Variable Assignment & Basic Flow Control Structures in Javascript

Javascript programming for fun & profit

Why bother?

Static vs Active

```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2        "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
3
4  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
5  <head>
6        <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
7
8        <title>untitled</title>
9
10  </head>
11
12  <body>
13
14
15  </body>
16  </html>
17
```

HTML | the static beginning

```
untitled
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
3
4  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
5  <head>
6      <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
7
8      <title>untitled</title>
9
10 </head>
11
12 <body>
13     What is 2.0 + 2.0?
14     <script language = "JavaScript">
15         <!-- your script here -->
16     </script>
17
18 </body>
19 </html>
20
```
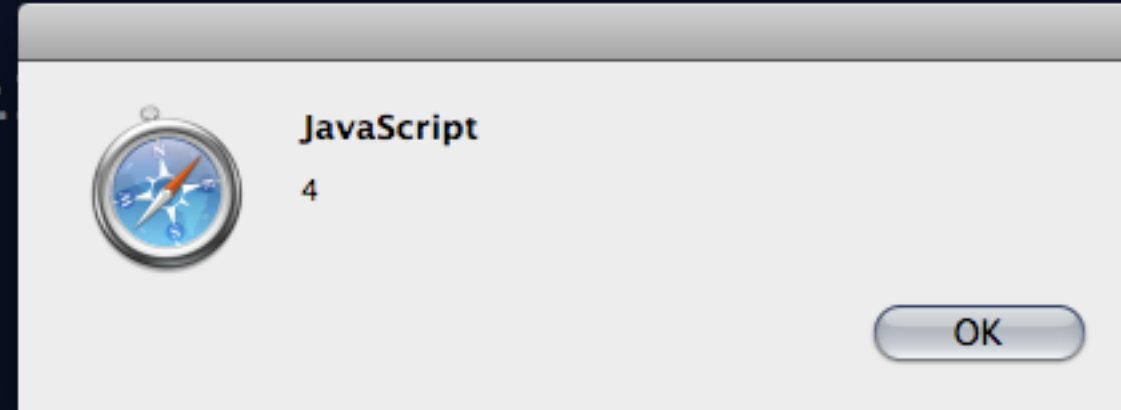
Now with more Javascript™

Introducing the <script> tag

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Javascript in action: Parsing

Process-as-you-go

```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2      "http://www.w3.org/TR/xhtml11/DTD/xhtml11-strict.dtd">
3
4  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
5  <head>
6      <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
7
8      <title>untitled</title>
9
10 </head>
11
12 <body>
13     What is 2.0 + 2.0?
14     <script language = "JavaScript">
15         alert(2.0 + 2.0);
16     </script>
17
18 </body>
19 </html>
20
```

Using the Alert Output

```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2      "http://www.w3.org/TR/xhtml11/DTD/xhtml11-strict.dtd">
3
4  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
5  <head>
6      <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
7
8      <title>untitled</title>
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10 </head>
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12 <body>
13     What is 2.0 + 2.0?
14     <script language = "JavaScript">
15         alert(2.0 + 2.0);
16     </script>
17
18 </body>
19 </html>
20
```

JavaScript

4

OK

Using the Alert Output

```
<!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" xml:lang="en" lang="en">
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>

    <title>untitled</title>

</head>

<body>
    What is 2.0 + 2.0?
    <script language = "JavaScript">
        document.write(2.0 + 2.0);
    </script>

</body>
</html>
```

