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Lecture 26

jQuery

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Course logo spider web photograph from [Morguefile](#) openstock photograph by Gabor Karpati, Hungary.

Why jQuery

- Some aspects of JavaScript grow tiresome to us programmers.
- For starters
 - Querying the DOM for objects
 - Connecting events to call backs
 - Applying functions to collections
 - Asynchronous client-server interaction

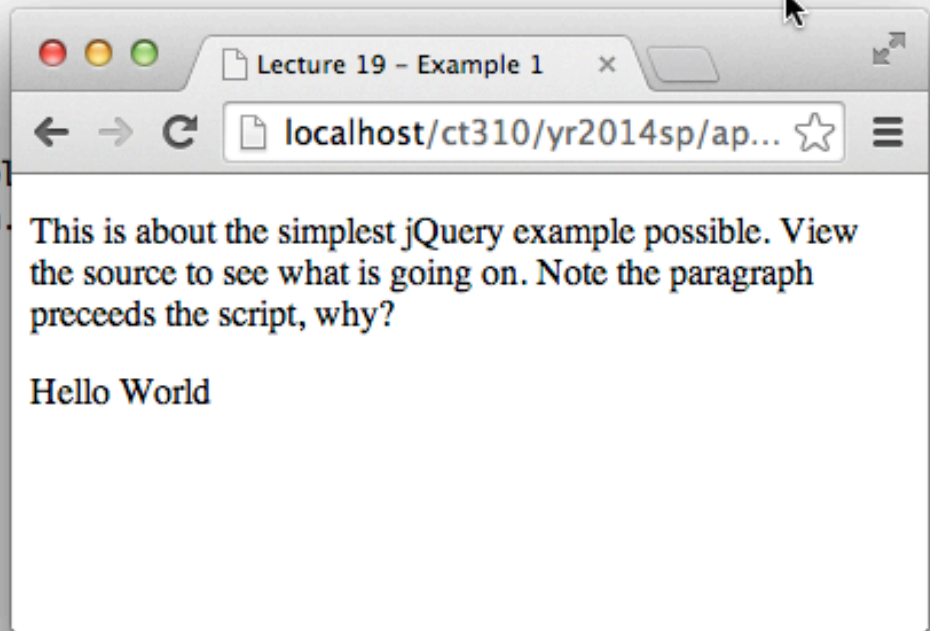
What is jQuery?

- Too big a question for one slide, but
- In practice it acts much like a language extension
 - But not strictly true characterization
- Hence, first step is to connect ...
 - A new syntax to ...
 - A new set of behaviors

Starting by Example

➤ Hello World in jQuery (2014)

```
3 <head>
4 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
5 <title>Lecture 19 - Example 1</title>
6 <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.0/jquery.min.js"></script>
7 </head>
8 <body>
9 <div id="contents">
10 <p>
11 This is about the simplest jQuery example possible. View the source to see what is going on. Note the paragraph
12 precedes the script, why?
13 </p>
14 <p id="message">Go Away!</p>
15 <script>
16 $( "#message" ).text("Hello World");
17 </script>
18 </div>
19 <!-- end of the page contents -->
20
21
22 </body>
23 </html>
```



But Wait - 2016

The screenshot shows a web browser window with the address bar at `localhost/courses/ct310/yr2016`. The page title is "Lecture 26 - Example 1, jQuery Hello World". The main content area contains the text: "This is about the simplest jQuery example possible. View the source to see what is going on. Note the paragraph precedes the script, why?" followed by a yellow box containing the text "Go Away".

Below the main content, a yellow warning banner displays the message: "[blocked] The page at <https://localhost/courses/ct310/yr2016sp/aplay/lec26/lec26ex01.html> was not allowed to run insecure content from <http://ajax.googleapis.com/ajax/libs/jquery/1.11.0/jquery.min.js>."

The browser's developer console is open, showing the "Selected Element" section with the HTML: `<p id="message">Go Away</p> = $1`.

Even before we touch jQuery, we need to talk briefly about http and https.

