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jQuery

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What is jQuery?

jQuery is a lightweight, "write less, do more", JavaScript library

The purpose of jQuery is to make it much easier to use JavaScript on your website

jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that you can call with a single line of code

jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation

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What is jQuery?

The jQuery library contains the following features:
- HTML/DOM manipulation
- CSS manipulation
- HTML event methods
- Effects and animations
- AJAX
- Utilities

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Will jQuery Work in all Browsers?

The jQuery team knows all about cross-browser issues, and they have written this knowledge into the jQuery library

jQuery will run exactly the same in all major browsers, including Internet Explorer 6!

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Adding jQuery to Your Web Pages

Two methods:

Download - 2 versions

    Production

    Development

    Both can be downloaded from jQuery.com (http://jquery.com/download/)

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Adding jQuery to Your Web Pages

Two methods:

Download - 2 versions

Include in head element of pages:

```
<head>
<script src="jquery-3.2.1.min.js"></script>
</head>
```

Notes:

    The path to the file may be different

    Notice the `</script>` tag

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Adding jQuery to Your Web Pages

Two methods:

jQuery Content Delivery Network (CDN)

    If you don't want to download and host jQuery yourself, you can include it from a CDN

    Both Google and Microsoft host jQuery

    To use jQuery from Google or Microsoft, use one of the following:

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Adding jQuery to Your Web Pages

Two methods:

jQuery Content Delivery Network (CDN)

Google CDN:

```
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
</head>
```

Microsoft CDN:

```
<head>
<script src="https://ajax.aspnetcdn.com/ajax/jQuery/jquery-3.2.1.min.js"></script>
</head>
```

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Adding jQuery to Your Web Pages

Advantage of CDN over Download:

Many users already have downloaded jQuery from Google or Microsoft when visiting another site

As a result, it will be loaded from cache when they visit your site, which leads to faster loading time

Also, most CDNs will make sure that once a user requests a file from it, it will be served from the server closest to them, which also leads to faster loading time

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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)

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jQuery Syntax

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"

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The Document Ready Event

all jQuery methods should appear inside a document ready event

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

    // jQuery methods go here...

});
```

This is to prevent any jQuery code from running before the document is finished loading (is ready)

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The Document Ready Event

It is good practice to wait for the document to be fully loaded and ready before working with it

This also allows you to have your JavaScript code before the body of your document, in the head section

Examples of actions that can fail if methods are run before the document is fully loaded:

Trying to hide an element that is not created yet
Trying to get the size of an image that is not loaded yet

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The Document Ready Event

Tip: The jQuery team has also created an even shorter method for the document ready event:

```
$(function(){

    // jQuery methods go here...

});
```

Use the syntax you prefer

The document ready event is easier to understand when reading the code

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jQuery Selectors

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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 name, 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: $()

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jQuery Selectors - The #id Selector

The jQuery #id selector uses the id attribute of an HTML tag to find the specific element

An id should be unique within a page, so you should use the #id selector when you want to find a single, unique element

To find an element with a specific id, write an octothorp, followed by the id of the HTML element:

```
$("#test")
```

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jQuery Selectors - IDs

Javascript:

document.getElementById("test")…

vs. jQuery:

$("#test")

```
$(document).ready(function(){
    $("button").click(function() {
        $("#test").hide();
    });
});
```

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jQuery Selectors - IDs

Example:

```
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#test").hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p id="test">This is another paragraph.</p>

<button>Click me</button>
```

This is a heading

This is a paragraph.

This is another paragraph.

Click me

This is a heading

This is a paragraph.

Click me

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jQuery Selectors - The Element Selector

The jQuery element selector selects elements based on the element name
You can select all <p> elements on a page like this:

$("p")

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jQuery Selectors - The Element Selector

Javascript:

document.getElementByTagName("p")...

vs. jQuery:

$("p")...

