

Using AJAX and JSON



Profound Logic Software

Alex Roytman



About Me

- I create Web Application Development and Modernization Tools for IBM i
- Have been doing it for 13 years
- AJAX is vital for what we do





Why learn about AJAX

- Integral part of Web application development today
- If you are creating any kind of web application, you should be familiar with the concept

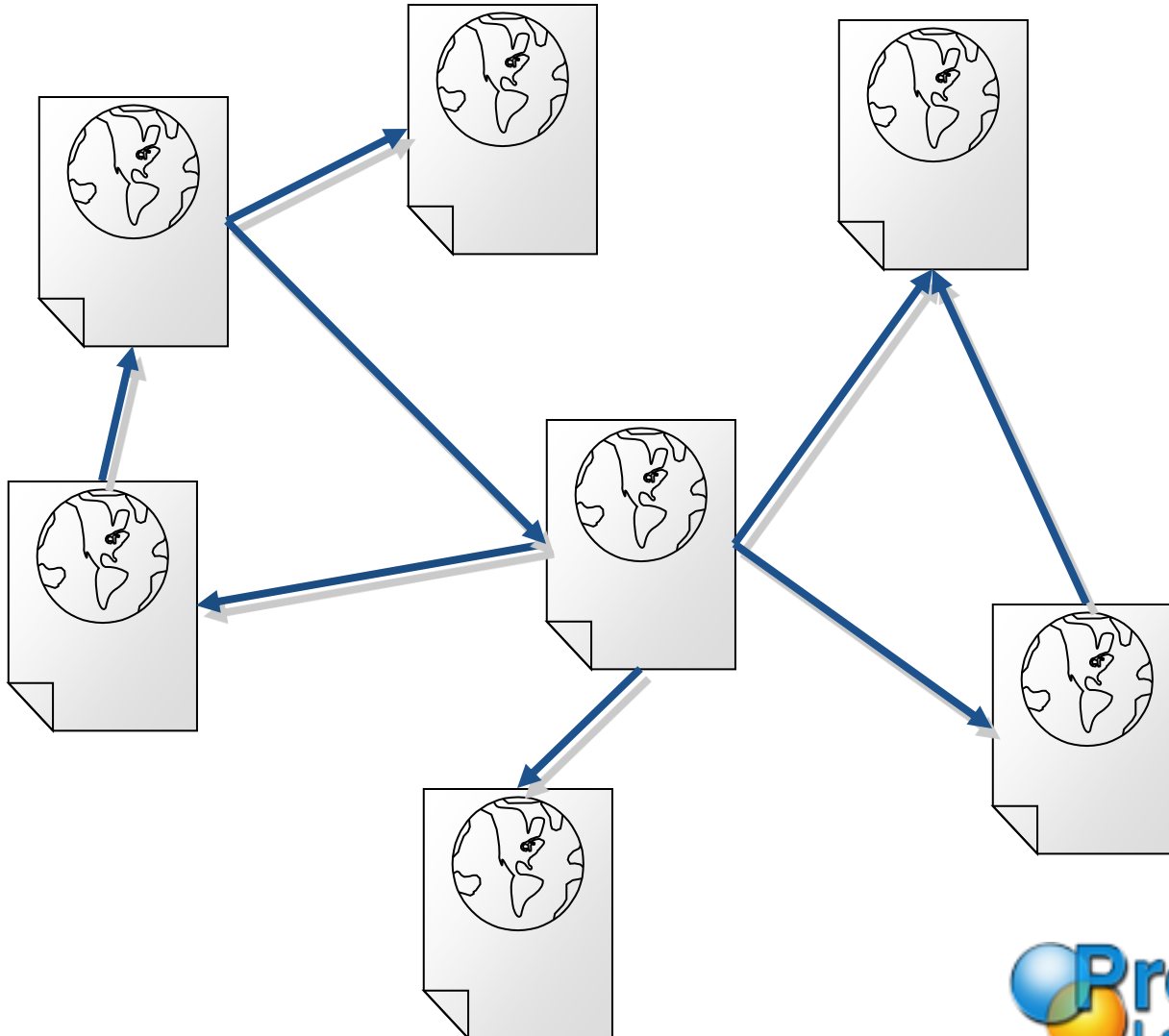


What is AJAX?

- Technique for creating more interactive, faster Web applications
- A way for requesting data behind the scenes to update parts of a web page



Web pages not made for applications





CGI programs

- Output HTML dynamically
- Many variations of the concept
- Pages reload with every user interaction
 - Slow
 - No inherent session
 - Can be cumbersome to program
 - Various techniques needed to overcome limitations



Traditional Techniques

- Form data and hidden fields
- Cookies
- Session variables



Newer technique: AJAX

- Pioneered by companies like Google
- A discovered technique
- Uses JavaScript's ability to update the DOM (Document Object Model)
- Server is called in the background to request partial data



What does AJAX stand for?

- Asynchronous
- JavaScript
- And
- XML



What is JSON?

- Data interchange format
- Light and compact
- Easy to read and understand
- Can be produced by any server-side Web language
- Consumed by JavaScript in the Browser



JSON is a discovered format

- Not invented
- Discovered while working on Web applications
- Syntactically identical for creating JavaScript objects and arrays
- No Parser is needed for JSON
- Simply eval()



Some JavaScript syntax

- `var attendees = new Array();`
- `var attendees = [ ];`



Some JavaScript syntax

- `var attendees = new Array();`
`attendees[0] = "Alex"`
`attendees[1] = "Laura";`
`attendees[2] = "Jacob";`
- `var attendees = [ "Alex", "Laura", "Jacob" ];`



Some JavaScript syntax

- `var customer = new Object();`
- `var customer = { };`



Some JavaScript syntax

- `var customer = new Object();
customer.name = "Profound Logic";
customer.address = "123 Main Street";`
- `var customer = { name: "Profound Logic",
address: "123 Main Street" };`



JSON vs. XML

- XML
 - Fetch an XML document
 - Parse It
 - JavaScript can help with this, but still have to use XML's Document Object Model to loop through elements to get the information you want
 - Extract values and store in JavaScript variables, arrays, or objects



JSON vs. XML

- JSON
 - Fetch a JSON string
 - eval() the string into variables, arrays, or objects



Small Issue with AJAX

- No standard way to implement among browsers
 - XMLHttpRequest()
 - ActiveX object “Microsoft.XMLHTTP”
- Cross browser implementation may take 100's of lines of code



Solution

- Use prebuilt AJAX library
 - Simple one
 - <http://www.profoundlogic.tv/resources/ajaxlibrary.js>
 - Bigger framework
 - jQuery



Tools to get started

- Server-side web technology (RPG/CGI, PHP, etc.)
- AJAX Library or a framework that includes AJAX
- JavaScript and DOM knowledge (the vary basics)
- Firefox with Firebug plugin



Thank You

For comments/questions, please send to:

Alex Roytman

aroytman@profoundlogic.com

Visit us at:	www.profoundlogic.com
Visit us at:	www.profoundui.com
Call us at:	1-877-224-7768

