jQuery

jQuery

- Pre-requisite
  - Basic knowledge of HTML, CSS, Javascript
- What it does?
  - Manipulates Page Content (DOM)
  - Works on all modern browsers
  - Adding sophisticated effects
- jQuery 7 Key Simplified Features
  - Selection and Traversal – (CSS3 Selectors)
  - Manipulation – (Attribute, Content & CSS)
  - Event Handling – $(selector).on(…), $(selector).off(…)
  - ajax
  - Effects – (show/hide/toggle, slide Up/Down, fade In/Out, animate …)
  - User Interface – YUI
  - Extensibility – jQuery Plugins/Extensions

Selectors

SELECTOR	PURPOSE	EXAMPLE
tagname	Gets all elements that are named *tagname*	$('p') $('li')
#identifier	Gets all elements with ID of *identifier*	$('#employeeName') $('#systemTabContent')
.className	Gets all elements that have class attribute with the value of *className*	$('.DarkTitle') $('.SectionBlock')
tag.className	Gets all elements of type *tag that have a class attribute with the value of className*	$('p.SectionBlock') $('tr.OddRow')
tag#id.className	Gets the *tag* element that has an ID of *id* and a class attribute with the value of *className*	$('input#employeeName.SmallText')
comma and space	Comma – OR Space – All Child … NoSpace – AND	$('#One, #Two') $('p .className') $('.classN1.classN2')

Type of Filters
1. Basic
2. Content
3. Visibility
4. Attribute
5. Child
6. Form

Filters - Basic

FILTER	PURPOSE
:first	Selects only the first instance of the selector's returned set
:last	Select only the last instance of the selector's returned set
:even	Select only even-numbered elements in the selector's returned set
:odd	Select only odd-numbered elements in the selector's returned set
:eq(n)	Select only elements that are positioned at the given index of the selector's returned set
:gt(n)	Select only elements that are past the given index of the selector's returned set
:lt(n)	Select only elements that are before the given index of the selector's returned set
:header	Select all header elements (H1, H2, H3, ...) of the selector's returned set
:animated	Selects only elements that are currently being animated of the selector's returned set
:not(selector)	Select only elements that do not match the given selector of the selector's returned set

Filters – Attribute

FILTER	PURPOSE
[attribute]	Includes elements in the result set if they have the specified *attribute*
[attribute=value]	Includes elements in the result set if they have the specified *attribute* and it has the given *value*
[attribute!=value]	Includes elements in the result set if they have the specified *attribute* and it does not have the given *value*
[attribute^=value]	Includes elements in the result set if they have the specified *attribute* and it starts with the given *value*
[attribute$=value]	Includes elements in the result set if they have the specified *attribute* and it ends with the given *value*
[attribute*=value]	Includes elements in the result set if they have the specified *attribute* and it contains with the given *value*
[attFilter1][attrFilterN]	Includes elements in the result set that matches all of the specified filters

Filters – Content

FILTER	PURPOSE
:contains(text)	Filters the selection to only include elements that contains the *text* string
:empty	Filters the selection to only include empty elements
:has(selector)	Matches elements that contain at least one element that has the specified selector
:parent	Matches all elements that are parents (i.e. they contains atleast one other element, including text)

Filters – Visibility

FILTER	PURPOSE
:visible	Filters the selection to only include visible elements
:hidden	Filters the selection to only include hidden elements

Filters – Child

FILTER	PURPOSE
:nth-child(index)	Selects child elements at *index (postion starts @ 1)*
:nth-child(even)	Selects child elements at even position (index starts @ 1)
:nth-child(odd)	Selects child elements at odd position (index starts @ 1)
:nth-child(equation)	Selects child elements at the result of an equation Xn+M (ex: 2n or 3n+1) NOTE: n starts @ 0
:first-child	Selects the child elements who are the first child of their parent
:last-child	Selects the child elements who are the last child of their parent
:only-child	Selects the child elements who are the only child of their parent

Filters – Form

Form element selectors start with colon (:) like a regular filter

FILTER	PURPOSE
:input	Finds all input, select, textarea and button elements
:text	Finds all text elements
:password	Finds all password elements
:radio	Finds all radio button elements
:checkbox	Finds all checkbox elements
:submit	Finds all submit button elements
:reset	Finds all reset button elements
:image	Finds all image button elements
:button	Finds all button elements
:file	Finds all file upload elements

FILTER	PURPOSE
:enabled	Matches all form elements that are enabled
:disabled	Matches all form elements that are disabled
:checked	Matches all form elements that are checked (radio and checkbox)
:selected	Matches all form elements that are selected

