



MIS3690 WEB TECHNOLOGIES

BABSON COLLEGE
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BASICS OF JQUERY



WHAT IS JQUERY?

- A library (or collection) of JavaScript functions
 - Created using JavaScript
 - Functions that we typically write and pre-created for you
 - Must know how to refer to and use functions
 - It is open-source (free for developers and users)
- Where is this library?
 - Can download from : <http://jquery.com/download/> and linked as a local file.
 - Other place to get it: [Github](#)
 - Can also be linked as a remote file (see template for *how*)

JQUERY SYNTAX

`$(selector).action()`

- `action()` is a jQuery function
- Selector – a HTML tag
 - Defines the element that triggers the `action ()`
 - Also defines the element that is changed/manipulated by the `action ()`
- Examples of selectors:
 - `"h1"` – applies the action to all h1 elements
 - `"#one"` – applies the action to the element with id="one"
 - `".me"` – applies the action to the element with class="me"

A SHORT SAMPLE LIST OF SELECTORS

- `$("h1")` – selects all `<h1>` elements
- `$("#one")` – selects all elements with `id = "one"`
- `$(".two")` – selects all elements with `class = "two"`
- `$("p#one")` – selects all `<p>` elements with `id="one"`
- `$("h1.two")` – selects all `<h1>` elements with `class = "two"`
- `$("p:first")` – selects the first `<p>` element
- `$("ul li:first")` – selects the first `` element under the first `` element
- `$("*")` – selects ALL elements on the page (wild card)
- `$("[href]")` – selects all elements with the "href" attribute defined.
- `$("tr:even")` – selects even `<tr>` elements ("tr:odd" – selects all odd elements)

JQUERY ACTION EXAMPLES

- Change all <h1> elements to have a Navy font
 - `$("#h1").css ("color", "Navy");`
- Add a border (3px, black, solid) to a paragraph with id "one"
 - `$("#p#one").css ("border", "3px solid black");`
- Change font color and font weight of all elements with the class "fcfw"
 - `$(".fcfw").css ({ "color": "Navy", "font-weight" : "bold" });`
 - Notice the use of the curly parenthesis within the regular parenthesis (only needed when multiple CSS definitions are defined in a single statement).
 - Notice the difference between the first example (where only one CSS definition was defined) and this example

DEFINING EVENTS WITH SELECTORS

```
$ (Selector).event ( function ()  
{  
    // Actions here  
    } );
```

Element that triggers
the function

This does not change when
you write the actual code

Example: Change the text within a <h1> tag when the <button> element is clicked.

```
$ ("button").click ( function ()  
{  
    $ ("h1").text("New Text Here");  
});
```

Element that is changed by
the function

DEFINING EVENTS WITH SELECTORS

```
$ (Selector).event ( function ()  
    {  
        $(this).action()  
    } );
```

Example: Change the text within a <h1> tag when the <h1> element is clicked.

```
$ ("h1").click ( function ()  
    {  
        $(this).text("New Text Here");  
    } );
```

In this example, we are interacting with an element <h1> and changing the same element <h1> . jQuery uses "this" selector to refer to the same element

SAMPLE JQUERY ACTION FUNCTIONS – THESE COME FROM THE LIBRARY

- `.hide()` – Hide an element on the page
- `.show()` – Unhide an element on the page
- `.toggle()` – Hide/unhide toggle
- `.fadeIn(speed)` – Unhide in slow motion
 - Speed options: "fast", "slow", # milliseconds
- `.fadeOut (speed)` – Hide in slow motion
 - Speed options: "fast", "slow", # milliseconds
- `.fadeTo(speed, opacity)` – unhide to some extent
 - Smaller the "opacity" number (between 0 and 1), the more faded it looks
- `.alert("message")` – Same as for JS
- `.css("property", "value")` – Apply CSS to an element
 - Example: `css("color", "blue")`

CS20-INCLASS-JQUERY-SELECTOR.HTM

- Select the following elements using jQuery selectors:
 - JavaScript Only
 - PHP Only
 - JavaScript and PHP
 - All the programming languages
 - the name input
 - the name input and the email input



JQUERY EFFECTS

MANIPULATING PAGE AND FORM CONTENT AND STYLE

TEXT EFFECTS

- `html()` gets the html of the selected item
- `html("x")` inserts x as the html of the selected item
- `text()` gets the text of the selected item ignoring html tags
- `text("x")` inserts x (which should contain no html itself) as the html of the selected item
- Examples:
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_html_get
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_html_set

FORM EFFECTS

- `val()` gets the value of the selected form field(s)
- `val("x")` sets the value of the selected form field(s)

- Examples

https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_val_get

https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_html_set

MANIPULATING HTML ATTRIBUTES

- `attr("x")` gets the value of the attribute x from the selected element(s)
- `attr("x", "y")` sets the value of the attribute x of the selected element(s) to y
- `attr("x1": "y1", "x2": "y2", etc)` sets the value of attribute x1 to y1, x2 to y2, etc.
- Examples:
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_attr_get
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_attr_set
- You can use `attr()` to change the href of a link, the src of an image, or even the function that runs onclick.

