

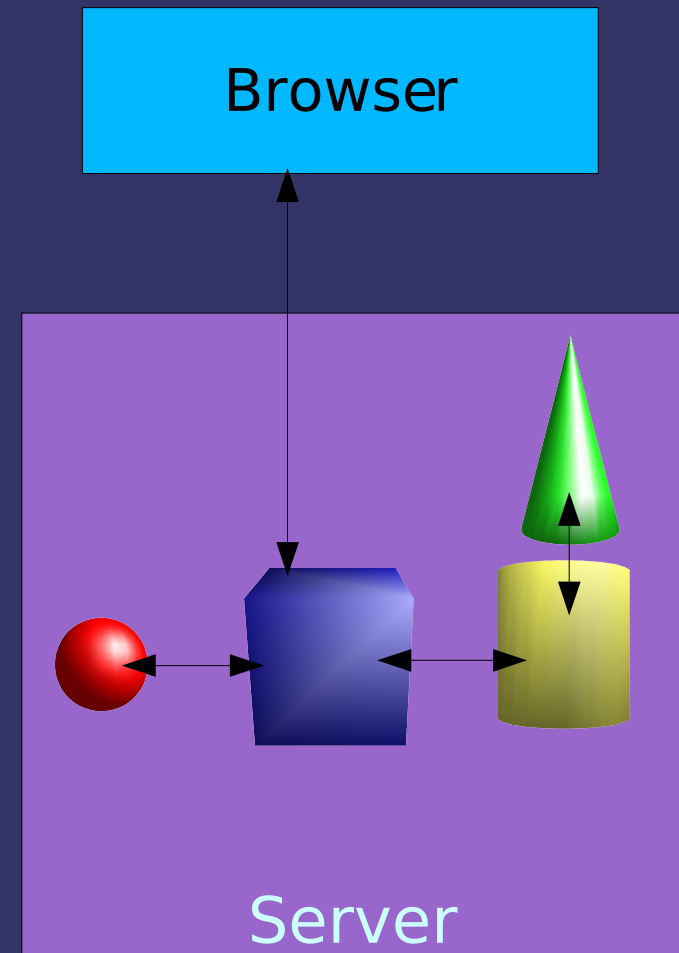
DIY Web Development

An introduction to building and
maintaining your own web site.

www.iredale.net

Technology Stack

- Web Browser
 - DOM/CSS/ECMAScript-262
- *Transfer via HTTP/HTTPS*
- Web Server
 - CGI or plug-ins
- Support Services
 - SSH, Database, Backup
- Operating System
- Hardware



Hardware & Operating System

- Basic web server just need a balanced hardware platform:
 - 1 GHz CPU
 - 1 GiB RAM
 - Fast disks
 - Good network
- Any OS will do:
 - *nix e.g. Linux, BSD, Solaris
 - other e.g. VAX, zOS, Windows

Hosting...

- Self Host
 - e.g. domestic ADSL Internet connection (£0)
- Virtual Hosting
 - e.g. an Apache virtual host (£0-£10 pm)
- Virtual Server
 - e.g. Xen, UML, Vmware (£10-£100 pm)
- Co-Location & Dedicated Hosting
 - e.g. commercial hosting company (£100- pm)

Self Hosting

- Advantages:
 - Free
 - Easy
 - Secure
- Disadvantages:
 - Usually limited up-stream bandwidth
 - Hard
 - Insecure

Virtual Hosting

- Advantages:
 - Free or very cheap
 - Easy & simple
 - Secure
- Disadvantages:
 - You don't have full control
 - Insecure

Virtual Server

- Advantages:
 - Fairly Cheap
 - Nearly full control
 - Secure
- Disadvantages:
 - Need to manage more than just the server
 - Insecure

Hosted Server

- Advantages:
 - Full control
 - Scalability
 - Performance
 - Security
- Disadvantages:
 - Expensive

Suggestions

- Self Hosted server on home network only
 - Not exposed – don't connect to Internet
 - Free
 - Learning space
- Virtual Server (e.g. ISP)
 - Someone else looks after box & software
 - Free/nearly-free
 - Low Risk

Web Server

- You have several to choose from
- Most servers offer similar features
- Most Linux distros allow you to install and configure automatically
- Apache:
 - Is not the best
 - It is very well known
 - A good overall compromise

First Steps

- Web server maps a real directory on your system to a web address:
 - /var/wwwroot/htdocs/
 - becomes
 - http://xxxxxxx/
- Files to deal with:
 - web pages, style sheets, scripts
 - plain text files!
 - graphics, Java, animations, movies
 - binaries

Tools

- WYSIWYG Tools:
 - Nvu, *Dreamweaver*, *FrontPage*
- Dedicated non-WYSIWYG Tools or IDE:
 - Bluefish, Quanta+, *HomeSite*, HTML-Kit
 - Kate, Emacs, GVim, Eclipse
- Text Editor:
 - Vi*, Emacs, nano, Joe
- Graphics:
 - GIMP, Inkscape, *PhotoShop*

Hello World (1)

- Install Apache on your PC (2 pre-fork)
- Pick/install a text editor/non-WYSIWYG editor
- Create file in the correct place, e.g.
`hello.html`
- Edit the page
- View with web browser

hello.html

```
<html>
  <head>
    <title>Hello World!</title>
  </head>
  <body>
    <h1>Hello World</h1>
    <p>This is my first page!</p>
  </body>
</html>
```

Browse To <http://127.0.0.1/>

Index of /

	<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
<-	Parent Directory		-	
[]	hello.html	11-Sep-2006 10:16	3.2K	

Apache/2.0.54 (Debian GNU/Linux) Server at 127.0.0.1 Port 80

Click on [hello.html](#)

Hello World

This is my first Page!

