Introduction: History of HTML & XHTML

Computer Science Department
University of Central Florida

COP 3175 – Internet Applications

Objectives

- Learn the history of the Web and HTML
- Understand HTML standards and specifications
- Understand HTML elements and markup tags
- Tools for Creating Web pages

Exploring the History of the World Wide Web

- A **network** is a structure linking computers together for the purpose of sharing information and services
- Users typically access a network through a computer called a **host** or **node**
- A node that provides information or a service is called a **server**

Exploring the History of the World Wide Web

- A computer or other device that requests services from a server is called a **client**
- One of the most commonly used designs is the **client-server network**
- If the computers that make up a network are close together (within a single department or building), then the network is referred to as a **local area network (LAN)**

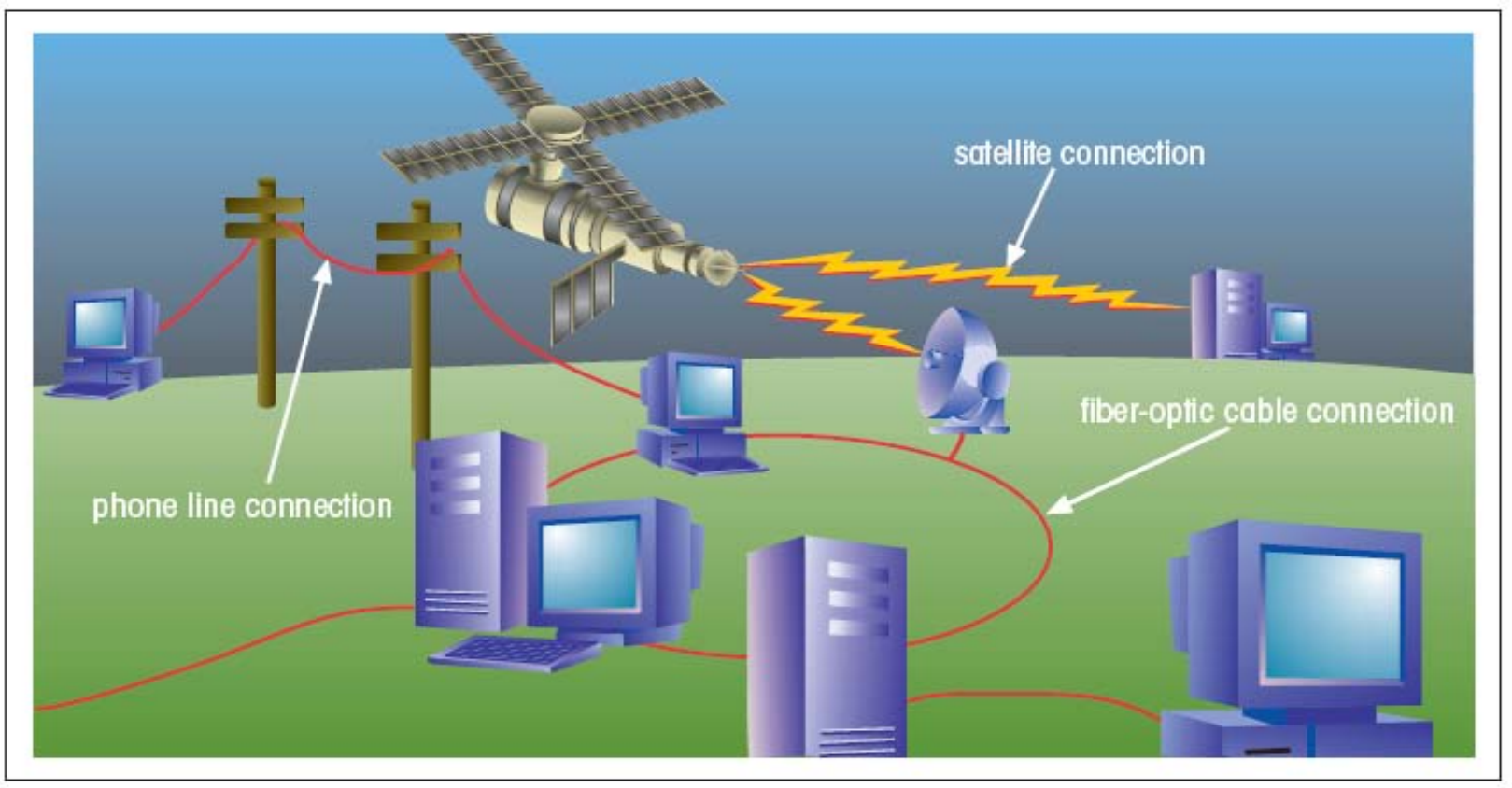
Exploring the History of the World Wide Web

