CIS 4004: Web-Based Information Technology Fall 2013

Homework Assignment #5 (100 pts)
Due Friday November 22, 2013

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            http://www.cs.ucf.edu/courses/cis4004/fall2013

Department of Electrical Engineering and Computer Science
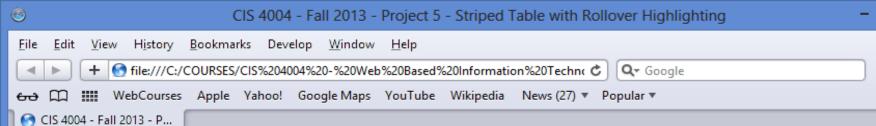University of Central Florida

Homework Assignment #5

- This assignment has two main objectives:

(1) To gain more experience with the DOM tree and manipulating web pages dynamically.

(3) To utilize JavaScript to access the event object and use event propagation and event bubbling to achieve a dynamic effect on the behavior of the page.

HTML For Assignment #5

- This project is intended to begin with the final version of the markup, style sheet, and JavaScript that you produced for Assignment #4. If you did Assignment #4 the correct way, you'll basically only need to work with the JavaScript this time.

- I've put a validated copy of the markup that you are to use to *begin* this assignment on the course web page (it's also on WebCourses2). The markup differs only slightly from the markup used in Assignment #4, but it is different so be sure to use this new markup as your starting point. This is the starting point for this assignment.

- Note that this markup does not include a link to your style sheet or your JavaScript. You will need to add these, but these are the **only** changes to the markup you are allowed to make.

- With your CSS, this "starting" markup renders as shown on the next slide.

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Title	Author	Publisher	Comment
PPK on JavaScript	Peter-Paul Koch	New Riders	Europe's foremost JS expert gives his personal insights.
Beginning JavaScript with DOM Scripting and Ajax	Chris Heilmann	Apress	Yahoo's JS guru ensures you're not a beginner for long.
Pro JavaScript	John Resig	Apress	Serious JS with the man who brought you jQuery.
Bulletproof Ajax	Jeremy Keith	New Riders	Approachable and readable—a little masterpiece.
Ajax in Action	David Crane & Eric Pascarello	Manning	Modern coding techniques for professional Web programmers.
Programming The World Wide Web	Robert Sebesta	Pearson	A long standing classic - 3 JavaScript chapters, two of which deal with the DOM.

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A Multiplication Table

	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27

Details For Assignment #5

- What you are to accomplish in this project is to modify your JavaScript so that any table on the page that belongs to the class "`stripe_table`" will have each row highlighted as the cursor moves over it and return to its original state when the cursor moves off of that row.

- The illustration of this effect is shown on the next few slides.

- Note that the header rows of the tables are not highlighted when the cursor moves over them…just the actual "data" rows of the table are highlighted.

Cursor positioned here

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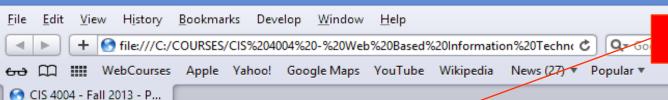| Title	Author	Publisher	Comment
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Details For Assignment #5

- Notice that in the first table, the fifth row of the table contains a hyperlink (an `<a>` element). Its very common to have links and other elements in table cells.

- The code you develop for this assignment must be robust enough to handle such circumstances. What this link is doing is providing an additional level of content hierarchy within the `<td>` elements of the table.

- The idea here is that the element with the event listener is the `<tbody>`, the element that will trigger the event (on a `mouseover` or `mouseout`) is either a `<td>` or an `<a>` element, and the element that is modified in the DOM as a result of the event is a `<tr>` element.

Details For Assignment #5

- In other words, the element that triggered the event doesn't handle the event and the element that is modified as a result of the event is neither the element that caused the event nor the element which handles the event.

- Because events bubble up, the event listeners for the `mouseover` and `mouseout` events will need to be attached to the `<tbody>` element. You want the highlighting effect to occur only to the rows within the body of the table…the elements in the `<thead>` element should not be highlighted when the cursor moves over them.

Details For Assignment #5

- Thus, the highest level at which you can detect the `mouseover` and `mouseout` events would be the `<tbody>`. If you went higher the DOM hierarchy you would receive events from the table rows that are in the header, which you don't want to highlight.

- Once you attach the event listeners, your next task will be to determine the target element – that is, the element that is actually triggering the event.

- To do this, you need to get the target element's `nodeName`, which in the case of an element gives the name of the tag.

Details For Assignment #5

- Be aware that your problem here is that the `<tr>` elements do not trigger events when the mouse goes over them, because they are entirely filled with their child `<td>` elements. There is simply no where you can place the cursor to get the `<tr>` element to trigger a mouse event.

- The target element, i.e., the element directly under the mouse, will always be the `<td>` element unless you explicitly add padding or margins to create space between it and the `<tr>` element.

- The `<td>` element, because it's a child of a `<tr>` element will always be on top of the `<tr>` element in the element stacking order and will therefore always be the target of any mouse event.

Details For Assignment #5

- Since I've added an anchor element to a `<td>` element in the first table, if the mouse is over the `<a>` element within the `<td>` element, then the `<a>` element becomes the target.

- The most important thing to remember at this step is that the target element, be it the `<td>`, `<a>`, or some other element that might appear within a table cell, is a child of the row that you want to highlight.

- Your next step is to find the target element's ancestor table row so that you apply the highlighting to that table row.

- You'll start moving up the DOM tree from the target element until you find the element with the node name `<tr>` and apply the highlighting class to that element. This is known as `traversing the DOM`.

