

Web Development

BSc Applied Computing / Forensics / Entertainment Systems/ IOT

Produced
by

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Waterford Institute of Technology

<http://www.wit.ie>

<http://elearning.wit.ie>



Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE



Agenda

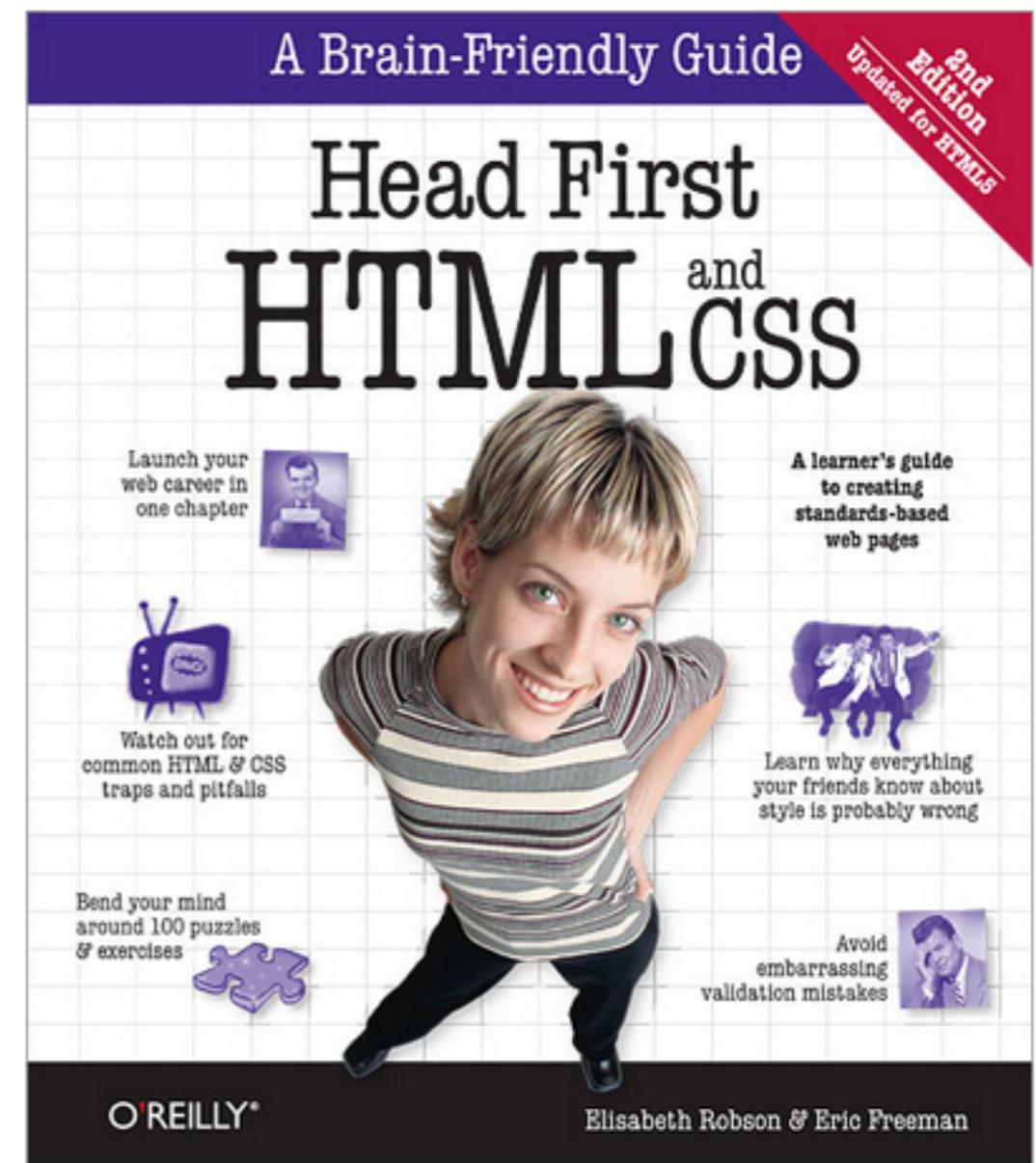
- The Web Development Module
- The Internet
- The Web
- The Labs

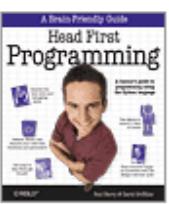
Web Development

- Tuition Team:
 - Eamonn de Leastar (edeleastar@tssg.org)
 - Dr. Brenda Mullally (bmullally@wit.ie)
- 12 Week Module
 - 2 Lecture
 - +1 x 2 hour supervised lab
 - 100% Continuous assessment
 - 2 Assignments during term.

Recommended Text

- Head First HTML and CSS, 2nd Edition. By Freeman, Elisabeth and Eric Freeman. 2012. [Head First HTML with CSS & XHTML](#). O'Reilly & Associates. 658 p. ISBN 978-0-596-15990-0
- £17 on amazon (new)





Head First Programming

By David Griffiths, Paul Barry

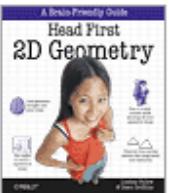
November 2009

Print: \$49.99

Ebook: \$39.99

Bundle: \$54.99

If you have little or no programming experience, this book will help you get started with the core concepts of writing computer programs -- variables, functions, and objects --... [Read more](#).



Head First 2D Geometry

By Lindsey Fallow, Dawn Griffiths

November 2009

Print: \$19.99

Ebook: \$15.99

Bundle: \$21.99

Having trouble with geometry? Do Pi, the Pythagorean theorem, and other calculations just make your head spin? Relax. With Head First 2D Geometry, everything from triangles, quads, and... [Read more](#).



Head First iPhone Development

By Dan Pilone, Tracey Pilone

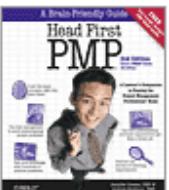
October 2009

Print: \$44.99

Ebook: \$35.99

Bundle: \$49.49

Let's say you have an idea for a killer iPhone app. Head First iPhone Development will help you get your first application built... [Read more](#).



Head First PMP, Second Edition

By Jennifer Greene, Andrew Stellman

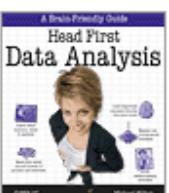
July 2009

Print: \$69.99

Ebook: \$55.99

Bundle: \$76.99

Learn the latest principles and certification objectives for the PMP exam. Fourth Edition, in a unique and inspiring way with Head First PMP, this book helps... [Read more](#).



Head First Data Analysis

By Michael Milton

July 2009

Print: \$49.99

Ebook: \$39.99

Bundle: \$54.99

How can you learn to manage and analyze all kinds of data? Head First Data Analysis, where you'll learn how to collect and organize data, analyze it, and present it effectively.



Head First Networking

By Al Anderson, Ryan Benedetti

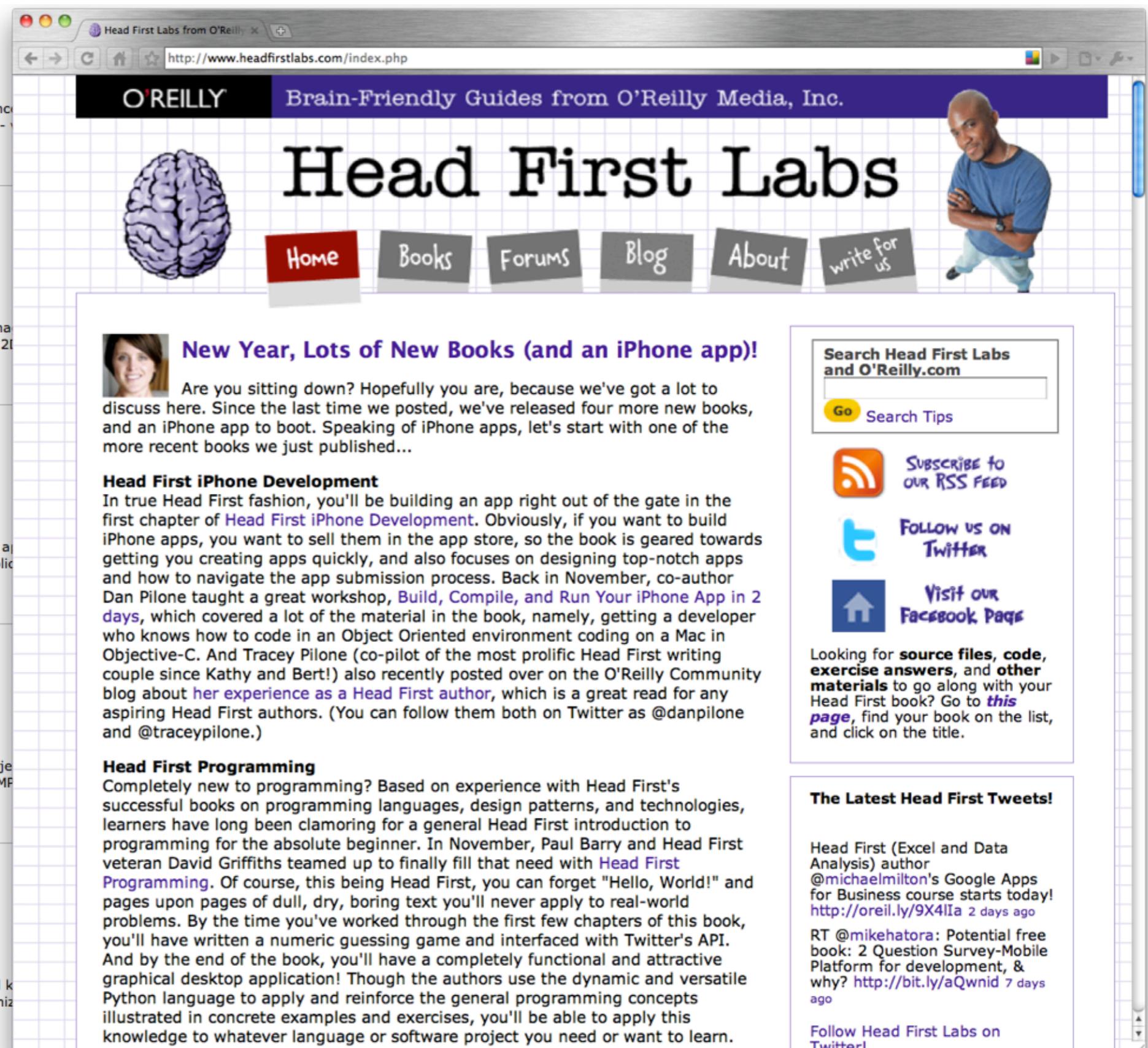
May 2009

Print: \$54.99

Ebook: \$43.99

Bundle: \$60.49

Frustrated with networking books so chock full of acronyms that your brain goes into sleep mode? Head First Networking's unique, visually rich format provides a task-based approach to computer networking... [Read more](#).



O'REILLY Brain-Friendly Guides from O'Reilly Media, Inc.

Head First Labs




New Year, Lots of New Books (and an iPhone app)!

 Are you sitting down? Hopefully you are, because we've got a lot to discuss here. Since the last time we posted, we've released four more new books, and an iPhone app to boot. Speaking of iPhone apps, let's start with one of the more recent books we just published...

Head First iPhone Development

In true Head First fashion, you'll be building an app right out of the gate in the first chapter of [Head First iPhone Development](#). Obviously, if you want to build iPhone apps, you want to sell them in the app store, so the book is geared towards getting you creating apps quickly, and also focuses on designing top-notch apps and how to navigate the app submission process. Back in November, co-author Dan Pilone taught a great workshop, [Build, Compile, and Run Your iPhone App in 2 days](#), which covered a lot of the material in the book, namely, getting a developer who knows how to code in an Object Oriented environment coding on a Mac in Objective-C. And Tracey Pilone (co-pilot of the most prolific Head First writing couple since Kathy and Bert!) also recently posted over on the O'Reilly Community blog about [her experience as a Head First author](#), which is a great read for any aspiring Head First authors. (You can follow them both on Twitter as @danpilone and @traceypilone.)

Head First Programming

Completely new to programming? Based on experience with Head First's successful books on programming languages, design patterns, and technologies, learners have long been clamoring for a general Head First introduction to programming for the absolute beginner. In November, Paul Barry and Head First veteran David Griffiths teamed up to finally fill that need with [Head First Programming](#). Of course, this being Head First, you can forget "Hello, World!" and pages upon pages of dull, dry, boring text you'll never apply to real-world problems. By the time you've worked through the first few chapters of this book, you'll have written a numeric guessing game and interfaced with Twitter's API. And by the end of the book, you'll have a completely functional and attractive graphical desktop application! Though the authors use the dynamic and versatile Python language to apply and reinforce the general programming concepts illustrated in concrete examples and exercises, you'll be able to apply this knowledge to whatever language or software project you need or want to learn.

