Announcements

• Quiz #3 on Friday
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 (but 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:

```html
<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: MouseEvents.html
Events we will use 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 modify an existing element, as long as it has an identifier.

Assume the following element already appears on the page:

```
<img id="Joe" src="flower.jpg" alt="flower" height="50" />
```

We can use Javascript to modify ANY attribute of the element dynamically!
Dynamic Updates to Elements

```html
<img id="Joe" src="flower.jpg" alt="flower" height="50" />
```

We can change attribuates at any time with Javascript

```javascript
Joe.src="dog.jpg";
Joe.height="100";
```

Example: DynamicUpdates1.html
Dynamic Updates to Style

<p id="Bozo">Hello!</p>

In Javascript, we can change the style at will:

Bozo.style.color = "green";
Bozo.style.fontFamily = "arial";
Bozo.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="Bozo">Hello!</p>

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

```javascript
Bozo.innerHTML = "Goodbye!";
```

Example: DynamicInnerHTMLUpdates.html

World’s Dumbest Game