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?
Addition / Strings Example – Part 1

<?xml version = "1.0"?><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"><html xmlns = "http://www.w3.org/1999/xhtml"><head><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>

Addition / Strings Example – Part 2

<?xml version = "1.0"?><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"><html xmlns = "http://www.w3.org/1999/xhtml"> <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>
Objects and Control Flow – Part 1

Objects and Control Flow – Part 2

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<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>
Click Refresh (or Reload) to run this 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 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 #2  -- 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);
```

Exercise #3

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

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