Computer Science 140

Lab 6

Due Week of November 20-22.

Purpose

Explore the usage of jQuery and third party HTML5 widgets in HTML.

Overview

Provide a time and date form picker for the previous lab's order form.

Resources

Review the Kendo UI widget http://docs.kendoui.com/api/web/datetimepicker

Process

Follow these steps to complete the lab work. Take your time doing this lab—if you rush through the steps, you may miss details. **If you "copy and paste" this lab's code, you may have to rewrite any double quote characters.**

1. Open the File Explorer and create the following new folders on your H: drive:

   `comp140\lab06`
   `comp140\lab06\PizzaPalace`
   `comp140\lab06\PizzaPalace\images`.

   On the H: drive copy all your previous lab 5 work (the html files and the image files) into your new lab 6 folders. Open WinSCP and copy the new lab06 folder to your `deepblue` account inside the `public_html\comp140` folder.

2. Briefly review some of the Kendo UI widgets at http://demos.kendoui.com (click the Launch Demos button) for Web demos. These UI widgets were constructed using a combination of HTML, CSS, JavaScript and a form of JavaScript called jQuery, a cross-browser library of functions designed to simplify browser scripting of HTML. jQuery is the most popular and free JavaScript library in use today. Native HTML form elements do not provide the rich functionality that these custom widgets provide.

3. This lab will add in the Kendo UI DateTimePicker widget into the order form from the previous lab. Edit the new lab 6 `order.html` file and add in the following links and script references into the HTML file's head element:

```
<link href="http://cdn.kendostatic.com/2012.2.710/styles/kendo.common.min.css"
rel="stylesheet">
<link  href="http://cdn.kendostatic.com/2012.2.710/styles/kendo.default.min.css"
rel="stylesheet">
```

```
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.7/jquery.min.js"></script>
<script src="http://cdn.kendostatic.com/2012.2.710/js/kendo.all.min.js"></script>
```

The first two link elements cause the CSS libraries from Kendo to be included into this `order.html` file. The next two script elements cause the jQuery library and Kendo's JavaScript library to be included into this `order.html` file. Without these references the calls to jQuery functions which follow in this lab will not work.

jQuery is shorthand for using JavaScript. For example in JavaScript you access elements in the HTML document this way:

```
document.getElementById("menu")      or
document.getElementsByTagName("input")
```

in jQuery the same thing is done this way using a **selector reference**:

```
$("#menu")   or
$("input")
```

The `$` symbol is used to access or define jQuery functions. After the `$` symbol the parentheses enclose a **selector**, which can be a tag name, or a tag name having a CSS class style, or a tag name having a CSS ID style.

`$("p")` - a jQuery reference to all `<p>` elements in the current document
`$(".auth")` – a jQuery reference to all elements having class="auth"
`$("#menu")` – a jQuery reference to the one element having id="menu"

In jQuery the notation `$(document)` refers to the current HTML document.

Following the jQuery selector reference is the action (or "method") for the designated selector reference, as in

`$("p").hide();` - hide all `<p>` elements (they are not displayed)

`$(".auth").fadeIn();` - cause all hidden elements having class="auth" to fade into view

`$("#menu").fadeOut("slow");` - cause the element having id="menu" to fade out slowly

4. The following jQuery code is added as a new `<script>` element just before the `</head>` tag. The outlined boxes with the curved corners show where the }) symbols match the start ({ symbols.

```
<script type= "text/javascript">

     $(document).ready(function() {

          $("#datetimepicker").kendoDateTimePicker( {
                value: new Date(),
                interval: 30,

          } );
     } );

</script>
```

This jQuery code initializes the third party Kendo UI widget `kendoDateTimePicker` to a desired configuration (assigning an initial `value` and `interval` properties to the `kendoDateTimePicker`) . The JavaScript notation `new Date()` is the current date. The interval property directs the `kendoDateTimePicker` to only select times on the half hour.

The addition of the `.ready()` to the `$(document)` defines a new function to execute as soon as the current document is loaded into the browser. This new function does not have a name but it does perform one task: set the Kendo datetimepicker element to its initial configuration.

5. Next we will add in the widget elements into the HTML document. Locate the HTML which define the Pickup and Delivery radio buttons. Insert the following lines after the "Delivery" button element:

```
<br>
   <div id="orderdate">
      <input id="datetimepicker">
   </div>
```

6. Save the `order.html` file and verify the page enables the new UI widget correctly in Firefox, Chrome, and Internet Explorer browsers.

7. The `timePicker` dropdown needs to be configured so that the minutes appear in 15 minute **intervals** on the quarter hour. Can you determine where this would need to be modified? (Hint: check the kendoUI demo page for DateTimePicker and look under the Documentation – scroll down the page a bit to find it.) Make the necessary updates where required.

8. It would not make sense to allow for an order to be made for the previous day so the `datetimepicker` widget needs to be configured to prevent that. Make the

necessary changes to the widget so that the earliest day is the current day. (Hint: look for the **min** method in the documentation.)