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Looking for **source files**, **code**, **exercise answers**, and **other materials** to go along with your Head First book? Go to [this page](#), find your book on the list, and click on the title.

The Latest Head First Tweets!

Head First (Excel and Data Analysis) author @michaelmilton's Google Apps for Business course starts today! <http://oreil.ly/9X4IIa> 2 days ago

RT @mikehatora: Potential free book: 2 Question Survey-Mobile Platform for development, & why? <http://bit.ly/aQwnid> 7 days ago

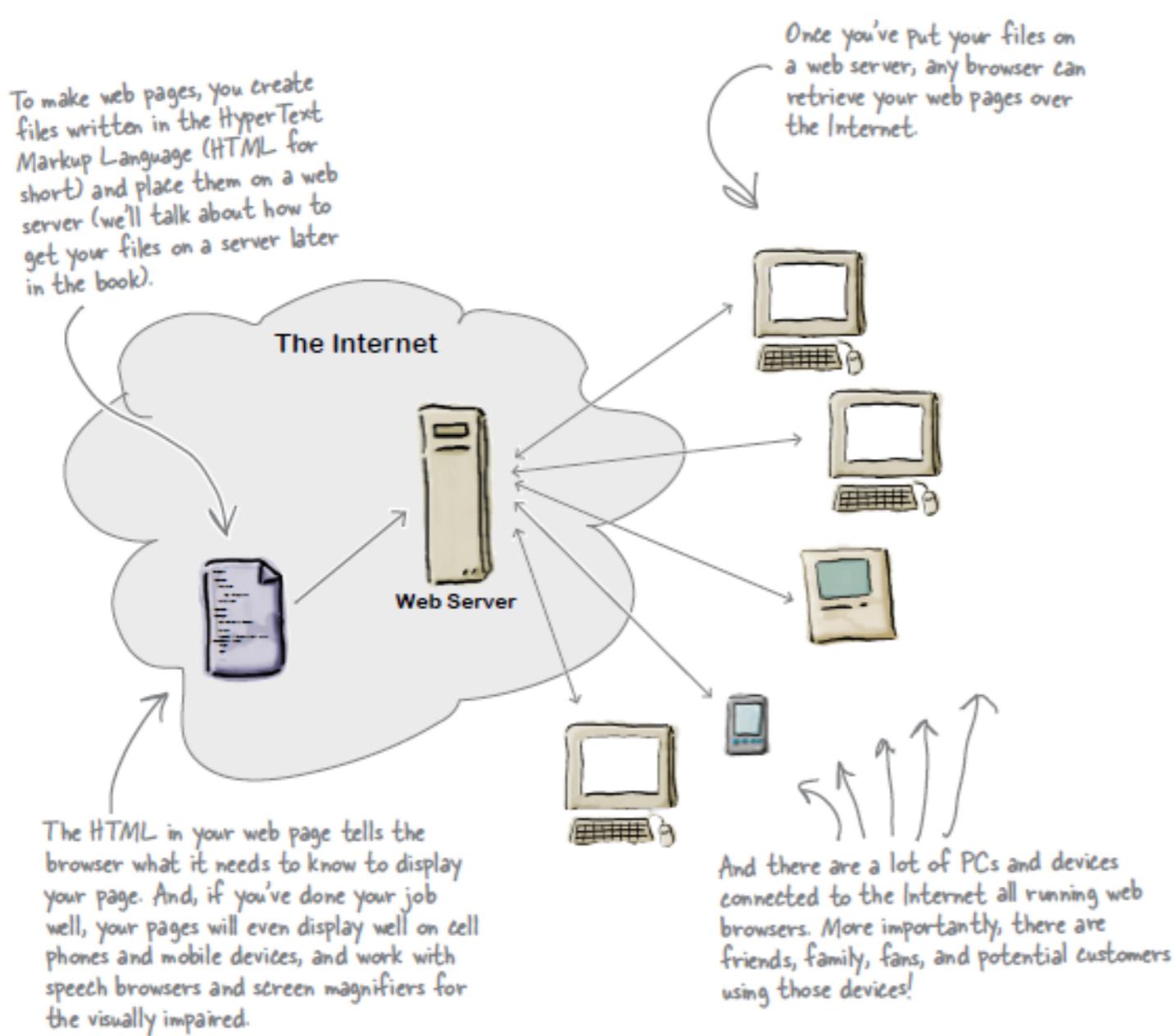
Follow Head First Labs on Twitter!

The Web

Video killed the radio star

Want to get an idea out there? Sell something? Just need a creative outlet? Turn to the Web—we don't need to tell you it has become the universal form of communication. Even better, it's a form of communication **YOU** can participate in.

But if you really want to use the Web effectively, you've got to know a few things about **HTML**—not to mention, a few things about how the Web works too. Let's take a look from 30,000 feet:



A flavour of the book...

What you write (the HTML)

So, you know HTML is the key to getting a browser to display your pages, but what exactly does HTML look like? And what does it do?

Let's have a look at a little HTML...imagine you're going to create a web page to advertise the *Head First Lounge*, a local hangout with some good tunes, refreshing elixirs, and wireless access. Here's what you'd write in HTML:

```
<html>
  <head>
    <title>Head First Lounge</title> A
  </head>
  <body>
    <h1>Welcome to the Head First Lounge</h1> B
     C
    <p>
      D Join us any evening for refreshing elixirs,
      conversation and maybe a game or
      two of <em>Dance Dance Revolution</em>. E
      Wireless access is always provided;
      BYOWS (Bring your own web server).
    </p>
    <h2>Directions</h2> F
    <p>
      G You'll find us right in the center of
      downtown Webville. Come join us!
    </p>
  </body>
</html>
```



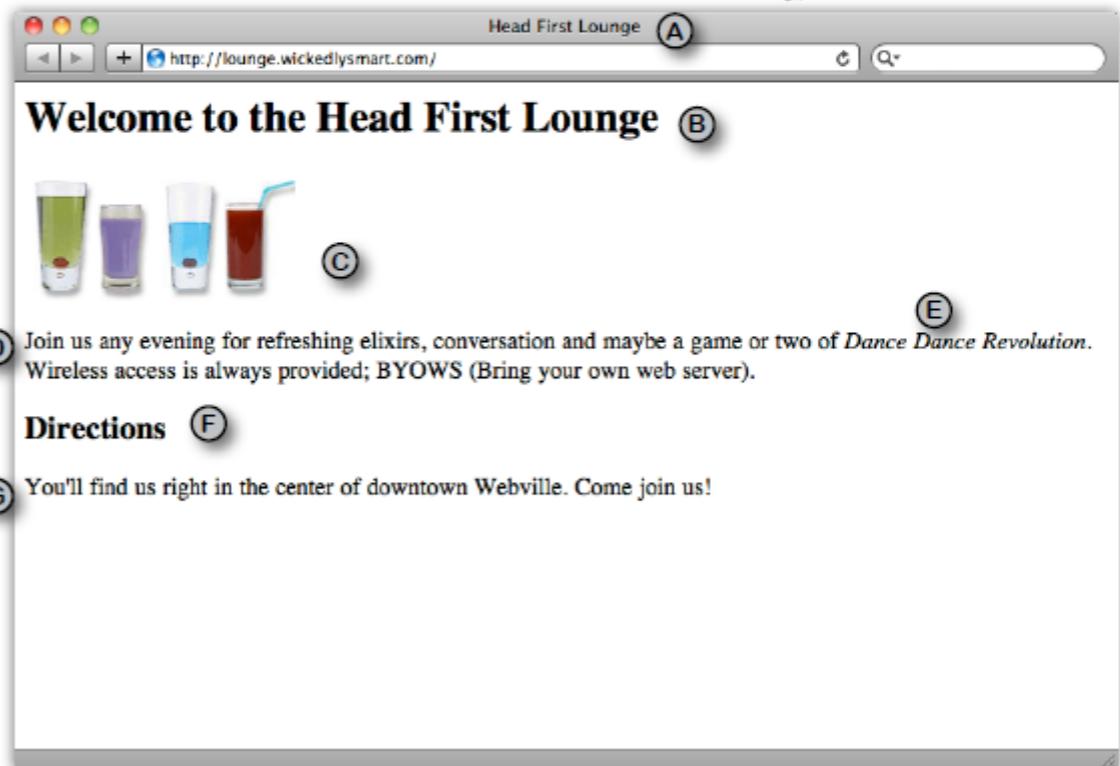
We don't expect you to know HTML yet.

At this point you should just be getting a feel for what HTML looks like; we're going to cover everything in detail in a bit. For now, study the HTML and see how it gets represented in the browser on the next page. Be sure to pay careful attention to each letter annotation and how and where it is displayed in the browser.

What the browser creates

When the browser reads your HTML, it interprets all the *tags* that surround your text. Tags are just words or characters in angle brackets, like `<head>`, `<p>`, `<h1>`, and so on. The tags tell the browser about the *structure and meaning* of your text. So rather than just giving the browser a bunch of text, with HTML you can use tags to tell the browser what text is in a heading, what text is a paragraph, what text needs to be emphasized, or even where images need to be placed.

Let's check out how the browser interprets the tags in the Head First Lounge:



A flavour of
the book...

Web Development: House of Cards

- 12 Topics in Web Development
 - one topic per week
- Each Topic builds on concepts, tools and techniques from previous weeks.

Introducing HTML



We explore the foundations of web and get to grips with the fundamentals of the HTML language. As you will see, its structure and format is relatively straightforward, and you will be able to understand the basics very quickly. We will be focusing on a small number of 'tags' to get started, and also on the ways in which different html files can be linked together to form a site.

Introducing CSS

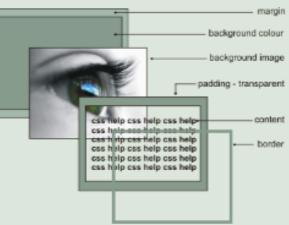
Anatomy of a CSS Rule

```

    Selector: h1 { Property: color: orange; Value: text-align: center; }
    Declaration = Property + Value
  
```

CSS is the language we use to style HTML. This language looks simple at first, but as we will see in the next few weeks, it is considerably more complex than HTML and will require a very careful approach to get right.

The Box Model



In order to style the same html elements in different ways we need to use classes. This allows us to target specific occurrences of an html element for styling purposes. At the heart of the layout engine in web browsers is a concept called the 'box model'. This defines a general layout structure for all HTML elements, providing a language for specifying important dimensions and relationships to other elements.

Layout

Our guarantee: at the lounge, we're committed to providing with an exceptional experience every time you visit. Whether stopping by to check in on email over an elixir, or are here ordinary dinner, you'll find our knowledgeable service staff in every detail. If you're not fully satisfied, have a Blueberry B

ut that's not all; at lounge and drumbe of our comfy w the main lounge rig jungle area to relax onected with our guarantee

```

  border-color: black;
  border-width: 1px;
  border-style: solid;
  
```

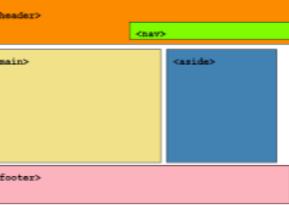
Using an understanding of the fundamental features of the box model we can start to produce more interesting page layouts. Specifically, we can break a page down into sections and use box model properties to dimension and position these sections in a flexible manner. This will allow us to grow multi-column pages that can vary according to the size of the browser windows used to view them.

Navigation



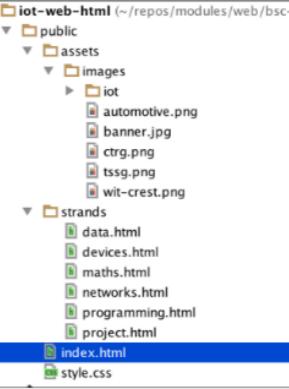
Central to a well designed site is a clear and understandably navigation structure. This must easily allow the user to explore the site, provide sufficient context such that the user knows where they are at any stage, and do this in a visually pleasing and efficient manner.

Semantic HTML + More Layout



HTML5, the latest version of the standard, introduced a range of new elements. Among the most interesting are the so-called 'semantic' elements. These attempt to re-examine the proliferation of DIVs in HTML, and proposed an alternative vocabulary that would better reflect the purpose of many of these DIVs.

Layout + Review



A well structured site combines efficient and carefully composed CSS + well structured HTML content, cleanly indented with an appropriate selection of semantic elements. A simple site is reviewed here along with some more CSS layout techniques.

Deployment

Static web publishing for Front-End Developers

Zero-build, single-command, bring your own source control web publishing CDN. Yes, it's free.

