

Coding for the Web

JavaScript & JQuery

Learning Objectives

Understand what Javascript is and its uses

Understand what JQuery is and its relationship with JavaScript

Create simple Javascript and JQuery interactions in a website

Have the confidence to experiment more with JavaScript and JQuery.

JavaScript

JavaScript — is a scripting language for the web.

It is used to program behaviours of a web page and it runs in the Web browser.

The Basics

Adding JavaScript to a html page;

```
<!DOCTYPE html>
<html>
<body>
<h2>My First JavaScript </h2>
<p id="myPara"></p>
<script>
document.getElementById("myPara").innerHTML = "My First JavaScript";
</script>
</body>
</html>
```

HTML DOM - Actions

In JavaScript you can perform actions which effect the HTML elements in you site.

You can use these action to add elements, remove elements and changing property values.

- JavaScript can change all the HTML elements in the page
- JavaScript can change all the HTML attributes in the page
- JavaScript can change all the CSS styles in the page
- JavaScript can remove existing HTML elements and attributes
- JavaScript can add new HTML elements and attributes
- JavaScript can react to all existing HTML events in the page
- JavaScript can create new HTML events in the page

Finding Elements

Method

```
document.getElementById(id)  
document.getElementsByTagName(name)  
document.getElementsByClassName(name)
```

Description

```
Find an element by element id  
Find elements by tag name  
Find elements by class name
```

Changing HTML Elements

```
element.innerHTML = new html content  
element.attribute = new value  
element.setAttribute(attribute, value)  
element.style.property = new style
```

```
Change the inner HTML of an element  
Change the attribute value of an HTML element  
Change the attribute value of an HTML element  
Change the style of an HTML element
```

Adding and Deleting Elements

```
document.createElement(element)  
document.removeChild(element)  
document.appendChild(element)  
document.replaceChild(element)  
document.write(text)
```

```
Create an HTML element  
Remove an HTML element  
Add an HTML element  
Replace an HTML element  
Write into the HTML output stream
```

Variables

Variables is how you store data in Javascript.

a variable is defined as;

var or **let**.

The main difference between them is **var** is defined through-out the whole document, where as **let** is has limited scope and would be applied to a statement.

You can name your variables anything you like but never start the name with a number.

Types of Variables:

integer = Whole number eg.

```
var x = 10;
```

floating Point or Float = decimal number

```
var x = 0.1;
```

String = Written Characters

```
var x = "Chris O' Connor";
```

HTML DOM Events

Events allows Js to interact with Html

Examples of HTML events:

Events

```
<button onclick="myFunction();" >  
  Click here  
</button>
```

When a user clicks the mouse

onClick

When a web page has loaded

onLoad

When the mouse moves over an element

onmousedown, onmouseenter, onmouseleave,

When a user strokes a key

onmousemove, onmouseover, onmouseout, onmouseup

onkeydown, onkeypress, onkeyup

Conditional Statements

In JavaScript we have the following conditional statements:

Use **if** to specify a block of code to be executed, if a specified condition is true

Use **else** to specify a block of code to be executed, if the same condition is false

Use **else if** to specify a new condition to test, if the first condition is false

Use **switch** to specify many alternative blocks of code to be executed

If

```
<p id="demo">Good Evening!</p>
```

```
<script>
```

```
if (new Date().getHours() < 18) {
```

```
    document.getElementById("demo").innerHTML = "Good day!";
```

```
}
```

```
</script>
```

if Else

```
<button onclick="myFunction()">Try it</button>
```

```
<p id="demo"></p>
```

```
<script>
```

```
function myFunction() {
```

```
    var hour = new Date().getHours();
```

```
    var greeting;
```

```
    if (hour < 18) {
```

```
        greeting = "Good day";
```

```
    } else {
```

```
        greeting = "Good evening";
```

```
    }
```

```
    document.getElementById("demo").innerHTML = greeting;
```

```
}
```

```
</script>
```

Useful web pages

W3Schools - Excellent web site for learning all thing web code

HTML Cheat Sheet - a digital cheat sheet for HTML, CSS and JavaScript

Tutorials Point - Tutorials Site in all things Code

Site Point - another cool site for learning code - Free login required

Solo Learn - another excellent site in teaching code - also a mobile app.- Free login required

CSS-tricks - Amazing site for teaching more than just CSS

Examples Code:

