IT350 Web and Internet Programming

SlideSet #8: Intro to JavaScript

(from Chapters 6,7,8 of the text 4th or 5th edition)

JavaScript Intro – Outline

• What is it good for?
• What does it look like?
• Is it Java?
• Example Usage
What’s JavaScript good for?

- Client-side computation?

- Server-side computation?
Java vs. JavaScript

Object-oriented?

Add methods/properties to objects at run-time?

Variable typing?

C-like expressions, control?

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Addition / Strings Example – Part 1

The page at intranet.cs.usna.edu says:
Enter first integer

OK Cancel

The page at intranet.cs.usna.edu says:
Enter second integer

OK Cancel

The sum is 117

Click Refresh (or Reload) to run the script again

Addition / Strings Example – Part 2

<!DOCTYPE html>
<html>
<head>
<meta charset = "utf-8" />
<title>An Addition Program</title>
<script type = "text/javascript"> var firstNumber, secondNumber, number1, number2, sum; // read in first number from user as a string firstNumber = window.prompt( "Enter first integer", "0" );
// read in second number from user as a string secondNumber = window.prompt( "Enter second integer", "0" );
// convert numbers from strings to integers number1 = parseInt( firstNumber );
number2 = parseInt( secondNumber );
// add the numbers sum = number1 + number2;
// display the results document.writeln( "<h1>The sum is " + sum + "</h1>" );
</script>
</head>
<body>
<p>Click Refresh (or Reload) to run the script again</p>
</body>
</html>
Operators and Precedence

<table>
<thead>
<tr>
<th>Operators</th>
<th>Associativity</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>* / %</td>
<td>left to right</td>
<td>multiplicative</td>
</tr>
<tr>
<td>+ -</td>
<td>left to right</td>
<td>additive</td>
</tr>
<tr>
<td>&lt; &lt;= &gt; &gt;=</td>
<td>left to right</td>
<td>relational</td>
</tr>
<tr>
<td>== !=</td>
<td>left to right</td>
<td>equality</td>
</tr>
<tr>
<td>=</td>
<td>right to left</td>
<td>assignment</td>
</tr>
</tbody>
</table>

Fig. 7.17 Precedence and associativity of the operators discussed so far.

Exercise #1 -- What’s the output?

```javascript
var x, y, z;

x = 7;
y = 9;
z = "abc";

window.alert(x+y+z);

window.alert(z+y+x);

if (x)
    window.alert("x true");

x = "seven";

window.alert(x+y+z);
```

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<!DOCTYPE html>
<html>
<head>
<meta charset = "utf-8" />
<title>Using Relational Operators</title>
<script type = "text/javascript">

var now = new Date(); // current date and time
hour = now.getHours(); // current hour (0-23)

// determine whether it is morning
if ( hour < 12 )
   document.write( "<h1>Good Morning, " );

// determine whether the time is PM
if ( hour >= 12 )
   {
      // convert to a 12 hour clock
      hour = hour - 12;

      // determine whether it is before 6 PM
      if ( hour < 6 )
         document.write( "<h1>Good Afternoon, " );

      // determine whether it is after 6 PM
      if ( hour >= 6 )
         document.write( "<h1>Good Evening, " );
   }

document.writeln( "the date is: " + now + "</h1>" );

</script>
</head>
<body>
<p>Click Refresh (or Reload) to run this script again.</p></body>
</html>
Exercise #2  -- What’s the output?

```javascript
var a, b, c;

a = 1;
b = 2;
c = 3;

d = a + b * c;

window.alert("<h1>Begin</h1>");

if (d < 20)
    window.alert("d is okay: "+d);
else
    window.alert("d is too high!:"+ d);
    d = d - 3;

document.writeln("<h1>Done. Final d = "+d"</h1>");
```

Exercise #3

- Write a JavaScript snippet to read in a number from the user and output its absolute value.
Exercise #4

• Look at this:
   /* Return an integer no larger than ‘max’ */
   var max = 25;
   var value;
   do {
       value = window.prompt("Please enter an integer no larger than "+max);
   } while (value > max);

• When does this work and why?

• When does it fail and how to fix?

Exercise #5

• Write a JavaScript snippet to read in three numbers x, y, z and output them in sorted order.