9. Occasionally it is useful to store information locally on the user's computer using a "cookie". Cookies are small text files read and written by the browser until the cookies expire. You will use a jQuery library to set up a cookie that will count the number of times the page has been visited by the current user. Copy the `jquery.cookie.js` library (check your course web site under labs, lab 6) to your deepblue lab 6 folder. Add a script reference to the jquery.cookie.js library **after** the jQuery script reference.

```
<script src="jquery.cookie.js"></script>
```

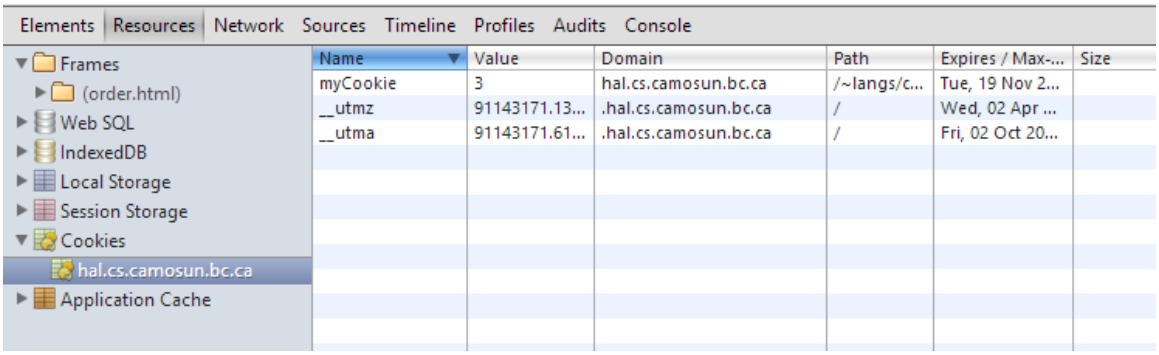
Within the existing jQuery script element you can add this new jQuery code which will create a new cookie and store a single number count in it.

```
$(document).ready(function () {
      var cookie_name = "myCookie";

      // Create the session cookie with its name "myCookie".

      var cookie_value = $.cookie(cookie_name);

      // If the cookie does not exist yet, create it.

      if ( cookie_value == null || isNaN(cookie_value)) {
           cookie_value = 0;
      }

      cookie_value = parseInt(cookie_value);

      $.cookie( cookie_name,
                ++cookie_value,
                { expires: 7 },
                { path: '/' });

      $('#splash').html('You have visited here ' + cookie_value
                        + ' times!');
      $('#splash').show();

      $("#datetimepicker").kendoDateTimePicker( {
          … from step 4
      } ) ;

});
```

The id element `splash` must be defined somewhere in your HTML in order for it to be displayed. Just inside the `middlebox` would be fine. You can verify the cookie exists once you refresh the page by searching for it in the browser options.

In the **Google Chrome** browser open the `order.html` web page from your deepblue site. Click the F12 key on the keyboard to bring up the developers tools display on the lower half of the browser window. Click on the Resources menu option (second from the left on the gray bar). Click on the dark gray arrow to the left of the Cookies option to expand the view of available cookies for deepblue.cs.camosun.bc.ca. Click on the deepblue site and you should see the myCookie cookie in the panel with its current value and expiry date. Right click on that cookie to delete it to test your JavaScript.

The graphic below shows the hal.cs.camosun.bc.ca web site cookies for langs.



For Firefox, click on Tools at the browser top main menu, select Options, then select Privacy. Then click on remove individual cookies.

10. The delivery time should be selected on the quarter hour which means the kendoDateTimePicker widget should show only times such as 5:00PM, 5:15PM, 5:30PM, 5:45PM, 6:00PM, etc. Add the following JavaScript code just after the jQuery ready function for the kendoDateTimePicker:

```
$(document).ready(function () {

    if (typeof(now) === 'undefined') {
      now = new Date();
      var mins = now.getMinutes();  // the current minute (0-59)
      var quarterHours = Math.round(mins / 10);
      if (quarterHours == 5) {
         now.setHours(now.getHours() + 1);
      }
      var rounded = (quarterHours * 15) % 60;
      now.setMinutes(rounded);
    }
    var cookie_name = "myCookie";
```

and change the `value` and `min` properties for the kendoDateTimePicker in the jQuery to the JavaScript named `now` instead of `new Date()`. The above JavaScript code is supposed to set the variable `now` to the date rounded forward to the nearest quarter hour but it is **buggy** (it has two typos you must correct).

Hint: if the current minute is between 0 and 14, then `quarterHours` should be 0. If the current minute is between 15 and 29, then `quarterHours` should be 1. If the current minute is between 30 and 44, then `quarterHours` should be 2. If the current minute is between 45 and 59, then `quarterHours` should be 3.

When you have the JavaScript working, your kendoDateTimePicker widget should automatically set itself to the time on the quarter hour when you load the order web page.

Modify the JavaScript code so that the selected delivery time is minimum two hours from now because we don't have pizza delivery vehicles equipped with warp drives yet.

11. The next step is to make the splash div show the delivery date and time when you select from the kendoDateTimePicker. To do this we need to define a change event handler within the kendoDateTimePicker

```
change: onChange
```

and define an `onChange` function within the `DateTimePicker`:

```
$(document).ready(function(){
    $("#datetimepicker").kendoDateTimePicker({

        change: onChange
    });

function onChange() {
    delivery = kendo.toString(this.value(), 'g');
    // write the jQuery to set div splash to:
    //    Selected delivery arrival is delivery
}
});
```

Hand In / Submit

1. [20 marks] When you want to submit the lab work, send me an email message (langs@camosun.bc.ca) with the subject: Comp 140 Lab 6 *John Smith* (where John Smith is your name). The body of the message should contain the URL to your work above, e.g. the URL `http://deepblue.cs.camosun.bc.ca/~cst0x/comp140/lab06/PizzaPalace/order.html`