



Web Development:

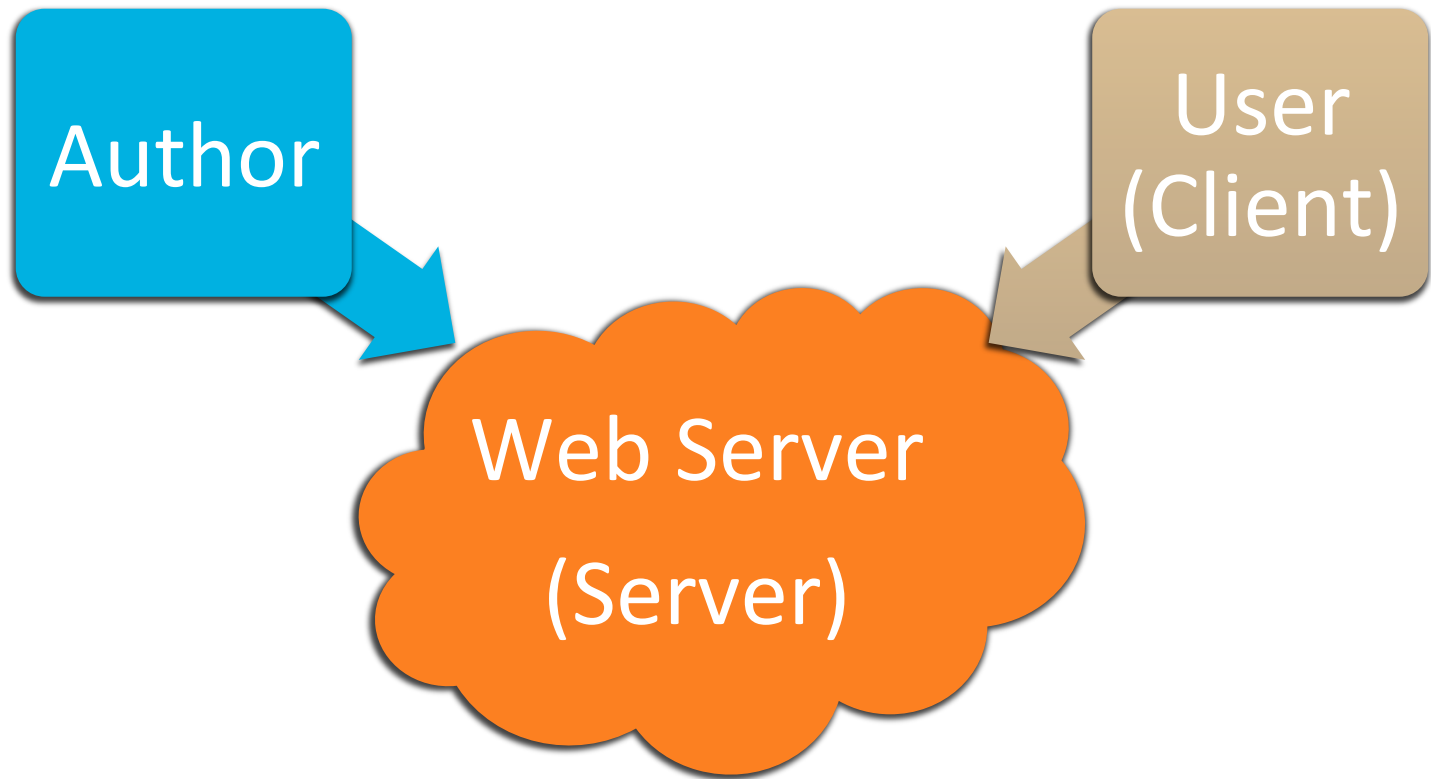
Techniques for Handling Content



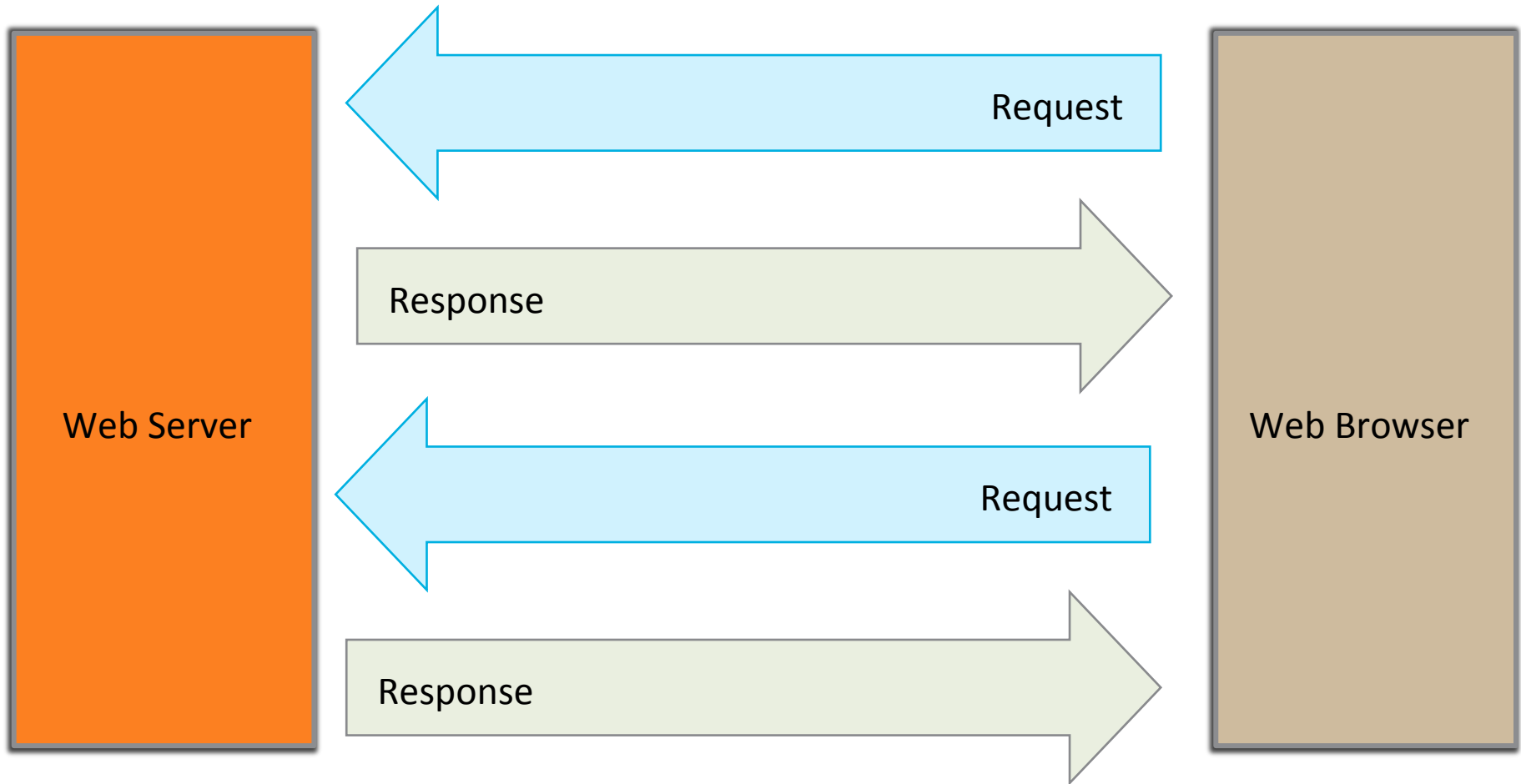
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Web Background



Web Background



Approaches to Web Content

Static HTML
Pages

Client-Side
Technologies

Server-Side
Technologies

Static vs. Dynamic Pages

Static

- Most Common Individual Pages
- Cost-Effective Method for Infrequent Changes
- Constant Structure and Content with Each User Request
- Edits Require Manual Updates with a Text Editor or Web Authoring Tool

Dynamic

- Response to User Interactions, Data Supplied by an Application, or Evolution over Time
- Adaptable Content and/or Appearance Provides Flexibility
- Significant Potential Expense for Development, Software, and High-End Web Servers

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Client-Side Uses

- **User Interaction**
 - Change, Copy, Clone, Create and Delete HTML Elements
 - Change User Interface Elements and Apply Styles
 - Perform Calculations
 - Prompt Users for Input and Validate Input
 - Run Animation
 - Provide Interactivity
- Interacts with Temporary and Local Storage
 - Sends and Receives Data from Server
- Provides Instant Screen Updates

Client-Side Scripting Language

Object-Oriented

Interpreted

JavaScript

Write with Any
Text or Web Editor

Frequent Browser
Support

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Server-Side Uses

- **Requires Dynamic Data to be Loaded**
 - Interacts with Database
 - Query
 - Encoding Data
 - Inserting and Updating Data
 - Business Rules and Calculations
 - Process Code without End-User Visibility

Server-Side Languages

Language	Benefits	Liabilities
ASP.net (Active Server Pages)	.NET-compatible Language; Well-supported	Designed for Windows Webserver
ColdFusion	Tag-Based (RAD); Scalable; Cross-Platform	Expensive; Limiting for Skilled Programmers
