

Introduction to HTML Training

A Quick Overview of Web Development



Lesson 1, Activity 2: **Client-side Programming**

Client-side programming involves writing code that is interpreted by a browser such as Internet Explorer or Mozilla Firefox or by any other Web client such as a cell phone. The most common languages and technologies used in client-side programming are HTML, JavaScript, Cascading Style Sheets (CSS) and Macromedia Flash.

HTML

HyperText Markup Language (HTML) is the language behind most Web pages. The language is made up of elements that describe the structure and format of the content on a Web page.

Cascading Style Sheets

Cascading Style Sheets (CSS) is used in HTML pages to separate formatting and layout from content. Rules defining color, size, positioning and other display aspects of elements are defined in the HTML page or in linked CSS pages.

JavaScript

JavaScript is used to make HTML pages more dynamic and interactive. It can be used to validate forms, pop up new windows, and create dynamic effects such as dropdown menus and image rollovers.

The word "JavaScript" is a proprietary name for Netscape's version of ECMAScript. Microsoft's version of this language is called JScript. However, everyone calls it JavaScript.

Dynamic HTML

Dynamic HTML is not a language in and of itself, but rather refers to code that uses JavaScript to manipulate CSS properties on the fly.

Ajax

The term *Ajax* was originally a pseudo-acronym for "[Asynchronous JavaScript And XML](#)," but is now used much more broadly to cover all methods of communicating with a server using JavaScript.

The main purpose of Ajax is to provide a simple and standard means for a web page to communicate with the server without a complete page refresh.

Adobe Flash

At the time of this writing, according to Adobe's website, more than 97% of computers connected to the internet have Flash Player installed. The Flash Player is a plug-in to Internet Explorer and other web browsers. It enables browsers to display dynamic graphical web pages that can be visually more fluid than pages that are built with Dynamic HTML. Flash pages are called movies and they are created using special software (also called Flash). ActionScript, a language similar to JavaScript, is used to manipulate Flash objects to make movies more interactive.

At the time of this writing, designers are either moving to JavaScript or converting existing Flash videos to HTML5. However, converting is a challenge because not all features of Flash can be converted. Tools to

solve this issue are currently being introduced by Adobe (with Wallaby) and Google (with Swiffy) and others..

Silverlight

Silverlight is Microsoft's answer to Flash. Like Flash, it is mostly used for video and for game development and delivery. Although not as ubiquitous as Flash, it is gaining popularity very quickly.

Lesson 1, Activity 3: **Server-side Programming**

Server-side programming involves writing code that connects Web pages with databases, XML pages, email servers, file systems and other systems and software accessible from the Web server. The most common server-side languages and programming frameworks are Perl, ColdFusion, Active Server Pages, Java (in many flavors), ASP.NET and PHP.

Perl

Perl was the first server-side language to become popular in Web development. Originally derived from C, its relative simplicity and strengths in file and text manipulation and the fact that it is open source made it a good choice for writing CGI scripts. Although Perl is still widely used, it is not as popular a choice for new Web projects as some of the other server-side languages discussed below.

ColdFusion

ColdFusion, created by Allaire (now owned by Adobe), is arguably the simplest of all server-side languages. It is tag-based, which makes it look a lot like HTML and easier for client-side programmers to understand than some of the other choices. Because of the relative ease with which it is written, ColdFusion is sometimes assumed not to be so powerful. In fact, ColdFusion code is compiled to Java bytecode, which means the pages run quickly. Web developers can accomplish virtually any required task using the ColdFusion Markup Language (CFML). However, as ColdFusion can easily be integrated with Java applications,

developers have the choice of using Java to extend ColdFusion applications.

Active Server Pages

Microsoft Active Server Pages (ASP) is a framework that allows developers to write server-side pages in many scripting languages; however, VBScript and JScript are the only commonly used choices. ASP became popular quickly and sites with pages ending in .asp are now all over the Web. It is not as simple as ColdFusion, but it has the huge advantage of being built in to Microsoft Internet Information Server (IIS). Although still commonly used, ASP has been replaced by Microsoft with ASP.NET, an architecture that is much more similar to Java's than to traditional ASP's.

Java EE

Java EE is used in large web projects. With its power and robustness comes a steep learning curve. Java EE is defined by its [specification](#) and [Application Programming Interface \(API\)](#). A Java Application Server (Java AS) manages servlets, JavaServer Pages (JSP), Web Services, and Enterprise JavaBeans (EJB). Java EE also includes a number of other APIs commonly linked to enterprise application development. JDBC, JPA, e-mail, JMS, and XML are some examples. But that's only part of the picture. There are a number of frameworks built on some of these technologies that streamlines the development process further. Hibernate offers most of the object/relational mapping (ORM) without an EJB Container. For this reason it's called a lightweight ORM technology. JavaServer Faces, Struts, and

Spring-MVC build on JSP to do away with scriptlets completely, relying on HTML style tags and associated JavaBeans.

ASP.NET

Microsoft's ASP.NET is not a language, but a framework for writing Web sites and software. Like ColdFusion and JSP (and unlike traditional ASP) ASP.NET pages are precompiled, so they run faster than traditional ASP pages do. ASP.NET pages can be written in many languages, but the most popular are C# (pronounced C-sharp) and Visual Basic .NET (VB.NET).

PHP

Like Perl, PHP is open source. It has rapidly become a popular alternative to the proprietary languages such as ColdFusion and ASP.NET. PHP is lightweight, relatively simple to learn and runs on almost all commonly used Web servers. A nice feature is that it can be integrated with both Java and COM.

Ruby on Rails

[Wikipedia](#) describes Ruby on Rails as "a web application framework that aims to increase the speed and ease with which database-driven web sites can be created and offers skeleton code frameworks (scaffolding) from the outset. Often shortened to Rails, or RoR, Ruby On Rails is an open source project written in the Ruby programming language and applications using the Rails framework are developed using the Model-View-Controller design pattern."