

week10

Quiz 1 Next week

- Everything is “fair game”
 - Emphasis on week 6 onward
 - Same format as Quiz0
 - Quiz review next week
 - Both in section and course-wide review

Javascript

- <https://www.destroyallsoftware.com/talks/wat>

Javascript

- Client-side scripting language
 - Not compiled or executed on the server
 - Loading a Javascript page executes it on your local machine
- Syntax is similar to C, PHP
- Error checking is possible via the console

Hello World

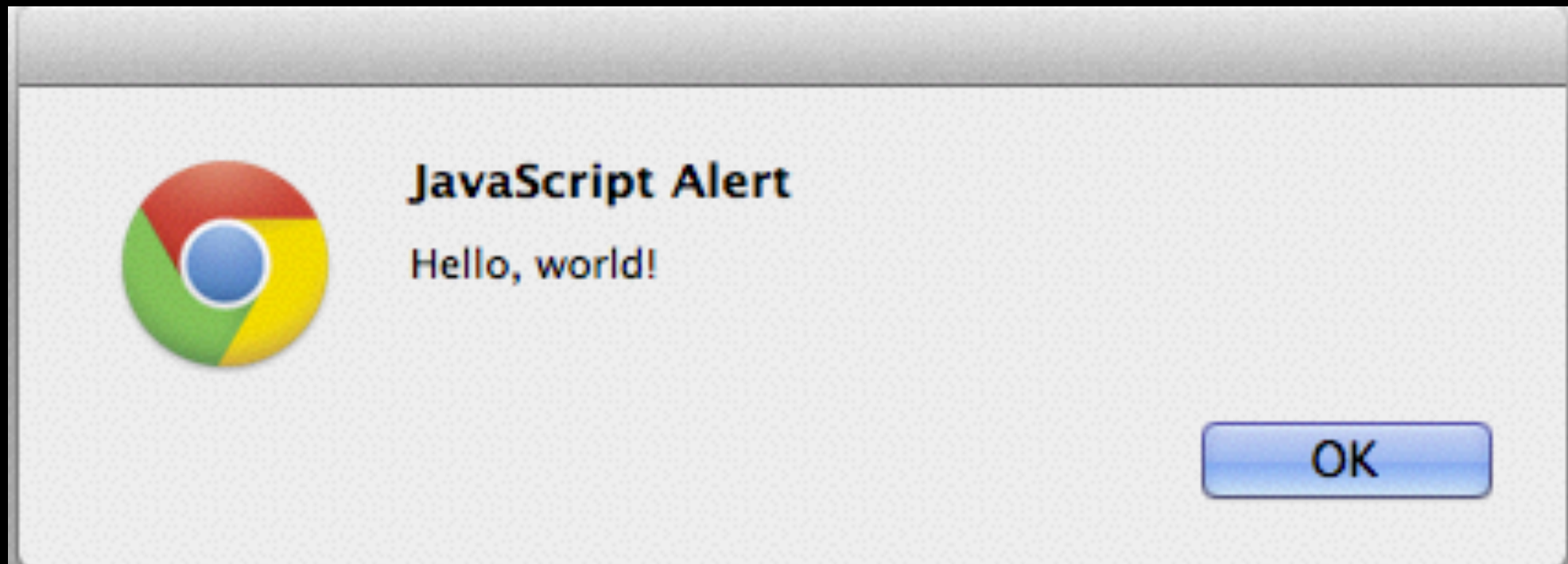
index.html:

```
<!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

