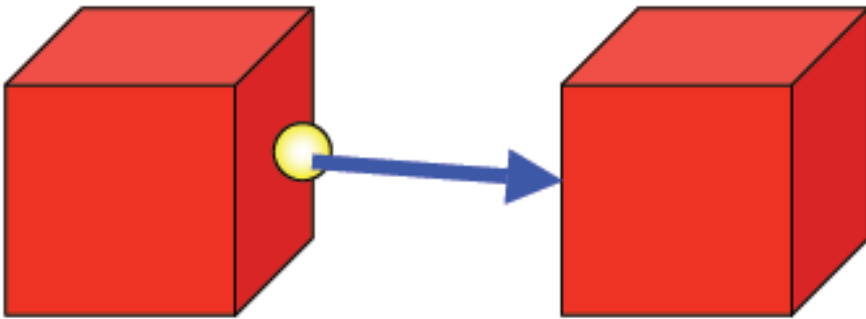# Your Own Web Page:
Quick and Dirty

A Special Language for the Web

- In the early 1990's web pages were mostly described using a special purpose language, called Hyper-Text Markup Language, HTML
- HTML provides **markup tags to provide hints of** how a document should be rendered
- HTML also provides tags for structuring documents and provides a container for web content

Marking Up with HTML

- *Tags describe how a web page should look*
- Formatting with Tags:
  - Words or abbreviations enclosed

    in angle brackets < >
  - Come in pairs (beginning and end):

    <title> </title>
  - Tags are not case-sensitive, but the actual text

    between the tags is

Text Formatting

- **Bold: \ **
- *Italic: \<i> \</i>*
- Tag pair surrounds the text to be formatted
- You can apply more than one kind of formatting at a time
- \\<i>Go Tarheels!\</i>\ produces:
  Go Tarheels!
- Tags can be in any order, but have to be nested correctly
- Some tags do not surround anything, so they don't have
  an ending form:
  - \<hr> inserts horizontal line
  - \
 inserts a line break

HTML Web Page Structure

Begins with <html> and ends with </html>

<html>
<head>
    <title>Preliminary Data Goes Here</title>
</head>
<body>
    The Page's main content go here
</body>
</html>

Structuring Documents

- Headings:
  - Choice of eight levels of heading tags to produce headings, subheadings, etc.
  - Headings display material in large font on a new line

    `<h1>Pope</h1>`

    `<h2>Cardinal</h2>`

    `<h3>Archbishop</h3>`

  Produces:

  # Pope
  ## Cardinal
  ### Archbishop

HTML Format vs. Display Format

- HTML does not preserve your formatting as typed
  - Successive lines may be joined
  - Unexpected breaks my be introduced
- HTML source tells the browser how to produce the formatted image based on tags, not on how it is formatted in the file (The <pre> </pre> "preformatted" tag allows you to get around this rule somewhat).
- Human-written HTML is usually formatted to make it easier for people to understand
- However, most modern HTML is machine generated

Special Symbols in HTML

- If a web page needed to show a math relationship like
  0 < p > r
- The browser would interpret < p > as a paragraph tag, and would not display it
- HTML provides an escape mechanism for specifying reserved and difficult to type "character entities":
  &*descriptive_name;*
  see http://www.intuitive.com/coolweb/entities.html for a list
- Ex: To show angle brackets, use escape symbol ampersand (&), then an abbreviation, then a semicolon (;)
  < displays as <

Attributes in HTML

- Text alignment can also be described in HTML
- For text alignment, one can specify left, right, or center
- *Attributes appear inside the angle brackets, after tag* word and equal sign, in double quotes
  <p align="center">
  (default justification is left)
- Horizontal rule attribute: width and size (thickness) can be specified or left to default

Marking Links With Anchor Tags

Hyperlinks are one of key innovations of Web documents, in comparison to other Rich Text formatting languages, that predated the web. They allow one document to link to another in response to being selected

There are two parts of a hyperlink:

1. *Anchor text (the text in the current document that is highlighted)*
2. *Hyperlink reference (the address of the other Web page)*

Begin with <a followed by a space

Give the link reference using href="filename"

Close tag with

Including Pictures With Image Tags

- Image Tag Format:

  <img src="filename">

  – src stands for source

- GIF, PNG, and JPEG Images are the most widely supported

  – GIF: Graphic Interchange Format

  – JPEG: Joint Photographic Experts Group

  – Image format is implied by the filename extension (.gif, .jpg)

- Pictures can be used as links by surrounding them with an anchor tag

Modern Web Authoring

- HTML was designed in a era when people generated most Web content
- Today PROGRAMS generate most web content
- Moreover, many are dynamic

Web Development: Client Side Coding

- **Ajax:** Asynchronous JavaScript provides new methods of using JavaScript, and other languages to improve the user experience.

- **Flash:** Adobe Flash Player is an ubiquitous browser plugin ready for RIAs. Flex 2 is also deployed to the Flash Player (version 9+).

- **JavaScript:** Formally called ECMAScript, JavaScript is a ubiquitous client side platform for creating and delivering rich Web applications that can also run across a wide variety of devices.

- **Microsoft Silverlight:** Microsoft's browser plugin that enables animation, vector graphics and high-definition video playback, programmed using XAML and .NET programming languages.

- **REAL Studio Web Edition** is a rapid application development environment for the web. The language is object oriented and is similar to both VB and Java. Applications are uniquely compiled to binary code.

- **HTML5 and CSS3 Latest HTML** proposed standard combined with the latest proposed standard for CSS natively supports much of the client-side functionality provided by other frameworks such as Flash and Silverligh

Web Development: Server Side Coding

- ASP (Microsoft proprietary)
- CSP, Server-Side ANSI C
- ColdFusion (Adobe proprietary, formerly Macromedia, formerly Allaire)
- CGI and/or Perl (open source)
- Groovy (programming language) Grails (framework)
- Java, e.g. Java EE or WebObjects
- Lotus Domino
- PHP (open source)
- Python, e.g. Django (web framework) (open source)
- REAL Studio Web Edition
- Ruby, e.g. Ruby on Rails (open source)
- Smalltalk e.g. Seaside, AIDA/Web
- SSJS Server-Side JavaScript, e.g. Aptana Jaxer, Mozilla Rhino
- Websphere (IBM proprietary)
- .NET (Microsoft proprietary)

Web Development: Client + Server

- **Google Web Toolkit** provides tools to create and maintain complex JavaScript front-end applications in Java.

- **Pyjamas** is a tool and framework for developing Ajax applications and Rich Internet Applications in python.

- **Tersus** is a platform for the development of rich web applications by visually defining user interface, client side behavior and server side processing. (open source)

Web Development: Database Tech

- Apache Derby
- DB2 (IBM proprietary)
- Firebird
- Microsoft SQL Server
- MySQL
- Oracle
- PostgreSQL
- SQLite
- Sybase

Mashup

- Mashup is a new web technology that allows a web page author to easily generate dynamic content.

- Basically, it allows you to "reconnect" web content in unique ways.

- This is done via a program, but the program is generated rather painlessly.