Overview of Client-Side and Server-Side Interactivity

CGT 356
Web Programming, Development, & Database Integration

Server-Side Technologies

- Client - Side
- Server - Side

Server-Side Technologies (cont.)

- Servers reside in a room and are usually not seen
  - Temperature regulated
  - Cables galore

- Usually do not ‘use’ a server once it is set up

Client-Side

- Def: Applications that run on a user’s machine and need a server to do some processing
- Typically refer to a **user’s** computer as the client
  - A student browsing the web is an example
  - Any web browser, such as Chrome, is a client application that runs on a client machine
  - Chrome interprets HTML on the client machine, thus HTML is a client-side technology

Client-Side

- Prerequisite for this course dealt primarily with client-side technologies
- Other client-side technologies
  - HTML & HTML5
  - JavaScript & jQuery (anything JavaScript based)
  - VBScript
  - JScript
  - Java
  - XML & XSL
  - ActiveX
  - Flash
  - Sound
  - There are more

Server-Side

- Def: Some event that occurs on the server of a client-server system.
- Servers typically reside in a dungeon deep below the earth’s surface with guys like Egor monitoring them.
  - Yes Master, Yes Master... I’ll install the ISAPI filter to enrich our web content so that it will be dynamically driven... Yes Master
  - But Egor has geek glasses, you know those thick black frames with tape in the middle... And he’s walkin around like Yes Master... Look for him on campus

Server-Side

- Client – Side
- Server – Side
Server-Side (cont.)

- Typically referred to as back-end technologies
  - Depends on the context
    - HTML could be the front-end generated by an PHP back-end
    - PHP could be the front-end with a database backend
      - When you say this, you are typically talking about PHP generating the HTML front-end
  - Other Server-Side Technologies
    - PHP
    - ASP.NET
    - JSP
    - CGI
    - ISAPI (Microsoft)
    - Databases
      - There are many, many, many more...

- Languages that can be used on server-side technologies
  - Java
  - PHP
  - VB
  - VBScript
  - XML / XSL
  - JavaScript
  - C
  - C++
  - SQL
  - C#
  - Perl
  - Many many more

This class will focus primarily on
- PHP (the pages you create)
- Databases (SQL) (the data you deliver to the browser)
- MySQL (the specific database management system we use)
- XML (a ubiquitous transfer language for Web and other means)
Prerequisites

- In the prerequisite course, we dealt with some JavaScript
- Client-Side

```html
<script type="text/javascript">
```
Prerequisites (cont.)

In contrast, on the Server-Side

A Closer Look at the Server-Side

ISAPI

- Internet Server Application Program Interface
- Enables programmers to build Web applications that run much faster than conventional CGI applications because they are more tightly integrated with the Web server.

API

- Application Program Interface
- A set of stored routines, protocols, and tools for building software applications. (The building blocks for software development)

CGI Disadvantages

- If your web server is Windows:
  - CGI applications are a separate process from IIS
  - A new CGI application process is started each time a request is made for its service
  - Data cannot be shared between requests
  - Because of this, CGI is slow
Advantages of PHP

- Data can be persisted and shared between requests
- It has a low learning curve and is easy to program
- Not constrained by client-side applications
- ODBC can link to any data source
  - ODBC: Open Database Connectivity

Disadvantages of PHP

- It is an interpreted language, which means there is no compilation of code
- Debugging can be trial and error, but web browsers are pretty good about displaying messages
- It uses a scripting language, and does not use an OO programming language (although it is possible to write object oriented scripts)