Getting Adjusted to SSL

- There are 3 URL forms in this context.
 1. Start with `http://` - this failed!
 2. Start with `https://` - this will work
 3. Start with `//` - this is non committal
- Which is best? (think about it ...)
- For example⁰¹ they are:

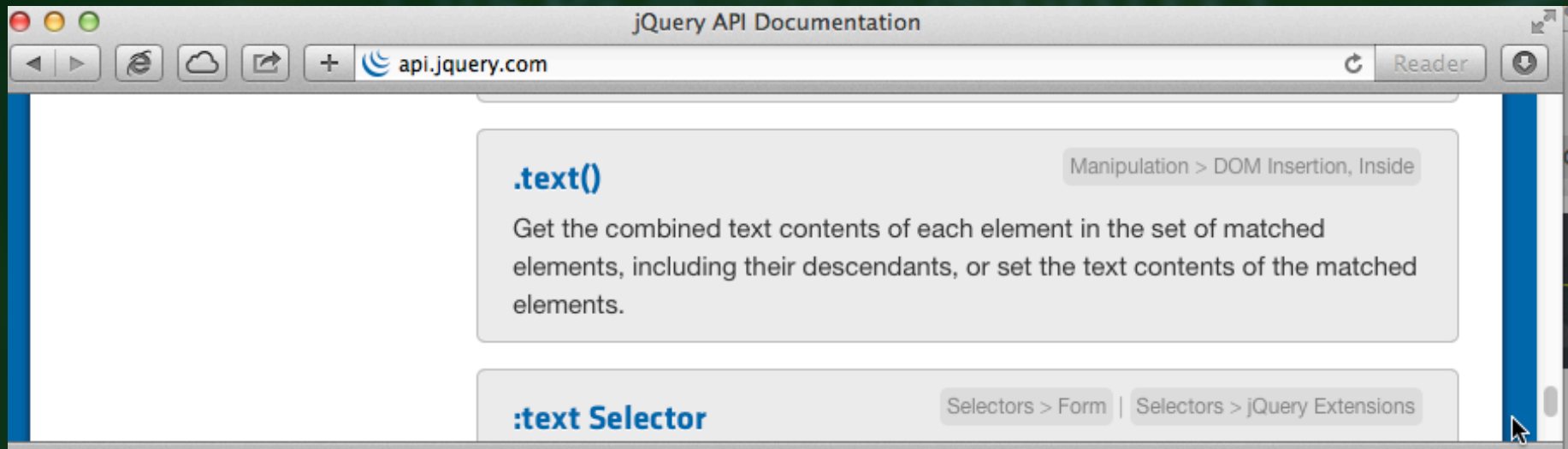
```
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.0/jquery.min.js">
</script>

<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.0/jquery.min.js">
</script>

<script src="//ajax.googleapis.com/ajax/libs/jquery/1.11.0/jquery.min.js">
</script>
```

Back to jQuery - Selectors

- Here is way to think about syntax
 - `$ (selector) . action`
- Think of selector as DOM query.
- Large set of actions/methods defined.



