Section 3-20

Functions

The syntax for a named function

```
function functionName (parameters) {
    // statements that run when the function is executed
}
```

A named function with no parameters that doesn’t return a value

```
function showYear() {
    var today = new Date();
    alert( "The year is " + today.getFullYear() );
}
```

How to call the function

```
showYear();
```

A named function with two parameters that returns a value

```
function calculateTax ( subtotal, taxRate ) {
    var tax = subtotal * taxRate;
    tax = parseFloat( tax.toFixed(2) );
    return tax;
}
```

How to call the function

```
var subtotal = 85.00;
var taxRate = 0.05;
var salesTax = calculateTax( subtotal, taxRate );
alert(salesTax);
```

The syntax for an anonymous function

```
var variableName = function(parameters) {
    // statements that run when the function is executed
}
```

An anonymous function with no parameters that doesn’t return a value

```
var showYear = function() {
    var today = new Date();
    alert( "The year is " + today.getFullYear() );
}
```

How to call the function

```
showYear();
```

An anonymous function with two parameters that returns a value

```
var calculateTax = function ( subtotal, taxRate ) {
    var tax = subtotal * taxRate;
    tax = parseFloat( tax.toFixed(2) );
    return tax;
}
```

How to call the function

```
var subtotal = 85.00;
var taxRate = 0.05;
var salesTax = calculateTax( subtotal, taxRate );
alert(salesTax);
```

Local vs. Global Variables

A function that uses a local variable named tax

```
var calculateTax = function ( subtotal, taxRate ) {
    var tax = subtotal * taxRate;   // tax is local
    tax = parseFloat( tax.toFixed(2) );
    return tax;
}
```

Referring to a local variable from outside the function causes an error

```
alert("Tax is " + tax);
```

A function that uses a global variable named tax

```
var tax;                            // tax is global
var calculateTax = function ( subtotal, taxRate ) {
    tax = subtotal * taxRate;
    tax = parseFloat( tax.toFixed(2) );
}
```

Referring to a global variable from outside the function doesn’t cause an error

```
alert("Tax is " + tax);        // will not cause error
```

A function that inadvertently uses a global variable named tax

```
var calculateTax = function ( subtotal, taxRate ) {
    tax = subtotal * taxRate;   // tax is global
    tax = parseFloat( tax.toFixed(2) );
}
```

Referring to the tax variable from outside the function doesn’t cause an error...but it should!

```
alert("Tax is " + tax);          // will not cause error
```

Best coding practices

- Use local variables whenever possible.
- Always use the **var** keyword to declare a new variable before the variable is referred to by other statements.

An anonymous function (the $ function) with one parameter that returns a DOM element

A shortcut for document.getElementById( )

```
var $ = function (id) {
    return document.getElementById(id);
}
```

How to call the function

```
var emailAddress1 = $("email_address1").value;
```

Exercise 3-2

- Do the exercises for this section (shown to the right for the link to this presentation)

Section 3-30

Events

Common events

Object	Event
window	load
button	click
control or link	focus
	blur
control	change
	select
element	click
	dblclick
	mouseover
	mousein
	mouseout

The syntax for attaching an event handler

```
objectVariable.oneventName = eventHandlerName;
```

An event handler named joinList

```
var joinList = function() {
    alert("The statements for the function go here");
}
```

How to attach the event handler to the click event of a button

```
document.getElementById("submit_button").onclick =
    joinList;
```

How to attach the event handler to the double-click event of a text box

```
document.getElementById("text_box_1").ondblclick =
    joinList;
```

The HTML for a page

```
<h1>Please join our email list</h1>
<label for="email_address">Email Address:</label>
<input type="text" id="email_address"
       name="email_address"><br>

<label>&nbsp;</label>
<input type="button" id="join_list"
       value="Join our List"><br>
```

