

Building ColdFusion Powered Ajax Applications

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- Traditionally, all web page requests are synchronous – made one after the other
 - Click on a link and the entire page refreshes
 - Early attempts to get around this include the use of frames and iframes
- Ajax (Asynchronous JavaScript and XML) “is a web development technique used for creating interactive web applications. The intent is to make web pages feel more responsive by exchanging small amounts of data with the server behind the scenes, so that the entire web page does not have to be reloaded each time the user requests a change” (*Wikipedia*)
 - Clicks (or other events) can cause data to be returned without a page refresh
 - Results are processed programmatically, and JavaScript is used to make any necessary screen changes
 - DHTML (HTML+JavaScript+CSS) is used to manage UI

- **AutoSuggest**
 - When the user starts typing into a field, popup a list of suggested matches for easy selection
- **Related controls**
 - A change to one control causes the contents of a related control to change
- **Inline content**
 - Clicking a link causes inline expansion to display more data, a subsequent click collapses the inline content
- **Data paging**
 - Paging through large amounts of data, displaying smaller subsets
- **Form validation**
 - Validating form contents against server-side data or logic
- **Nonintrusive login**
 - On-screen login whenever needed

- ColdFusion as a back-end for full blown Ajax clients
 - Client is pure DHTML/JavaScript/CSS
 - Leverage popular client libraries (Dojo, Prototype, jQuery, others)
 - ColdFusion is back-end only, does not render client UI code at all
 - Data sent back and forth as XML, usually formatted as JSON
 - JSON encoding and decoding (both explicit and automatic) is built in to ColdFusion 8
- Ajax powered widgets in more traditional ColdFusion powered HTML clients
 - ColdFusion 8 includes a variety of Ajax enabled form and layout tags
 - The tags generate client-side code and embed supporting JavaScript code and libraries
 - ColdFusion Components are the back-end for all ColdFusion 8 Ajax controls and widgets
 - ColdFusion exposes a framework that can be leveraged as needed
 - Extended
 - Debugging



- The Eclipse “ColdFusion Ajax” wizard can generate a complete data-centric ColdFusion Ajax application
 - The wizard generates CFCs to interact with back-end data, and code that uses CFML Ajax tags (`<CFMENU>`, `<CFWINDOW>`, `<CFLAYYOUT>`, etc.) to generate the client

- ColdFusion Ajax tags need to know what back-end ColdFusion code to invoke to obtain (or transmit) data
- The back-end code is always a CFC method specified as `cfc:path.method()`
- Arguments may be passed back to the CFC if needed:
 - Static values
 - Dynamic client-side expressions, formatted as `{expression}`

Exercise 2: The AutoSuggest Control



- AutoSuggest is an extension to the standard `<INPUT TYPE="text">` control
 - AutoSuggest supports static (client embedded) lists, as well as dynamic runtime generated Ajax powered lists
 - The pre-defined expression `{cfautosuggestvalue}` refers to whatever value has been entered into the form field

- Bindings connect controls to each other or to back-end CFC methods
 - The **AUTOSUGGEST** method used previously (which accepted `cfc:path.method()`) is an example of a binding
- Events are used to execute code (client-side or server-side) when something occurs:
 - Selection made
 - Button clicked
 - Drop-down value changed
 - Mouse moved over an item



- Related **<SELECT>** controls make it possible for selections in one control to force a new set of options in a related control
 - The underlying mechanism which powers this functionality also supports other HTML form controls
 - **BIND** is used to connect to CFC methods
 - The **bindonload** event can be used to force an explicit binding

- CFC methods use in bindings can accept parameters, both required and optional
 - These are defined in the CFC method using `<CFARGUMENT>` tags
- To make it easier to refer to dynamic client-side values, ColdFusion supports pre-defined expressions that can be used in lieu of actual values:
 - `{cfautosuggestvalue}`
 - `{cfgridpage}`
 - `{cfgridsortcolumn}`

Exercise 4: The Ajax Data Grid



- **<CFGRID>** has long supported static datasets (including dynamically generated static datasets), and now supports the use of live Ajax powered datasets
 - **BIND** is used to specify the CFC method that will return a query
 - Must specify current page, page size, and sort information (passed as arguments)
 - **QueryConvertForGrid()** can be used to format the results as needed



- Articles on Adobe.com ColdFusion Developer Center
- Blogged examples
 - My blog: <http://forta.com/blog/>
 - Ray Camden's blog: <http://www.coldfusionjedi.com/>
- Rob Gonda's "ColdFusion Powered Ajax" session (WD213W)