

Web Technologies

XHTML

dHTML

JavaScript

Java

CSS

Flash

ASP.NET

PHP

MySQL

Client/Server relationship

–The internet is a combination of clients and servers

–Clients **request** information from servers. Servers give a **response**.

–So web technologies can be divided into two camps:

- those that run on the client
- and those that run on the server.

Client-Side

–Run by the web client:

- XHTML
- dHTML
- JavaScript
- CSS
- Flash
- Java Applets

Server-Side

–Run on the web server:

- ASP.NET
- PHP
- JSP
- MySQL

Client-Side

–Run by the web client:

- **XHTML**
- dHTML
- JavaScript
- CSS
- Flash
- Java Applets

XHTML

–**eXtensible Hypertext Markup Language**

- XHTML is the latest version of HTML
- “Hypertext” means information that is **linked** together
- Links between HTML pages create the “**web**”

–XHTML is used to design web pages

–It is used to indicate the structure of the content on a web page using a system of **tags**.

–Every web page uses HTML

XHTML (continued)

- XHTML is a subset of XML (extensible markup language)
- HTML is somewhat primitive
- Different web browsers can sometimes display the same HTML very differently – annoying.
- Most simple pages can be created with a WYSIWYG editor like DreamWeaver
- HTML is interpreted by the web **client**, i.e. the web browser.

Client-Side

–Run by the web client:

- XHTML
- dHTML**
- JavaScript
- CSS
- Flash
- Java Applets

dHTML

–dHTML stands for **dynamic HTML**

–There is no such thing.

- HTML is not dynamic at all.

- “dHTML” is a marketing term, not a technology

–dHTML usually refers to to the combination of XHTML, JavaScript, and CSS.

–JavaScript and CSS are both client-side technologies that provide ways to make XHTML seem more dynamic.

–This term is often used interchangeably with the term **AJAX**

Client-Side

–Run by the web client:

- XHTML
- dHTML
- JavaScript**
- CSS
- Flash
- Java Applets

JavaScript

–Is not related to Java!

- But like most languages based on C, they look similar.

–Can respond to actions of the user.

- Mouse Button presses
- Mouse Rollover events
- User Filling in forms

–Does not need to contact the server

- All processing occurs in the client

JavaScript (continued)

- Can move XHTML elements around the page
- Can fill in forms automatically
- Can show “alert” windows to user
- Can make parts of a page appear and disappear
- Can do math calculations on the fly
 - e.g. to calculate tax for an online credit card order
- And other “smart” programming tasks

Client-Side

–Run by the web client:

- XHTML
- dHTML
- JavaScript
- CSS**
- Flash
- Java Applets

CSS

- CSS stands for **C**ascading **S**tyle **S**heets
- Provides reusable **design templates** for web pages
- Does not add functionality, only design
- Can specify things like:
 - How wide is the border around a table?
 - What color do links show up as?
 - Positions of elements on the page
 - Whether to show a scroll-bar or not
- Can be modified on the fly by JavaScript

Client-Side

–Run by the web client:

- XHTML
- dHTML
- JavaScript
- CSS
- Flash**
- Java Applets

Flash

- Is used for animation, and more complicated interactions
- Is very popular.
- Has some similarities with Java Applets, but is more popular in the design world. Java is more complete as a programming tool.
- Runs on the client-side, but can communicate with a server without the user's intervention.
- Can be created either through a WYSIWYG editor, or written in code using **ActionScript**

Flash (continued)

- Fills a vacuum created by the inadequacy of HTML and dHTML for design and display.
- Allows for the relatively simple creation of dynamic content on web pages without the hassle of dHTML
- Will always look and act the same on all web browsers

Client-Side

–Run by the web client:

- XHTML
- dHTML
- JavaScript
- CSS
- Flash
- Java Applets**

Java Applets

–Java has many different uses

–Applets

- Most common client-side use of Java
- Can provide similar results to Flash, but are not as popular in design.
- Usually more useful for their functionality than their design.
- Provides the power of a full programming language in a small portable form made for web pages.

Server-Side

–Run on the web server:

- ASP.NET**

- PHP

- MySQL

- JSP

ASP.NET

- ASP stands for **A**ctive **S**erver **P**ages
- Is a Microsoft proprietary server-side technology
- Only runs on Microsoft IIS Servers
 - These are expensive and are usually used by large corporations
- Usually written in VBScript
- Very frequently is used to connect to Microsoft SQL Server databases.

ASP.NET (continued)

- ASP is somewhat smooth because it is part of a vertical integration of Microsoft products
- Fewer compatibility issues that sometimes arise in other technologies.
- Has a nice GUI development environment

Server-Side

–Run on the web server:

- ASP.NET

- PHP**

- MySQL

- JSP

PHP

- PHP stands for **H**ypertext **P**re-**P**rocessor
- Is a server-side scripting language, like ASP
- Supports many types of databases
 - MySQL, Informix, Oracle, Sybase, Solid, PostgreSQL, Generic ODBC, etc.
- Runs on many platforms (Mac, Windows, Unix, Linux)
- Is Compatible with most web servers
 - Apache, IIS, etc.
- Is open-source and **free**

PHP (continued)

- Is most commonly used with MySQL databases
- Does not have a nice GUI development environment

Server-Side

–Run on the web server:

- ASP.NET

- PHP

- MySQL**

- JSP

MySQL

- Is a small database server
- Is ideal for small and medium applications
- Supports standard SQL
- Compiles on a number of platforms
- Is **free** to download and use
- Is very popular in medium to small corporations

MySQL

-PHP combined with MySQL are cross-platform (means that you can develop in Windows and serve on a Unix platform)

-ASP/SQL Server is more common in large corporations.

-PHP/MySQL is more common in medium and small corporations, and with individuals

Server-Side

–Run on the web server:

- ASP.NET

- PHP

- MySQL

- JSP**

JSP

- On the server side, JSP is the most commonly used Java technology.
- JSP provides much the same functionality as ASP.NET and PHP, but written in Java.
- JSP scripts are compiled into Servlets, which are just regular Java Applications.
- Supposedly more modular and reusable than ASP.NET or PHP.
- Provides good support for XML, using XSLT

So What Are We Learning?

XHTML

CSS

Javascript

MySQL

PHP

Huh?

XHTML creates the structure of any web page

CSS is a sort of style guide for any web page

Javascript adds fancy interactive behaviors

MySQL stores data that you can then show on your web page

PHP allows you to create templates for your pages and is the glue that connects them to a database.