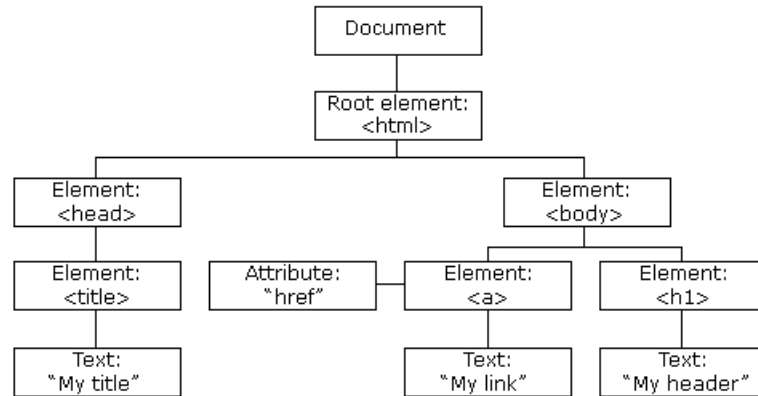


## CIS 255 – Lesson 21 – Comparing JavaScript and jQuery

JavaScript can change all the HTML and CSS elements and attributes in a web page using the document object model (DOM). So can jQuery. But what are the differences?



From: [http://www.w3schools.com/js/js\\_htmlDOM.asp](http://www.w3schools.com/js/js_htmlDOM.asp)

One way to access and update an element is by using `document.getElementById().value` in JavaScript. Consider the following JavaScript code:

```
<!DOCTYPE html>
<html>
<head>
<script>
function convert(degree) {
    if (degree == "C") {
        F = document.getElementById("c").value * 9 / 5 + 32;
        document.getElementById("f").value = Math.round(F);
    } else {
        C = (document.getElementById("f").value - 32) * 5 / 9;
        document.getElementById("c").value = Math.round(C);
    }
}
</script>
</head>
<body>
<p>Insert a number into one of the input fields below:</p>
<input id="c" onkeyup="convert('C')"> degrees Celsius<br>
equals<br>
<input id="f" onkeyup="convert('F')"> degrees Fahrenheit

<p>Note that the <b>Math.round()</b> method is used, so that the result
will be returned as an integer.</p>
</body>
</html>
```

From: [http://www.w3schools.com/js/tryit.asp?filename=tryjs\\_celsius](http://www.w3schools.com/js/tryit.asp?filename=tryjs_celsius)

**This code replaces the text in the Fahrenheit textbox if a number is entered into the Celsius textbox, and vice versa. (Try it.)**

## Debugging JavaScript Errors

What if we add another temperature scale, Kelvin? Sometimes you can get an error using `document.getElementById().value`, especially if

```
<!DOCTYPE html>
<!-- -----
file: svsu cis255 2014-11-06 ckf
author: george corser
adapted from:
http://www.w3schools.com/js/tryit.asp?filename=tryjs_celsius
----- -->

<html>
<head>
<script>
function convert(degree) {
    if (degree == "C") {
        F = document.getElementById("c").value * 9 / 5 + 32;
        document.getElementById("f").value = Math.round(F);
        K = parseFloat(document.getElementById("c").value) + 273;
        document.getElementById("k").value = Math.round(K);
    } else {
        if (degree == "F") {
            C = (document.getElementById("f").value - 32) * 5 / 9;
            document.getElementById("c").value = Math.round(C);
            K = C - 273;
            document.getElementById("k").value = Math.round(K);
        } else {
            C = parseFloat(document.getElementById("k").value) - 273;
            document.getElementById("c").value = Math.round(C);
            F = C * 9 / 5 + 32;
            document.getElementById("f").value = Math.round(F);
        }
    }
}
</script>
</head>

<body>
<p>Insert a number into one of the input fields below:</p>
<input id="c" onkeyup="convert('C')"> degrees Celsius<br>
equals<br>
<input id="k" onkeyup="convert('K')"> degrees Kelvin <br>
equals<br>
<input id="f" onkeyup="convert('F')"> degrees Fahrenheit

<p>Note that the Math.round() method is used, so that
the result will be returned as an integer.</p>
</body>

</html>
```

## Before

Insert a number into one of the input fields below:

degrees Celsius  
equals  
 degrees Fahrenheit

Note that the **Math.round()** method is used, so that the result will be returned as an integer.

## After

Insert a number into one of the input fields below:

degrees Celsius  
equals  
 degrees Kelvin  
equals  
 degrees Fahrenheit

Note that the **Math.round()** method is used, so that the result will be returned as an integer.

## A jQuery Solution

jQuery is a library of JavaScript functions so some people might still consider it JavaScript. But it looks a bit different:

```
$("#fahrenheit").keyup(function() {  
    $("#celsius").val(((this.value-32)*(5/9)).toFixed(2));  
    $("#kelvin").val((((this.value-32)*(5/9))+273.15).toFixed(2));  
})
```

**This code replaces the text in Celsius and Kelvin textboxes if a number is entered into the Fahrenheit textbox. Two more similar code blocks permit the other conversions. (Try it.) This code forces accuracy to two decimal places.**

**Instead of using HTML `onkeyup="convert('C')"` to trigger the execution of the function, the event handling is taken care of in jQuery, i.e. `$("#fahrenheit").keyup()`.**

The HTML file for the jQuery code looks like this:

```
<!DOCTYPE html>
<html>
<head>
  <title>JQUERY Example</title>
  <meta charset="utf-8">
  <script
src="http://ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js">
  </script>
  <link rel="stylesheet" href="css/ex4-style.css" type="text/css"
media="screen">
  <script src="js/script.js" type="text/javascript"></script>
</head>
<body>

<h3>Temperature Converter:</h3>
<form id="tempUnits" method="get" action="#">

<fieldset>

  <label for="fahrenheit">Fahrenheit:
  <input type="text" id="fahrenheit" value="32">
</label>

  <label for="celsius">Celsius:
  <input type="text" id="celsius" value="0">
</label>

  <label for="kelvin">Kelvin:
  <input type="text" id="kelvin" value="273.15">
</label>

</fieldset>

</form>
</body>
</html>
```

## In class assignment

1. Write the jQuery code (script.js) for the HTML file above.
2. Print your code and put it in my "in" box
3. Put a link to the html file on your personal menu.

## Homework (Assignment 21)

See accompanying page.