73,478 deployments 534.14 GB published 10,015 projects

The web site will ultimately have to be moved from your local folders to a public web server where it can be accessed via a public domain. Modern tools can make this quite seamless and convenient.

Templates

All Templates

Our complete collection of Bootstrap themes and our themes for any project, personal or commercial.



Modern web site development is more likely to break large pages into smaller 'fragments' - called templates. This allows a more convenient way of building large and complex sites, and facilitates greater reuse of page elements, styles and components.

Semantic-UI Part I

Programming

Learn a broad range of programming and problem solving skills, including writing new platforms, software tools and languages. Use these skills to build apps for desktop, mobile and device based applications, including a portfolio of functioning applications.

Networks

This strand will explore modern networks and cloud technology. Be able to configure, network and manage all aspects of a modern network, from simple connections to single board computers, mobiles and full workstations.

Project

Building exciting IoT projects in every corner of the programme. Your projects will combine skills acquired from the other strands and enable you to build a comprehensive portfolio of IoT applications and services.

Semantic-UI is a powerful and expressive CSS framework, providing a broad range of styles, components and layouts.

Semantic-UI Part II

Data Science

All the heart of many IoT applications is data management, sensors, alarms and other information that must be relayed, stored and ultimately turned into knowledge. Learn the fundamentals of machine learning to data in the strand.

A further exploration of the Semantic-UI library - with a focus on icons, variations in segments and responsive grids.

Assignments



These are the two assignment specifications collected here for convenience.

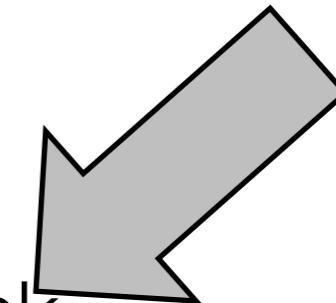


Week 1 – Introducing HTML

These slides

Slides
for next
lecture

Labs for this week



The Nature of the Web



<html>

The World Wide Web permeates our lives to an extraordinary degree. However, most of us are unaware of its technical underpinnings. In this session we explore the nature of the Web and in particular the role of HTTP protocol and the HTML standard. We also identify the 'client/server' nature of the web and its implications. In this context we will gain an understanding of the role of the 'browser' in presenting a web page, and begin to understand how pages are retrieved and rendered.

HTML Basics



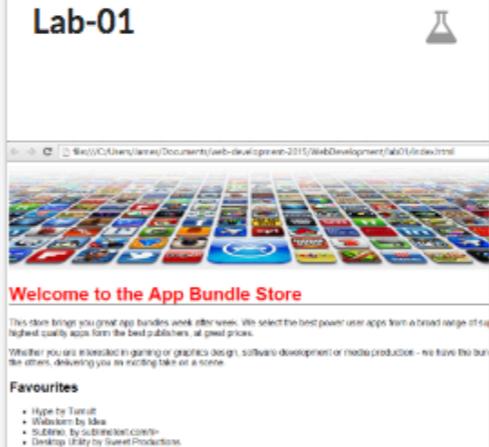
We can now explore the basics of HTML and we will try to get to grips with the fundamentals of the HTML language. As you will see, its structure and format is relatively straightforward, and you will be able to understand the basics very quickly. We will be focusing on a small number of 'tags' to get started, and also on the ways in which different html files can be linked together to form a site.

Lab-00

```
index.html
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Starbuzz Coffees</title>
5   </head>
6   <body>
7     <h1>Starbuzz Coffee Beverages</h1>
8
9     <h2>House Blend, $1.49</h2>
10    <p>A smooth, mild blend of coffees from Mexico, Bolivia and Guatemala.</p>
11
12    <h2>Mocha Cafe Latte, $2.35</h2>
13    <p>Espresso, steamed milk and chocolate syrup.</p>
14
15    <h2>Cappuccino, $1.85</h2>
16    <p>A mixture of espresso, steamed milk and foam.</p>
17
18    <h2>Chai Tea, $1.85</h2>
19    <p>A spicy drink made with black tea, spices, milk and honey.</p>
20
21  </body>
22 </html>
```

This lab will firstly introduce you to the tools we will use during the web development module and secondly introduce you to creating, editing, saving and displaying a web page.

Lab-01



The labs are where you will do the real learning in this module. In Lab0-01 you will become familiar with the editor Sublime. We will then use this editor to create a simple multi-page web site containing a small variety of text, images and links. In this lab we will explore some of the basic features of CSS, including colours, font and interesting techniques for setting styles across entire sections of a page.

<html>

We explore the foundations of web and get to grips with the fundamentals of the HTML language. As you will see, its structure and format is relatively straightforward, and you will be able to understand the basics very quickly. We will be focusing on a small number of 'tags' to get started, and also on the ways in which different html files can be linked together to form a site.

CODE is King (or Queen)

- The language of the Web:

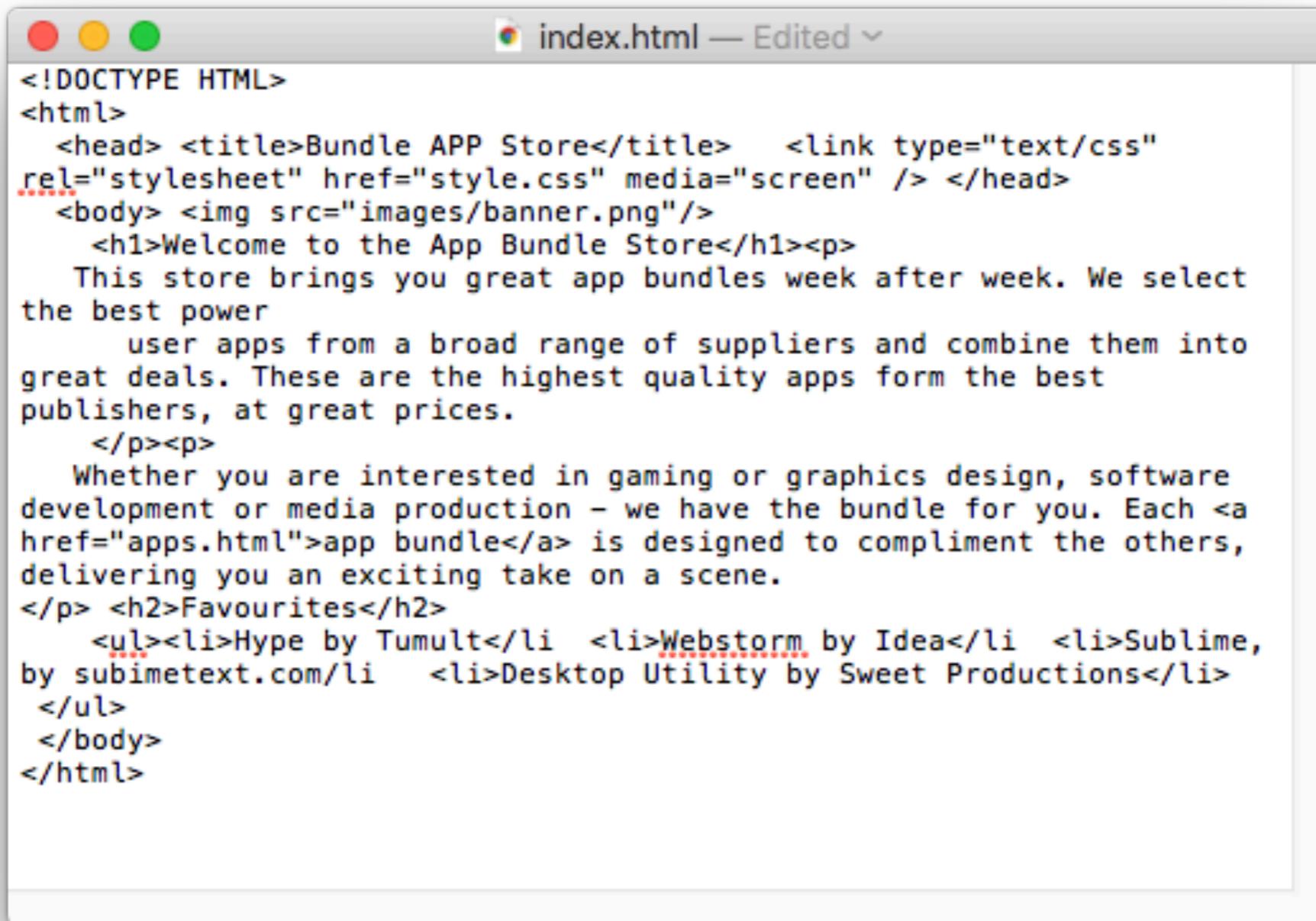
Hypertext Markup Language - HTML

Cascading Style Sheets - CSS

- Build over successive labs a simple web sites from scratch.
- Focus on the structure and meaning of:

CODE - *html, css*

The Code in a Conventional Editor



A screenshot of a Mac OS X desktop environment showing a window titled "index.html — Edited". The window contains an HTML document with the following content:

```
<!DOCTYPE HTML>
<html>
  <head> <title>Bundle APP Store</title>   <link type="text/css"
rel="stylesheet" href="style.css" media="screen" /> </head>
  <body> 
    <h1>Welcome to the App Bundle Store</h1><p>
      This store brings you great app bundles week after week. We select
      the best power
      user apps from a broad range of suppliers and combine them into
      great deals. These are the highest quality apps form the best
      publishers, at great prices.
    </p><p>
      Whether you are interested in gaming or graphics design, software
      development or media production - we have the bundle for you. Each <a
      href="apps.html">app bundle</a> is designed to compliment the others,
      delivering you an exciting take on a scene.
    </p> <h2>Favourites</h2>
    <ul><li>Hype by Tumult</li> <li>Webstorm by Idea</li> <li>Sublime,
      by subimetext.com</li> <li>Desktop Utility by Sweet Productions</li>
    </ul>
  </body>
</html>
```

- The actual document text - but poorly structured (indented)

The Code in a Programmers Editor

```
html
1 <html>
2   <head>
3     <title>Bundle APP Store</title>
4   </head>
5   <body>
6     
7     <h3>Freebie</h3>
8     <p>
9       Stacksocial just published its so called Free Ondesoft Mac Tool Bundle, which contains
10      5 apps from Ondesoft. The bundle worth $146 will be probably available only a couple
11      of days so you'd better hurry up to get it.
12    </p>
13    <p>
14      
15    </p>
16    </p>
17    <hr>
18    <h3>Macware Business Bundle</h3>
19    <p>
20      Here comes the next bundle for march. This time its macware who publish a bundle. The
21      so called macware Business Bundle contains 6 apps at a price of only $29.99 instead
22      of $199.94. So you can save around 84%. There is n...
23    </p>
24  </body>
25</html>
```