- A network that covers a wide area, such as several buildings or cities, is called a **wide area network (WAN)**
- The largest **WAN** in existence is the **Internet**
- In its early days, the Internet was called **ARPANET** and consisted of two network nodes located at UCLA and Stanford, connected by a phone line

Exploring the History of the World Wide Web

- Today the Internet has grown to include an uncountable number of nodes involving computers, cell phones, PDAs, MP3 players, gaming systems, and television stations
- The physical structure of the Internet uses fiber-optic cables, satellites, phone lines, wireless access points, and other telecommunications media

Structure of the Internet



Exploring the History of the World Wide Web

- Timothy Berners-Lee and other researchers at the CERN nuclear research facility near Geneva, Switzerland laid the foundations for the **World Wide Web**, or the **Web**, in 1989
  - *(Just don't tell Al Gore that!)*
- They developed a system of interconnected **hypertext** documents that allowed their users to easily navigate from one topic to another
  - **Hypertext** is a method of organizing information that gives the reader control over the order in which the information is presented

Hypertext Documents

- When you read a book, you follow a linear progression, reading one page after another
- With hypertext, you progress through pages in whatever way is best suited to you and your objectives
- Hypertext lets you skip from one topic to another

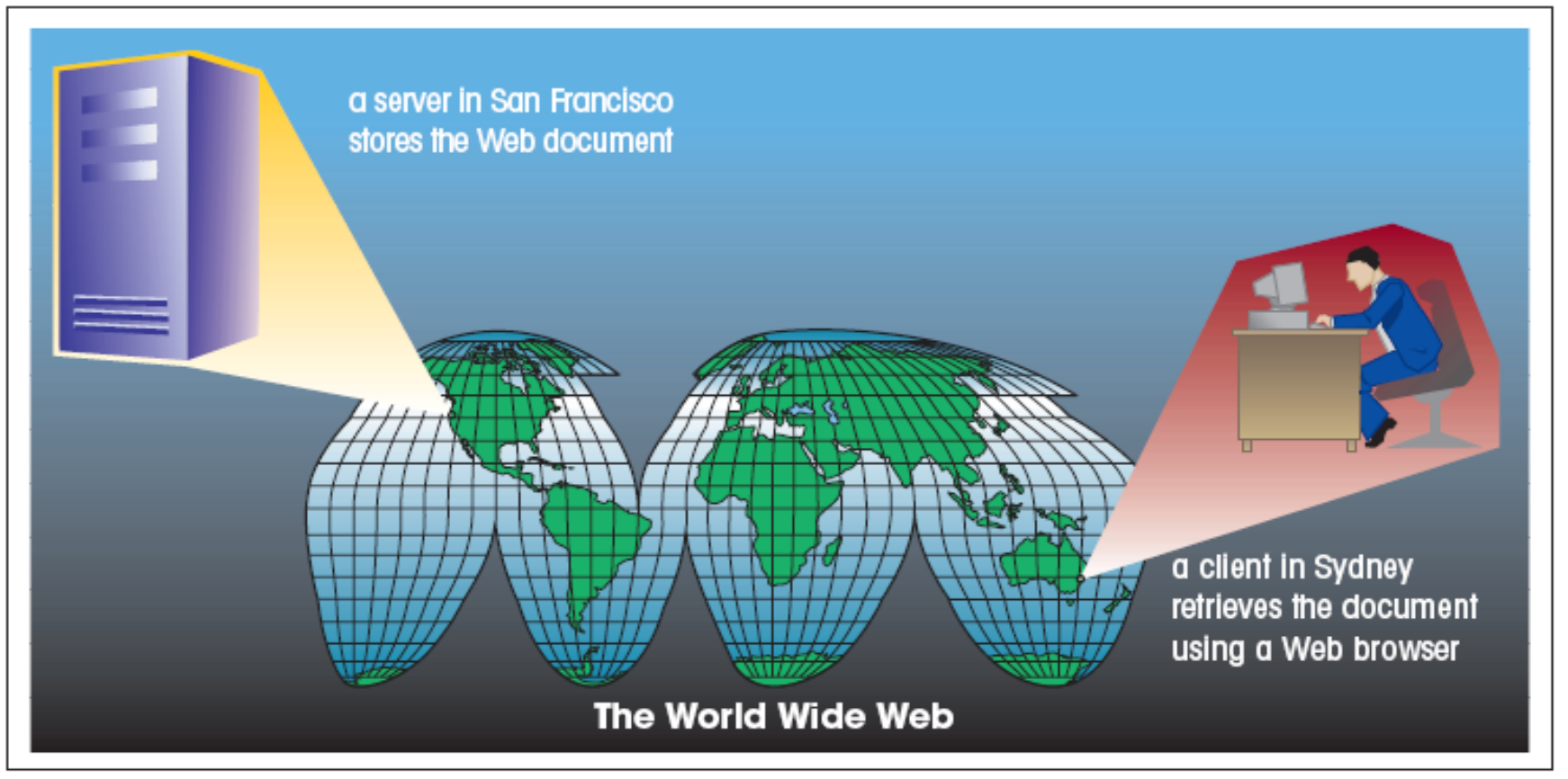
Hypertext Documents

- The key to **hypertext** is the use of **links**
  - Links are the elements you click, in a hypertext document, that allow you to jump from one topic or document (page) to another
- A **link** may point to another section of the same document, or to another document entirely
- A **link** can open a document:
  1) on your computer
  2) or through the Internet, a link can open a document on a computer anywhere in the world

Web Pages and Web Servers

- Each document on the World Wide Web is referred to as a **Web page**
  - Web pages are stored on **Web servers,**
    - A web server is a computer that make Web pages available to any device connected to the Internet
- A **Web browser** is a program we all use
  - It retrieves the web page from the Web server and renders it on the user's computer or other device
- The earliest browsers, known as **text-based browsers**, were incapable of displaying images

Web Pages and Web Servers



Brief Interlude: Human Stupidity

Introducing HTML

- Has the Web evolved over the years?
  - ABSOLUTELY!
  - As such, in order to appreciate the nuances of HTML, it does help to have a little bit of history…
- SGML:
  - Standard Generalized Markup Language
    - First popular markup language
      - A markup language allows you to “understand” how a document should look
