JavaScript

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External JavaScript

JavaScript is usually kept in a separate file for organization purposes

They have the file extension **.js**

To use an external JS file, put the name of the file as the src attribute of a <script> tag

Example:

```
<script src="script.js"></script>
```

Script tags must be empty if the src attribute is used

They can be placed either inside the body or the head, we will almost always use the HEAD

JavaScript Syntax

JavaScript runs sequentially (top to bottom)

Each line represents a **statement**, and performs some action

Statements are terminated by semicolons

JavaScript has two types of values: **literals** and **variables**
◦ Literals cannot be changed, e.g. 'hi'
◦ Variables can be changed, we will talk more about variables later

Comments are denoted by //

JavaScript Output

JavaScript has no predefined output/display functions

We can display data by:
- Writing to an alert box **window.alert('hi');**
- Writing to the HTML output directly (NOT RECOMMENDED) **document.write('do not do this');**
- Writing to an HTML element **document.getElementById('derp').innerHTML = 'hi';**
- Writing to the browser console **console.log('this is cool');**

JavaScript Variables

Variables are containers for storing data values

Example:

```
var x = 5;

var y = 6;
```

The word **var** declares a variable, it is followed by the name of the variable
- The variable may then be used, variables must be declared before using them

Variable **names** (identifiers) should be descriptive, and in camelCase
- Can contain letters and digits, are case sensitive
- Must begin with a letter, must not be a keyword

```
var numberOfCats = 8;
```

JavaScript Operators

The = sign is an **assignment** operator

```
x = 5;
```

Assigns the value of 5 to the variable x

Other operators include +, -, *, /
◦ Same as in math

```
x = x + y + 5;
```

Evaluates what the value of `x + y + 5` is, and assigns it to the variable x

If the variable is a string ("something in double quotes"), the + operator will add them together (concatenation)

Example

Create some variables

Assign variables values

Do operations on the variables

Output the values