- Same document - pleasingly indented and syntax highlighted

Agenda

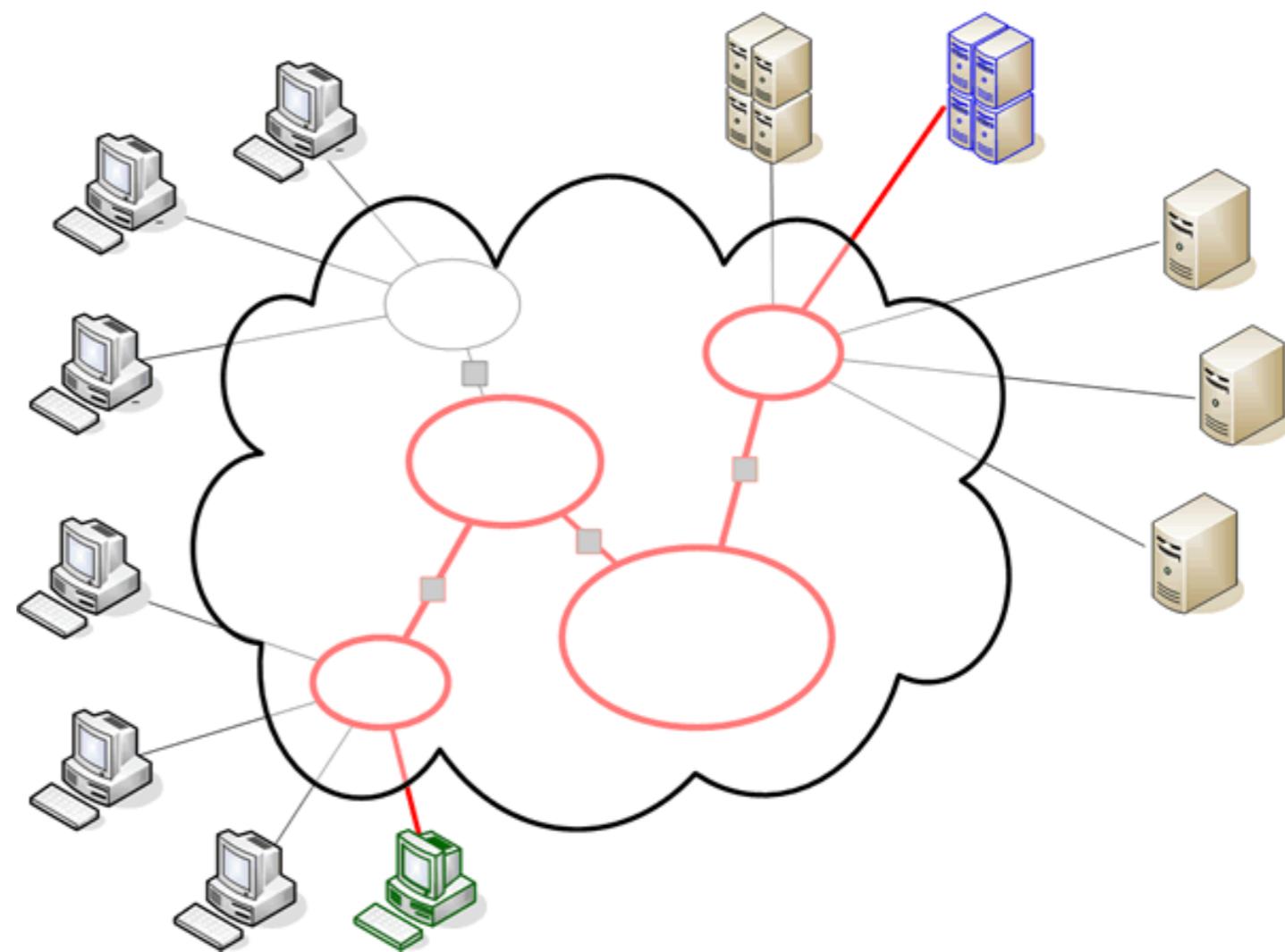
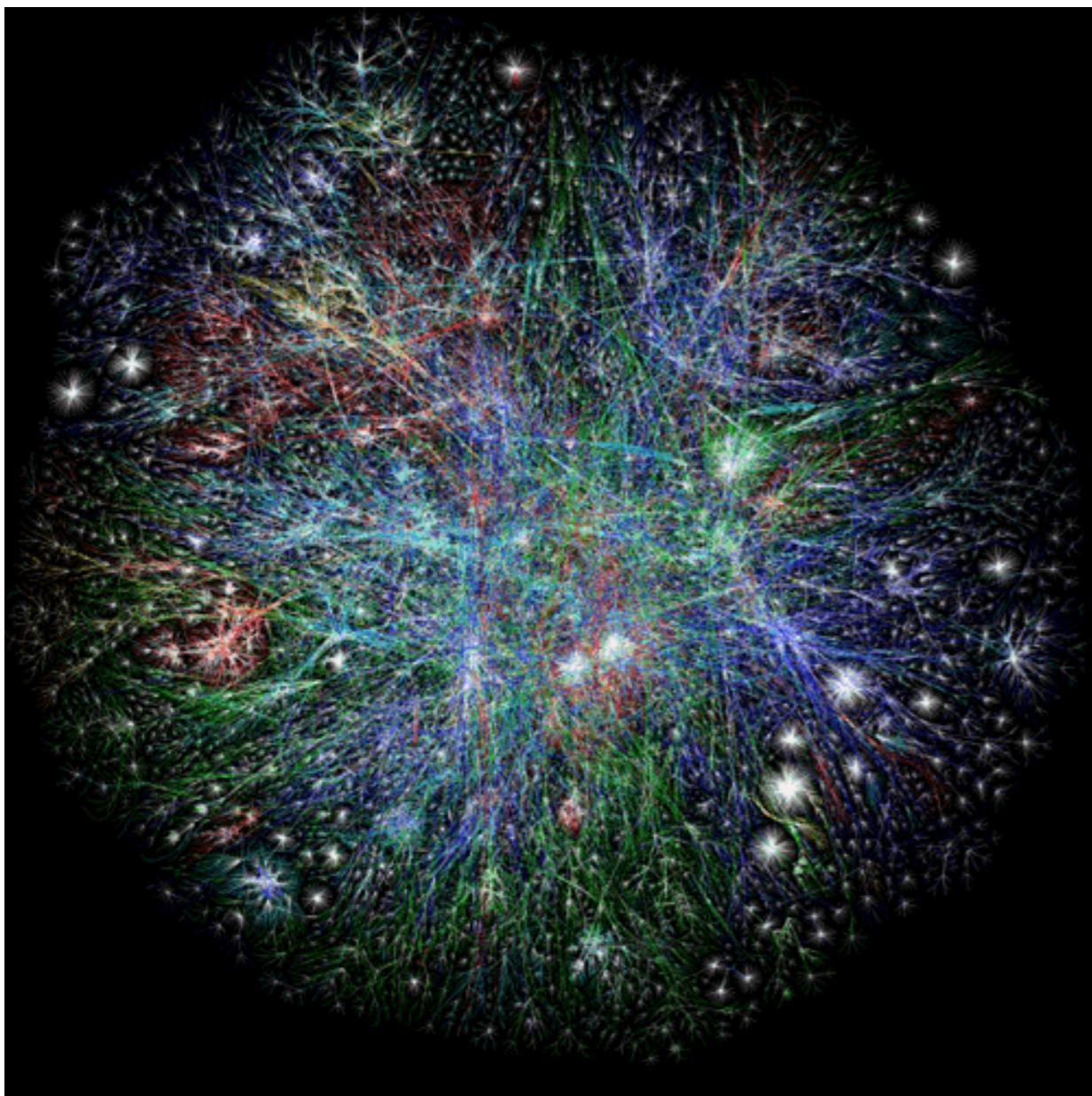
- The Module

- The Internet

- The Web

- The Labs

The Internet



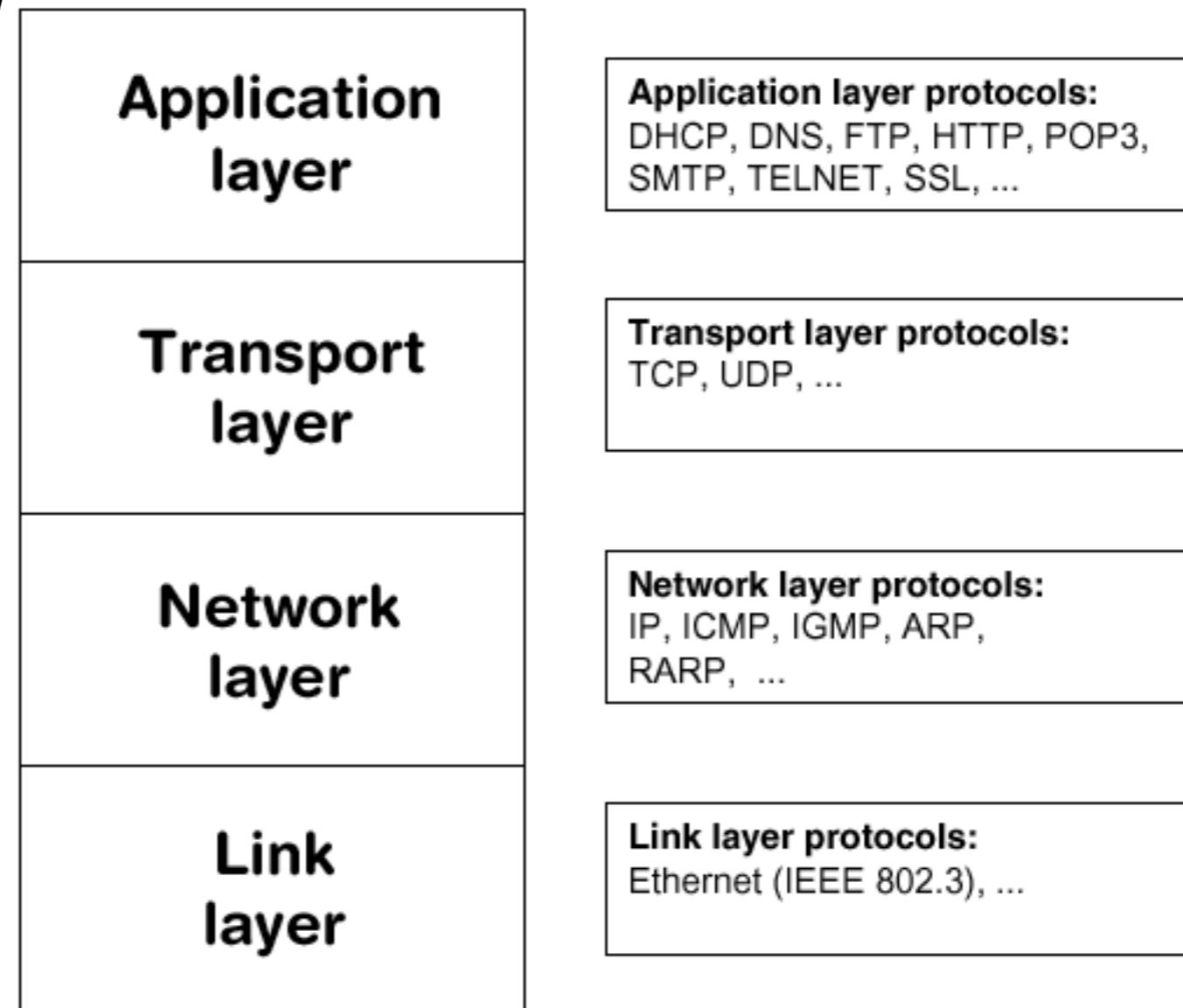
The Internet

- Global network infrastructure connecting millions of computers.
- More than 190 countries linked
- 3,137,102,200 Internet users (04/06/2015 www.internetlivestats.com)
- 952,105,920 websites.

Underlying nature of the Internet - Protocols & Standards

“The irony is that in all its various guises -- commerce, research, and surfing -- the Web is already so much a part of our lives that familiarity has clouded our perception of the Web itself.”