FIG 1

```
<div id="fig1">  the results shows here  </div>
```

```
<script>
```

```
/*fig 1*/
```

```
document.getElementById('fig1').innerHTML = "<h1> This is get element by id method 1</h1>";
```

```
</script>
```

FIG2

```
<h2 class="fig2Class">  the results shows here </h2>
```

```
<script>
```

```
/*fig 2*/
```

```
document.getElementsByClassName('fig2Class')[0].innerHTML = "This is get Element by Class name method";
```

```
</script>
```

FIG3

```
  <div id="fig3" >
```

```
<h3> the results shows here </h3>
```

```
<script>
```

```
  /*fig 3*/
```

```
  document.getElementsByTagName('h3')[0].innerHTML = "This is get Element by Tag name method";
```

```
</script>
```

FIG 5

```
<h1 onclick="changeText(this)">Click on this text!</h1>

<script>

/*fig5*/  function changeText(id) {
            id.innerHTML = "Oops!";

        }

</script>
```

FIG 6

```
<p id="fig6p">    </p>

<script> /*fig6*/
        var num1 = 20;
        var num2 = 40;
        var total = num1 + num2;

        document.getElementById("fig6p").innerHTML = ` The total is:` + total;

</script>
```

Project 1

```
<article class="cssChange">
<h1 id="cssChange1" onClick="csstitle()">Change this Title</h1>
<p id="cssChange2" onClick="csspara1()"> Insert Paragraph here</p>
<p id="cssChange3" onClick="csspara2()">
Insert Paragraph here </p>
</article>
<script>
function csstitle(){
document.getElementById("cssChange1").style.color = "#ff3399";}
function csspara1(){
document.getElementById("cssChange2").style.backgroundColor = "#ff3399";
document.getElementById("cssChange2").style.color = "#fff";
}
function csspara2(){
    document.getElementById("cssChange3").style.backgroundColor = "#ff3399";
    document.getElementById("cssChange3").style.color = "#fff";
    document.getElementById("cssChange3").style.position = "absolute";
    document.getElementById("cssChange3").style.left = "700px";
}
```

Project 2

```
<div class="row">
    <p id ="css2Change3" onClick="css2para2()">
        Insert Paragraph here </p>
</div>
```

```
/*project2 */
<script>
    function css2para2() {
    var elem = document.getElementById("css2Change3");
    var pos = 0;
    var id = setInterval(frame, 5);
    function frame() {
    if (pos == 700) {
    clearInterval(id);
    } else {
    pos++;
    elem.style.left = pos + `px`;
    elem.style.position = "absolute";
    }
    }
}
</script>
```

JQuery

JQuery is a light weight JavaScript Library, which enables web developers to create interactive content more easily

With JQuery you need to add a link to access the library.

You can either down load the file and link locally of use an external CDN link.

I prefer to use an external link however if you wish to develop your site locally with limited internet access you will have to down load the files

Local Link

```
<head>  
<script src="jquery-3.3.1.min.js"></script>  
</head>
```

Google CDN link

```
<head>  
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>  
</head>
```

JQuery site to down load files

Links for Copy and pasting

JQuery Sytax

`$(selector).action()`

The \$ sign defines the JQuery code.

The Selector finds the html element eg. h1, .class #id.

The action is what you would like to happen to the element.

If placing you JQuery at the start of the document you need to ensure that the page has loaded before your JQuery initialises, otherwise it will not function.*

You do this with a document ready event.

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

```
    // jQuery methods go here...
```

```
});
```

or Simplified version

```
$(function(){
```

```
    // jQuery methods go here...
```

```
});
```

*Note. If you place your JQuery at end of your document you dont need this.

Selectors

`$(".class")` all with this Class name

`$("#id")` the tag with this id

`$("h1")` all with this tag

`$(this)` Selects the current HTML element

`$("p.intro")` Selects all `<p>` elements with `class="intro"`

`$("p:first")` Selects the first `<p>` element

there are many more

Mouse Events

dblclick
mouseenter
mouseleave

Keyboard Events

keydown
keypress
keyup

Form Events

submit
change
focus
blur

Document/Window Events

load
resize
scroll
unload

```
<script>
```

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

```
</script>
```

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

```
<p>Click me away!</p>
```

```
<p>Click me too!</p>
```