**JavaScript Date Objects**

**Review: Events**

* What is an *event*?
* What is an *event handler*?
* Where can event handlers be defined?
* How does an event handler get assigned to a particular event?

<p onmouseout="doSomething()"> This paragraph has an onmouseout event</p>  
  
 <script>  
        function doSomething() {  
            document.demoform.message.value = "something";  
        }  
 </script>  
  
    <form name="demoform">  
        <input name="message" />  
    </form>  
  
In the code above:

* Identify the purpose of each section
* Why do the <form> and <input> elements have *name* attributes? What would *id* attributes be used for?
* How would you re-assign the doSomething event handler to the page onload event?

**JavaScript Objects**

* An object is a little bit like a variable, but it can itself contain variables and functions (except the functions are called *methods* when they are contained in an object).
* An object often represents a “thing”. It can either be a representation (model) of a thing in the real world or a thing within the web page or JavaScript program itself.
* You’ve already used one object: document
  + It contains variables and functions related to the web page (the web page is the document)
  + What functions have you already used?
  + What objects does the document object contain?
  + Do a little exploring to see what else is in the document object besides the functions you’ve already used.

**Date Object**

* The Date object contains variables and functions related to time and date.
* Creating an object: To work with a Date object, you need to use the new operator to create one:  
    
  var newYear = new Date();
* Setting values in an object: After creating a Date object, we can set date and time values that will be stored in the object:  
    
  newYear.setFullYear(2017, 0, 1);
* Additional methods for setting the date:  
  + setSeconds
  + setMinutes
  + setHours
  + setDate - day of the month
  + setMonth
  + setFullYear
  + setTime
* Retrieving values from an object: The methods below can be used to retrieve values:  
  + getSeconds
  + getMinutes
  + getHours
  + getDate – day of the month
  + getDay
  + getMonth
  + getFullYear
  + getTime
* Using a constructor: The Date constructor has optional parameters that you can use to initialize your Date object with a particular date and / or time:  
    
  var taxDay = new Date(“April 18, 2017”);  
  + Date is a special kind of function called a *constructor*.
  + The new operator creates (or *instantiates*) objects (or *instances*).
  + taxDay is the Date object we just created.
* We can use new and the Date constructor to make as many instances of Date as we want:  
    
  var independenceDay = new Date(“July 4, 2017”);  
  var graduation = new Date(“June 17, 2017”);
* Calculate the time difference between two Date objects:

var date1 = new Date("June 1, 1980");

var date2 = new Date("October 28, 1978");

// Number of days between the dates

// getTime returns the number of miliseconds since Jan 1, 1970

var date1Time = date1.getTime();

var date2Time = date2.getTime();

// Number of milliseconds between the two dates

var timeDifference = date1Time - date2Time;

var years = timeDifference / 1000 / 60 / 60 / 24 / 365;

alert (years);

* Add time to an object

var now = new Date();

var nowTime = now.getTime();

// add 20 hours

var thenTime = nowTime + 20 \* 60 \* 60 \* 1000;

var then = new Date();

then.setTime(thenTime);

alert(then);

* Display time in 12 hour format with am / pm:  
  https://www.w3schools.com/jsref/jsref\_tolocaletimestring.asp

var d = new Date();  
var n = d.toLocaleTimeString();