

TP5- jQuery

1- Importance of jQuery

If you want to make your website so dynamic and different from the other websites then you need to have some knowledge of jQuery. It is the latest technology in the web design which is supported by HTML. jQuery is basically a coding of java script on the website that allows dynamic experience for the users when they are browsing a website. If you want to go with the basics of jQuery, then first you need to understand that jQuery is an open source software that helps in improving the navigation of the website and make them simpler using the java script codes. It is a free software that enhances accessibility of the website to many users. It is now much easier for the developers to create an animation, handle the events and subscribe the forms and using the Ajax functionality on the website.

What is jQuery?

jQuery is a library of JavaScript Functions, it contains the following features:

HTML element selections, HTML element manipulation, CSS manipulation, HTML event functions, JavaScript Effects and animations, AJAX

Adding the jQuery Library to Your Pages

The jQuery library is stored as a single JavaScript file, containing all the jQuery methods. It can be added to a web page with the following mark-up:

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

Please note that the <script> tag should be inside the page's <head> section.

Downloading jQuery

Two versions of jQuery are available for downloading: one minified and one uncompressed (for debugging or reading). Both versions can be downloaded from [jQuery.com](http://jquery.com).

jQuery Syntax Examples

Basic syntax is: \$(selector).action()

- * A dollar sign to define jQuery
- * A (selector) to "query (or find)" HTML elements
- * A jQuery action() to be performed on the element(s)

Examples:

\$(this).hide() - hides current element

\$("p").hide() - hides all paragraphs

\$("p.test").hide() - hides all paragraphs with class="test"

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

The Document Ready Function

All jQuery methods should be inside a document.ready() function:

```
$(document).ready(function(){
    // jQuery functions go here...
});
```

This is to prevent any jQuery code from running before the document is finished loading (is ready). Here are some examples of actions that can fail if functions are run before the document is fully loaded:

- * Trying to hide an element that doesn't exist
- * Trying to get the size of an image that is not loaded

jQuery Selectors

jQuery selectors allow you to select HTML elements (or groups of elements) by element name, attribute

name or by content.

jQuery Element Selectors

`$("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

`$("[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".

| 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>\$("[href\$='.jpg']")</code> | All elements with an href 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> |

2- Manipulating HTML Content

`$(selector).html(content)`

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

Exercise 1

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

jQuery HTML Manipulation Methods From This Page:

| Function | Description |
|---|--|
| <code>\$(selector).html(content)</code> | Changes the (inner) HTML of selected elements |
| <code>\$(selector).append(content)</code> | Appends content to the (inner) HTML of selected elements |
| <code>\$(selector).after(content)</code> | Adds HTML after selected elements |

3- jQuery Effects

Here are some examples of effect functions in jQuery:

```
$(selector).hide() , $(selector).show() ,$(selector).toggle() ,$(selector).slideDown() ,$(selector).slideUp()
$(selector).slideToggle() ,$(selector).fadeIn() ,$(selector).fadeOut() , $(selector).fadeTo() ,
$(selector).animate()
```

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();
});
```

Both hide() and show() can take the two optional parameters: speed and callback.

```
$(selector).hide(speed,callback)
$(selector).show(speed,callback)
```

The speed parameter specifies the speed of the hiding/showing, and can take the following values: "slow", "fast", "normal", or milliseconds:

Example

```
$("#button").click(function(){
    $("p").hide(1000);
});
```

The callback parameter is the name of a function to be executed after the hide (or show) function completes.

jQuery Toggle

The jQuery toggle() method toggles the visibility of HTML elements using the show() or hide() methods. Shown elements are hidden and hidden elements are shown.

Syntax:

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

Example

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

Exercise 2

```
<html><head>
<script src="jquery.js"></script>
<STYLE type="text/css">
.test {background: #A0A0F0; color: #404080;}
.grass {background: green; color: #F0F000;}
</STYLE>
<script>
$(document).ready(function(){
    $("#button").click(function(){
        $(".test").hide();
    });
});
```

```
});
</script></head><body>
<h2 class="test">This is a heading</h2>
<p class="test">This is a paragraph.</p>
<p>This is another paragraph.</p>
<button>Click me</button>
</body></html>
```

jQuery Slide

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

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

slideDown() Example

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

slideUp() Example

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

slideToggle() Example

```
$("button").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 opacity parameter in the fadeTo() method allows fading to a given opacity.

fadeTo() Example

```
$("button").click(function(){
    $("div").fadeTo("slow",0.25);
});
```

fadeOut() Example

```
$("button").click(function(){
    $("div").fadeOut(4000);
});
```

Exercise 3

```
<html><head>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript">
$(document).ready(function(){
```

```

$("button").click(function(){
    $("p").slideUp();
});
});
</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>

```

4-jQuery 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"});
```

Example 1

```

<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>

```

Exercise 4

```

<html><head>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript">
$(document).ready(function(){
    $("button").click(function(){
        $("p").animate({ fontSize:"3em"},"slow");
    });
});
</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>

```

5-jQuery Callback Functions

JavaScript statements are executed line by line. However, with animations, the next line of code can be run even though the animation is not finished. This can create errors. To prevent this, you can create a callback function. The callback function will not be called until after the animation is finished.

jQuery Callback Example

Typical syntax: `$(selector).hide(speed,callback)`

The callback parameter is a function to be executed after the hide effect is completed:

Example with Callback

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

Without a callback parameter, the alert box is displayed before the hide effect is completed:

Exercise 5

```
<html><head>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript">
$(document).ready(function(){
    $("button").click(function(){
        $("#p").hide(1000);
        alert("The paragraph is now hidden");
    });
});
</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>
```

jQuery Events Reference

`click()` , `dblclick()` , `hover()` , `keydown()` , `keypress()` , `keyup()` , `mousedown()` , `mouseenter()` , `mouseleave()` , `mousemove()` , `mouseover()` , `mouseup()`

6-Exercices:

- 1 make a table of 4 rows and 4 columns, each cell contains a picture hyperlinked to a different site, these pictures are initially half transparent and become opaque when the mouse enters them and return half transparent when the mouse leaves.
- 2 make a slide show of 16 pictures where each one fade out in 3 seconds before the next one appears, the event is triggered by a click on a button

Hints:

- use iterative function with callback to the same function in exercise 2
- in the Ex1 and Ex2 you may need the following syntax:

```
$(this), this, fadeTo(),
<a href="http://www.google.com"></a>
```