



Lecture 8

Introduction to jQuery

What is jQuery?

- jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax(Asynchronous Javascript And Xml) much simpler with an easy-to-use API(application programming interface) that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.
 - jQuery is a JavaScript Library.
 - jQuery greatly simplifies JavaScript programming.
 - jQuery is easy to learn.

jQuery Syntax

- The jQuery syntax is tailor made for **selecting** HTML elements and performing some **action** on the element(s). Basic syntax is: **`$(selector).action()`**
 - ✓ A \$ sign to define/access jQuery
 - ✓ A (*selector*) to "query (or find)" HTML elements
 - ✓ A jQuery *action()* to be performed on the element(s)

Examples:

`$(this).hide()` - hides the current element.

`$("p").hide()` - hides all <p> elements.

`$(".test").hide()` - hides all elements with `class="test"`.

`$("#test").hide()` - hides the element with `id="test"`.

jQuery Selectors

- jQuery selectors allow you to select and manipulate HTML element(s).
- jQuery selectors are used to "find" (or select) HTML elements based on their id, classes, types, attributes, values of attributes and much more. It's based on the existing [CSS Selectors](#), and in addition, it has some own custom selectors.
- All selectors in jQuery start with the dollar sign and parentheses: `$()`.
 - The element Selector
 - The `#id` Selector
 - The class Selector

More Examples of jQuery Selectors

Syntax	Description
<code>\$("*")</code>	Selects all elements
<code>\$(this)</code>	Selects the current HTML element
<code>\$("#p.intro")</code>	Selects all <code><p></code> elements with <code>class="intro"</code>
<code>\$("#p:first")</code>	Selects the first <code><p></code> element
<code>\$("#ul li:first")</code>	Selects the first <code></code> element of the first <code></code>
<code>\$("#ul li:first-child")</code>	Selects the first <code></code> element of every <code></code>
<code>\$("#[href]")</code>	Selects all elements with an <code>href</code> attribute
<code>\$("#a[target='_blank']")</code>	Selects all <code><a></code> elements with a <code>target</code> attribute value equal to <code>"_blank"</code>
<code>\$("#a[target!='_blank']")</code>	Selects all <code><a></code> elements with a <code>target</code> attribute value NOT equal to <code>"_blank"</code>
<code>\$("#:button")</code>	Selects all <code><button></code> elements and <code><input></code> elements of <code>type="button"</code>
<code>\$("#tr:even")</code>	Selects all even <code><tr></code> elements
<code>\$("#tr:odd")</code>	Selects all odd <code><tr></code> elements

jQuery Event Methods

What are Events?

- All the different visitor's actions that a web page can respond to are called events.
- An event represents the precise moment when something happens.

Examples:

- moving a mouse over an element
- selecting a radio button
- clicking on an element
- The term "**fires**" is often used with events. Example:
"The keypress event fires the moment you press a key".

Some common DOM events

Mouse Events	Keyboard Events	Form Events	Document/Window Events
click	keypress	submit	load
dblclick	keydown	change	resize
mouseenter	keyup	focus	scroll
mouseleave		blur	unload

Commonly Used jQuery Event Methods

- **click()**
 - The click() method attaches an event handler function to an HTML element.
 - The function is executed when the user clicks on the HTML element.
- **dblclick()**
 - The dblclick() method attaches an event handler function to an HTML element.
 - The function is executed when the user double-clicks on the HTML element

Commonly Used jQuery Event Methods(continue..)

- **mouseenter()**
 - The mouseenter() method attaches an event handler function to an HTML element.
 - The function is executed when the mouse pointer enters the HTML element
- **mousedown()**
 - The mousedown() method attaches an event handler function to an HTML element.
 - The function is executed, when the left mouse button is pressed down, while the mouse is over the HTML element
- **mouseleave()**
 - The mouseleave() method attaches an event handler function to an HTML element.
 - The function is executed when the mouse pointer leaves the HTML element

Commonly Used jQuery Event Methods(continue..)

