

Lab 11. Javascript & AJAX

Prepared: TrangNTT

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Note: Using Firebug to debug Javascript.

11.1. Some simple JS examples

Step 1. Array

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<BODY>

<SCRIPT type="text/javascript">

// Create array and add three elements
var myArray = new Array();
myArray.push("Tim");
myArray.push("Janice");
myArray.push("Joe");

// print out the contents and newline
document.writeln( myArray.toString() );
document.writeln("<BR>");

// access array element by index
document.writeln( myArray[1] );
document.writeln("<BR>");

// print out the length of the array and newline
document.writeln( "Array Size: " + myArray.length );
document.writeln("<BR>");

// Pop the last element off the array and display it
var who = myArray.pop();
document.writeln( "Popped Element: " + who );
document.writeln("<BR>");

// print out the length of the array and newline
document.writeln( "Array Size: " + myArray.length );
document.writeln("<BR>");
document.writeln("<BR>");

// ***** //

// Populating array on instantiation
var otherArray = new Array("dog", 3, 8.4);

document.writeln( otherArray.toString() );
document.writeln("<BR>");
document.writeln("<BR>");

// setting and accessing associative arrays.
otherArray["key"] = "value";
document.writeln( otherArray["key"] );
document.writeln("<BR>");

</SCRIPT>

</BODY>
</HTML>
```

Result:

Tim,Janice,Joe
Janice
Array Size: 3
Popped Element: Joe
Array Size: 2

dog,3,8.4

value

Step 2. Open new window

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<BODY>

<SCRIPT type="text/javascript">

if (window.confirm("Open Google?")) {
    newWindow = window.open('http://www.google.com','NewGoogleWindow','toolbar=no,alwaysRaised=yes');
    newWindow.focus();
}

</SCRIPT>

</BODY>
</HTML>
```

Step 3. Count the Function calls

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<HEAD>

    <SCRIPT type="text/javascript">

        num = 0;
        // Count the number of this function has been called. Print the result to a text field.
        function myFunc( ) {
            num++;
            document.myForm.outputField.value = "Called " + num + " times";
        }

        window.setInterval("myFunc()", 1000);

    </SCRIPT>

</HEAD>
<BODY>

<FORM name="myForm">
    <INPUT type="text" name="outputField" readonly>
</FORM>

</BODY>
</HTML>
```

Step 4. Set controls' attributes

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<HEAD>

    <SCRIPT type="text/javascript">

        function setAlign( align ) {
            var pTag = window.document.getElementById("paragraph");
            pTag.setAttribute("align", align);
        }

    </SCRIPT>

</HEAD>
<BODY>

<FORM name="alignForm">
    <SELECT id="alignSelect">
        <OPTION value="left">left</OPTION>
        <OPTION value="right">right</OPTION>
        <OPTION value="center">center</OPTION>
    </SELECT>
    <INPUT type="button" value="Go" onclick="setAlign( document.alignForm.alignSelect.value )">
</FORM>

<P id="paragraph">
    This is some sample text.
</P>

</BODY>
</HTML>
```

Step 5. Add text fields

```
<html>
<head>
    <title>Example Message Box Page</title>
    <script type="text/javascript">
        var inputs = 1;

        function addField()
        {
            inputs++;

            var form = document.getElementById('sweet-form');
            var line_break = document.createElement('br');
            var textbox = document.createElement('input');

            textbox.setAttribute('type', 'text');
            textbox.setAttribute('name', 'text_'+inputs);
            textbox.setAttribute('value', 'I am box #' + inputs);

            form.appendChild(line_break);
            form.appendChild(textbox);
            return false;
        } //end addField

        function doLoad()
        {
            document.getElementById('sweet-link').addEventListener('click', addField, false);
        } //doLoad
        window.addEventListener('load', doLoad, false);
    </script>
</head>
<body>
    <form id="sweet-form">
        <input type="text" name="text_1" value="I am box #1"/>
    </form>
    <a id="sweet-link" href="#">Add Text Field</a>
</body>
</html>
```

Step 6. Validate postal code and money using RE (JS)

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<HEAD>

  <SCRIPT type="text/javascript">

    function validatePostalCode( ) {
      var postalCodeCheck = new RegExp("[A-Z][0-9]){3,3}")
      if ( postalCodeCheck.test(document.myForm.postalCodeField.value) ) {
        alert("Valid Postal Code");
        return true;
      } else {
        alert("Invalid Postal Code: " + document.myForm.postalCodeField.value);
        return false;
      }
    }

    function validateMoney( ) {
      var moneyCheck = new RegExp("[0-9]*[\\.][0-9][0-9]")
      if ( moneyCheck.test(document.myForm.moneyField.value) ) {
        alert("Valid Money");
        return true;
      } else {
        alert("Invalid Money: " + document.myForm.moneyField.value);
        return false;
      }
    }

  </SCRIPT>

</HEAD>
<BODY>

<FORM id="myForm">
  Postal Code: <INPUT type="text" name="postalCodeField" ><INPUT type="button"
  value="Check Postal Code" onClick="validatePostalCode()">
  <BR>
  Money: $<INPUT type="text" name="moneyField" ><INPUT type="button"
  value="Check Money" onClick="validateMoney()">
</FORM>