```
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] = "this is ok";
```

Objects in JavaScript (1)

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

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

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

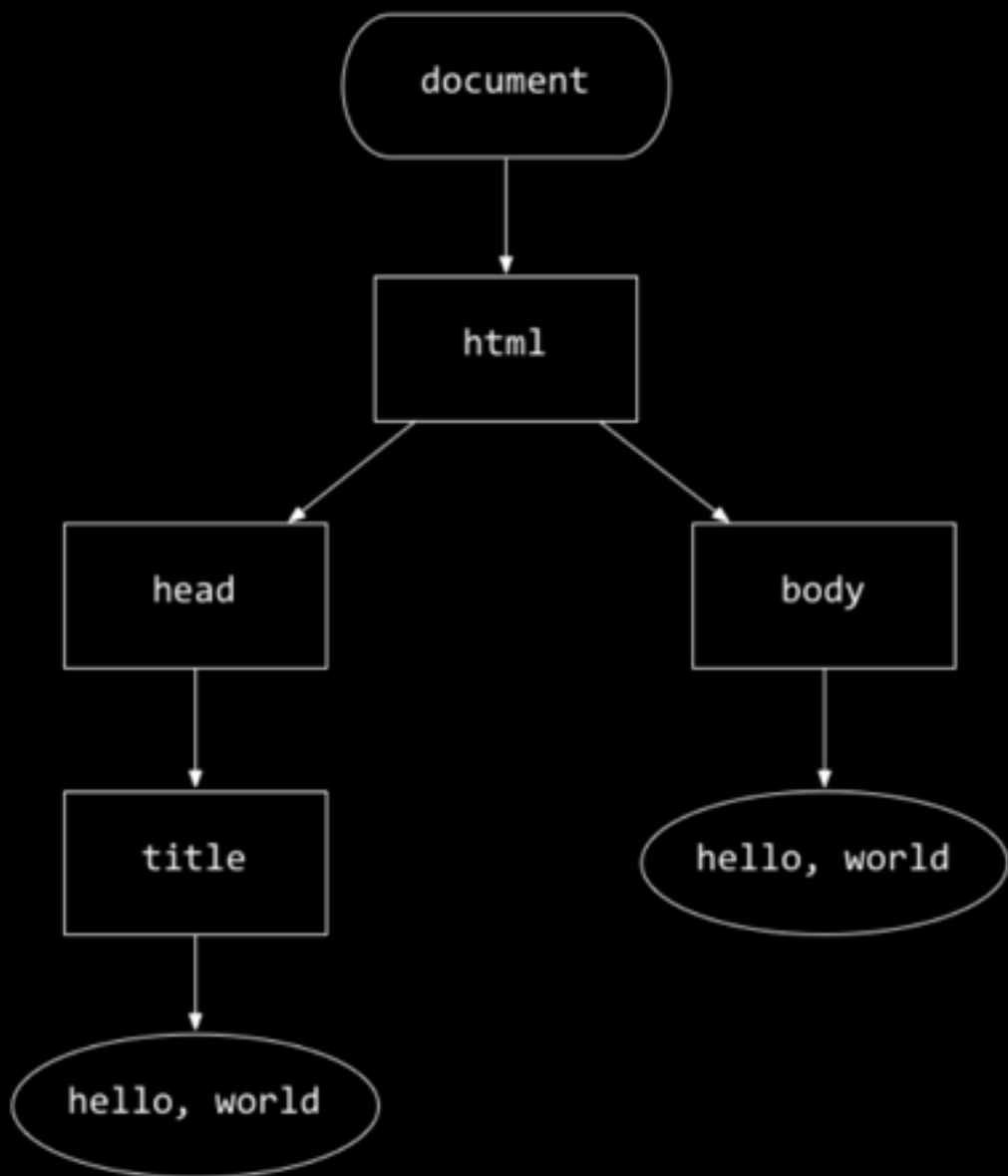
Objects in JavaScript (2)

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

Objects in JavaScript (3)

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

- A library built on top of javascript (but really at this point it's part of Javascript)

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

```
$(document).ready(function() {  
    // do something cool  
});
```

“Fun” With Javascript

AJAX

```
$.getJSON("articles.php", parameters)
    .done(function(data, textStatus, jqXHR)
    {
        // do something with the data
    })

    .fail(function(jqXHR, textStatus, errorThrown)
    {
        // something terrible happened
    });
```