    - SGML was very powerful, BUT it was also very complex
    - Benefit: SGML could be used to create other markup languages that are simpler to use and maintain
    - The birth of HTML…

Introducing HTML

- A Web page is a **text file** written in a language called **Hypertext Markup Language** (HTML)
- HTML is **not** a programming language or a formatting language
- HTML is a markup language
  - A **markup language** is a language that **describes** a document's content and structure
- **Styles** are format descriptions written in a separate language from HTML that tell browsers how to render each element for particular devices

The History of HTML

- The first version of HTML was created using the **Standard Generalized Markup Language (SGML)**
- In the early years after HTML was created, no single organization was responsible for the language
  - The effect was both good and bad (mostly bad)
  - Web developers were free to define and modify HTML in whatever ways they thought best
  - But what happens as a result?

The History of HTML

- In the early years after HTML was created, no single organization was responsible for the language
  - But what happens as a result?
  - Well, think about it:
    - How are web pages viewed?
    - They are viewed using a Web browser
    - Can anyone identify the problem that occurred?
    - Developers would modify HTML however they saw fit
    - But a Web browser can only parse/render (understand) an HTML file based on its own standards

The History of HTML

- In the early years after HTML was created, no single organization was responsible for the language
  - But what happens as a result?
  - In effect, developers made web pages, which when viewed in browsers, did NOT look like what they expected
    - That's a BIG problem!
  - As developers wanted new "options" available in the document, competing Web browsers listened to the developers and tried to accommodate them

The History of HTML

- In the early years after HTML was created, no single organization was responsible for the language
  - There were two main competing browsers:
    - Microsoft Internet Explorer
    - Netscape Navigator
      - anyone even remember Netscape?
  - Both wanted to dominate the market
    - Right? They wanted to make money
  - So they listened to the developers and they added new features to their browsers (called extensions)

The History of HTML

- In the early years after HTML was created, no single organization was responsible for the language
  - Example extension offered by Netscape:
    - Background sounds
      - Remember all the cheesy websites playing music upon loadup
  - Example extension offered by IE:
    - Marquee style text that could scroll across a page
  - Note: these extensions were COOL
    - Developers always liked more funcitonality
  - But what was the problem?

