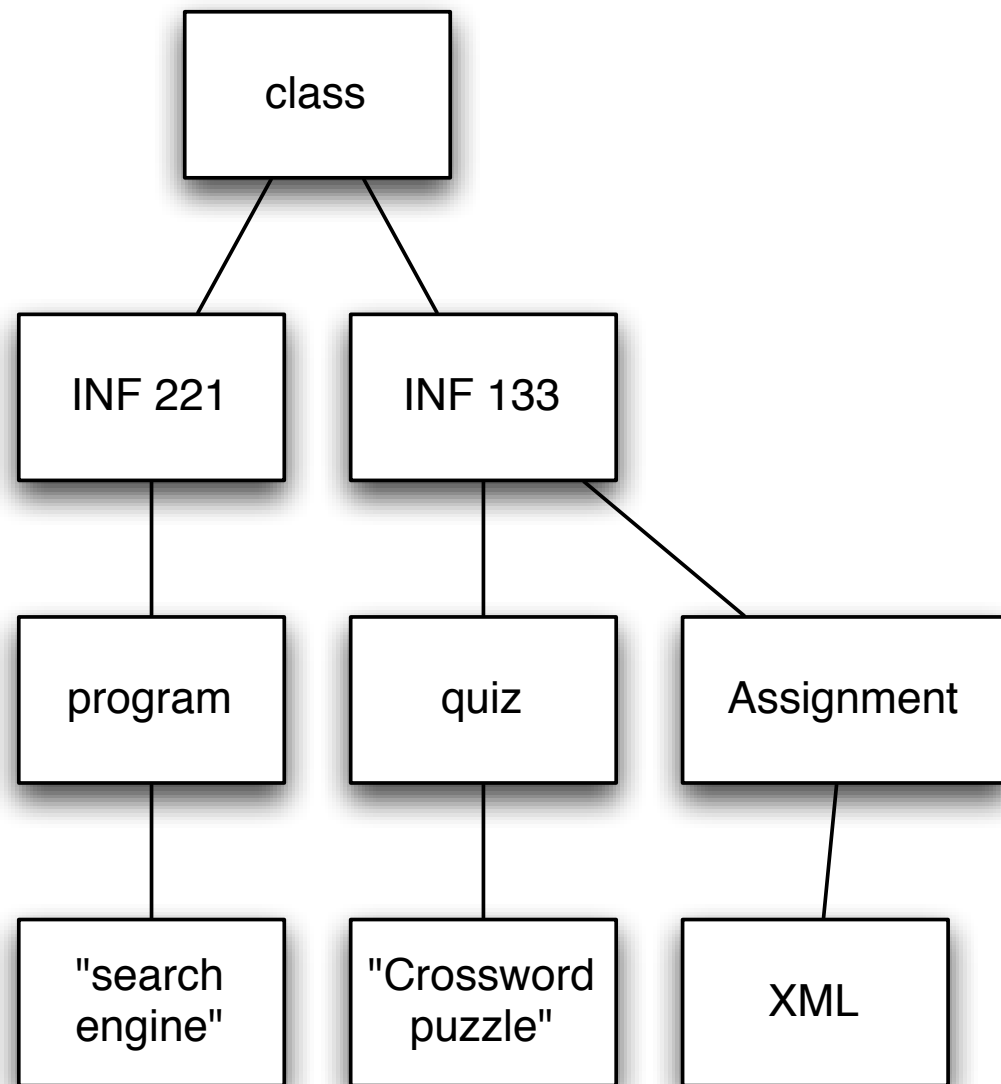


Example



- Represent this as
 - XML
 - JSON
- There is not an absolutely correct answer to how to interpret this tree in the respective languages.
- There are multiple ways to interpret what this tree means.

Example

```
<?xml version="1.0"?>
<class>
  <INF_221>
    <program>
      search engine
    </program>
  </INF_221>
  <INF_133>
    <quiz>
      crossword puzzle
    </quiz>
    <Assignment>
      <XML/>
    </Assignment>
  </INF_133>
</class>
```

```
{
  "class": {
    "INF 221": {
      "program": "search engine"
    },
    "INF 133": {
      "quiz": "Crossword puzzle",
      "Assignment": "XML"
    }
  }
}
```

How does a web page work?

