

Announcements

- Midterm #2 scores are ready.

Validating through Web Developer

- Web Developer is an add-on (extension) for firefox

<https://addons.mozilla.org/firefox/60/>

- Let's see some of its options, including validation

Events

- **Event** – Notification that something has occurred
- Example of situations that make the web browser generate an event
 - Browser finishes loading a document
 - When the user clicks on a button
 - When the user moves the mouse
 - Others
- **Event handler** (also known as event listener)
 - JavaScript function or code fragment that is executed when a particular event occurs
- **Event handler registration**
 - Associating an event handler with a particular event
- **Example:** EventEx.html

Event-driven Programming

- **Normal (control flow-based) programming**
 - Approach
 - Start at main()
 - Continue until end of program or exit()
- **Event-driven programming**
 - Start at main()
 - Register event handlers
 - Await events & perform associated computation
- **GUIs (Graphical User Interfaces)**
 - Example of event-driven software

Event Handler Attributes for most HTML

■ Mouse Related

- ❑ **onclick** – mouse button is pressed and released
- ❑ **ondblclick** – mouse button is double-click over element
- ❑ **onmouseover** – mouse moves over element
- ❑ **onmouseout** – mouse moves off element
- ❑ **onmousemove** – mouse pointer is moved
- ❑ **onmousedown** – mouse is pressed down while cursor is over the element
- ❑ **onmouseup** – mouse is released while the cursor is over the element

■ Keyboard Related

- ❑ **onkeypress** – key pressed and released
- ❑ **onkeydown** – key is pressed
- ❑ **onkeyup** – key is released

■ Other

- ❑ Keep in mind that there additional handlers that are specific to certain tags. We will address those later on

For Loop

- Iteration statement
- General form

*for (initialize; test; expression)
statement*

basically equivalent to

*Initialize
while (test)
statement*

If more than one statement use { }

- **Example:** ForLoops.html
- **Example:** ForLoopVariations.html

Arrays

- **Problem** - You need to keep track of the scores of students in a class
 - Declaring and handling 50 variables is not an easy task
 - Arrays come to the rescue
- **Array** – Collection of values that can be treated as a unit or individually.
- You can visualize an array as a set of variables one after another
- There are several ways to define arrays.

```
var scienceScores = new Array(); // Creates an empty array  
var mathScores = new Array(3); // Creates an array with 3 entries  
var englishScores = [77, 88, 65]; // Creates an array with 3 entries  
// having the specified values
```

Arrays

- To access elements of an array
 - Use the [] operator
 - We will use index values **starting at zero** to represent each element
- Accessing array elements

mathScores[0] = 70; // Assigning 70 to the first array element

mathScores[1] = 80; // Assigning 80 to the second array element

var total = mathScores[0] + mathScores[1]; // reading the first
// and second elements

- The array length property defines the number of elements
- Several functions are associated with arrays.
 - sort() – sorts elements of an array
 - reverse() – reverse elements of an array
 - join() – converts elements of an array to string and concatenates them
 - Others
- For loops are frequently use to iterate through arrays
- **Example:** ArrayEx.html