The History of HTML

- In the early years after HTML was created, no single organization was responsible for the language
  - But what was the problem?
    - A website, which took advantage of some extensions, might work in one browser but not in another
    - Developers had to test their sites in various VERSIONS of browsers to confirm the page rendered as expected
      - And then make workarounds in the event that they didn't
  - So extensions were useful
    - But they added a layer of complexity that diminished the simplicity that made HTML so attractive in the first place

The History of HTML

- **World Wide Web Consortium (W3C)**
  - A group of Web developers, programmers, and authors, got together and created a set of standards or specifications that all browser manufacturers were to follow
  - This group became know as the W3C
- The **W3C** has no enforcement power
  - Their standards were mere recommendations
  - BUT, the recommendations of the **W3C** are usually followed since a uniform approach to Web page creation is beneficial to everyone

The History of HTML

- So, the W3C can develop a new version of HTML
  - a new set of standards
    - which they are doing right now…HTML5 (not out yet)
  - As new versions of HTML come out, what happens?
    - Some new browsers will support the features
    - Other browsers may not
    - Additionally, older features of HTML are often become **deprecated**, or phased out, by the W3C
    - Note: That does not mean you can't continue to use them—you may need to use them if you are supporting older browsers

History of HTML and XHTML

Version	Date of Release	Description
HTML 1.0	1989	The first public version of HTML which included browser support for inline images and text controls.
HTML 2.0	1995	The first version supported by all graphical browsers. It introduced interactive form elements such as option buttons and text boxes. A document written to the HTML 2.0 specification is compatible with almost all browsers on the World Wide Web.
HTML 3.0	1996	A proposed replacement for HTML 2.0 that was never widely adopted.
HTML 3.2	1997	This version included additional support for creating and formatting tables and expanded the options for interactive form elements. It also supported limited programming using scripts.
HTML 4.01	1999	This version added support for style sheets to give Web designers greater control over page layout. It added new features to tables and forms and provided support for international features. This version also expanded HTML's scripting capability and added increased support for multimedia elements.
HTML 5.0	not yet released	This version supports elements that reflect current Web usage, including elements for Web site navigation and indexing for use with search engines. This version also removes support for purely presentational elements because those effects can be better handled with styles.
XHTML 1.0	2001	This version is a reformulation of HTML 4.01 in XML and combines the strength of HTML 4.0 with the power of XML. XHTML brings the rigor of XML to Web pages and provides standards for more robust Web content on a wide range of browser platforms.
XHTML 1.1	2002	A minor update to XHTML 1.0 that allows for modularity and simplifies writing extensions to the language.
XHTML 2.0	not yet released	The latest version, designed to remove most of the presentational features left in HTML. XHTML 2.0 is not backward compatible with XHTML 1.1.
XHTML 5.0	not yet released	A version of HTML 5.0 written under the specifications of XML, unlike XHTML 2.0, XHTML 5.0 will be backward-compatible with XHTML 1.1.

The History of HTML

- Current Web developers are increasingly using **XML (Extensible Markup Language)**
  - **XML** is a language that actually creates markup languages (like SGML)
    - But without the crazy complexity of SGML
    - Developers can create documents that actually obey rules for content and structure
    - which is in contrast to HTML
      - HTML supported a wide variety of rules
      - But had no mechanism to enforce those rules
  - One of the languages created by XML is **XHTML**
    - Extensible Hypertext Markup Language

The History of HTML

- **XHTML** is a stricter version of HTML
  - designed to confront some of the problems associated with the different and competing versions of HTML
  - **XHTML** is also designed to better integrate **HTML** with other markup languages such as **XML**
- Because XHTML is an XML version of HTML, most of what you learn about HTML can be applied to XHTML
  - You “get” this as we go one in the semester

The History of HTML

- The current version of XHTML is XHTML 1.1
  - Most browsers do support this
- **XHTML 2.0** is still in the draft stage
  - But it is controversial because it is not backward-compatible with earlier versions of HTML and XHTML
- In response to this, HTML 5 is being developed
  - Provides MUCH greater support for new technologies and is backwards compatible
  - …it's just not out yet

Writing HTML Code

- So how do you make a good web page, which translates to, “how do you write good HTML code”?
  - Become well-versed in the history of HTML
  - Know your market
  - Test your code on several different browsers and browser versions
  - Read the documentation on the different versions of HTML and XHTML

Tools for Creating HTML Documents

1. The original and most basic tool:
   - A simple text editor such as Windows **Notepad**
   - Tried and true
   - Nothing fancy here
   - You just type your HTML code, save it, and view it in a browser
     - For “newbies”, this is a challenge
       - Cuz they do NOT want to learn HTML code
     - But, that’s what this class if for!
   - A better version of Notepad is Notepad++
     - http://download.tuxfamily.org/notepadplus/5.9.3/npp.5.9.3.Installer.exe