- <http://www.ics.uci.edu/~djp3>
- Domain Names
- IP Addresses (IPv4 vs IPv6)
 - DHCP vs static IPs
- Routing a request
- a “web server”
- What is a web page?
- What does a browser do?
- HTML and CSS



Web Fundamentals

Create your own website and learn the building blocks of web development with HTML and CSS.

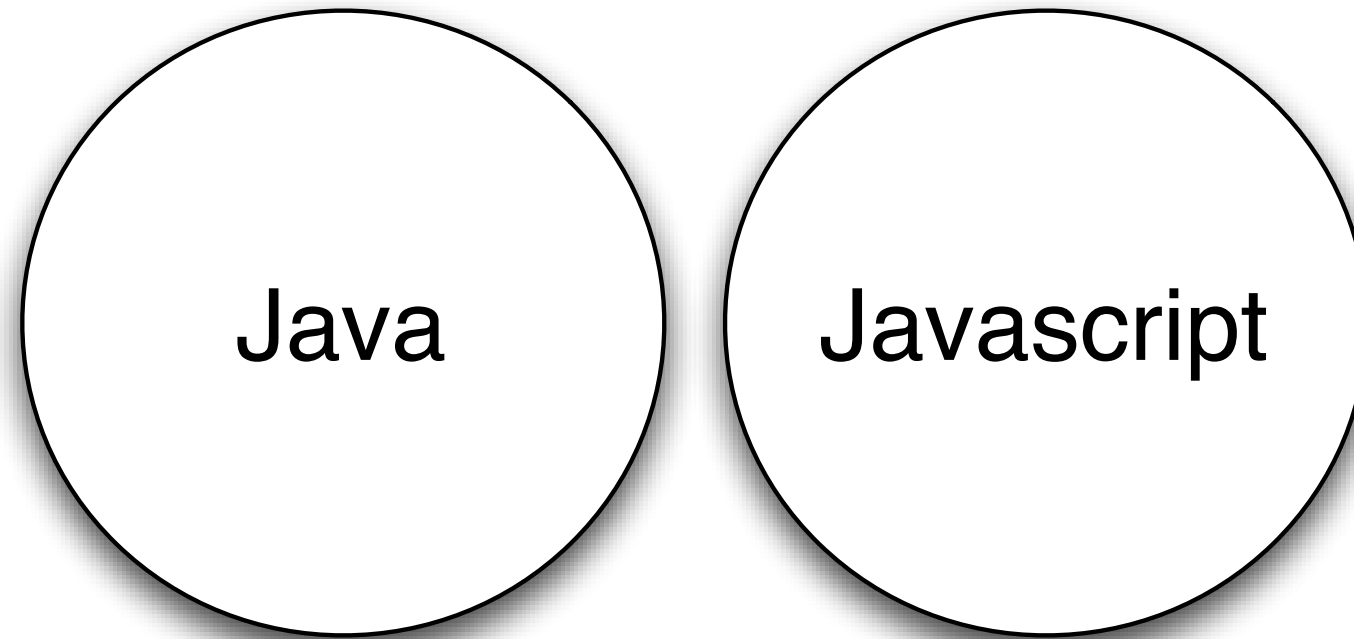
Explore >

<http://www.codecademy.com/learn>

User Interaction: Introduction to Javascript

Assoc. Professor Donald J. Patterson
INF 133 Fall 2013





- Java and Javascript are not the same
 - They unfortunately share the same name
 - They are different in what they are designed to do
 - They are different in how they came to be
- Java is more powerful and complex

- JavaScript gives web designers a programming tool
 - Simple syntax
 - Supports putting "snippets" of code into web pages
- JavaScript can put dynamic text into an HTML page
 - A JavaScript statement like this:
 - `document.write("<h1>" + name + "</h1>")`
 - can write the content of a variable into a web page
- JavaScript can react to events
 - A JavaScript can be set to execute when something happens, like when a page has finished loading or when a user clicks on an HTML element