Writing to the Document | Using Javascript to build your page

Javascript is extremely useful

Asynchronous **J**ava**S**cript and **X**ML
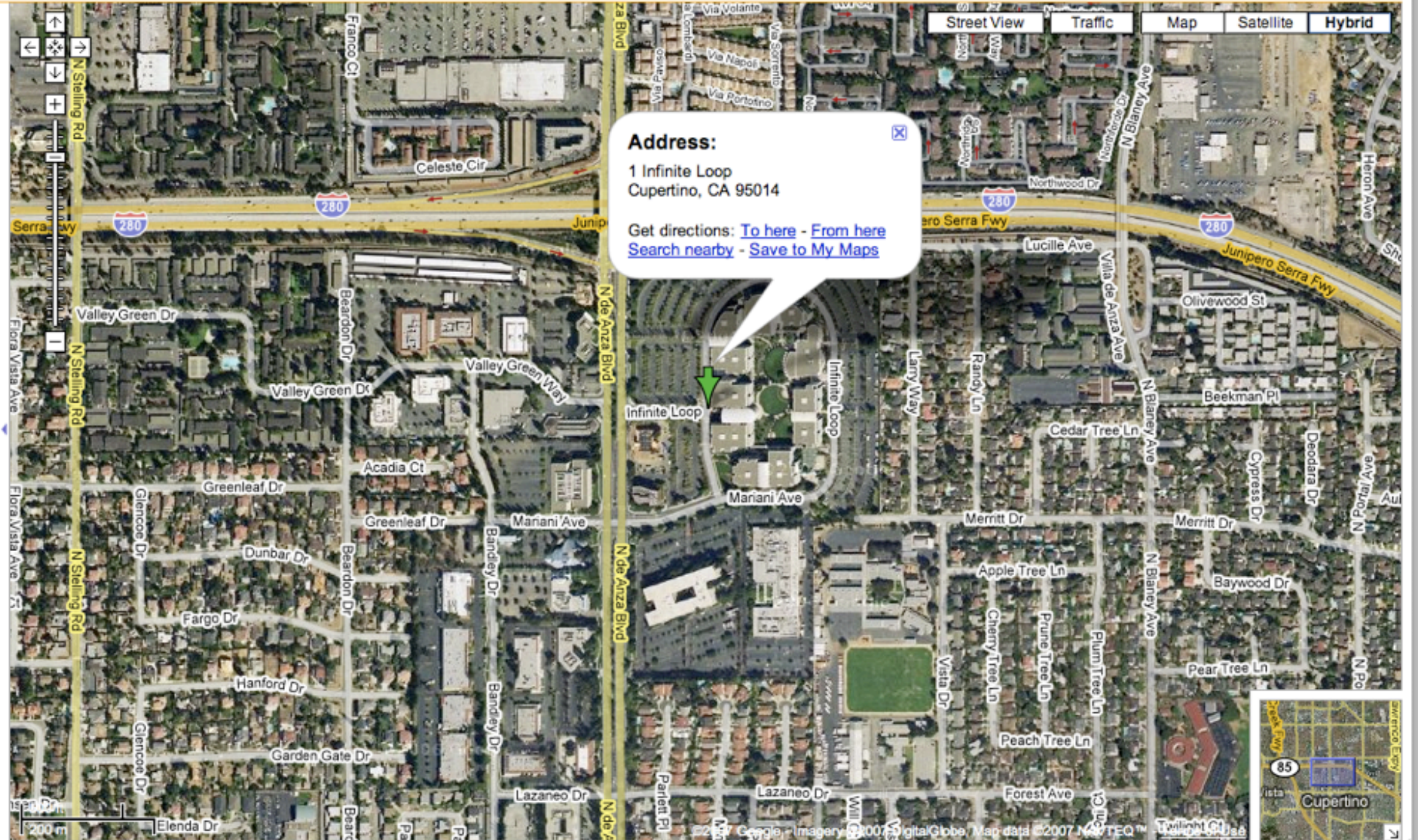
The Unforgiving Nature of Javascript

Semicolons, closed quotes and all that jazz.

```
1  <script language = "JavaScript">
2      docmuent.write("something");
3  </script>
```

Line: 2 Column: 10   HTML   Tab Size: 4 —

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```
1 <script language = "JavaScript">
2     document.write("something);
3 </script>
```

Line: 2 Column: 32   HTML   Tab Size: 4 —

What the !#$% is a variable?

Names with many faces.

$$y = mx + b$$

Declarations

Or, getting your variables into the party.

```
<script language = "JavaScript">
    var instructor;
    var class_school;
    var class_level;
    var class_length;
    var lecture_today;
</script>
```

Values

Values

‣ Numerics: Int, Float, Double...

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  ‣ 7, 7.0, -1, 6.023e+23

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Values

- Numerics: Int, Float, Double...

    - 7, 7.0, -1, 6.023e+23

- Alphas: Char, String, Blob...

    - "A", "This is Sparta", "No, seriously, this is   Spartaaaa!"

Values

▸ Numerics: Int, Float, Double...

    ▸ 7, 7.0, -1, 6.023e+23

▸ Alphas: Char, String, Blob...

    ▸ "A", "This is Sparta", "No, seriously, this is   Spartaaaa!"

▸ Booleans: True / False

Values

‣ Numerics: Int, Float, Double...

    ‣ 7, 7.0, -1, 6.023e+23

‣ Alphas: Char, String, Blob...

    ‣ "A", "This is Sparta", "No, seriously, this is   Spartaaaa!"

‣ Booleans: True / False

‣ Specialities: Date, Time and more...

The difference between = and ==

"Gets" and "Equates"

Assignment

Assignment

[variable] [assignment] [expression]