Details For Assignment #5

- To traverse the DOM you'll run a loop that resets the event target element to its parent node until the node name of the parent is equal to `<tr>`.

- All that is left to do once you've found the "new" target element is to apply the highlighting to this row.

- Give some thought at this point though on how you'll restore the original row styling when the `mouseout` event occurs.

Additional Requirements For Assignment #5

1. Your markup, style sheet, and JavaScript must support cross-browser compatibility.   It should render and behave properly in both W3C-compliant browsers as well as Microsoft browsers (at least IE6 and above).

2. Your markup cannot be altered in any way from the original markup that appears on the course web page except for the following cases:

    a.   Add a link to your external style sheet.

    b.   Add a script element to access your JavaScript. Do this the "correct" way.

3. As before, you can apply any color to the page that you would like provided that there is good contrast both in the static rendering as well as the dynamically applied highlighting.
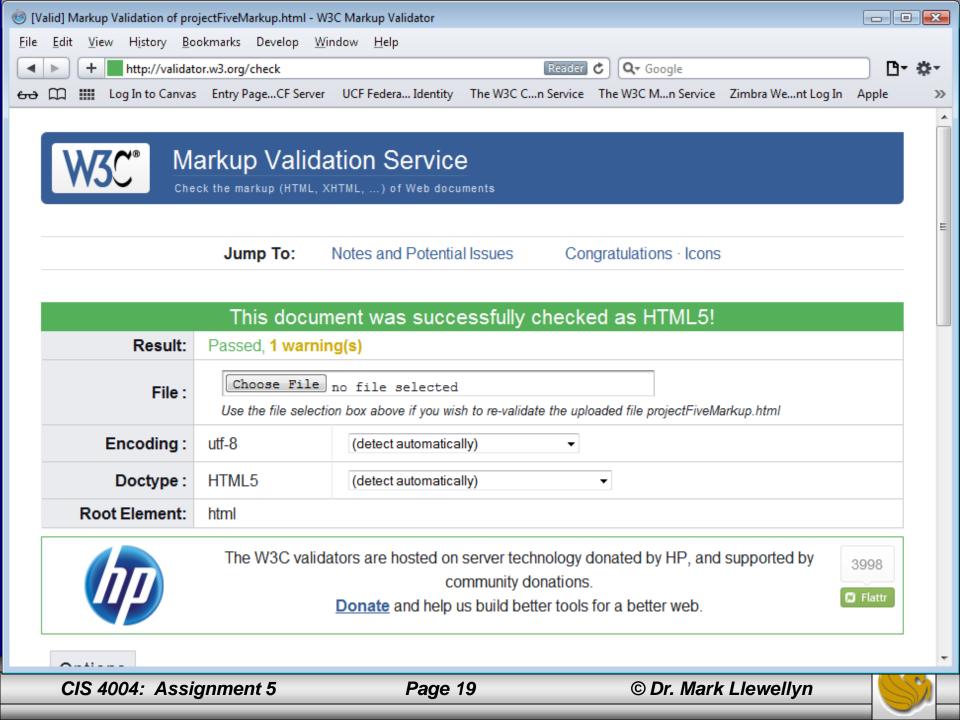
Additional Requirements For Assignment #5

4. Your JavaScript must work correctly for:

   a. A table with an arbitrary number of rows.

   b. A page with more than one table. That is to say, any identified table that appears in the document should have its rows striped by your JavaScript.

   c. Tables that have cells which contain elements other than text.

When And What To Turn In

- The deliverables for this assignment are:

  1. A semantically correct HTML5 markup document (5 pts).

  2. The CSS external stylesheet (20 pts).

  3. The JavaScript file (50 pts.)

  4. A document containing screen captures for both HTML5 validation that shows only the one warning as shown on the next page and CSS validation (both passing!). Make sure that the name of the validated file appears in the screen shot. (10 pts – 5 pts each)

  5. A screen shot of your final rendered document illustrating a highlighted row. (10 pts)

- The deliverables for this assignment are to be submitted via WebCourses no later than 11:59pm (WebCourses time) on Friday November 22, 2013.

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http://validator.w3.org/check

Reader ↻   Google

Log In to Canvas   Entry Page...CF Server   UCF Federa... Identity   The W3C C...n Service   The W3C M...n Service   Zimbra We...nt Log In   Apple

W3C® Markup Validation Service
Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Notes and Potential Issues   Congratulations · Icons

This document was successfully checked as HTML5!

Result:	Passed, **1 warning(s)**
File :	[Choose File] no file selected *Use the file selection box above if you wish to re-validate the uploaded file projectFiveMarkup.html*
Encoding :	utf-8 (detect automatically) ▼
Doctype :	HTML5 (detect automatically) ▼
Root Element:	html

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The W3C CSS Validation Service

W3C CSS Validator results for projectFiveCSS.css (CSS level 3)

Jump to: **Validated CSS**

W3C CSS Validator results for projectFiveCSS.css (CSS level 3)

Congratulations! No Error Found.

This document validates as CSS level 3 !

To show your readers that you've taken the care to create an interoperable Web page, you may display this icon on any page that validates. Here is the XHTML you could use to add this icon to your Web page:

```
<p>
    <a href="http://jigsaw.w3.org/css-validator/check/referer">
        <img style="border:0;width:88px;height:31px"
            src="http://jigsaw.w3.org/css-validator/images/vcss"
            alt="Valid CSS!" />
    </a>
</p>
```

```
<p>
<a href="http://jigsaw.w3.org/css-validator/check/referer">
```