before Antón

Nibali to ride Paris-Nice instead of Tirreno-Adriatico

Malaysia's Loh Sea Keong signs for Argos-Shimano

Anton considers Team Colombia approach

Schleck brothers to follow same build-up to Tour de France in 2014