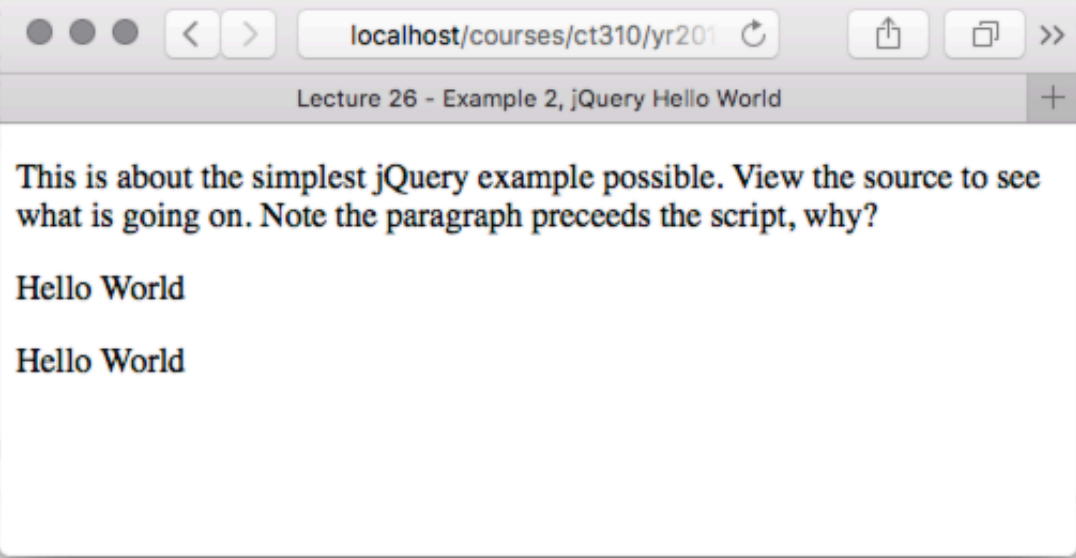
The text method

The screenshot shows a web browser window displaying the jQuery API documentation for the `.text()` method. The browser's address bar shows `api.jquery.com/text/`. The page features the jQuery logo with the tagline "write less, do more." and a banner for the "ROOST CHICAGO, IL" JavaScript conference held from September 10-11, 2014. The navigation menu includes "Download", "API Documentation", "Blog", "Plugins", and "Browser Support", along with a search bar. On the left, a sidebar lists categories such as "Ajax", "Global Ajax Event Handlers", "Helper Functions", "Low-Level Interface", "Shorthand Methods", and "Attributes". The main content area is titled `.text()` and includes a breadcrumb trail: "Categories: [Manipulation](#) > [DOM Insertion](#). Inside". The description states: "Get the combined text contents of each element in the set of matched elements, including their descendants, or set the text contents of the matched elements." Under the heading "Contents:", there is a list of sub-methods: `.text()` and `.text()`.

Already Powerful – A Twofer

Pay attention to the fine print on text, it can operate on sets.

```
4 <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
5 <title>Lecture 26 - Example 2, jQuery Hello World</title>
6 <script src="//ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js">
7 </script>
8 </head>
9 <body>
10 <div id="contents">
11 <p>
12 This is about the simplest jQuery example possible. View the source to see
13 what is going on. Note the paragraph precedes the script, why?
14 </p>
15 <p class="message">Seriously Folks</p>
16 <p class="message">Seriously Folks Again</p>
17 <script>
18 $( ".message" ).text("Hello World");
19 </script>
```



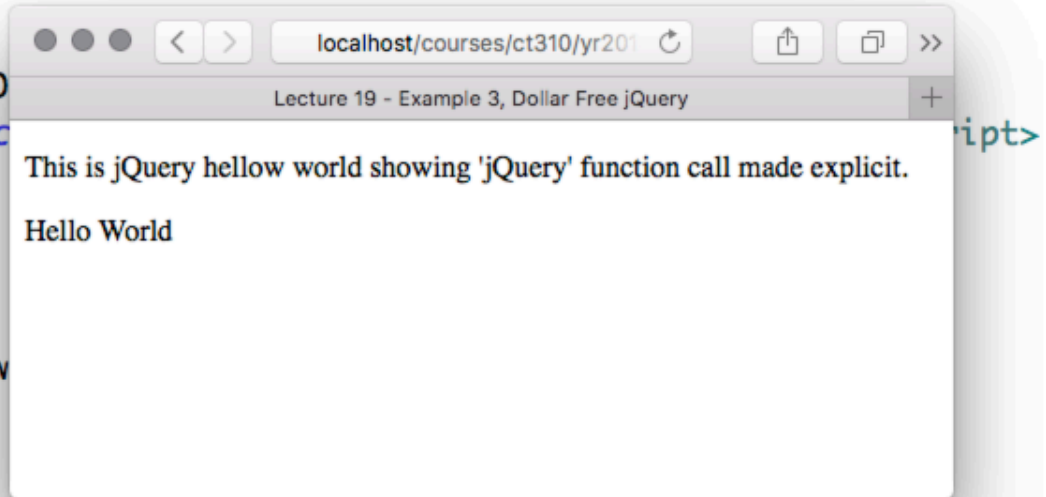
Detail – Dollars = Conflict

- The concise syntax has many virtues
- But, sometimes library conflicts arise over '\$' and so, use 'jQuery' instead.
- This also is helpful in terms of understanding.
- jQuery is a library and it defines a single very powerful function 'jQuery'.

