

## Overview of Client-Side and Server-Side Interactivity

CGT 356  
Web Programming, Development, & Database  
Integration

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## Server-Side Technologies

- Client – Side
- Server – Side

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## 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

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## 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

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## 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

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## Server-Side (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

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## 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...

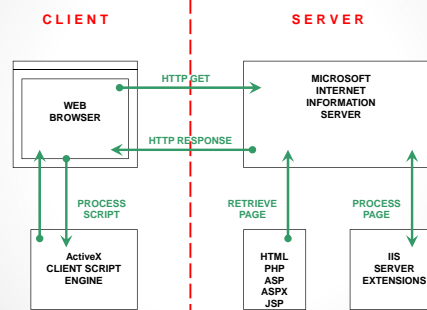
## Server-Side (cont.)

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

## Server-Side (cont.)

- 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)

## Server-Side (cont.)



## Server-Side (cont.)

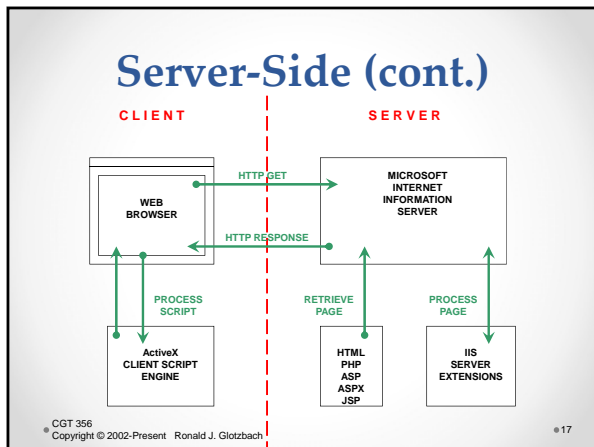
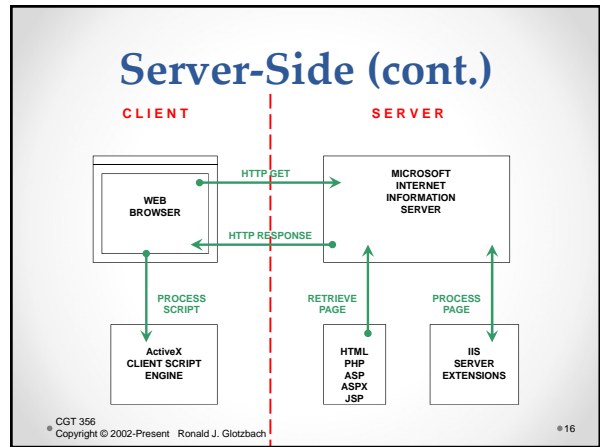
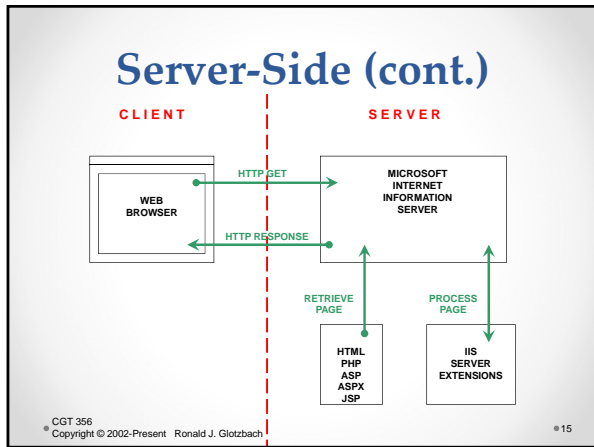
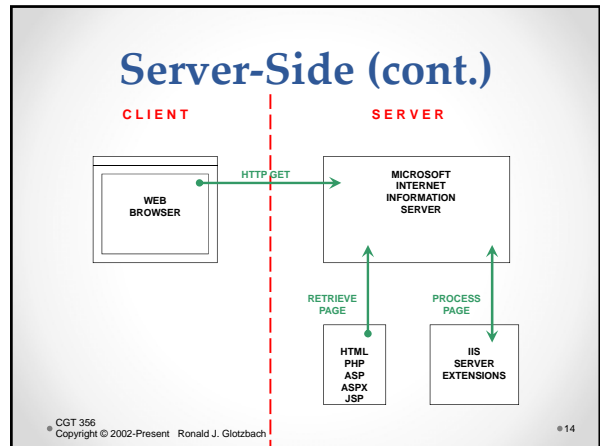
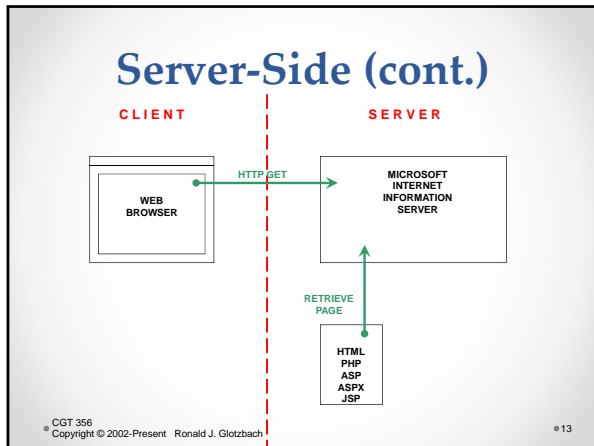
CLIENT SERVER



## Server-Side (cont.)

CLIENT SERVER





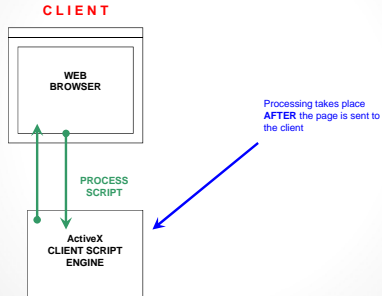
### Prerequisites

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

```
<script type="text/javascript">
```

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## Prerequisites (cont.)

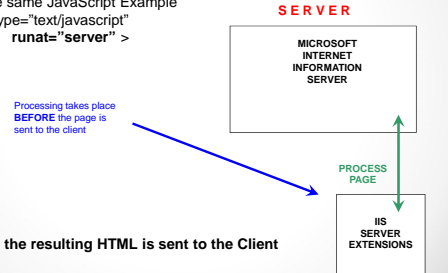


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## In contrast, on the Server-Side

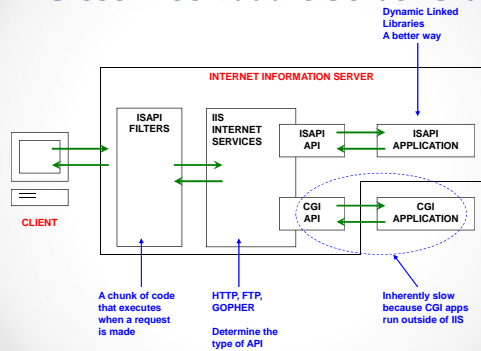
Using the same JavaScript Example  
`<script type="text/javascript" runat="server" >`



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## A Closer Look at the Server-Side



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## 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.

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## API

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

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## 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*

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## 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

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## 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)

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