Tools for Creating HTML Documents

2. **HTML Converter**
   - translates formatted text into HTML code
   - Basically, you make a document in a word processor, for example
     - Such as Microsoft Word
   - Then Word can convert that document into HTML code, which can be viewed in a browser
   - Problem: HTML code created using a converter is often longer and more complicated than necessary, resulting in "bloated" code
     - UGLY UGLY UGLY code that is horrible to read

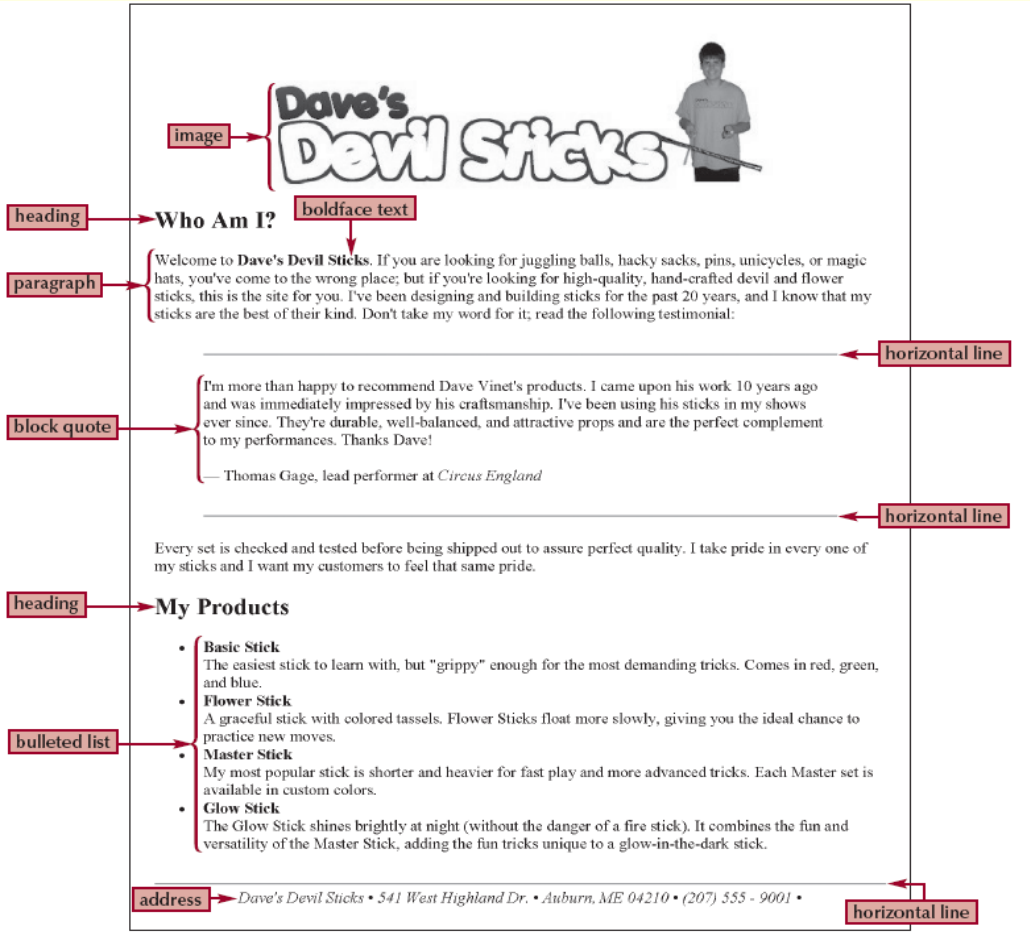
Tools for Creating HTML Documents

3. **HTML Editor** – helps you create an HTML file by inserting HTML codes for you as you work
   - They can save you a lot of time and help you work more efficiently
   - WYSIWYG – "What you see is what you get"
     - "Pay" Programs: Dreamweaver or MS Expression Web
     - Free Programs: Amaya, Kompozer, and others
   - Advantages and limitations similar to those of HTML converters
     - Allow you to set up a Web page quickly
       - Will usually still have to work with HTML code to create a finished document