Dollar Free jQuery

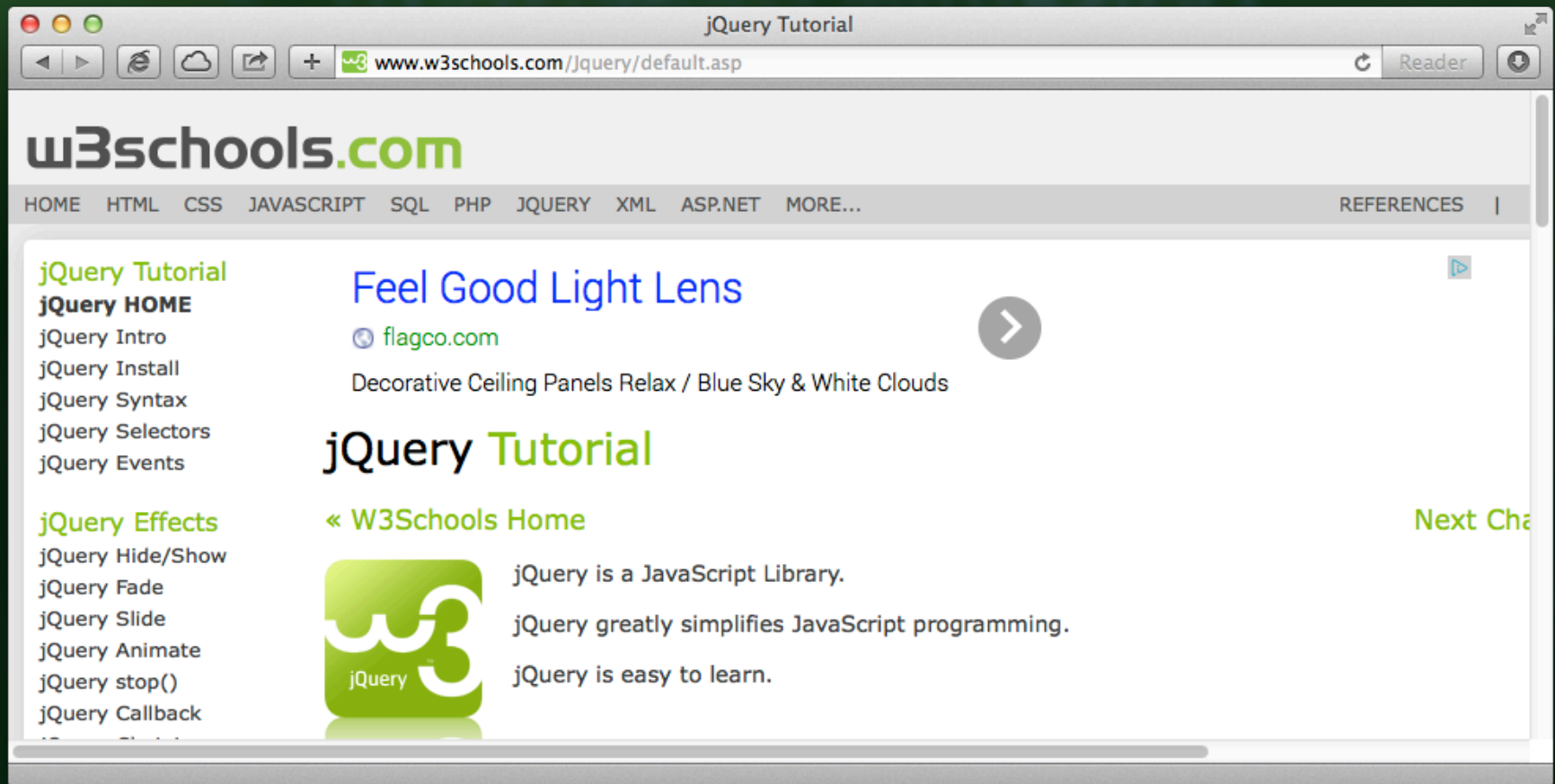
- For compatibility with other libraries that may want prior claim on '\$'

```
3<= <head>
4 <meta http-equiv="Content-Type"
5 <title>Lecture 19 - Example 3, D
6 <script src="//ajax.googleapis.c
7 </head>
8<= <body>
9<= <div id="contents">
10<= <p>
11 This is jQuery hellow world show
12 </p>
13 <p id="message">Go Away!</p>
14<= <script>
15     jQuery( "#message" ).text("Hello World");
16 </script>
```



Credit Where Credit ...