Here is the most confusing thing

An HTML web page is the data that javascript works with

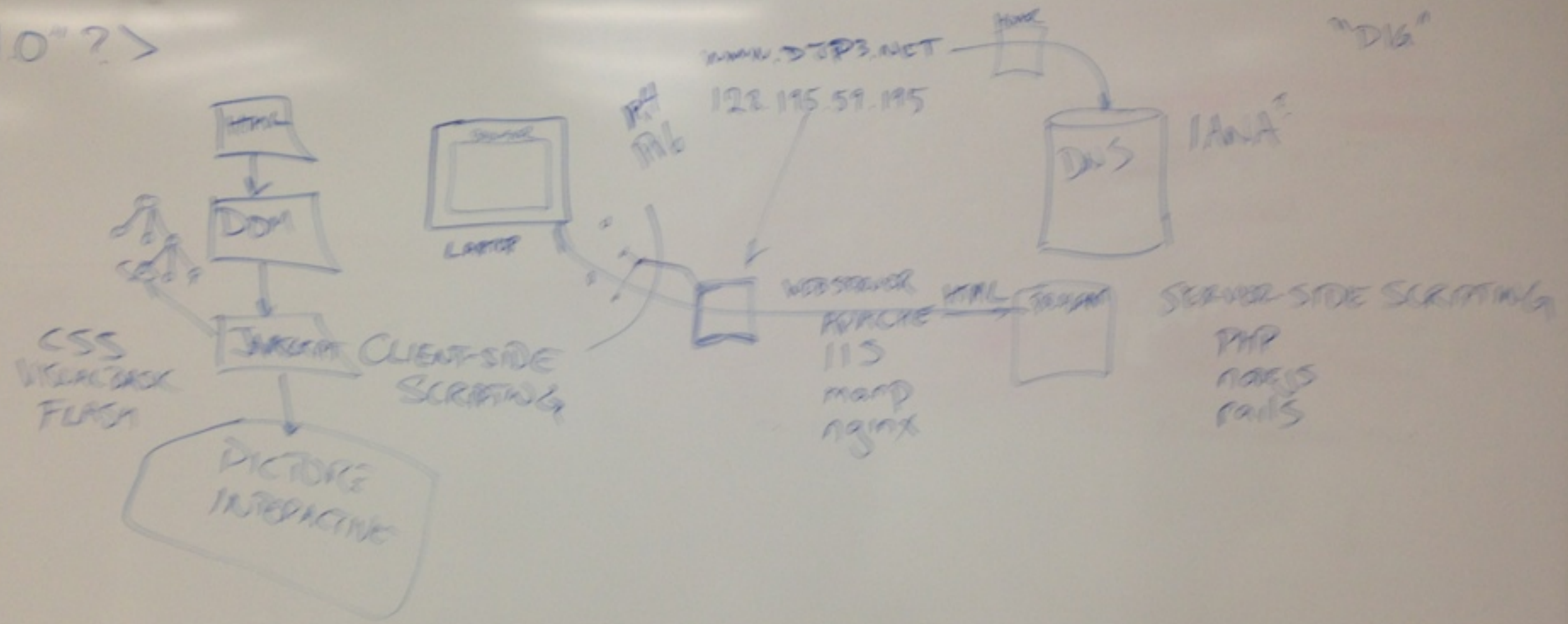
but

An HTML web page is also where the javascript is stored

and

the web browser is constantly redrawing the HTML (DOM)
as the Javascript changes it.

SDN="1.0"?>



- Javascript can read and write HTML elements
 - A Javascript can read and change the content of an HTML element
- JavaScript can be used to validate data
 - A JavaScript can be used to validate form data before it is submitted to a server.

- The data structure that is rendered by the browser is called
 - The **DOM**
 - Document Object Model
 - “is a platform- and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure and style of documents. The document can be further processed and the results of that processing can be incorporated back into the presented page.”

Javascript

- get a Hello World running
 - This eliminates errors related to your hosting provider and web set up
 - It ensures that you have resources necessary on a web host
 - Hopefully this was solved in Task 03

```
<html>
  <head>
    <title>Step 1</title>
  </head>
  <body>
    Hello World
  </body>
</html>
```


- Let's put some Javascript in it
 - <script> tag
 - encloses javascript code that is run by the browser

```
<html>
  <head>
    <title>Step 2</title>
  </head>
  <body>
    <script type="text/javascript">
      document.write("This is my first JavaScript!");
    </script>
  </body>
</html>
```

```
<html>
  <head>
    <title>Step 3</title>
  </head>
  <body>
    <script type="text/javascript">
      document.write("<font color=\"red\">This is my second JavaScript!</font>");
    </script>
  </body>
</html>
```