Tim Berners-Lee in
Weaving the Web



*Internet
Technologies*

You
are
here!
HTTP

Agenda

- The Module

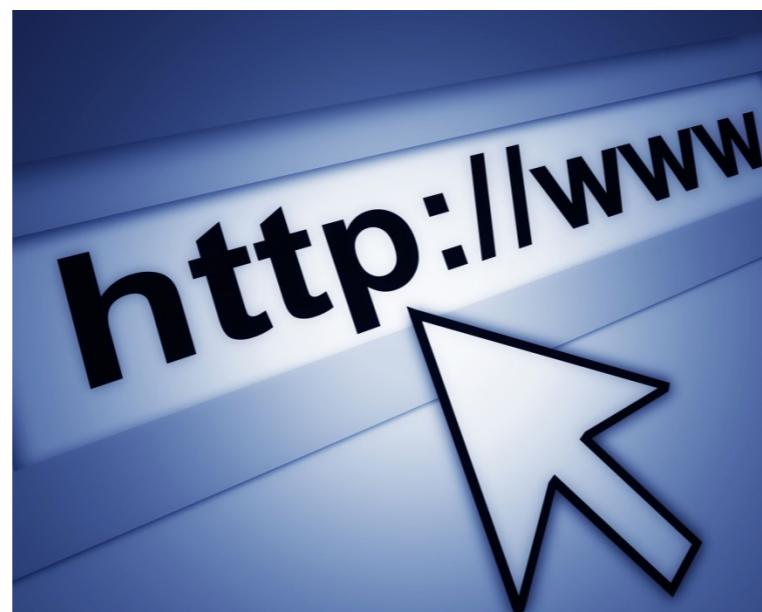
- The Internet

- The Web

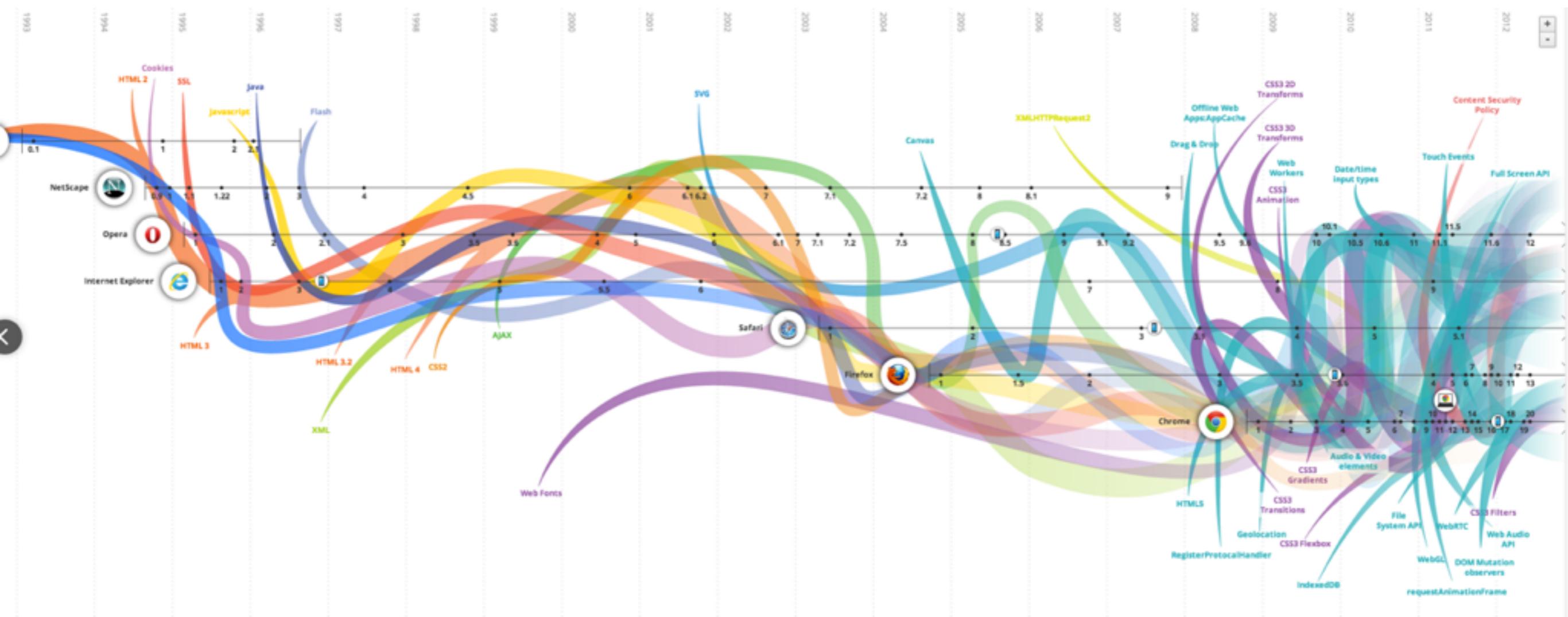
- The Labs

World Wide Web

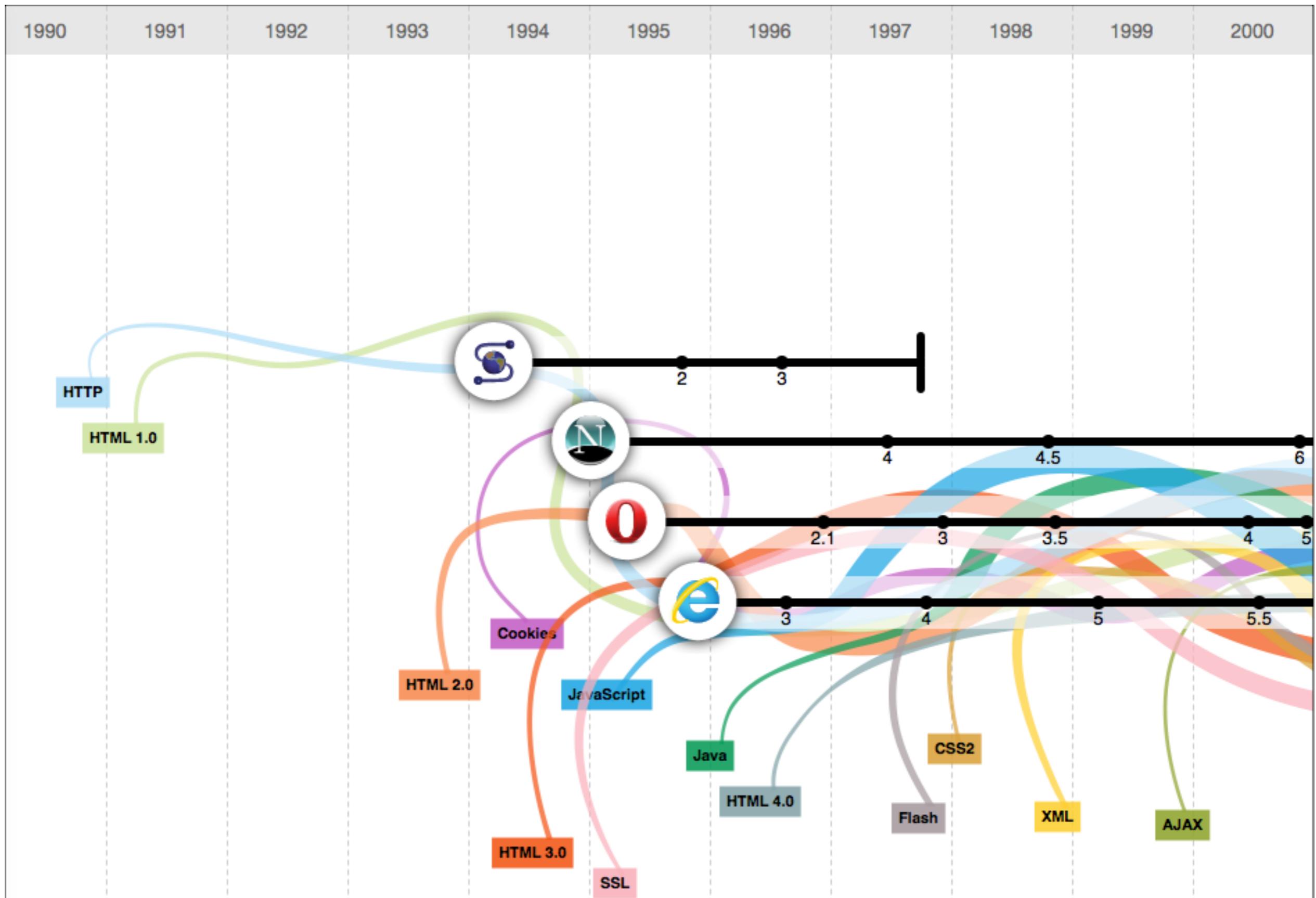
- The world wide web is a huge globally distributed collection of information and data that can be accessed via the internet with the help of http: Hypertext Transfer Protocol
- WWW has made the Internet the most important communication medium of our days.
- Thanks to the simple to use graphical interface – The Web Browser – the WWW provides everyone with simple access to information



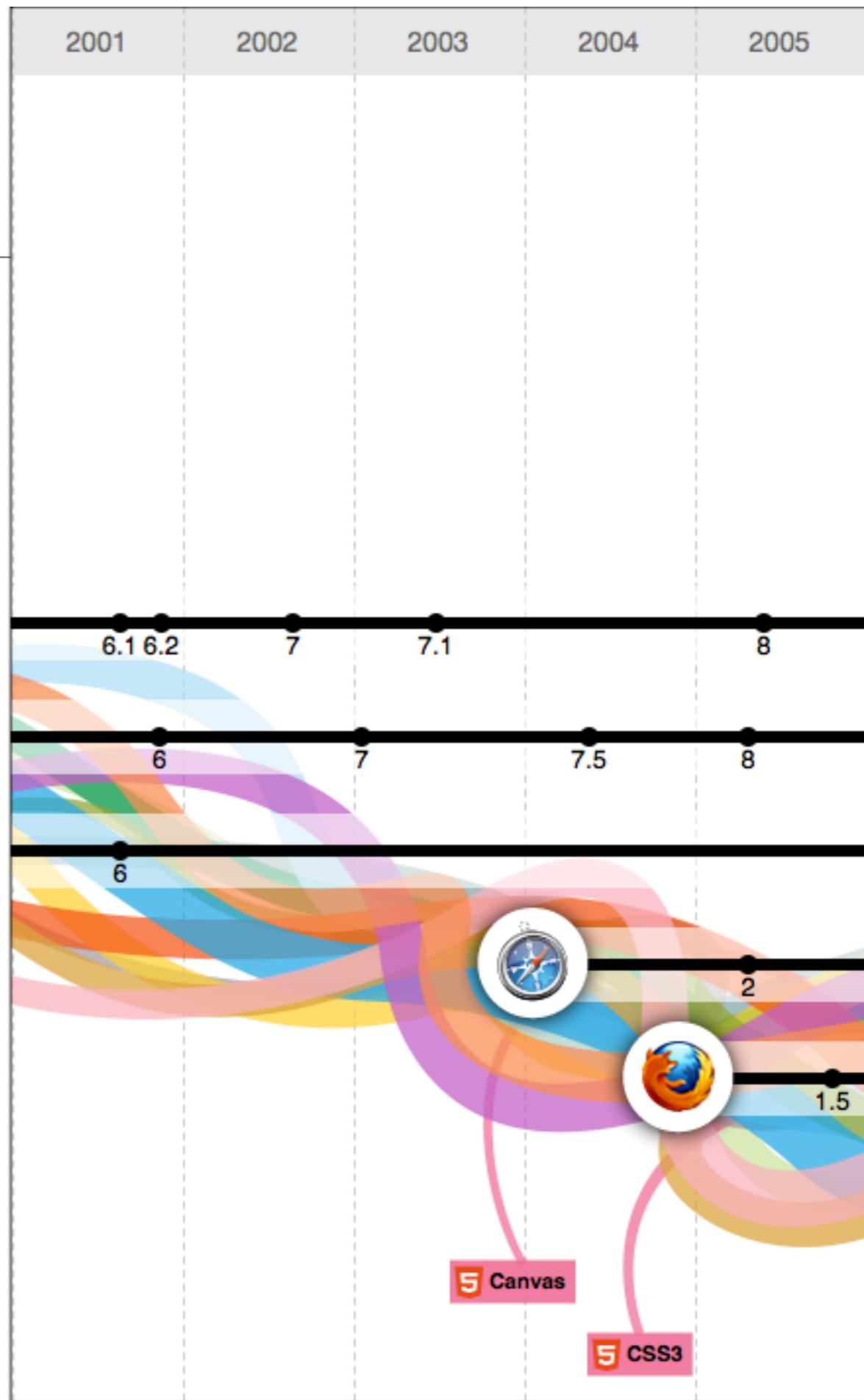
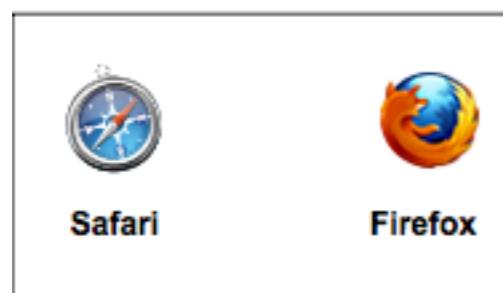
Evolution of the Web - 1990-2012



