

jQuery

A Javascript Library

Hard things made easier

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jQuery

- Code less do more
- Code is simpler and more manageable
- Less prone to errors
- Support different browser types
- (Fairly) easy to learn
- You should try all the examples on

<http://www.w3schools.com/jquery>

Or take the code Academy JQuery course.

<http://www.codecademy.com>

Simple example

```
<html>
  <head>
    //include remote jquery library
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js">
      </script>

    //or save it in a .js file and include it as a local file
    //<script type="text/javascript" src="jquery.js"></script>
    <script type="text/javascript">
      $(document).ready(function() {
        $("p").click(function() {
          $(this).hide();
        });
      });
    </script>
  </head>

  <body>
    <p>If you click on me, I will disappear.</p>
  </body>

</html>
```

jQuery Overview

- **What is jQuery?**
- jQuery is a library of JavaScript Functions.
- jQuery is a lightweight "write less, do more" JavaScript library.
- The jQuery library contains the following features:
 - HTML element selections
 - HTML element manipulation
 - CSS manipulation
 - HTML event functions
 - JavaScript Effects and animations
 - HTML DOM traversal and modification
 - AJAX
 - Utilities

Using jQuery

Just include the library

```
<head>
```

```
  <script type="text/javascript"  
  src="jquery.js"></script>  
</head>
```

Simple jQuery

Click button to hide all paragraphs

```
<html>
  <head>
    <script type="text/javascript" src="jquery.js"></script>
    <script type="text/javascript">
      $(document).ready(function(){
        $("button").click(function(){
          $("p").hide();
        });
      });
    </script>
  </head>

  <body>
    <h2>This is a heading</h2>
    <p>This is a paragraph.</p>
    <p>This is another paragraph.</p>
    <button>Click me and things will be hidden</button>
  </body>
</html>
```

jQuery Syntax Examples

\$ indicates a jQuery statement
(Note CSS Style References)

- [\\$\(this\).hide\(\)](#)
Demonstrates the jQuery hide() method, hiding the current HTML element.
- [\\$\("#test"\).hide\(\)](#)
Demonstrates the jQuery hide() method, hiding the element with id="test".
- [\\$\("p"\).hide\(\)](#)
Demonstrates the jQuery hide() method, hiding all <p> elements.
- [\\$\(".test"\).hide\(\)](#)
Demonstrates the jQuery hide() method, hiding all elements with class="test".

Syntax

SELECT some HTML Elements and perform some action on them

```
$(selector).action()
```

Usually define functions only after the document is finished loading, otherwise elements may not be there.

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

```
    // jQuery functions go here...
```

```
});
```


jQuery Selectors

- **jQuery Element Selectors**
- jQuery uses CSS selectors to select HTML elements.
- `$("p")` selects all `<p>` elements.
- `$("p.intro")` selects all `<p>` elements with `class="intro"`.
- `$("p#demo")` selects all `<p>` elements with `id="demo"`.

- **jQuery Attribute Selectors**

- jQuery uses XPath expressions to select elements with given attributes.
- `$("[href]")` select all elements with an href attribute.
- `$("[href='#']")` select all elements with an href value equal to "#".
- `$("[href!='#']")` select all elements with an href attribute NOT equal to "#".
- `$("[href$='.jpg']")` select all elements with an href attribute that ends with ".jpg".

CSS Selectors

- **jQuery CSS Selectors**

- jQuery CSS selectors can be used to change CSS properties for HTML elements.
- The following example changes the background-color of all p elements to yellow:

- **Example**

- `$("p").css("background-color","yellow");`
- `$("p").css({"propertyname":"value","property name":"value",...});`

More Examples

Syntax	Description
<code>\$(this)</code>	Current HTML element
<code>\$("p")</code>	All <code><p></code> elements
<code>\$("p.intro")</code>	All <code><p></code> elements with <code>class="intro"</code>
<code>\$("p#intro")</code>	All <code><p></code> elements with <code>id="intro"</code>
<code>\$("p#intro:first")</code>	The first <code><p></code> element with <code>id="intro"</code>
<code>\$(".intro")</code>	All elements with <code>class="intro"</code>
<code>\$("#intro")</code>	The first element with <code>id="intro"</code>
<code>\$("ul li:first")</code>	The first <code></code> element of the first <code></code>
<code>\$("ul li:first-child")</code>	The first <code></code> element of every <code></code>
<code>\$("ul li:nth-child(3)")</code>	The third <code></code> element of every <code></code>
<code>\$("[href\$='.jpg']")</code>	All elements with an <code>href</code> attribute that ends with ".jpg"
<code>\$("div#intro .head")</code>	All elements with <code>class="head"</code> inside a <code><div></code> element with <code>id="intro"</code>