➤ w3schools jQuery tutorial is good.

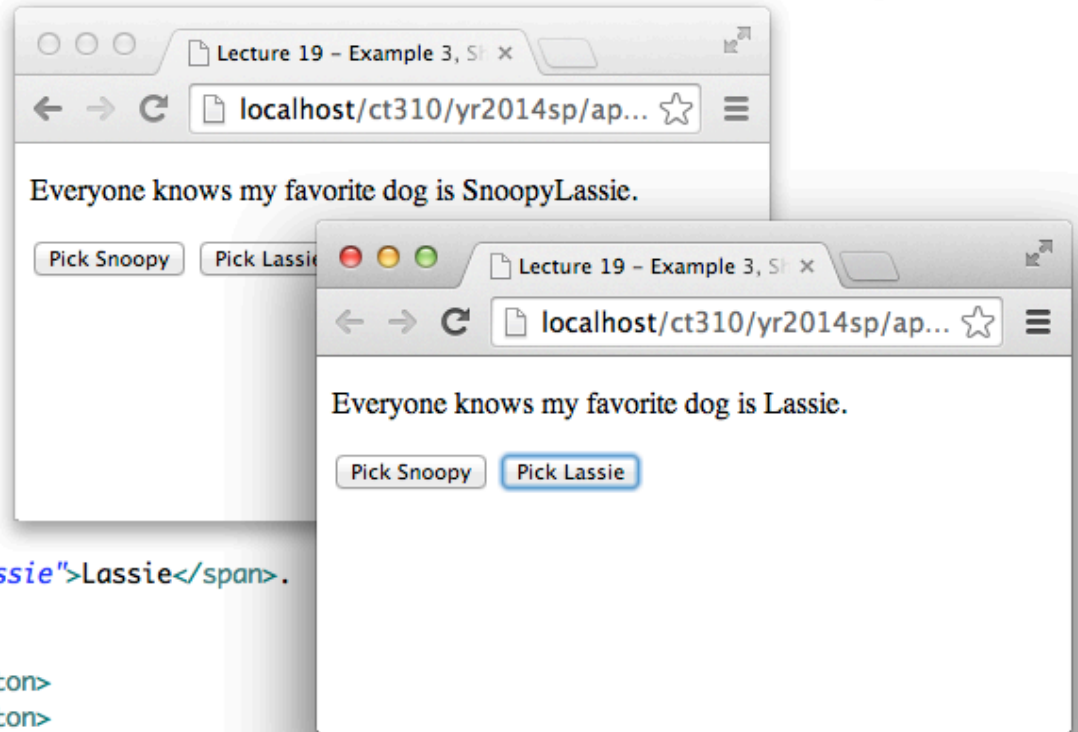


The screenshot shows a web browser window titled "jQuery Tutorial" with the address bar displaying "www.w3schools.com/jquery/default.asp". The page content includes the w3schools.com logo, a navigation menu with links like HOME, HTML, CSS, JAVASCRIPT, SQL, PHP, JQUERY, XML, ASP.NET, MORE..., and REFERENCES. The main content area features a sidebar with a "jQuery Tutorial" menu listing items like "jQuery HOME", "jQuery Intro", "jQuery Install", "jQuery Syntax", "jQuery Selectors", "jQuery Events", "jQuery Effects", "jQuery Hide/Show", "jQuery Fade", "jQuery Slide", "jQuery Animate", "jQuery stop()", and "jQuery Callback". The main content area displays an advertisement for "Feel Good Light Lens" by flagco.com, a "jQuery Tutorial" section with a "W3Schools Home" link and a "Next Chapter" link, and a jQuery logo with the text "jQuery is a JavaScript Library.", "jQuery greatly simplifies JavaScript programming.", and "jQuery is easy to learn."