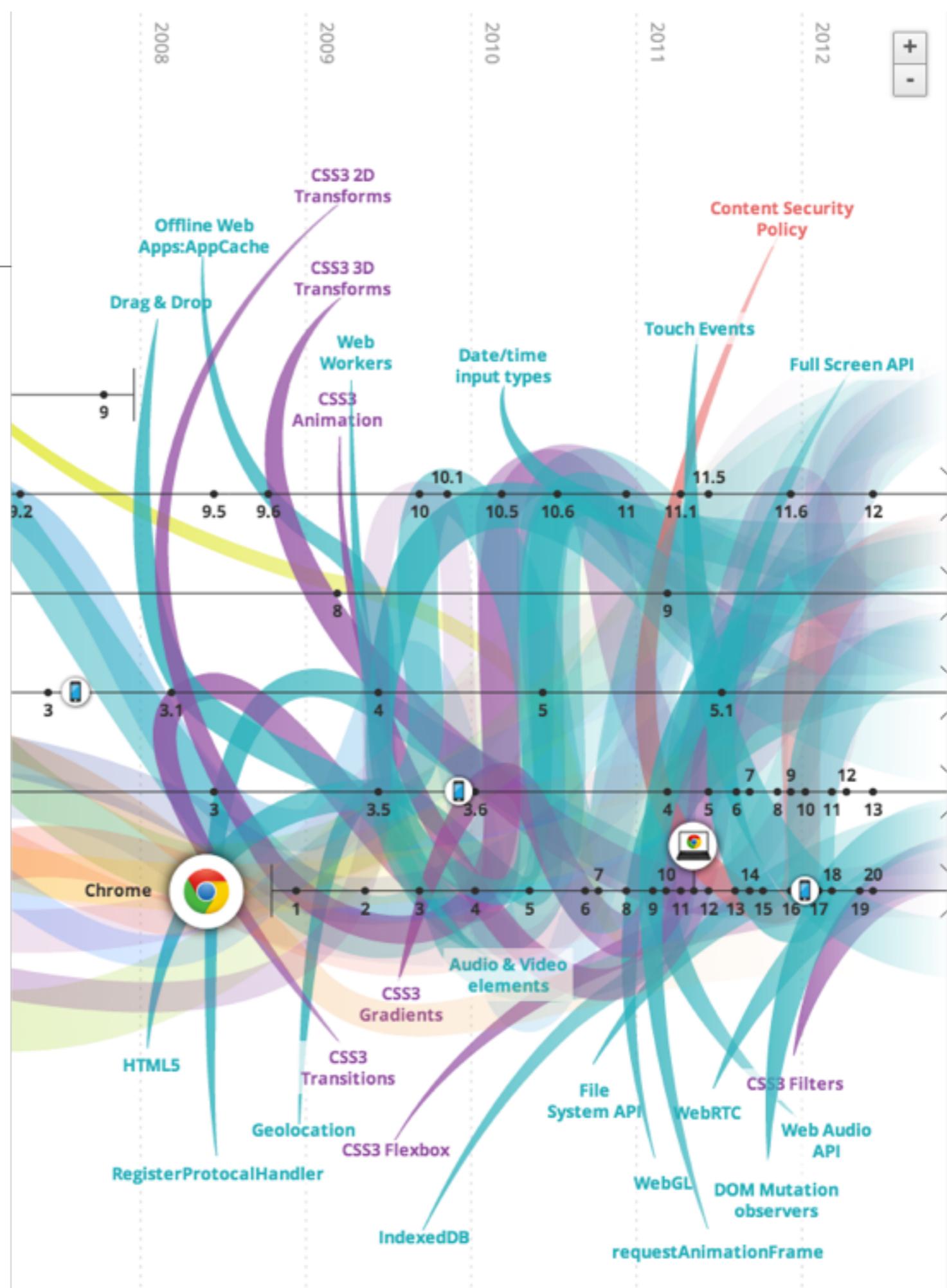
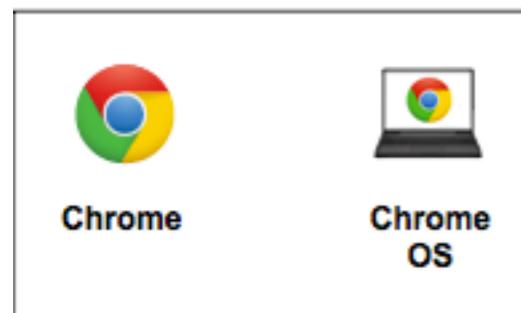
Evolution of the Web - 1990-2000



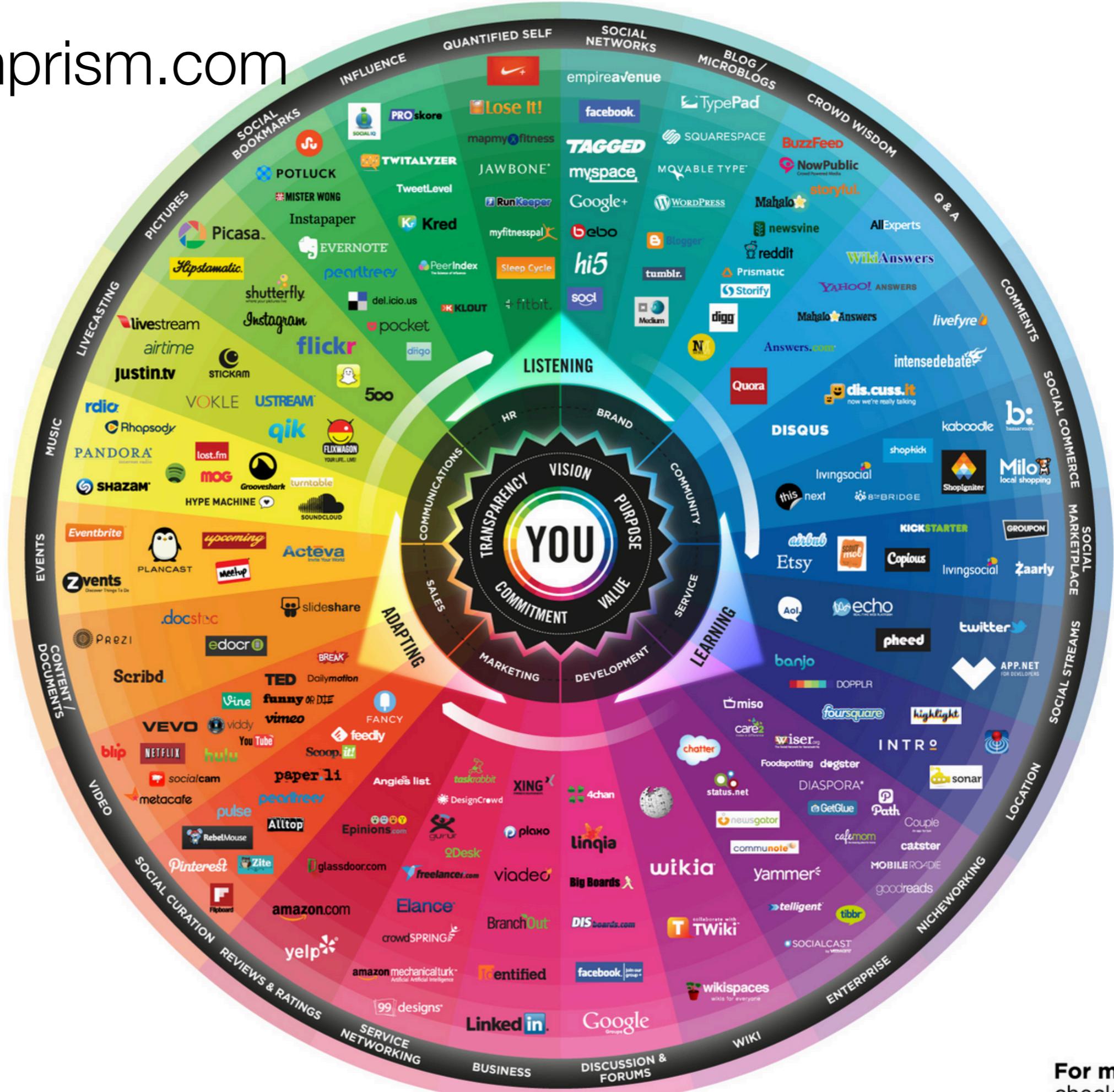
2001-2005



2006-2012



conversationprism.com

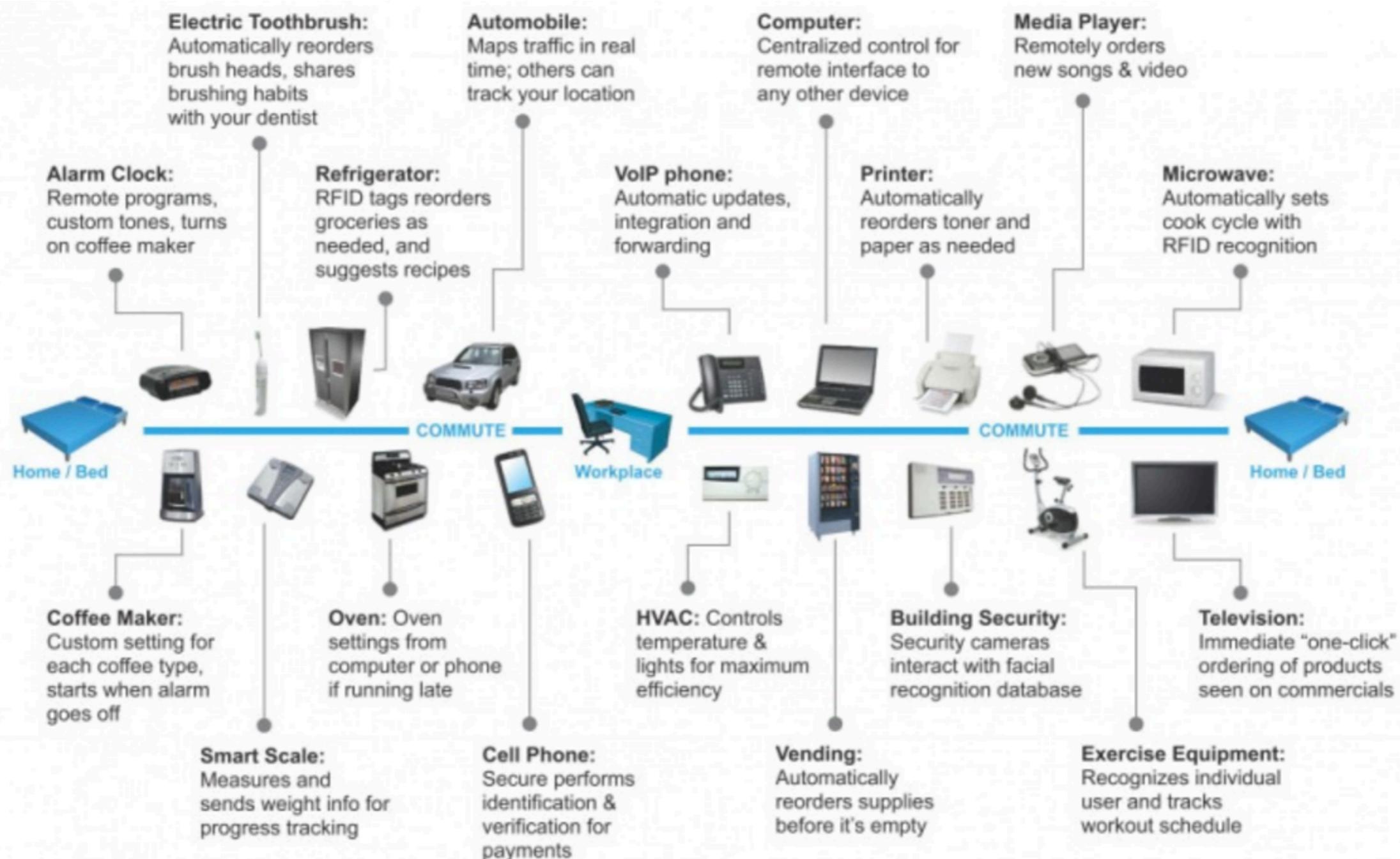


For more
check out

Devices: Conventional



Devices: Things!

