

Announcements

- Quiz 1 next week
 - Covers all weeks but emphasis on week 6 onward
 - Same format as Quiz 0
- Quiz Review next week
 - Both in section and course-wide review

Resources

lecture notes & source code

cs50.harvard.edu/shorts

study.cs50.net

man

Google

cs50.net/discuss

office hours

Me!

JavaScript



"JavaScript is the best programming language currently in existence. Other people will try to tell you otherwise. They are wrong."

Thomas MacWilliam
Head Teaching Fellow, 2012

Javascript

- Client-side scripting language
 - Not compiled or executed on the server
 - Load a Javascript page and it executes on your machine
- Syntax is similar to C, PHP
 - Variables, loops, conditions should look familiar!
- Error-check via the console

Hello World

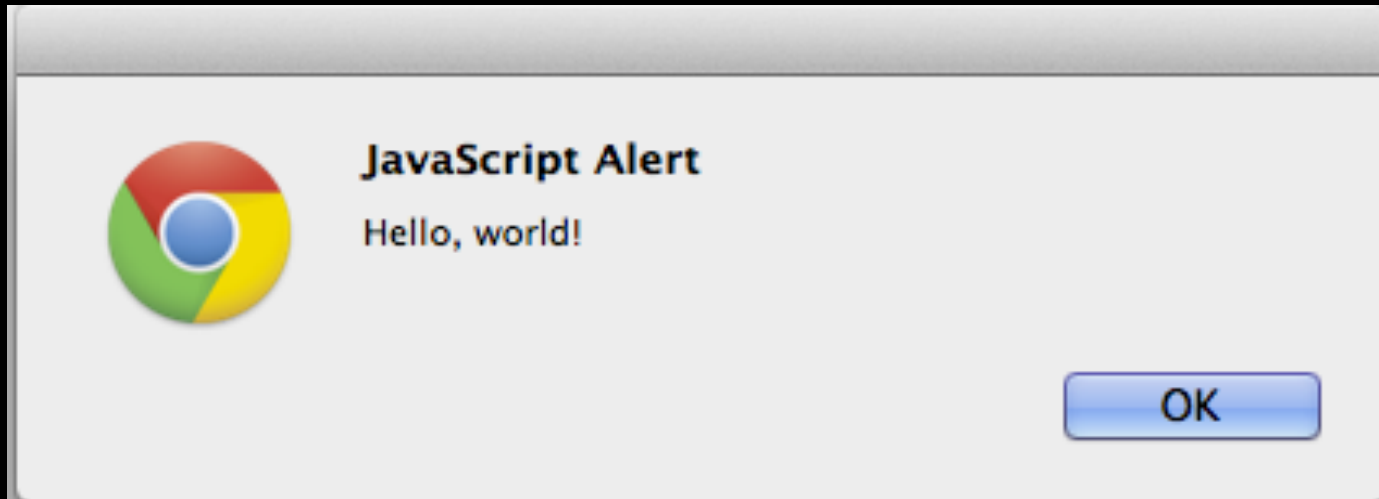
index.html:

```
<!DOCTYPE html>
  <html>
    <head>
      <script type="text/javascript"
src="hello.js">
      </script>
      <title>Hello, world!</title>
    </head>
    <body>
      Body HTML here
    </body>
  </html>
```

hello.js:

```
alert("Hello, world!");
```

Hello World



Variable Declarations

Loosely-typed

```
var s = "CS50";
```

```
var n = 3.14;
```

```
var b = true;
```

...

```
alert("Type of b: " + typeof(b));
```

```
b = "make b a string";
```

```
alert("Type of b: " + typeof(b));
```

Loops

```
for(/* init */; /* condition*/; /* update */)
{
    /* code */
}
```

```
while(/* condition */)
{
    /* code */
}
```

```
do {
    /* code */
} while(/* condition */);
```


Function Declarations

```
function sum(x, y)
{
    return x + y;
}
```

/ or */*

```
var sum = function(x, y)
{
    return x + y;
}
```

```
var sum = sum(3, 5);
alert("3 + 5 = " + sum);
```

Arrays in JavaScript

```
var arr = [];
```

```
var arr2 = ["Arrays", "in", "JS"];  
var thirdElement = arr2[2];
```

```
var arr2len = arr2.length;
```

```
var arr3 = [2.3, true, 5];  
arr3[2] = "not a number";  
arr3[100] = "legit";
```

Objects in JavaScript (1)

```
var emptyObject = {};
```

```
emptyObject["newProperty"] = "newValue";  
emptyObject.otherNewProperty =  
"otherNewValue";
```

```
alert(emptyObject.otherNewProperty);  
alert(emptyObject["otherNewProperty"]);
```