```
$(document).ready(function(){
    $("button").click(function(){
        $("p").hide();
    });
});
```

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jQuery Selectors - The Element Selector

Example:

```
<script>
$(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 to hide paragraphs</button>
```

This is a heading

This is a paragraph.

This is another paragraph.

Click me to hide paragraphs

This is a heading

Click me to hide paragraphs

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jQuery Selectors - The .class Selector

The jQuery class selector finds elements with a specific class

To find elements with a specific class, write a period character, followed by the name of the class:

$(".test")

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jQuery Selectors - The .class Selector

Javascript:

```
document.getElementByClassName("test")…
```

vs. jQuery:

```
$(".test")…
```

```
$(document).ready(function(){
    $("button").click(function(){
        $(".test").hide();
    });
});
```

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jQuery Selectors - The .class Selector

Example:

```
<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>
```

This is a heading

This is a paragraph.

This is another paragraph.

Click me

This is another paragraph.

Click me

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jQuery Selectors - More Examples

Syntax	Description
$("*")	Selects all elements
$(this)	Selects the current HTML element
$("p.intro")	Selects all <p> elements with class="intro"
$("p:first")	Selects the first <p> element
$("ul li:first")	Selects the first element of the first
$("ul li:first-child")	Selects the first element of every
$("[href]")	Selects all elements with an href attribute

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jQuery Selectors - More Examples

Syntax	Description
$("a[target='_blank']")	Selects all <a> elements with a target attribute value equal to "_blank"
$("a[target!='_blank']")	Selects all <a> elements with a target attribute value NOT equal to "_blank"
$(":button")	Selects all <button> elements and <input> elements of type="button"
$("tr:even")	Selects all even <tr> elements
$("tr:odd")	Selects all odd <tr> elements

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jQuery Functions In a Separate File

If your website contains a lot of pages, and you want your jQuery functions to be easy to maintain, you can put your jQuery functions in a separate .js file

In the examples here, the functions are added directly into the <head> section

However, sometimes [often] it is preferable to place them in a separate file, like this (use the src attribute to refer to the .js file):

```
<script src="my_jquery_functions.js"></script>
```

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jQuery Event Methods

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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

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What are Events?

The term "fires/fired" is often used with events

Example:

"The keypress event is fired, the moment you press a key"

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What are Events?

Here are 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

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jQuery Syntax For Event Methods

In jQuery, most DOM events have an equivalent jQuery method

To assign a click event to all paragraphs on a page, you can do this:

```
$("p").click(function(){
  // action goes here!!
});
```

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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

The following example says: When a click event fires on a <p> element; hide the current <p> element:

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

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("p").click(function(){
        $(this).hide();
    });
});
</script>
</head>
<body>

<p>If you click on me, I will disappear.</p>
<p>Click me away!</p>
<p>Click me too!</p>
```

If you click on me, I will disappear.

Click me away!

Click me too!

If you click on me, I will disappear.

Click me too!

If you click on me, I will disappear.

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Commonly Used jQuery Event Methods

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:

```
$("p").dblclick(function(){
    $(this).hide();
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("p").dblclick(function(){
        $(this).hide();
    });
});
</script>
</head>
<body>

<p>If you double-click on me, I will disappear.</p>
<p>Click me away!</p>
<p>Click me too!</p>
```

If you double-click on me, I will disappear.

Click me away!

Click me too!

If you double-click on me, I will disappear.

Click me too!

If you double-click on me, I will disappear.

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Commonly Used jQuery Event Methods

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:

```
$("#p1").mouseenter(function(){
    alert("You entered p1!");
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("#p1").mouseenter(function(){
        alert("You entered p1!");
    });
});
</script>
</head>
<body>

<p id="p1">Enter this paragraph.</p>

</body>
</html>
```

www.w3schools.com says:

You entered p1!!

OK

Enter this paragraph.

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Commonly Used jQuery Event Methods

mouseleave()

The **mouseleave()** method method attaches an event handler function to an HTML element

The function is executed when the mouse pointer leaves the HTML element:

```
$("#p1").mouseleave(function(){
    alert("Bye! You now leave p1!");
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("#p1").mouseleave(function(){
        alert("Bye! You now leave p1!");
    });
});
</script>
</head>
<body>

<p id="p1">This is a paragraph.</p>

</body>
</html>
```

www.w3schools.com says:
Bye! You now leave p1!