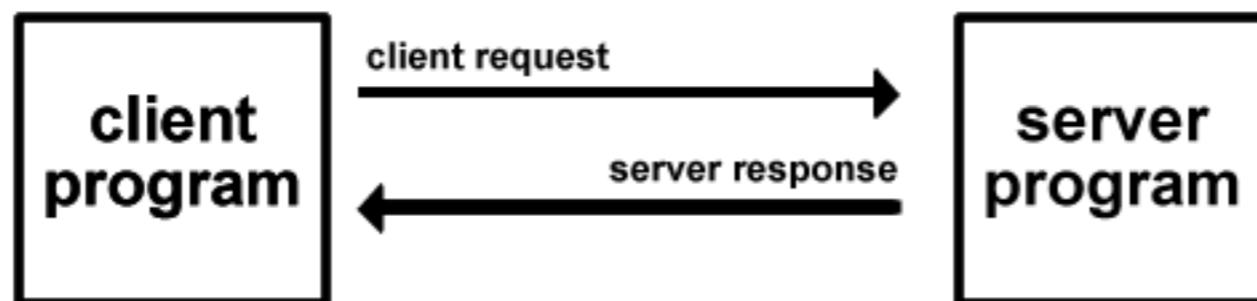


The Web

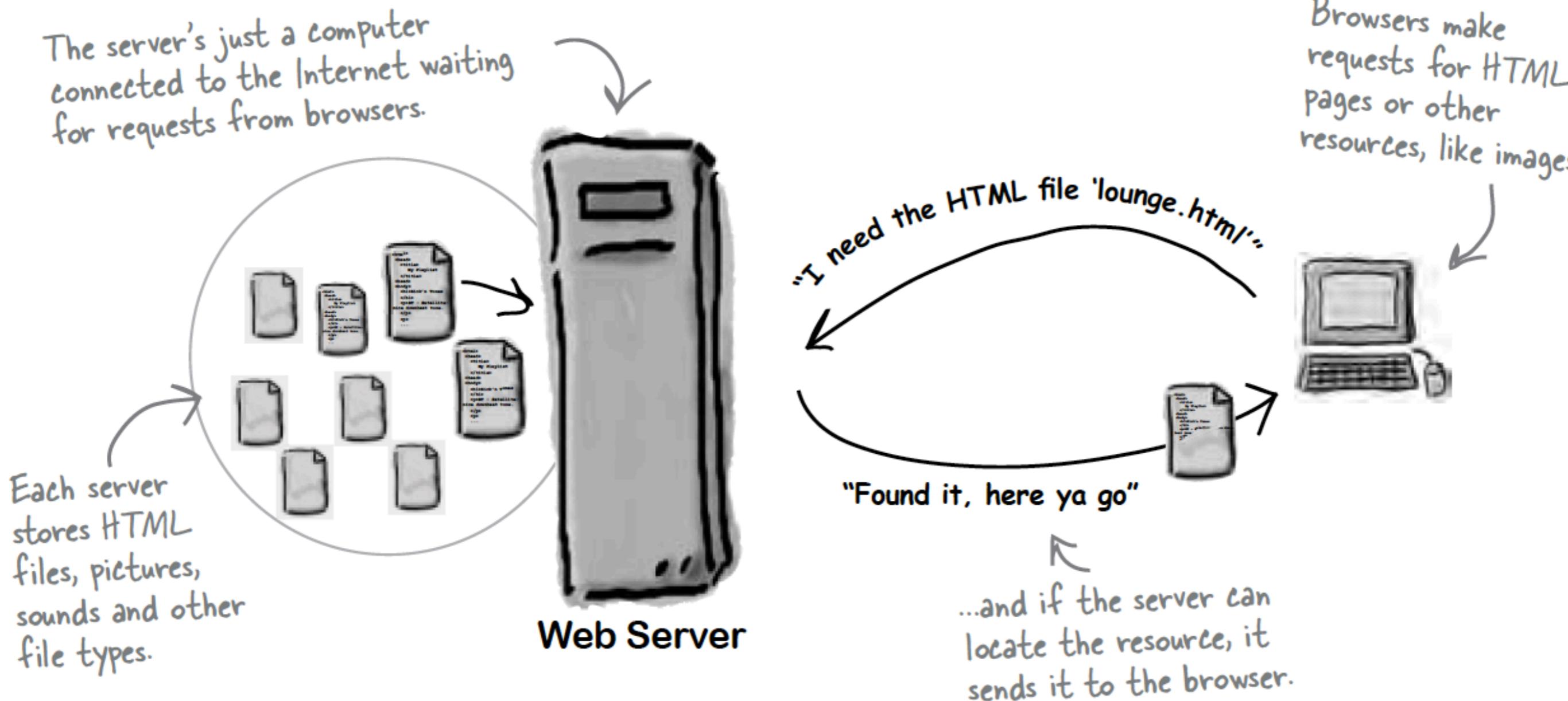
- Protocols & Standards
 - Protocol : agreed vocabulary to enable two programs to communicate
 - Standard: an agreed definition of the structure and meaning of a document
- Web Protocol
 - Hyper Text Transfer Protocol - HTTP
- Web Standard
 - Hyper Text Markup Language – HTML
 - Cascading Style Sheets - CSS
- Web Servers and Web Browsers use HTTP to exchange HTML documents

Clients and Servers

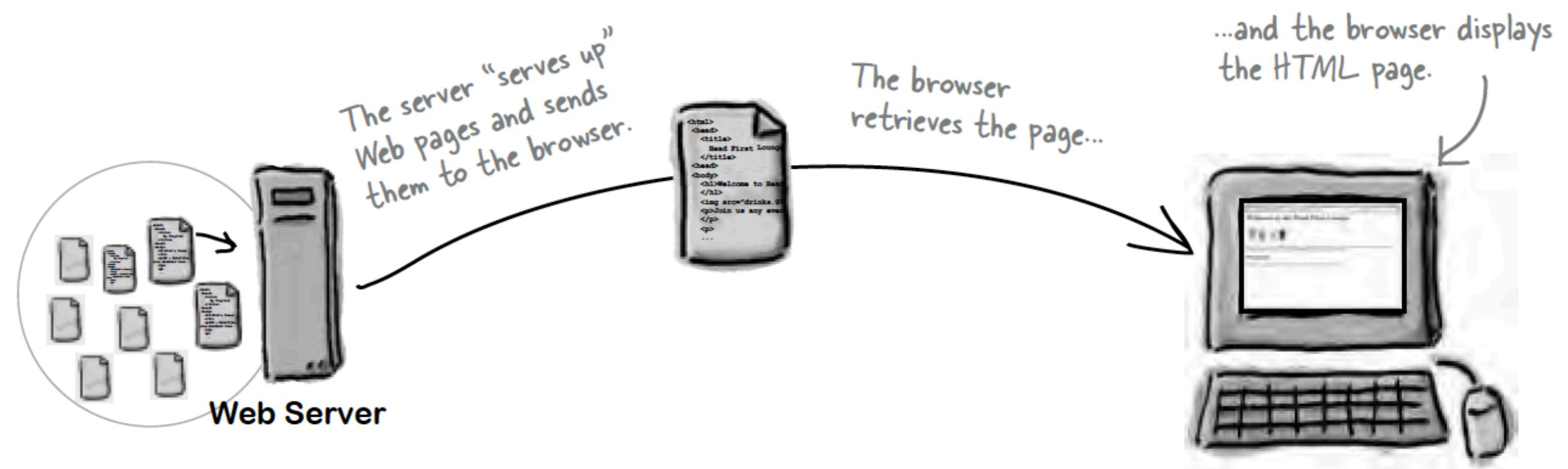
- Client/Server Computing:
 - The interaction between two programs when they communicate across a network.
 - A program at one site sends a request to a program at another site and awaits a response.
 - The requesting program is called a client; the program satisfying the request is called the server.



Role of Server



Role of Client



Hyper Text Markup Language

- HTML tells your browser about the structure of your document:
 - where the headings are,
 - where the paragraphs are,
 - what text needs emphasis, etc
 - what text needs to linked
 - what images to be displayed
- Given this information, browsers have built-in default rules for how to display each of these elements.
- This information is conveyed using “Tags”, this denote the intention of the author regarding the structure and display of the document.

HTML

- An HTML document is called a ‘page’
- The starting page of a site is called the ‘homepage’
- Markup language should only be used for the description of the document structure and not to describe the document presentation
- Every HTML document consists of two parts:
 - Document ‘header’: contains information about the document.
 - Document ‘body’: contains the content of the document.

HTML Tags (more correctly called Elements)

Tags for this week

```
<html>
<head>
<title>
<body>
  <h1>
  <h2>
  <em>
  <a>
  <img>
  <style>
```

- Grouped by purpose:
 - Structural
 - <html>, <head>, <title>, <body>
 - Text
 - Heading
 - <h1>, <h2>
 - Text
 - <p>,
 - Hypertext
 - <a>
 - Image
 -
 - Style
 - <style>

The Page

A screenshot of a web browser window. The title bar shows 'My DVDs' and 'view-source:file:///Users/ed...' with a highlighted tab 'file:///Users/edeleastar/perforce/modo/edeleastar/Cours'. The main content area has a yellow background and displays the following text:

New Release DVD's (B)

The Girl with the Dragon Tatoo

Forty years ago, Harriet Vanger disappeared from a family gathering on the island owned and inhabited by the powerful Vanger clan. (D)

Peter Jackson and the Lightening Thief

Trouble prone teen Percy Jackson is about to be kicked out school but thats the least of his problems.

The Crazies

In a terrifying tale of the American Dream gone wrong, four friends find themselves trapped in their hometown

Callouts:

- (A) Top-left corner of the browser window.
- (B) Next to the title 'New Release DVD's'.
- (C) Next to the movie title 'The Girl with the Dragon Tatoo'.
- (D) Next to the descriptive text about the Vanger clan.
- (E) Next to the movie title 'The Crazies'.

```
1 <html>
2   <head>
3     <title>My DVDs</title>
4     <style type="text/css">
5       body
6       {
7         background-color: #d2b48c;
8         margin-left: 20%;
9         margin-right: 20%;
10        border: 1px dotted gray;
11        padding: 10px 10px 10px 10px;
12        font-family: sans-serif;
13      }
14    </style>
15  </head>
16  <body>
17    <h1>New Release DVD's</h1>
18    <h2>The Girl with the Dragon Tatoo</h2>
19    <p>
20      Forty years ago, Harriet Vanger disappeared from a family
21      gathering on the island owned and inhabited by the powerful Vanger clan.
22    </p>
23    <h2>Peter Jackson and the Lightening Thief</h2>
24    </p>
25      Trouble prone teen Percy Jackson is about to be kicked out school
26      but thats the least of his problems.
27    </p>
28    <h2>The Crazies</h2>
29    <p>
30      In a terrifying tale of the American Dream gone wrong,
31      four friends find themselves trapped in their hometown
32    </p>
33  </body>
34 </html>
```

Every word in <> is a *Html Element*

| HTML 5 NEW TAG TAG NOT SUPPORTED IN HTML 5 | |
|---|--|
| <!----> | Define a comment |
| <!DOCTYPE> | Defines the document type |
| <a> | Defines a hyperlink href, hreflang, media, ping, rel, target, type |
| <abbr> | Defines an abbreviation |
| <acronym> | Used to define an embedded acronyms |
| <address> | Defines an address element |
| <applet> | Used to define an embedded applet |
| <area> | Defines an area inside an image map alt, coords, href, hreflang, media, ping, rel, shape, target, type |
| <article> | Defines an article cite, pubdate |
| <aside> | Defines content aside from the page content |
| <audio> | Defines sound content autobuffer, autoplay, controls, src |
| | Defines bold text |
| <base> | Defines a base URL for all the links in a page href, target |
| <basefont> | Used to define a default font-color, font-size, or font-family for all the document |
| <bdo> | Defines the direction of text display dir |
| <big> | Used to make text bigger |
| <blockquote> | Defines a long quotation cite |
| <body> | Defines the body element |
| | Inserts a single line break |
| <button> | Defines a push button autofocus, disabled, form, formaction, formenctype, formmethod, formnovalidate, formtarget, name, type, value |
| <canvas> | Defines graphics height, width |
| <caption> | Defines a table caption |
| <center> | Used to center align text and content |
| <cite> | Defines a citation |
| <code> | Defines computer code text autobuffer, autoplay, controls, src |
| <col> | Defines attributes for table columns |
| <colgroup> | Defines groups of table columns span |
| <command> | Defines a command button checked, disabled, icon, label, radiogroup, type |

| | |
|------------------|--|
| <datalist> | Defines a dropdown list |
| <dd> | Defines a definition description |
| | Defines deleted text cite, datetime |
| <details> | Defines details of an element open |
| <dialog> | Defines a dialog (conversation) |
| <dfn> | Defines a definition term |
| <dir> | Used to define a directory list |
| <div> | Defines a section in a document |
| <dl> | Defines a definition list |
| <dt> | Defines a definition term |
| | Defines emphasized text |
| <embed> | Defines external interactive content or plugin height, src, type, width |
| <fieldset> | Defines a fieldset disabled, form, name |
| <figure> | Defines a group of media content, and their caption |
| | Used to define font face, font size, and font color of text |
| <footer> | Defines a footer for a section or page Defines a form |
| <form> | accept-charset, action, autocomplete, enctype, method, name, novalidate, target |
| <frame> | Used to define one particular window (frame) within a frameset |
| <frameset> | Used to define a frameset, which organized multiple windows (frames) |
| <h1> to <h6> | Defines header 1 to header 6 |
| <head> | Defines information about the document |
| <header> | Defines a header for a section or page |
| <hgroup> | Defines information about a section in a document |
| <hr> | Defines a horizontal rule |
| <html> | Defines an html document manifest, xmlns |
| <i> | Defines italic text |
| <iframe> | Defines an inline sub window height, name, sandbox, seamless, src, width |
| | Defines an image alt, src, height, ismap, usemap, width |
| <input> | Defines an input field accept, alt, autocomplete, autofocus, checked, disabled, form, formaction, formenctype, formmethod, formnovalidate, formtarget, height, list, max, maxlength, min, multiple, name, pattern, placeholder, readonly, required, size, src, step, type, value, width |
| <ins> | Defines inserted text cite, datetime |
| <keygen> | Defines a generated key in a form autofocus, challenge, disabled, form, keytype, name |
| <kbd> | Defines keyboard text |
| <label> | Defines an inline sub window for, form |
| <legend> | Defines a title in a fieldset |
| | Defines a list item value |
| <link> | Defines a resource reference href, hreflang, media, rel, sizes, type |
| <map> | Defines an image map name |
| <mark> | Defines marked text |
| <menu> | Defines a menu list label, type |
| <meta> | Defines meta information charset, content, http-equiv, name |
| <meter> | Defines measurement within a predefined range high, low, max, min, optimum, value |
| <nav> | Defines navigation links |
| <noframes> | Used to display text for browsers that do not handle frames |
| <noscript> | Defines a noscript section |
| <object> | Defines an embedded object data, form, height, name, type, usemap, width |
| | Defines an ordered list reversed, start |
| <optgroup> | Defines an option group label, disabled |
| <option> | Defines an option in a drop-down list disabled, label, selected, value |
| <output> | Defines some types of output for, form, name |
| <p> | Defines a paragraph |
| <param> | Defines a parameter for an object name, value |
| <pre> | Defines preformatted text |
| <progress> | Defines progress of a task of any kind max, value |
| <q> | Defines a short quotation cite |
| <rp> | Used in ruby annotations to define what to show browsers that do not support the ruby element |
| <rt> | Defines explanation to ruby annotations |
| <ruby> | Defines ruby annotations |
| <s>, <strike> | Used to define strikethrough text. |
| <samp> | Defines sample computer code |
| <script> | Defines a definition list async, type charset defer, src |
| <section> | Defines a section cite |
| <select> | Defines a selectable list autofocus, disabled, form, multiple, name, size |
| <small> | Defines small text |
| <source> | Defines media resources media, src, type |
| | Defines a section in a document |
| | Defines strong text |
| <style> | Defines a style definition type, media, scoped |
| <sub>, <sup> | Defines sub/super-scripted text |
| <table> | Defines a table summary |
| <tbody> | Defines a table body summary |
| <td> | Defines a table cell colspan, headers, rowspan |
| <textarea> | Defines a text area autofocus, cols, disabled, form, maxlength, name, placeholder, readonly, required, rows, wrap |
| <tfoot>, <thead> | Defines a table footer / head |
| <th> | Defines a table header colspan, headers, rowspan, scope |
| <time> | Defines a date/time datetime |
| <title> | Defines the document title |
| <tr> | Defines a table row datetime |
| <tt> | Used to define teletype text |
| <u> | Used to define underlined text |
| | Defines an unordered list |
| <var> | Defines a variable |
| <video> | Defines a video autobuffer, autoplay, controls, height, loop, src, width |