```
1  <script language = "JavaScript">
2      var instructor = "Sam Herz";
3      var class_school = "Info/CSE";
4      var class_level = 100;
5      var class_length = 50 / 60;
6      var lecture_today = true;
7  </script>
```

Expressions

Round 1

```
<script language = "JavaScript">
    var example = 10 / 5;
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 2 * 3;
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 1 - 1;
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 1 + 1;
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 10 % 8;
    document.write(example);
</script>
```

Conditionals: Flow Control

If, Else If, Else

```
<script language = "JavaScript">
    if (<!-- this is true -->)
    {
        <!-- do this -->
    }
    else if (<!-- that is true -->)
    {
        <!-- do that -->
    }
    else
    {
        <!-- do the other thing -->
    }
</script>
```

```
<script language = "JavaScript">
    if (<!-- this is true -->)
    {

        <!-- do this -->
    }
</script>
```

```html
<script language = "JavaScript">
    if (<!-- this is true -->)
    {
        <!-- do this -->
    }
    else if (<!-- that is true -->)
    {
        <!-- do that -->
    }
</script>
```

```html
<script language = "JavaScript">
    if (<!-- this is true -->)
    {
        <!-- do this -->
    }
    else
    {
        <!-- do the other thing -->
    }
</script>
```

```
<script language = "JavaScript">
    var example = 5;
    if (example <= 5)
    {
        example = example * 2;
    }
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 5;
    if (example <= 5)
    {
        example *= 2;
    }
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 5;
    if (example <= 5)
    {
        example = example * 2;
    }
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 5;
    if (example <= 5)
    {

        example *= 2;
    }
    document.write(example);
</script>
```

```
1  <script language = "JavaScript">
2      if (grade_percent < 50)
3      {
4          document.write("Uh, oh.");
5      }
6  </script>
```

Expressions Continued

Round 2: We ain't in Kansas no more.

```
1  <script language = "JavaScript">
2      if (1 < 2)
3      {
4          document.write("true");
5      }
6      else
7      {
8          document.write("false");
9      }
10 </script>
```

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```
<script language = "JavaScript">
    if (1 >= 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

```
<script language = "JavaScript">
    if (1 == 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

```
<script language = "JavaScript">
    if (2 <= 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

```
<script language = "JavaScript">
    if (1 != 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

```
<script language = "JavaScript">
    if (3 > 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

Line: 2   Column: 10   HTML   Tab Size: 4   —

18

```
<script language = "JavaScript">
    if (3 > 2 || 3 == 2)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

```
<script language = "JavaScript">
    if (3 > 2 && 1 == 1)
    {
        document.write("true");
    }
    else
    {
        document.write("false");
    }
</script>
```

Overloading, Concatenation & Order of Operation

Clarity & Efficiency for the Masses

```html
<script language = "JavaScript">
    var example = "a" + "b" + "c";
    document.write(example);
</script>
```

```html
<script language = "JavaScript">
    var example = 5 + 5;
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = "5" + "5";
    document.write(example);
</script>
```

```
<script language = "JavaScript">
    var example = 5 + "5";
    document.write(example);
</script>
```

First Javascript Program, Revisited

```
1  <script language = "JavaScript">
2      var number1, number2, answer;
3      number1 = 2.0;
4      number2 = 2.0;
5      answer = number1 + number2;
6      document.write(answer);
7  </script>
```

Moving Forward

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▸Read!

Moving Forward

‣Read!
‣Practice makes perfect

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▸Precisions and indenting will save amazing amounts of time

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▸Iterate: Program - Save - Refresh - Debug

Moving Forward

‣Read!

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‣Precisions and indenting will save amazing amounts of time

‣Iterate: Program - Save - Refresh - Debug

‣Don't wait for help until the very last minute

Questions & Examples?