OK

This is a paragraph.

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Commonly Used jQuery Event Methods

mousedown()

The **mousedown()** method method attaches an event handler function to an HTML element

The function is executed, when the left, middle or right mouse button is pressed down, while the mouse is over the HTML element:

```
$("#p1").mousedown(function(){
    alert("Mouse down over p1!");
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("#p1").mousedown(function(){
        alert("Mouse down over p1!");
    });
});
</script>
</head>
<body>

<p id="p1">This is a paragraph.</p>

</body>
</html>
```

www.w3schools.com says:
Mouse down over p1!

OK

This is a paragraph.

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Commonly Used jQuery Event Methods

mouseup()

The **mouseup()** method method attaches an event handler function to an HTML element

The function is executed, when the left, middle or right mouse button is released, while the mouse is over the HTML element:

```
$("#p1").mouseup(function(){
    alert("Mouse up over p1!");
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("#p1").mouseup(function(){
        alert("Mouse up over p1!");
    });
});
</script>
</head>
<body>

<p id="p1">This is a paragraph.</p>

</body>
</html>
```

www.w3schools.com says:

Mouse up over p1!

OK

This is a paragraph.

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Commonly Used jQuery Event Methods

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:

```
$("#p1").hover(function(){
    alert("You entered p1!");
},
function(){
    alert("Bye! You now leave p1!");
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("#p1").hover(function(){
        alert("You entered p1!");
    },
    function(){
        alert("Bye! You now leave p1!");
    });
});
</script>
</head>
<body>

<p id="p1">This is a paragraph.</p>

</body>
</html>
```

www.w3schools.com says:
You entered p1!
OK

This is a paragraph.

www.w3schools.com says:
Bye! You now leave p1!
OK

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Commonly Used jQuery Event Methods

on()

The **on()** method attaches one or more event handlers for the selected elements.

Attach a click event to a <p> element:

```
$("p").on("click", function(){
    $(this).hide();
});
```

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Commonly Used jQuery Event Methods

Example:

```
<script>
$(document).ready(function(){
    $("p").on("click", function(){
        $(this).hide();
    });
});
</script>
</head>
<body>

<p>If you click on me, I will disappear.</p>
<p>Click me away!</p>
<p>Click me too!</p>

</body>
</html>
```

If you click on me, I will disappear.

Click me away!

Click me too!

Click me away!

Click me too!

Click me too!

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A note on constructing JavaScript/jQuery functions

Though this lecture features relatively simple functions to demonstrate several concepts, it should be obvious that the code can grow more complex in practice

I suggest (Since NPP and Brackets aren't sophisticated to anticipate this) that you consider the old programmers (pre code-completion days) method of constructing them:

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A note on constructing JavaScript/jQuery functions

First:

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

});
```

See how there's an anonymous function nested inside the `$(document).ready` function?

So, get the punctuation right before cluttering it up with your code

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A note on constructing JavaScript/jQuery functions

Then:

```
$(document).ready(function(){
    $("button").click(function() {

    });
});
```

We then set up a second, nested 'skeleton', to tell the browser how to behave when the document is indeed ready

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A note on constructing JavaScript/jQuery functions

Then:

```
$(document).ready(function(){
    $("button").click(function() {
        $("#test").hide();
    });
});
```

We can, confident that all the parentheses, braces, and semicolons are properly nested, add the actual code to execute

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A note on constructing JavaScript/jQuery functions

Using the same method, we can add additional nested functions:

```
$(document).ready(function(){
    $("button").click(function() {
        $("#test").hide();
    });

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

...and so on

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Scaffolding

A lot of current web-building technology is based on these basic concepts

There are a number of JavaScript frameworks available that also seek to eliminate the pain points associated with vanilla JavaScript

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Scaffolding

All of them have their fanbases
Pros and cons
Focus on front-end – user-centric design
Learning each requires a sound grounding in vanilla JS
jQuery kind of 'splits the difference' between vanilla JS and JS frameworks
Library instead of framework
A little less complex

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Copyrights

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