</BODY>
</HTML>
```

11.2. Validate for login form

Step 1. Create login form

- Download the style.css in Lab folder in course website to get the style for login.php.
- Get the login form in the exercise 9.4 of Lab 09 and modify as the following:

```
1 <?php
2 $linkTo = $_REQUEST["LinkTo"];
3 $userName = $_POST["UserName"];
4 $password = $_POST["Password"];
5
6 if (isset($userName)){
7     $host= 'localhost';
8     $user = 'root';
9     $passwd = '12345';
10    $database = 'Lab12';
11    $table_name = 'users';
12    $query = "SELECT * FROM $table_name WHERE UserName='$userName' AND Password='$password'";
13    $connect = mysql_connect($host, $user, $passwd);
14
15    if ($connect){
16        mysql_select_db($database);
17        $result = mysql_query($query, $connect);
18
19        $row = mysql_fetch_row($result);
20        if ($result && $row) {
21            if ($linkTo != ""){
22                header("Location: " . $linkTo);
23            } else {
24                //assumn that google.com is the homepage
25                header("Location: http://www.google.com/");
26                exit();
27            }
28        }
29    }
30 }
31 ?>
32 <html>
33 <head>
34     <title>Member, please login</title>
35     <link rel="stylesheet" type="text/css" href="style.css">
36     <script language="javascript">
37         function fCommit(){
38             if(document.frmLogin.UserName.value == "")
39             {
40                 alert("UserName must be enter!");
41                 document.frmLogin.UserName.focus();
42                 return false;
43             }
44             return true;
45         }
46
47         function fReset(){
48             document.frmLogin.UserName.value = "";
49             document.frmLogin.Password.value = "";
50             document.frmLogin.UserName.focus();
51         }
52     </script>
53 </head>
54 <body topmargin="0" leftmargin="0">
55     <form method="POST" action="<?php echo $_SERVER["PHP_SELF"]?>" name="frmLogin" onsubmit="return fCommit();">
56         <table border="0" width="100%" height="100%" cellpadding="0" cellspacing="0">
57             <tr valign="middle"><td align="center">
58                 <table>
59                     <tr>
60                         <td><p class="reporttitle">LOGIN TO THE SYSTEM</p></td>
61                     </tr>
62                 </table>
63             </td></tr>
64         </table>
65     </form>
66 </body>
67 </html>
```

```

63 <table class="forumline" width="280" border="0" cellspacing="1" cellpadding="2">
64 <tr class="formstyle"><td>
65 <table width="100%" border="0" cellpadding="2" cellspacing="0">
66
67 <tr class="formstyle">
68 <td class="th-caption" align="right" width="40%"> User name:&nbsp;</td>
69 <td class="th-caption" width="60%">&nbsp;<input class="edit" style="width:97%" type="text" name="UserName"
70 value="<?php echo $userName?>">
71 <input type="hidden" name="LinkTo" value="<?php echo $linkTo?>">
72 </td>
73 </tr>
74 <tr class="formstyle">
75 <td class="th-caption" align="right" width="40%"> Password:&nbsp;</td>
76 <td class="th-caption" width="60%">&nbsp;<input class="edit" style="width:97%" type="password" name="Password">
77 </td>
78 </tr>
79 <tr class="formstyle" height="30">
80 <td class="th-caption" align="center" colspan="2">
81 <input class="btn" style="width:80" type="submit" value="Login">
82 <input class="btn" style="width:80" type="reset" value="Reset" onClick="fReset();">
83 <input type="hidden" name="LinkTo" value="<?php echo $linkTo?>">
84 </td>
85 </tr>
86 <?php
87 if (isset($user) && !$row) {
88 echo '<tr align="center">
89 <td colspan="2"><p class="error">Invalid name and/or password!</p></td>
90 </tr>';
91 }
92 mysql_free_result($result);
93 mysql_close($connect);
94 <?>
95 </table>
96 </td></tr>
97 </table>
98 </td></tr>
99 </table>
100 </td></tr>
101 </table>
102 </form>
103 <script>
104 document.frmLogin.UserName.focus();
105 </script>
106 </body>
107 </html>

```

Step 2. Run some special cases to check if the validation is good or not.

11.3. Exercise 1 - Event Handling (JS)

Write a simple HTML document called `colors.html` containing three colored links at the top of the page labeled RED, GREEN, and BLUE. Under the links there should be a small paragraph of text (you make this up) with a starting color of BLACK. Using `onMouseOver` and `onMouseOut` events of the links, when a user rolls over the each and any of the color labeled links, the color of the text in the paragraph below should change to the color corresponding to the link the user is hovering over. When the user rolls off the link, the color of the text should go back to it's starting color of BLACK.

11.4. Exercise 2- Inheritance (JS)

Implement and try to understand the following source code

```
var Person = function() {};  
  
Person.prototype.initialize = function(name, age)  
{  
    this.name = name;  
    this.age = age;  
}  
  
Person.prototype.describe = function()  
{  
    return this.name + ", " + this.age + " years old.";  
}  
  
var Student = function() {};  
Student.prototype = new Person();  
  
Student.prototype.learn = function(subject)  
{  
    console.log(this.name + " just learned " + subject);  
}  
  
var me = new Student();  
  
me.initialize("John", 25);  
me.learn("Inheritance");
```

Next, create an object called Teacher derived from the Person class, and implement a method called teach which receives a string called subject, and prints out:

```
[teacher's name] is now teaching [subject]
```