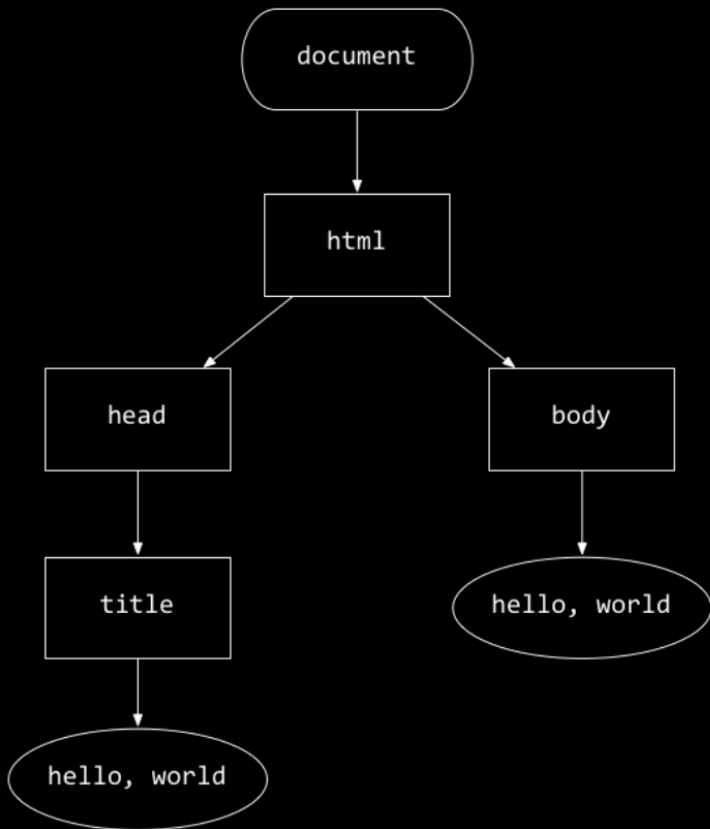
Objects in JavaScript (2)

```
var CS50 = {  
    "course": "CS50",  
    "instructor": "David J. Malan '99",  
    "tfs": ["R.J.", "Ben", "Pat", "Chris"],  
    "psets": 8,  
    "taped": true  
};
```

Objects in JavaScript (3)

```
var cottages = [  
  {name: "James", house: "Winthrop"},  
  {name: "Molly", house: "Cabot"},  
  {name: "Carl", house: "Kirkland"}  
];  
  
for(var i = 0; i < cottages.length; i++)  
{  
  alert(cottages[i].name);  
}
```

DOM: Document-Object Model



```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>hello, world</
```

```
  title>
```

```
  </head>
```

```
  <body>
```

```
    hello, world
```

```
  </body>
```

```
</html>
```

DOM: Document-Object Model (2)

Examples

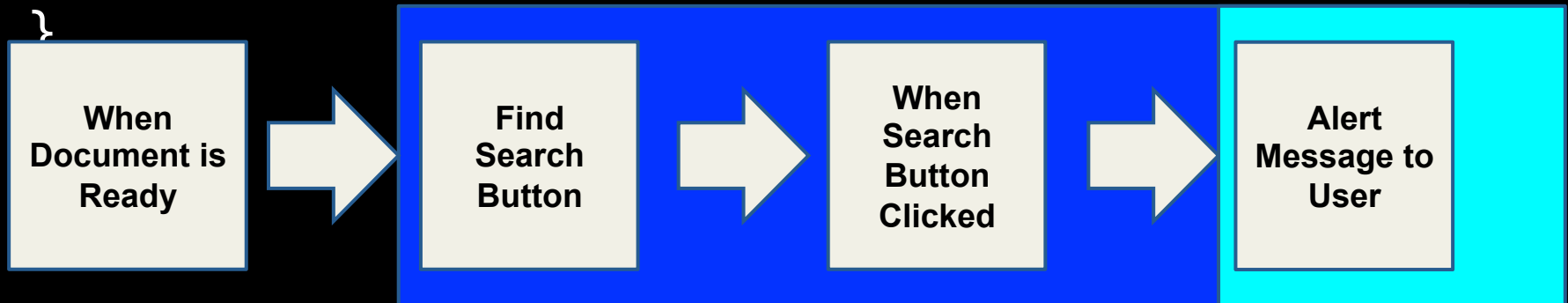
- `document.title`
- `document.body`
- `document.body.innerHTML`

Useful Functions

- `document.getElementById(string)`
- `document.getElementsByClassName(string)`
- `document.getElementsByTagName(string)`

JavaScript Events

```
window.onload = function() {  
  
    var searchButton =  
        document.getElementById("search_button");  
  
    searchButton.onclick = function() {  
        alert("You clicked the search  
button");  
    }  
}
```



jQuery

- Library built on top of Javascript

```
// in index.html
```

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

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

```
// in index.js
```

```
$(document).ready(function() {
```

```
    // TODO
```

```
});
```