Creating an HTML Document

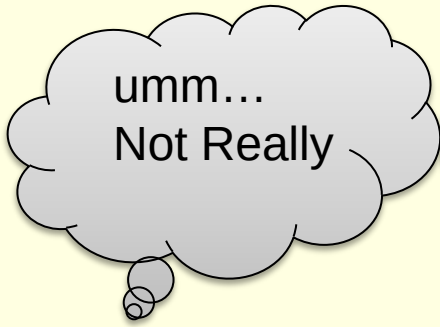
- Plan out your Web page before you start coding
  - What content do you want on it
  - How do you want it to look
    - Pictures, color scheme, etc.
    - Just like making a layout for a magazine
- Draw a planning sketch or create a sample document using a word processor
- Preparatory work can weed out errors or point to potential problems

Creating an HTML Document

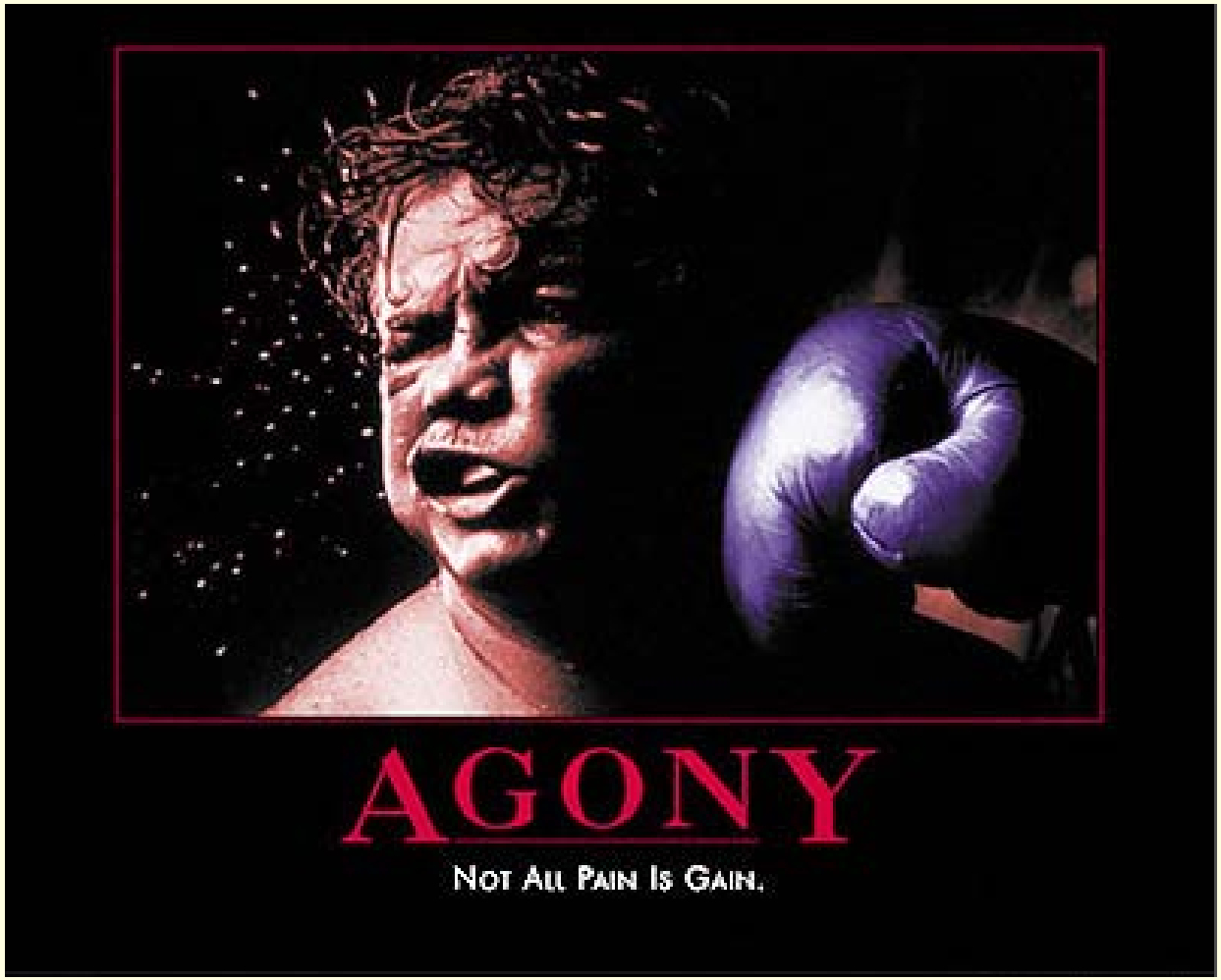


History of HTML & XHTML

AREN'T YOU EXCITED!



Daily Demotivator



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