Hide, Show & Buttons

- Pay attention to ready function.

```
7<script>
8 $(document).ready(function(){
9     $("#lassie_button").click(function(){
10         $("#snoopy").hide();
11         $("#lassie").show();
12     });
13     $("#snoopy_button").click(function(){
14         $("#snoopy").show();
15         $("#lassie").hide();
16     });
17 });
18 </script>
19
20 </head>
21 <body>
22 <div id="contents">
23 <p>
24 Everyone knows my favorite dog is
25 <span id="snoopy">Snoopy</span><span id="lassie">Lassie</span>.
26 </p>
27 <p>
28 <button id="snoopy_button">Pick Snoopy</button>
29 <button id="lassie_button">Pick Lassie</button>
30 </p>
31 </div>
32 <!-- end of the page contents -->
```



Example 5 – Table Cells

- Define a table on server – SQLite
- Edit cells on client
- Update table whenever a cell changes
- Puts a lot of pieces together:
 - HTML, CSS, PHP,
 - SQL,
 - JavaScript, AJAX through jQuery

Changes Persistent

Lecture 19 - Example 4

localhost/ct310/yr2014sp/aplay/lec19/lec19ex04.php

Fix the Dogs

Name	Creator	Person
Snoopy	Charles Schultz	Charlie Brown
Gromit	Nick Parks	Wallace
Lassie	Eric Knight	Timmie

Paragraph used to write update messages.

Paragraph used to write update messages.

localhost/ct310/yr2014sp/aplay/lec19/lec19ex04.php

Fix the Dogs

Name	Creator	Person
Snoopy	Charles Schultz	Charlie Brown
Gromit	Nick Parks	Wallace
Lassie	Eric Knight	Timmie

Cell id dogs0003creator now has value Eric Knight

Return from AJAX
Data: UPDATE dogs SET creator="Eric Knight" WHERE dog_id = 3
Status: success

Pay Attention To ...

- PHP Code to create HTML for table
- Note a CSS id encodes table cell

```
14 <table id="dogtable">
15   <tr> <th>Name</th> <th>Creator</th> <th>Person</th></tr>
16   <tr>
17     <td><input type="text" id="dogs0001name" value="Snoopy"
18     <td><input type="text" id="dogs0001creator" value="Charl
19     <td><input type="text" id="dogs0001person" value="Charli
20   </tr>
21   <tr>
22     <td><input type="text" id="dogs0002name" value="Cremitt"
```

- Probably better ways in complex systems, but this is clear.

Also, onchange call back

- There is only one call back function
- Two arguments
 - The id of the input text field
 - The value of the field after change.

```
value="Snoopy" onchange="newval(this.id, this.value)"></td>  
or" value="Charles Schultz" onchange="newval(this.id, this.valu  
n" value="Charlie Brown" onchange="newval(this.id, this.value)"  
  
value="Gromit" onchange="newval(this.id, this.value)"></td>  
or" value="Nick Parks" onchange="newval(this.id, this.value)"><  
n" value="Wallace" onchange="newval(this.id, this.value)"></td>
```

Simpler using jQuery

- Post functionality of jQuery.
- Cell input field id (cid) sent to the URL responsible for making change.
- So too is the new value.
- Bit tricky – think about “cid:cid”

```
1
2 function newval(cid, val) {
3     $("#outp1").text("Cell id " + cid + " now has value " + val);
4     $.post("lec19ex04up.php", { cid:cid, val:val },
5         function(data,status){
6             $("#outp2").html("Return from AJAX <br/>\nData: " + data + "<br/>\nStatus: " + status);
7         });
8 }
```

URL Handling Update

```
1 <?php|
2 if (! isset ( $_REQUEST ['cid'] )) {
3     die ( "Wow, that is not right." );
4 }
5 $cid = $_REQUEST ['cid'];
6 if (isset ( $_REQUEST ['val'] )) {
7     $val = strip_tags($_REQUEST ['val']);
8 }
9 try {
10     $dbh = new PDO ( "sqlite:./lec19ex04.db" );
11 } catch ( PDOException $e ) {
12     echo $e->getMessage ();
13 }
14 $row = intval(substr($cid, 4, 4));
15 $fld = substr($cid, 8);
16 $cmd = "UPDATE dogs SET $fld=\"$val\" WHERE dog_id = $row";
17 $dbh->exec($cmd);
18 echo $cmd;
19 ?>
```

Comments

- Security
 - Terrible! Simple example is not tied to prior user authentication.
- Virtue, hints at ...
 - Convenience of jQuery
 - Immediacy of modern web apps

~~Load URL /
Submit Form Data /
Refresh Page~~