

Announcements

- Quiz #3 on Wednesday
- Please bring laptops on Friday
- My office hour tomorrow is cancelled

Local vs. Global Variables

Local Variables

- Declared inside a function using “var”
- Created while function is running
- Destroyed when function is over
- Cannot be accessed outside the function

Global Variables

- Declared outside of any function
- Can be declared inside function if you don’t use “var” – don’t do this!
- Can be accessed anywhere

Exception: Parameters are local variables (even though they don’t use “var”)

Example: [VariableScope.html](#)

Event Driven Programming

(How Graphical User Interfaces are implemented)

Traditional Programming:

- Start at beginning
- Execute statements until the program ends

Event Driven Programming:

- Start at beginning
- Draw page and setup Graphical Controls
- Attach “Event Handlers” (functions) to the controls
- Sit back and wait...
- And wait...
- If an Event is triggered, run the handler
- Now go back to waiting for another event...

Example of “Event”

Mouse clicks can trigger function calls:

```
<p onclick=“...”> Click this </p>
```

Example: [SimpleClickEvent.html](#)

Mouse Events

onclick – user clicks element

ondblclick – user double-clicks element

onmousedown – mouse button has been pressed (but not released)

onmouseup – mouse button has been released

onmouseover – mouse cursor passes over element

onmousemove – mouse cursor has moved while over element

onmouseout – mouse cursor has been moved off element

Example: [MouseEvent.html](#)

Events we will use later with “Forms”

onkeypress – key has been pressed and released

onkeydown – key is held down

onkeyup – key is released

onchange – the state of a “control” has been changed (like a checkbox or radio button)

Dynamic Updates to Elements

We can easily modify an existing HTML element, as long as it has an **identifier**.

We can use Javascript to modify HTML elements in three ways...

Dynamic Updates to HTML attributes

```

```

We can change attributes at any time with Javascript

```
Joe.src="dog.jpg";  
Joe.height="100";  
Joe.width="50";      // Yes, this works!
```

[Example: DynamicAttributeChanges.html](#)

Dynamic Updates to Style

```
<p id="Joe">Hello!</p>
```

In Javascript, we can change the style at will:

```
Joe.style.color = "green";  
Joe.style.fontFamily = "arial";  
Joe.style.textAlign = "center";
```

Caution: Property names don't always match with CSS names!

For example: `fontFamily` vs. `font-family`

Also: Need the quotation marks around the values.

Example: [DynamicStyleUpdates.html](#)

Dynamic Updates to “Inner HTML”

```
<p id="Joe">Hello!</p>
```

In Javascript, we can change what's between the tags at will:

```
Joe.innerHTML = "Goodbye!";
```

**Example: [DynamicInnerHTMLUpdates.html](#)
World's Dumbest Game**