JSP: Java Server Pages	Templates; Platform Independent	Requires Installation of Application Components

Server-Side Languages

Language	Benefits	Liabilities
Perl	Free; Open-Source; Mature; Good Host Support	Optimized for Unix; Poor Scalability
PHP: Hypertext Preprocessor	Interpreted; Free; Open-Source; Cross-Platform; Wide Range of Applications	Requires Installation on Host System (Server)
Python	Interpreted; Free; Open-Source; Object- oriented; Popular Frameworks; Large Library; Handles Heavy Demand	Relatively Obscure
Ruby	Free; Open-Source; Framework; Handles Heavy Demand;	Multiple Methods for Tasks

Static HTML
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References

- Lynch, Patrick J., and Sarah Horton. "Browse Versus Search." *Web Style Guide: Basic Design Principles for Creating Web Sites*. 3rd ed. New Haven: Yale UP, 2008. 100. Print.
- Lynch, Patrick J., and Sarah Horton. "Supporting Web Search Users." *Web Style Guide: Basic Design Principles for Creating Web Sites*. 3rd ed. New Haven: Yale UP, 2008. 102. Print.
- Willard, Wendy. "Chapter 7 Beyond HTML and CSS." *Web Design Demystified / Hard Stuff Made Easy*. New York: McGraw-Hill, 2011. 165-76. Print.

Questions

Back-Up Slides



Classic Design Cycle

- Website Development
 - Research Dictates Functional Requirements
 - Requirements Transformed into Page Layouts and Site Map
 - Code is Assembled with Content
 - Functional and Editorial Testing Prior to Site Launch

Requirements



Design



Development



Testing



CGI: Common Gateway Interface

- Typically Used by Early Server-Side Languages
 - Perl
 - C
- Direct Execution Alternative
- Consistent Method for Transferring Data
 - Hypertext Transfer Protocol (HTTP)

Dynamic Impact on Navigation

➤ Search

- Studies show half of users will initially use search features rather than navigation
- Users typically expect Search features when a site contains more than a few pages

Site Search