- **mousedown()**
 - The mousedown() method attaches an event handler function to an HTML element.
 - The function is executed, when the left mouse button is pressed down, while the mouse is over the HTML element
- **mouseup()**
 - The mouseup() method attaches an event handler function to an HTML element.
 - The function is executed, when the left mouse button is released, while the mouse is over the HTML element

Commonly Used jQuery Event Methods(continue..)

- **hover()**
 - The hover() method takes two functions and is a combination of the mouseenter() and mouseleave() methods.
 - The first function is executed when the mouse enters the HTML element, and the second function is executed when the mouse leaves the HTML element
- **focus()**
 - The focus() method attaches an event handler function to an HTML form field.
 - The function is executed when the form field gets focus
- **blur()**
 - The blur() method attaches an event handler function to an HTML form field.
 - The function is executed when the form field loses focus

jQuery Effects

jQuery hide() and show()

- The optional speed parameter specifies the speed of the hiding/showing, and can take the following values: "slow", "fast", or milliseconds.
- The optional callback parameter is a function to be executed after the hide() or show() method completes

jQuery toggle()

- With jQuery, you can toggle between the hide() and show() methods with the toggle() method.

jQuery Effects (continue)

jQuery Fading Methods

- With jQuery you can fade an element in and out of visibility.
- jQuery has the following fade methods:
 - fadeIn()
 - fadeOut()
 - fadeToggle()
 - fadeTo()

jQuery Sliding Methods

- With jQuery you can create a sliding effect on elements.
- jQuery has the following slide methods:
 - slideDown()
 - slideUp()
 - slideToggle()

jQuery Effects (continue)

jQuery Animations - The animate() Method

- The jQuery animate() method is used to create custom animations.
- The required params parameter defines the CSS properties to be animated.
- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds.
- The optional callback parameter is a function to be executed after the animation completes.

jQuery Callback Functions

- JavaScript statements are executed line by line. However, with effects, the next line of code can be run even though the effect is not finished. This can create errors.
- To prevent this, you can create a callback function.
- A callback function is executed after the current effect is finished.
- Typical syntax:
\$(selector).hide(speed,callback);

jQuery - Get Content and Attributes

Get Content - `text()`, `html()`, and `val()`

- Three simple, but useful, jQuery methods for DOM manipulation are:
 - `text()` - Sets or returns the text content of selected elements
 - `html()` - Sets or returns the content of selected elements (including HTML markup)
 - `val()` - Sets or returns the value of form fields

Get Attributes - `attr()`

- The jQuery `attr()` method is used to get attribute values.

jQuery - Set Content and Attributes

Set Content - text(), html(), and val()

- We will use the same three methods from the previous page to **set content**:
 - text() - Sets or returns the text content of selected elements
 - html() - Sets or returns the content of selected elements (including HTML markup)
 - val() - Sets or returns the value of form fields

A Callback Function for text(), html(), and val()

- All of the three jQuery methods above: text(), html(), and val(), also come with a callback function. The callback function has two parameters: the index of the current element in the list of elements selected and the original (old) value. You then return the string you wish to use as the new value from the function.

jQuery - Add and Remove Elements

Add New HTML Content

- We will look at four jQuery methods that are used to add new content:
 - `append()` - Inserts content at the end of the selected elements
 - `prepend()` - Inserts content at the beginning of the selected elements
 - `after()` - Inserts content after the selected elements
 - `before()` - Inserts content before the selected elements

Remove Elements/Content

- To remove elements and content, there are mainly two jQuery methods:
 - `remove()` - Removes the selected element (and its child elements)
 - `empty()` - Removes the child elements from the selected element

jQuery - Get and Set CSS Classes

jQuery Manipulating CSS

- jQuery has several methods for CSS manipulation. We will look at the following methods:
 - `addClass()` - Adds one or more classes to the selected elements
 - `removeClass()` - Removes one or more classes from the selected elements
 - `toggleClass()` - Toggles between adding/removing classes from the selected elements
 - `css()` - Sets or returns the style attribute