Event Functions

```
<html>
  <head>
    <script type="text/javascript" src="jquery.js"></script>
    <script type="text/javascript">
      $(document).ready(function(){
        $("button").click(function(){
          $("p").hide();
        });
      });
    </script>
  </head>

  <body>
    <h2>This is a heading</h2>
    <p>This is a paragraph.</p>
    <p>This is another paragraph.</p>
    <button>Click me</button>
  </body></html>
```

Sample Events

- **Event Method** **Description**
- `$(document).ready(function)` Binds a function to the ready event of a document (when the document is finished loading)
- `$(selector).click(function)` Triggers, or binds a function to the click event of selected elements
- `$(selector).dblclick(function)` Triggers, or binds a function to the double click event of selected elements
- `$(selector).focus(function)` Triggers, or binds a function to the focus event of selected elements
- `$(selector).mouseover(function)` Triggers, or binds a function to the mouseover event of selected elements.

Effects

- **Examples**
- [jQuery hide\(\)](#)
Demonstrates a simple jQuery hide() method.
- [jQuery slideToggle\(\)](#)
Demonstrates a simple slide panel effect.
- [jQuery fadeTo\(\)](#)
Demonstrates a simple jQuery fadeTo() method.
- [jQuery animate\(\)](#)
Demonstrates a simple jQuery animate() method.

jQuery Hide and Show

- With jQuery, you can hide and show HTML elements with the `hide()` and `show()` methods:
- **Example**

```
$("#hide").click(function(){  
    $("p").hide();  
});
```

```
$("#show").click(function(){  
    $("p").show();  
});
```


Hide and show speed

- `$(selector).hide(speed,callback)`
- `$(selector).show(speed,callback)`
- `$("#button").click(function(){
 $("#p").hide(1000);
});`

Toggle

Between show and hide

`$(selector).toggle(speed,callback)`

```
$("#button").click(function(){  
    $("#p").toggle();  
});
```

jQuery Slide - slideDown, slideUp, slideToggle

The jQuery slide methods gradually change the height for selected elements.

jQuery has the following slide methods:

`$(selector).slideDown(speed,callback)`

`$(selector).slideUp(speed,callback)`

`$(selector).slideToggle(speed,callback)`

- The speed parameter can take the following values: "slow", "fast", "normal", or milliseconds.
- The callback parameter is the name of a function to be executed after the function completes.

Slide Examples

```
$(".flip").click(function(){  
    $(".panel").slideDown();  
});
```

```
$(".flip").click(function(){  
    $(".panel").slideUp()  
})
```

```
$(".flip").click(function(){  
    $(".panel").slideToggle();  
});
```

jQuery Fade - fadeIn, fadeOut, fadeTo

- The jQuery fade methods gradually change the opacity for selected elements.
- jQuery has the following fade methods:
- **`$(selector).fadeIn(speed,callback)`**
- **`$(selector).fadeOut(speed,callback)`**
- **`$(selector).fadeTo(speed,opacity,callback)`**
- The speed parameter can take the following values: "slow", "fast", "normal", or milliseconds.
- The opacity parameter in the fadeTo() method allows fading to a given opacity.
- The callback parameter is the name of a function to be executed after the function completes.

Custom Animations

- The syntax of jQuery's method for making custom animations is:
- **`$(selector).animate({params},[duration],[easing],[callback])`**
- The key parameter is **params**. It defines the CSS properties that will be animated. Many properties can be animated at the same time:

```
animate({width:"70%",opacity:0.4,marginLeft:"0.6in",fontSize:"3em"});
```

- The second parameter is **duration**. It specifies the speed of the animation. Possible values are "fast", "slow", "normal", or milliseconds.

Animation Example

```
<script type="text/javascript">  
  $(document).ready(function(){  
    $("button").click(function(){  
      $("div").animate({height:300},"slow");  
      $("div").animate({width:300},"slow");  
      $("div").animate({height:100},"slow");  
      $("div").animate({width:100},"slow");  
    });  
  });  
</script>
```

```
<script type="text/javascript">
  $(document).ready(function(){
    $("button").click(function(){
      $("div").animate({left:"100px"},"slow");
      $("div").animate({fontSize:"3em"},"slow");
    });
  });
</script>
```


Callback Functions

Function called after action is completed

```
$("#p").hide(1000,function(){  
    alert("The paragraph is now hidden");  
});
```

Instead of

```
$("#p").hide(1000);  
    alert("The paragraph is now hidden");
```

In 2nd example the alert will show before the paragraph is hidden, since the alert happens immediately and the hide takes 1 second. Calling the alert from a callback function ensures that it won't happen until the paragraph is hidden.

