

# JavaScript 101

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# What is JavaScript?

- Is a dialect of ECMAScript
- A lightweight, easy to learn Object Oriented Programming language
- Is a *client-side* language
- Is versatile – Can be inserted into any page (regardless of extension)
- Doesn't require a special license
- Not the same as Java

# What is it used for?

- For adding dynamic content to web pages
- For carrying actions based on events
- Validate data (forms)
- Browser detection
- Slideshows, Image Effects and much more

# Basic form of a JavaScript block

```
<script type = "text/javascript">
```

```
<!--
```

```
    Do something/code
```

```
//-->
```

```
</script>
```

- Note: JavaScript is case-sensitive (X is not equal to x)
- JavaScript ignores whitespace

# Where is JavaScript code placed?

- In the `<head></head>` section of your page
- In the `<body></body>` section of your page
- What's the difference?
- External Files (.js extension)

# Variable Declaration in JavaScript

```
<script type = "text/javascript">
```

```
  var variable1;
```

```
  var variable2 = 5;
```

```
  var variable2;
```

```
  variable 3;
```

```
</script>
```

# Operators

- Arithmetic Operators
- Assignment Operators
- (Boolean) Comparison Operators
- Logical Operators

# Arithmetic Operators

- + (Addition)
- - (Subtraction)
- \* (Multiplication)
- / (Division)
- % (Modulus)
- ++ (Increment)
- -- (Decrement)



# Addition Operator & Strings

- You can actually use the addition (+) operator to add two lines of text
- Example:

```
var audience = "WLG";  
document.write("Hello" + audience + "members!");
```

# Assignment Operators

- $(x = 5)$
- $(x += 5)$  same as  $x = x + 5$
- $(x -= 5)$  same as  $x = x - 5$
- $(x *= 5)$  same as  $x = x * 5$
- $(x /= 5)$  same as  $x = x / 5$
- $(x \% = 5)$  same as  $x = x \% 5$

# Comparison Operators

- ==
- ===
- !=
- >
- <
- >=
- <=

# Logical Operators

- `&&`
- `||`
- `!`

# Conditional Statements

- if
- if...else
- if...else if...else

# if statements

```
if (x > 5)
{
    code to be executed;
}
```

# if...else statements

```
if (x > 5)
{
    execute this code;
}
else
{
    execute this code instead;
}
```

# if...else if...else

```
if (x > 5)
{
    execute this code;
}
else if (x > 4)
{
    execute this code;
}
else
{
    execute this code;
}
```



# Loops

- Useful if you want to repeat code execution
- for loops
- while loops
- do...while loops

# for loop

```
for(i = 0; i < 10; i ++)  
{  
    document.write (i);  
}
```

Output: 0123456789

# while loop

```
var x = 6;  
while (x > 1)  
{  
    document.write(x);  
    x--;  
}
```

Output: 65432

# do...while loop

```
var x = 5;  
do  
{  
    document.write(x);  
    x--;  
}  
while (x > 1);
```

# Functions

- A good way to break your program/code into a smaller segment that does a specific thing.
- Where you place JavaScript code that you want to execute only when called.
- Begins with the keyword “function”

# Function - Example

```
function checkvalue(parameters)
{
    if (x < 10)
    {
        document.write("The value of x is " + 10);
    }
}
```

# Pop-Up Boxes

- `alert ("your text")`
- `confirm ("your text")`  
`//OK = True, Cancel = False`
- `prompt ("your text")`  
`//Input value or null`

# Objects

- An object is a "package" of data; a collection of values and functions all classed under a single name. – *(Aaron Weiss)*
- Objects have properties
- Objects have methods
- JavaScript has built-in objects and also allows you to define your own object.
- e.g. the document object
- document.URL
- document.getElementById()



# Objects – Properties (Examples)

- **Image.src**

//Sets or Returns the URL of the image

- **String.length**

//Returns the length of a given string

- **Document.URL**

//Returns the full URL of the current document

# Objects – Method Examples

- `Window.setTimeout();`

//Call a function or evaluate an expression  
after a specified # of milliseconds

- `Date.getDay();`

//Gets the day of the week (0-6)

- `String.toUpperCase();`

# Form Validation

A basic example: [basic-validation.html](#)

# Form Validation

An intermediate example: [form-validation.html](#)

# A Simple Slideshow

- [Slideshow.html](#)

# JavaScript Tip

- The HTML <noscript> tag

```
<script type = "text/javascript">
```

```
    var variable1 = "Welcome to my site";
```

```
    document.write(variable1);
```

```
</script>
```

```
<noscript>
```

```
    You have JavaScript turned off! The force is not strong with you!
```

```
</noscript>
```

# Validation without JavaScript

- Q. What happens to my form validation if JavaScript is turned off?