Where Next?

- Web pages are made from **XHTML**
- Make them pretty using **CSS**
- Make them interactive with ECMA Script-262 (**JavaScript**)
- Add pictures, **JPEG**, **PNG** or **GIF**
- World Wide Web Consortium (W3C)
 - <http://www.w3c.org/>
- Books
- Web Sites

W3C Standards

- **XHTML** (mark-up)
 - 1.1 (May 2001)
- **CSS** (style)
 - 2.0 (May 1998)
- **WCAG** (accessibility)
 - 1.0 (May 1999)
- **ECMAScript-262** (JavaScript)
 - 3rd Edition (December 1999)

Why Use Standards?

- Pages more predictable across browsers and versions
- Pages usually more compact, therefore faster to download and render
- Pages easier to create (honestly) and much easier to edit later
- Accessibility is good – it's the law, and anyway Google will find your page

Browser & Developer

- Your web browser has many built-in/add-in tools to help you learn:
 - Web Developer
 - FireBug
 - **View Source**
- Validators:
 - On-line via browser
 - In-line within Editor

XML Basics

- Tags are created from `< a word >`, e.g.
 - `<body>`
- All tags are closed, e.g.
 - `<h1>Heading</h1>`
 - `
`
- Tags are logically nested:
 - `Correct`
 - `WRONG!`

XML Basics 'cont

- Tags are case sensitive
 - `<h1>Good Heading</h1>`
 - `<h2>Bad Heading</H2>`
- Attributes must be quoted
 - `Foo`
 - `Bar`
 - `Baz`
 - `Womble`

xhtml Basics

- xhtml is XML
- There is a list of permitted tags
- There is a list of permitted nesting
- Documents **MUST** validate

Minimal xhtml Document

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
  "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
<head>
  <meta http-equiv="content-type" content="text/html; charset=iso-8859-1" />
  <meta name="description" content="iredale consulting, Home of XML, Perl and more!" />
  <meta name="keywords" content="XML, Perl, mod_perl, CGI, Apache, Linux, XHTML, CSS, W3C" />
  <meta name="robots" content="INDEX, FOLLOW" />
  <link rel="StyleSheet" href="/s/s-0.css" type="text/css" media="screen" />
  <link rel="shortcut icon" href="/i/favicon.ico" type="image/x-icon" />
<title>iredale consulting @ home :: Web :: Useful Links</title></head>
<body>
  <!-- Navigation zone, upper right -->
  <div id="top-nav" class="navigation">
    <ul>
      <li class="home"><a href="/" title="Site HOME">Home</a></li>
      <li class="break"><span class="break">:</span></li>
      <li class="nohit"><strong><a href="/stats/" title="Access Stats">Stats</a></strong></li>
    </ul>
  </div>
  <div id="content">
    <h1>Web</h1>
    <h2>Useful Links</h2>
    <h3>Web Specifications</h3>
    <p><a href="http://www.w3.org/MarkUp/">xhtml</a> - the eXtensible HyperText Markup
Language specification at the <abbr title="World Wide Web Consortium">W3C</abbr>.
<a href="http://www.w3.org/WAI/">WAI</a> - the Web Accessibility Initiative at the W3C.</p>
  </div>
  <p><small>&copy; 2003-2006</small></p>
</body>
</html>

```

Simple Style Sheet

```
body {
  background-color: #b6c7ea; color: #000;
  font-family: "DejaVu Sans", verdana, Arial, Helvetica, Sans-Serif;
  font-size: 13px; padding: 0; margin: 0;
}

a img {
  border: 0;
}

h1, h2, h3, h4, h5, h6 {
  font-family: "DejaVu Serif", "Times New Roman", Times, Serif;
  text-align: left; padding: 5px 10px; margin: 5px 10px; color: #003;
}

h1 {
  padding: 10px; margin: 10px; border-bottom: 3px solid #039;
}

.footer {
  text-align: right; margin-right: 40px;
}

a:link {
  color: #00f;
}

#top-nav {
  border-bottom: 2px solid #039; height: 50px; padding: 5px 10px; margin: 0;
}
```

Books

- **Web Design in a Nutshell**, 3rd Edition, O'Reilly, 0-596-00987-9
- **HTML & XHTML: The Definitive Guide**, 6th Edition, O'Reilly, 0-596-52732-2
- **CSS: The Definitive Guide**, 3rd Edition, O'Reilly, 0-596-52733-0
- and many many more...

Web Pages

- View the source of pages
- Learning XHTML/CSS Sites:
 - <http://www.useit.com/>
 - <http://www.w3schools.com/>
 - <http://alistapart.com/>
 - <http://www.csszengarden.com/>
 - <http://www.positioniseverything.net/>
 - <http://www.quirksmode.org/>

Some of My Work

- <http://www.overton-biodiversity.org/>
- <http://www.eastcourtschool.co.uk/>
- <http://www.iredale.net/>
- <http://iredale.dyndns.org/>