Traversing

Function/Property	PURPOSE
size(), length	The number of elements in the jQuery result set
get()	Returns an array of all matched DOM elements. Useful if need to operate on the DOM element directly instead of using wrapped jQuery functions
get(index)	Access a single matched DOM element at a specified index in the matched set (index starts @ 0)
find(expression)	Searches for descendent elements that match the specified expression
each(fn)	Execute a function within the context of every matched element

Get/Set/Create Content

- Getter/Setter

Function	PURPOSE
html()	Returns the HTML content of the first matched element of the selector/filter result set
html(newcontent)	Sets the HTML content of every matched element of the selector/filter result set
text()	Returns the text content of the first matched element of the selector/filter result set
text(newText)	Sets the text content for all matched elements

Manipulate Attributes

Function	PURPOSE
attr(attr-name)	Returns the HTML attribute value for attr-name of the first matched element of the selector/filter result set
attr(attr-name, value)	Sets a single attribute value of every matched element of the selector/filter result set
attr(attr-name, fn)	Sets a single attribute value to a computed value, on all matched element of the selector/filter result set. Instead of supplying a string value, a function is provided to compute the value of the attribute
attr(properties)	Sets a series of attributes on all matched elements using JSON syntax. `$("#imgLogo").attr({src:"/img/logo.gif", title:"Logo", alt:"Logo"});`
removeAttr(attr-name)	Removes the named attribute from all matched elements

NOTE: new attr-name will not be created. Only existing attr-name's value can be changed!

CSS Class Manipulation

CSS Function	PURPOSE
addClass(className)	Adds the specified class(es) to each of the set of matched elements
hasClass(className)	Returns true if the specified class is present on at least one of the set of matched elements
removeClass(className)	Removes all the specifed class(es) from the set of matched elements
toggleClass(className)	Adds the specified class if it is not present, removes the specified class if it is present
toggleClass(className, switch)	Adds the specified class if the switch is true, removes the specified class if the switch is false

NOTE: There are more on CSS manipulation functions.

CSS Property Manipulation

Function	PURPOSE
css(name)	Returns the value of the named CSS property for the first matched element
css(property, value)	Sets a single style property to a value on all matched elements. If a number is provided, it is automatically converted into a pixel value, with following exceptions: z-index, font-weight, opacity, zoom, and line-height

css(properties)	Sets the CSS properties of every matched element using JSON
	`var cssProp = {'background-color':'#ddd'`
	`, 'font-weight': 'bold'`
	`, 'color': 'rgb(0,40,244)'};`
	
	`$(this).css(cssProp);`

Insert Content

Function	PURPOSE
append(content)	Appends content to the inside of every matched element
appendTo(selector)	Appends all of the matched elements to another, specified, set of elements
prepend(content)	Prepends content to the inside of every matched element
prependTo(Selector)	Prepends all the matched elements to another, specified, set of elements
after(content)	Inserts content after each of the matched elements
before(content)	Inserts content before each of the matched elements
insertAfter(selector)	Inserts all of the matched elements after another, specified, set of elements
insertBefore(selector)	Inserts all the matched elements before another, specified, set of elements

Replace / Remove *

Function	PURPOSE
replaceWith(content)	Replaces all matched elements with the specified HTML or DOM elements
replaceAll(selector)	Replaces the elements matched by the specified selector with the matched elements
empty()	Removes all child nodes from the set of matched elements
clone()	Clone matched DOM elements and selects the clones
clone(bool)	Clone matched DOM elements, and all their event handlers, and select the clones

HTML Data Attribute

Function	PURPOSE
data()	Returns a JSON of all data attributes and its value on selected element
data(key)	Returns a value of data attribute value of a selected element
data(key, value)	Sets data key attribute with value of a selected element
removeData()	

Events

Native .addEventListener https://developer.mozilla.org/en-US/docs/Web/API/EventTarget/addEventListener

Simplified API: https://api.jquery.com/category/events/event-handler-attachment/

.on()
Attach an event handler function for one or more events to the selected elements.

.off()
Remove an event handler.

.one()
Attach a handler to an event for the elements. The handler is executed at most once per element per event type.

.trigger()
Execute all handlers and behaviors attached to the matched elements for the given event type.

AJAX

- Native ajax before 2015
  - Create new request using
    - XmlHttpRequest Object | XHR object | https://www.w3schools.com/xml/xml_http.asp
  - JSON (parse, stringify)

- Simplified jQuery ajax: http://api.jquery.com/jQuery.ajax/

- Modern ajax: Fetch API
  - https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API