MORE TEXT EFFECTS

- `append("x")` inserts x at the end of the selected content but before its closing tag
- `prepend("x")` inserts x at the beginning of the selected content, just after its opening tag
- These have the potential to affect the DOM (document object model – existence of web elements) if the insertion includes tags
- Examples:
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_html_append
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_html_prepend

DOM EFFECTS

- `after("x")` inserts x after the selected items
- `before("x")` inserts x before the selected items
- `remove()` removes the selected items
- `empty()` removes the child elements of selected items
- Examples:
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_remove
https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_empty

CLASS MANIPULATION

- `addClass("className")` applies the specified CSS class to the selected items
- `removeClass("className")` removes the specified CSS class from the selected items
- `toggleClass("className")` applies the specified CSS class to the selected items if they have a different or no style; removes this class if it currently applies to the selected items

- **Examples:**

https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_addclass

https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_removeclass

https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_dom_toggleclass

OBTAINING AND SETTING CSS PROPERTIES

- `css("property")` returns the value of the specified CSS property for the FIRST selected item
- `css("property", "value")` sets the CSS property to the indicated value for the selected items
- `css("property": "value", "property": "value", ...)` sets the value of multiple CSS properties
- Examples:
 - https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_css_getcolor
 - https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_css_setcolor
 - https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_css_set_multiple

HIDE/SHOW EFFECTS

- `hide()` makes the selected item disappear
- `show()` unhides selected items if they were hidden
- `toggle()` hides selected items that are showing, and shows selected items that are hidden
- Examples: http://www.w3schools.com/jquery/jquery_hide_show.asp

FADE EFFECTS

- `fadeIn(speed)` shows a hidden item gradually
 - Speed can be "`slow`", "`fast`", or `#` of milliseconds
- `fadeOut(speed)` hides a showing item gradually
- `fadeToggle(speed)` acts like `fadeIn()` for those selected items that are hidden and like `fadeOut()` for those selected items that are showing
- `fadeTo(speed,opacity)` fades the selected items at the specified speed to the specified opacity
 - Opacity is between `0` (transparent) and `1` (opaque)
- Examples:
http://www.w3schools.com/jquery/jquery_fade.asp

SLIDE EFFECTS

- `slideDown(speed)` used to slide down an element that has `display:none` or has been slid up
- `slideUp(speed)` used to slide an element up to eventually hide it
- `slideToggle(speed)` slides up what has been slid down and vice versa
- Examples:
http://www.w3schools.com/jquery/jquery_slide.asp

ANIMATE EFFECTS

- `animate({parameters} ,speed)` is used to change an element from its current style to the style specified in the parameter list
 - Parameters are separated by commas
 - Parameters specified as style `name:'style value'`
 - Example: `width:'150px'`
 - Can precede the value by `+=` to indicate compared to now
 - Can precede the value by `-=` to indicate compared to now
- Examples:
http://www.w3schools.com/jquery/jquery_animate.asp

THE JQUERY ANIMATION QUEUE

- Animations commands on the same element are placed in a queue and follow one another rather than running simultaneously
 - This is true even when they are run from different functions
- Animation commands on different elements have their own queues
 - Each queue runs in sequence, but different queues runs simultaneously
- `clearqueue()` removes all remaining items from the selected queue.
- Example:
http://w3schools.com/jquery/eff_clearqueue.asp

STOP EFFECTS

- `stop(all,finish)` stops the current animation
 - `all`, if true, flushes the queue
 - `Finish`, if true, reaches the end of the current animation immediately.
 - Example: `animate({width: '500px'}, "slow")` when stopped, the element animated will immediately become 500px wide, without the animated growth in between.
 - Example: `stop(true,false)`
 - Default: `stop(false,false)`. If either argument is missing, it is assumed to be false.
 - Applies to all effects, not just animation
- Examples:
http://w3schools.com/jquery/jquery_stop.asp

CS2 I-INCLASS

- Add functions to implement the following effects
- When clicking the button "Show odd rows", only show the first and third row of the table, and move the text "This text will move" to above `h2` "This is another simple text".
- When clicking the button "Show even rows", only show the second and fourth row of the table, and move the text "This text will move" to its original place.
- When clicking the paragraph, add class "`blue`" to `h1`, `p` and `tr`, add class "`red`" to `h2`.
- When clicking the `h1`, add class "`red`" to `h1`, `p` and `tr` (you need to remove the previous class first), and remove class "`red`" to `h2`.