Periodic table of HTML elements

| html | | | | | | | | | | | | | output | | | |
|---|---------|------------|------|------|------|------|-------|--------|--------|----------|----------|----------|----------|----------|--------|----------|
| base | h1-h6 | | | | | | | strong | area | param | caption | th | input | progress | | |
| head | hgroup | | | | | | | sub | audio | source | col | thead | keygen | select | | |
| style | nav | figcaption | p | bdi | data | mark | ruby | sup | map | canvas | colgroup | tr | label | details | | |
| title | section | figure | pre | bdo | dfn | q | s | time | track | noscript | table | button | legend | dialog | | |
| address | dd | hr | ul | br | em | rp | samp | u | video | script | tbody | datalist | meter | menu | | |
| article | div | li | abbr | cite | i | rt | small | var | embed | del | td | fieldset | optgroup | menuitem | | |
| footer | dl | main | b | code | kbd | rtc | span | wbr | object | ins | tfoot | form | option | summary | | |
| header | dt | ol | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | content | element | shadow | template |
| base metadata sectioning text-content text-semantics media embedded script edits table forms interactive web-components | | | | | | | | | | | | | | | | |

Major Categories of Elements

- Base
- Metadata
- Sectioning
- Text Content
- Text Semantics
- Media

- Embedded
- Script
- Edits
- Table
- Forms
- Interactive
- Web Components

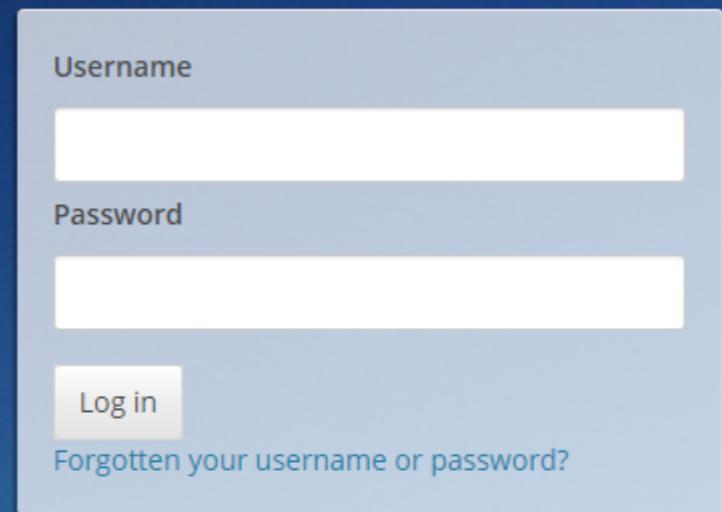
Moodle

Welcome to Moodle at WIT!

Moodle is WIT's online learning platform, a place where staff and students alike can participate and engage in the varying activities of their assigned modules.

Log in to access your module notes, assignments and other updates from your lecturers.

[Get help with Moodle](#)



A screenshot of a Moodle login interface. It features a light blue header bar with the text "Username" and "Password". Below these are two input fields, one for each. A "Log in" button is positioned below the password field. At the bottom of the form is a link "Forgotten your username or password?".

© Image courtesy of Terry Murphy Photography

<https://moodle.wit.ie>

Module: Web Development 1

https://moodle.wit.ie/course/view.php?id=96972§ion=1

Moodle Eamonn Deleastar

My Home / Web Development 1 [2016-2017] / 1: Introducing HTML

Table of Contents

Welcome

1: Introducing HTML

Web Development 1 [2016-2017]

1: Introducing HTML

Jump to...

The Nature of the Web

The World Wide Web permeates or lives to an extraordinary degree. However, most of us are unaware of its technical underpinnings. In this session we explore the nature of the Web and in particular the role of HTTP protocol and the HTML standard. We also identify the 'client/server' nature of the web and its implications. In this context we will gain an understanding of the role of the 'browser' in presenting a web page, and begin to understand pages are retrieved and rendered.

We can now explore the basics of HTML and we will try to get to grips with the fundamentals of the HTML language. As you will see, its structure and format is relatively straightforward, and you will be able to understand the basics very quickly. We will be focusing on a small number of 'tags' to get started, and also on the ways in which different html files can be linked together to form a site.

HTML Basics

We can now explore the basics of HTML and we will try to get to grips with the fundamentals of the HTML language. As you will see, its structure and format is relatively straightforward, and you will be able to understand the basics very quickly. We will be focusing on a small number of 'tags' to get started, and also on the ways in which different html files can be linked together to form a site.

Lab-00

This lab will firstly introduce you to the tools we will use during the web development module and secondly introduce you to creating, editing, saving and displaying a web page.

Lab-01

The labs are where you will do the real learning in this module. In Lab-01 you will become familiar with the editor Sublime. We will then use this editor to create a simple multi-page web site containing a small variety of text, images and links. In this lab we will explore some of the basic features of CSS, including colours, font and interesting techniques for setting styles across entire sections of a page.

Labs Philosophy

- Learn by Doing
- Supported by reading Associated chapter in Head First HTML (in general, 1 chapter per lab)
- Supervised by module team
- *Do Exercises & Don't be afraid to experiment - you can't break the web!*

Labs

- Steps
- Instructions for each step

Introducing HTML

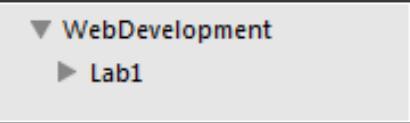
Lab-01 01 02 03 04 Exercises

First Project

If you are working on a pc in the IT lab, create a new folder on either your G drive or on your usb drive, name the folder WebDevelopment, inside that folder create another folder called Lab1.

Open Sublime and choose Open Folder from the File menu. Navigate to the WebDevelopment folder and choose click OK.

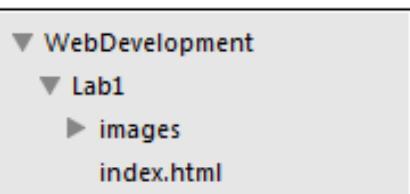
In sublime click on the WebDevelopment folder, you should see the Lab1 folder appear.



Chose New File from the File menu, a new blank page should appear in the sublime window. Click Save on the File menu and name the file index.html, save it into the Lab1 folder. You should see the file name appear in the left panel in sublime.



Now in File Explorer create another folder in Lab1 that is called images



Next you are to save 6 images into the images folder:

If you are working on a pc in the IT lab, create a new folder on either your G drive or on your usb drive, name the folder WebDevelopment, inside that folder create another folder called Lab1.

Open Sublime and choose Open Folder from the File menu. Navigate to the WebDevelopment folder and choose click OK.

In sublime click on the WebDevelopment folder, you should see the Lab1 folder appear.



Ex you will write some html code. Copy and paste in the following code.

index.html page content

```
<!DOCTYPE HTML>
<html>
<head>
<title>APP Store</title>
</head>
<body>
<h1>Apps, Movies, Music, Books</h1>
<ol>
<li><a href="apps.html">Apps</a></li>
</ol>
<h2>New Games</h2>
<ul>
<li>Clear All</li>
<li>Google Box</li>
</ul>
</body>
</html>
```

- Typical Step:
- Short motivation
- Screen shots to show outcome
- Some html to type
- More screen shots to
- show expected outcome
- Not a race! - Take your time
- 2 hours timetabled/supervised
- Reflect as you go along

Mobile Applications

1. Apps

New Games



• Clear All



Google
Apps for Work

• Google Box

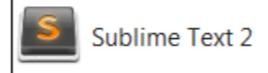
Objectives for Lab 00

- Introduce you to the tools we will use during the web development
- Introduce you to creating, editing, saving and displaying a simple web page.

Setup

Instructions for working in Walton Building PC Labs:

If you are working on the workstations in the IT Building, choose Sublime Text 2 from the programs menu.



Proceed with the next step of the lab.

Instructions for working on your own laptop

Download and install Sublime Text 2 from

- <http://www.sublimetext.com/>

Select the appropriate download for your laptop (OS, Windows, Linux)

Sublime Text 2

Download

The current version of Sublime Text 2 is 2.0.2.

Sublime Text 3 is currently in beta, and contains many improvements over Sublime Text 2.

- [OS X](#) (OS X 10.6 or later is required)
- [Windows](#) - also available as a [portable version](#)
- [Windows 64 bit](#) - also available as a [portable version](#)
- [Linux 32 bit](#)
- [Linux 64 bit](#)

Sublime Text 2 may be downloaded and evaluated for free, however a license must be [purchased](#) for continued use. There is currently no enforced time limit for the evaluation.

Please submit feature requests to <http://sublimetext.userecho.com/>. For notification about new versions, follow [sublimehq](#) on twitter.

Objectives for Lab 01

- Be able to download and install Sublime Text 2, and understand its key features.
- Create a WebDevelopment folder to contain a new Lab folder each week.
- Create a simple static web site, and be able to manage it within the Sublime environment
- Familiar with the following HTML elements:
`<html> <head> <title>`
`<link> <body> <h1> <h2>`
`<p> <a> and`
``

Introducing HTML

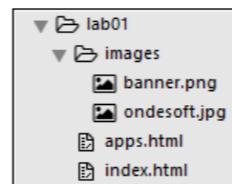
Lab-01 01 02 03 04 Exercises

HTML pages

We are going to create a web site that is based on the Google Play site or the Apple app store. It will present mobile apps, music, and movies to the user.

Choose New File from the File menu, next choose Save from the file menu and name it apps.html Do the same for a file named movies.html and one called music.html

You should now have the following folder and file structure:



Next you will write some html code. Copy and paste in the following code:

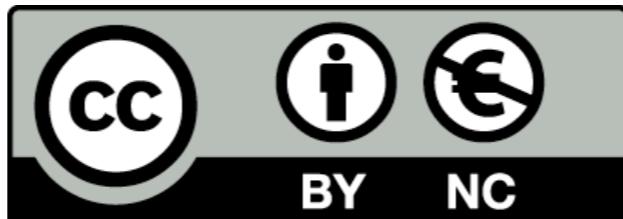
index.html page content

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Bundle APP Store</title>
  </head>
  <body>
    
    <h1>Welcome to the App Bundle Store</h1>
    <p>
      This store brings you great app bundles week after week. We select the best power
      user apps from a broad range of suppliers and combine them into great deals. These are the
    </p>
    <p>
      Whether you are interested in gaming or graphics design, software development or media prod
    </p>
    <h2>Favourites</h2>
    <ul>
      <li>Hype by Tumult</li>
      <li>Webstorm by Idea</li>
      <li>Sublime, by sublimetext.com</li>
      <li>Desktop Utility by Sweet Productions</li>
    </ul>
  </body>
</html>
```

apps.html page content

```
<!DOCTYPE HTML>
<html>
```

-
- Good Luck!



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Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

 eLearning
support unit