The JavaScript that attaches two event handlers in the onload event handler

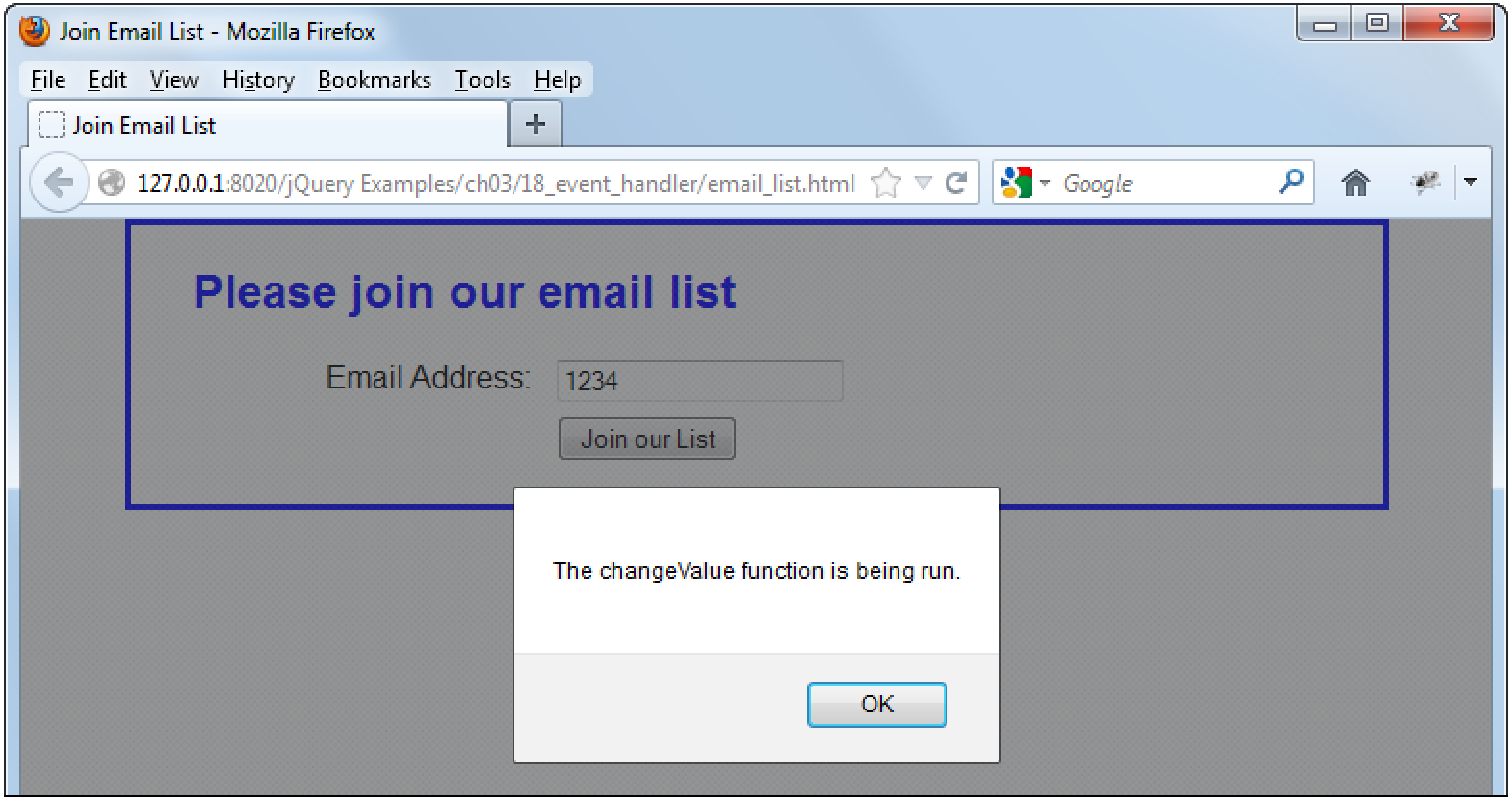
```
// the $ function
var $ = function (id) {
    return document.getElementById(id);
}

// the handler for the click event of the button
var joinList = function () {
    alert("The joinList function is being run.");
}

// the handler for the onchange event of the text box
var changeValue = function () {
    alert("The changeValue function is being run.");
}

// the handler for the onload event
window.onload = function () {
    $("join_list").onclick = joinList;
    $("email_address").onchange = changeValue;  //}
```

The web browser after the Email Address has been changed



Join Email List - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Join Email List
127.0.0.1:8020/jQuery Examples/ch03/18_event_handler/email_list.html
Google

Please join our email list

Email Address: 1234

The changeValue function is being run.

Exercise 3-3

- Do the exercises for this section (shown to the right for the link to this presentation)

End of Chapter 3 – Part 2