- document.write()
 - when this command is run
 - the parameter is inserted into the html document just like it was written there without any javascript
- Compare “View Source” and “Inspect Element”
- Review Google Chrome tools

- JavaScripts in a page will be executed immediately while the page loads into the browser.
- This is not always what we want.
 - Sometimes we want to execute a script when a page loads, or at a later event, such as when a user clicks a button.
- Scripts to be executed when they are called, or when an event is triggered, are placed in functions.
- **TIP:** Put your functions in one place (e.g., the head section), this way they are all in one place, and they do not interfere with page content or confuse you.

```
<html>
  <head>
    <script type="text/javascript">
      function message()
      {
        alert("This alert box was called with the onload event");
      }
    </script>
  </head>

  <body onload="message()">
    Hello World!
  </body>
</html>
```

- Javascripts can be put in the head and the body
- Multiple javascripts are fine

- To reuse javascript in multiple different webpages
 - store it in another file
 - load it externally

```
function message()  
{  
    alert("This alert box was called from a remote library.");  
}
```

```
<html>  
  <head>  
    <script type="text/javascript" src="Step5.js"></script>  
  </head>  
  
  <body onload="message()">  
    Hello World!  
  </body>  
</html>
```

User Interaction: jQuery

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INF 133 Fall 2013



- jQuery
 - A JavaScript Library
 - Cross-browser
 - Free (beer & speech)
 - It supports
 - manipulating HTML elements (DOM)
 - animations
 - event handling
 - AJAX

- Getting access to jQuery in our code
 - You can't just write JavaScript that calls jQuery
 - You must load it
 - From where?
 - From your own machine
 - <http://jquery.com/>
 - From someone else's machine
 - From Google
 - Why would you do this?
 - <http://code.google.com/apis/libraries/devguide.html>
 - Shortcut



- Loading jQuery is just like loading a remote JavaScript

```
<html>
  <head>
    <script type="text/javascript" src="Step5.js"></script>
  </head>

  <body onload="message()">
    Hello World!
  </body>
</html>
```

- Loading jQuery is just like loading a remote JavaScript

```
<html>
  <head>
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.8.2/jquery.min.js"></script>
    <script src="http://ajax.googleapis.com/ajax/libs/jqueryui/1.9.0/jquery-ui.min.js"></script>
  </head>

  <body>
    
  </body>
</html>
```

Step 6

- With jQuery you select HTML elements in the DOM and perform actions on them
 - Basic syntax is: `$(selector).action()`
 - A dollar sign (\$) is used to define jQuery
 - `$(selector).action() = jQuery(selector).action()`
 - A `selector` to "query (or find)" HTML elements
 - A jQuery `action` to apply to the element(s)

```
<p class="foo">words</p>  
<p id="bar">more words</p>  
<p class="foo">even more words</p>  
<img class="foo"/>
```

- Selection examples:
 - multiple results
 - \$("p").hide()
 - \$(".foo").hide()
 - \$("p.foo").hide()
 - single result
 - \$("#bar").hide()
 - context dependent
 - \$(this).hide()

Possible Actions:

- **append** content to a DOM element
- **wrap** content around a DOM element
- **toggle** the display of a DOM element
- attach a function that is run when you **hover** over a DOM element
- you can request data via the **ajax** pattern

- Loading jQuery is just like loading a remote JavaScript

```
<html>
  <head>
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.8.2/jquery.min.js"></script>
    <script src="http://ajax.googleapis.com/ajax/libs/jqueryui/1.9.0/jquery-ui.min.js"></script>
    <script>
      $(document).ready(
        function() {
          $("img").click(
            function () {
              $(this).hide("blind", { direction: "horizontal" }, 5000);
            }
          );
        }
      );
    </script>
  </head>

  <body>
    
  </body>
</html>
```

Step 7

- Loading jQuery is just like loading a remote JavaScript

```
<html>
  <head>
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.8.2/jquery.min.js"></script>
    <script src="http://ajax.googleapis.com/ajax/libs/jqueryui/1.9.0/jquery-ui.min.js"></script>
    <script>
      $(document).ready(
        function() {
          $("img").click(
            function () {
              $(this).hide("explode", 5000);
            }
          );
        }
      );
    </script>
  </head>

  <body>
    
  </body>
</html>
```