CALL BACK

- Normally, queues are executed simultaneously, allowing effects to overlap
- Can add a "call back" function to the last parameter of any effect to run a different effect only when the first one is finished
- Examples:
http://w3schools.com/jquery/jquery_callback.asp

DELAY EFFECT

- `delay(speed, queue)` delays the queue for a short time (**fast**), longer time (**slow**), or a given **number** of milliseconds
- The queue parameter is optional and if omitted refers to the current queue
- Example:
http://w3schools.com/jquery/eff_delay.asp



INTRO TO THE JQUERY UI

THEMES AND WIDGETS



ABOUT THE JQUERY UI

- Consists of “a curated set of user interface interactions, effects, widgets, and themes built on top of the jQuery JavaScript Library.”
- It is open source and free
- Available at the jQueryUI site at <http://jqueryui.com/>
- Let's go there now

DEMO

- Select Demo
- Examine the following widgets:
 - Accordion
 - Autocomplete
 - Datepicker
 - Slider
 - Tabs

SELECTING THEMES & DOWNLOADING

- Click on [Themes](#)
- Click on [Gallery](#)
- Click on some of the galleries to see how they affect selected widgets
- The [Roll Your Own](#) tab allow you to completely customize your theme, or you can edit an existing theme. We won't cover these options.
- Select the [Redmond](#) theme (third row) and click the Download button

DOWNLOADING (CONT.)

- Select the [Stable](#) version
- Unselect Toggle All components
- Scroll down to [Widgets](#) and select [Accordion](#), [Datepicker](#), and [Tabs](#)
- Notice that some of the UI core has automatically been selected for you
- Scroll down and click the [Download](#) button

PREPARING TO USE THE UI

- Extract all files from the downloaded zip file
- Copy the css, development-bundle, and js folders into a new folder
- Download CS22-InClass-jQueryUI.htm and copy it into the folder
- Make another copy of CS22-InClass-jQueryUI.htm in the folder and call it accordion.htm

MODIFYING THE ACCORDION PAGE

- Open accordion.htm in Code in one window
- Open index.html from the downloaded package in another window
- Copy the <link> and two <script> lines below it from the html page to your accordion page
- After the <form> tag, add <div id="accordion">. Close the div just before the </form> tag
- Add <h3>Contact Information</h3> before the <fieldset>tag
- Add <h3>Satisfaction</h3> after the </fieldset> tag
- Add <h3>Submission</h3> before the last <p> tag
- Add a <div> tag after the Satisfaction </h3> and before the Submission <h3>
- Copy the jQuery script from the html page to your accordion page
- Optionally delete the tabs and datepicker functions
- Optionally eliminate the <fieldset> and <legend> opening and closing tags
- Save and run your page
- Explore accordion widget options

MODIFYING THE CS22-INCLASS-JQUERYUI.HTM PAGE

- Modify CS22-InClass-jQueryUI.htm to tab the parts of the form rather than have them in an accordion setup
- Add a form to the page in the Satisfaction section to allow the user to enter the date purchased through a datepicker UI widget



JQUERY MOBILE



JQUERY MOBILE

- jQuery Mobile is a touch-friendly UI framework built on jQuery Core that works across all popular mobile, tablet and desktop platforms.
- <http://jquerymobile.com/>

DEMO

- <http://demos.jquerymobile.com/1.4.5/>
- Examine the following :
 - Pages & Navigation
 - CSS Framework
 - Widgets
 - Form widgets

THEMING

- jQuery Mobile has a robust theme framework that supports up to 26 sets of toolbar, content and button colors, called a "swatch".
 - Just add a data-theme="b" attribute to any of the widgets on this page to turn it black.
- Cool party trick: add the theme swatch to the page and see how all the widgets inside the content will automatically inherit the theme.
- When you're ready to build a custom theme, use ThemeRoller to drag and drop, then download a custom theme.
 - <https://themeroller.jquerymobile.com/>

TAKEAWAY

- JQuery Mobile takes much of the work out of developing a layout that works on a mobile device, and also allows for web pages that automatically adapt to any device size, smartphone, tablet, desktop.
- Themes allow the developer to choose from a variety of User Interfaces, which they can then customize.



APP.JS



APP.JS

- App.js is a lightweight JavaScript UI library for creating mobile webapps that behave like native apps, sacrificing neither performance nor polish.
- Docs: <http://code.kik.com/app/3/docs.html>
- Demo: http://code.kik.com/app/3/demo/?_app_platform=ios