Changing HTML Content

`$(selector).html(content)`

The `html()` method changes the contents (innerHTML) of matching HTML elements.

`$("p").html("Stern is the best");`

Will change all html within a `<p>` tag to "Stern is the best"

Example

```
<html>
<head>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript">
$(document).ready(function(){
  $("button").click(function(){
    $("p").html("Stern is the best");
  });
});
</script>
</head>

<body>
<h2>This is a heading</h2>
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
<button>Click me</button>
</body>
</html>
```

Wait for document
to load

Add a button to change
All "p" elements to "Stern
is the best"
When clicked.

Can also append or prepend content

Adding HTML content

`$(selector).append(content)`

- The `append()` method appends content to the inside of matching HTML elements.

`$(selector).prepend(content)`

- The `prepend()` method "prepends" content to the inside of matching HTML elements.

After and Before

`$(selector).after(content)`

The `after()` method inserts HTML content after all matching elements.

`$(selector).before(content)`

The `before()` method inserts HTML content before all matching elements.

CSS Methods

<u>Method</u>	<u>Description</u>
<u>addClass()</u>	Adds one or more classes to selected elements
<u>css()</u>	Sets or returns one or more style properties for selected elements
<u>hasClass()</u>	Checks if any of the selected elements have a specified class
<u>height()</u>	Sets or returns the height of selected elements
<u>offset()</u>	Sets or returns the position (relative to the document) for selected elements
<u>offsetParent()</u>	Returns the first parent element that is positioned
<u>position()</u> element	Returns the position (relative to the parent element) of the first selected
<u>removeClass()</u>	Removes one or more classes from selected elements
<u>scrollLeft()</u>	Sets or returns the horizontal position of the scrollbar for the selected elements
<u>scrollTop()</u>	Sets or returns the vertical position of the scrollbar for the selected elements
<u>toggleClass()</u>	Toggles between adding/removing one or more classes from selected elements
<u>width()</u>	Sets or returns the width of selected elements

jQuery AJAX

Asynchronous Javascript and XML

AJAX

Allows javascript to dynamically communicate with a server without reloading the page.

jQuery provides a rich set of methods for AJAX web development.

With jQuery AJAX, you can request TXT, HTML, XML or JSON data from a remote server using both HTTP Get and HTTP Post.

And you can load remote data directly into selected HTML elements of your web page!

This is the magic that allows for web pages to dynamically change parts of their content instead of having to reload the whole page. No more click submit and wait for new page.

Example: Google Earth, Google maps

More map tiles are loaded in the background while you look at part of the map, so that when you move, the next area is already loaded.

jQuery load method

The jQuery load() method is a simple (but very powerful) AJAX function. It has the following syntax:

\$(selector).load(url,data,callback)

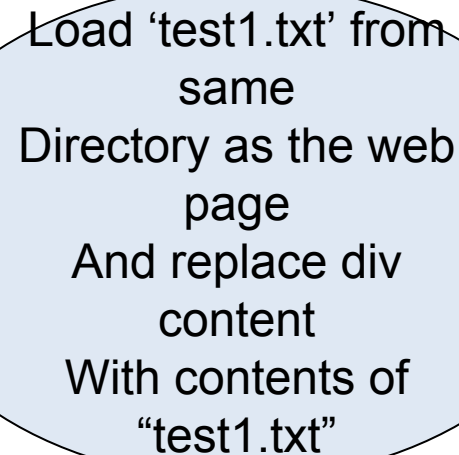
Use the **selector** to define the HTML element(s) to change, and the **url parameter** to specify a web address for your data.

jQuery load

```
<html>
<head>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript">
$(document).ready(function(){
  $("button").click(function(){
    $("div").load('test1.txt');
  });
});
</script>
</head>
<body>

<div><h2>Let AJAX change this text</h2></div>
<button>Change Content</button>

</body>
</html>
```



Load 'test1.txt' from
same
Directory as the web
page
And replace div
content
With contents of
"test1.txt"

jQuery AJAX

Many functions to move data back and forth between the server and PARTS of the web page.

Very powerful

Need these features to provide good user experience on mobile devices

Conclusion

- jQuery provides a wide range of functionality that makes very advanced capabilities available to developers who know a little javascript, html and css.
- jQuery mobile extends those capabilities for mobile devices by adding a set of mobile features

THANKS. ANY QUESTIONS?