- Step 8

- Loading jQuery is just like loading a remote JavaScript

```
<html>
  <head>
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.8.2/jquery.min.js"></script>
    <script src="http://ajax.googleapis.com/ajax/libs/jqueryui/1.9.0/jquery-ui.min.js"></script>
    <script>
      $(document).ready(
        function() {
          $("img").click(
            function () {
              $(this).hide("blind", { direction: "horizontal" }, 5000);
            }
          );
        }
      );
    </script>
  </head>

  <body>
    
    <br/>
    
  </body>
</html>
```

Step 07_02



The screenshot shows the jQuery website homepage with a dark blue header and a light blue footer. The header contains the jQuery logo and a navigation menu with links to jQuery, Plugins, UI, Meetups, Forum, Blog, About, and Donate. Below the header is a secondary navigation bar with links to Download, Documentation, Tutorials, Bug Tracker, and Discussion. The main content area features a large heading 'jQuery is a new kind of JavaScript Library.' followed by a paragraph describing the library's capabilities. To the right, there is a section titled 'GRAB THE LATEST VERSION!' with a form to choose a compression level (Production or Development) and a large 'Download (jQuery);' button. Below the main content, there is a section 'WHO'S USING JQUERY?' with logos of various companies and organizations. At the bottom, there are two sections: 'LEARN JQUERY NOW!' with a code snippet and a 'RUN CODE' button, and 'JQUERY RESOURCES' with links to getting started guides and developer resources.

jQuery
write less, do more.

jQuery Plugins UI Meetups Forum Blog About Donate

Download Documentation Tutorials Bug Tracker Discussion

jQuery is a new kind of JavaScript Library.

jQuery is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development. jQuery is designed to change the way that you write JavaScript.

✓ [Lightweight Footprint](#) ✓ [CSS3 Compliant](#) ✓ [Cross-browser](#)

GRAB THE LATEST VERSION!

CHOOSE YOUR COMPRESSION LEVEL:

☒ PRODUCTION (31KB, Minified and Gzipped)
☐ DEVELOPMENT (229KB, Uncompressed Code)

 **Download (jQuery);**

Current Release: **v1.6.4**

WHO'S USING JQUERY? Google DELL IBM NBC CBS NETFLIX Technorati mozilla.org WP

LEARN JQUERY NOW!

What does jQuery code look like? Here's the quick and dirty:

```
$("#p.neat").addClass("ohmy").show("slow");
```

RUN CODE

JQUERY RESOURCES

Getting Started With jQuery

- ◆ [How jQuery Works](#)
- ◆ [Tutorials](#)
- ◆ [Using jQuery with other libraries](#)
- ◆ [jQuery Documentation](#)

Developer Resources

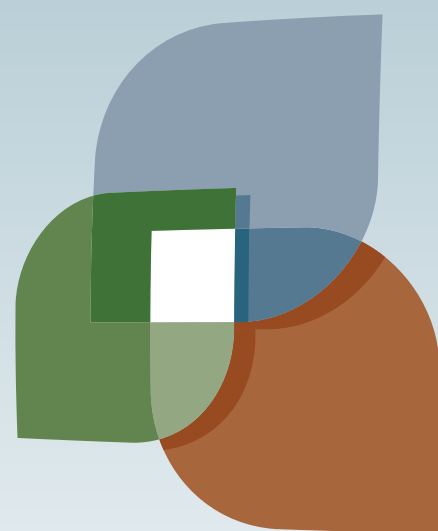
- ◆ [Mailing List](#)
- ◆ [Source code / Git](#)
- ◆ [Plugin Authoring](#)
- ◆ [Submit a New Bug Report](#)

- Task 14
 - Present the data as a table
 - http://www.w3schools.com/html/html_tables.asp
 - HTML tables overview
 - 3 primary tags
 - <table>
 - <tr>
 - <td>

- Basic table
 - <table>
 - <tr>
 - <td>

1	2
3	4

```
<html>
  <body>
    <table border="1">
      <tr>
        <td>
          1
        </td>
        <td>
          2
        </td>
      </tr>
      <tr>
        <td>
          3
        </td>
        <td>
          4
        </td>
      </tr>
    </table>
  </body>
</html>
```



L U C I

