Chapter 1: Introduction to the Internet

Client Specific Performance Objectives and Examples....1-2
What is the Internet?....3-5
The World Wide Web....6-8
History of the Internet....9
Hyperlinks....10-11
What is the Intranet?....12-13
What are Browsers?....14-15
System of Requests and Responses....16
URL: Uniform Resource Locator....17-18
Static and Dynamic Web Pages....19
Static Pages....20
Dynamic Pages....21-22
Routing....23-24
Connections....25
Simple Connections....26-27
Internet Connections Paths....28-29
Getting Started....30-31
Sample Connections....32-33
FTP an Introduction....34-35
FTP Basics....36
Telnet....37-38
Mobile Devices....39
Sample Applications....40
Internet Protocol Suite....41
Security Issues....42

Chapter 2: Introduction to HTML

Client Specific Performance Objectives and Examples....1-2
What is HTML?....3
HTML Tags....4
Paired Tags....5
Simple HTML Document....6
Tags....7-8
Hyperlinks....9
Create a Hyperlink....10
Naming a Hyperlink Destination....11
Sections and Paragraphs....12
Paragraph Format....13
Character Formatting....14
Character Size and Position....15
Changing the Font....16
Color....17-18
Images and Multimedia....19
Inserting Video Clips....20
Background Sounds....21
Frames....22
Lists....23-24
Tables....25
Image Maps....26

Forms....27-28
Objects....29
Use of CSS....30
New features of HTML....31
Interaction with scripts....32
Function and use of XML....33
Validating HTML....34
AJAX....35
Mobile Web Development....36

Chapter 3: Web Browsers

Client Specific Performance Objectives and Examples....1-2
Web Browsers....3-4
Internet Explorer - Setup....5-6
Finding the Information You Want....7
Listing Favorite Pages for Quick Viewing....8-9
Changing the Home Page....10-11
Changing the Home Page to Find Recently Visited Pages....12-13
Making Pages Available for Offline Viewing....14
Sample Internet Explorer....15-16
Changing Internet Explorer Options - Programs....17
Microsoft Internet Explorer Features....18-21
Microsoft Expression....23-24
Benefits....25-26
WebMatrix....27
Microsoft Visual Studio....28-30
ColdFusion....31
Adobe DreamWeaver....32
Query Builder....33
Firefox....34
Chrome....35
Safari....36
Opera....37

Chapter 4: Client/Server and the Internet

Client Specific Performance Objectives and Examples....1-2
Client Building Model....3
Server Building Block....4-6
Comparison to Peer to Peer....7
Comparison to Cloud Computing....8
C/S Infrastructure....9
Anatomy of a Server Program....10
What the Server Needs from the O/S....11
Extended Services....12
Asymmetric Multiprocessing....13-14
Symmetric Multiprocessing....14-15
Operating Systems-Clients....16
Operating Systems-Server....17
Evolution of the Windows 8 client....18
Client/Server Database Systems....19
Thin versus. Fat Client software....20
Use of Middleware....21
n-Tier Client Server....22

Chapter 5: TCP/IP

Client Specific Performance Objectives and Examples....1-2
What is TCP/IP?....3-5
TCP/IP Services....6-9
UDP....10
General Description of the TCP/IP Protocols....11-13
Layering....14
Layers of Services....15
IP Addresses....16-17
IPv4 and IPv6....18
Connectionless....19
Datagram versus Packet....20
TCP Level....21
Demultiplexing....22-24
Data Stream....25
Port Numbers....26-27
Sequence Number....28
Checksum....29
SMP....30
Data Stream with Header....31
IP Level....32
Gateway....33
Source/Destination IP....34
Protocol Number....35
IP with Header....36-38
Ethernet Level....39
Ethernet Header....40
Ethernet Packet....41-42
Checksum....43

Final Packet....44
Ethernet Level....45
Removing Headers....46-47
Well-Known Sockets and the Applications Layer....48
Find an Application....49-50
Port Numbers for Applications....51
Connection....52
Connection Numbers....53
Different Numbers....54
Protocols: UDP....55-57
ICMP: Internet Control Message Protocol....58-59
Domain System....60-63

Chapter 6: .NET Web Development

Client Specific Performance Objectives and Examples....1-2
ASP.NET....3
Programming Languages....4
Scripting....5
.NET Framework....6
Visual Studio Web Tools....7
Architecture of a Page....8
Server Controls....9
Custom User Controls....10
Events....11
Disconnected Database Model....12
Validation Controls....13
Drilldowns....14
Integrating XML....15
Deployment....16

Chapter 7: Java and Web Development

Client Specific Performance Objectives and Examples....1-2
Applet....3
Servlet....4
JavaServer Pages....5
Swing....6
Eclipse....7
Tomcat....8
JBOSS....9
WebSphere....10
WebLogic....11
AJAX....12
Sandboxing....13
Frameworks....14

Chapter 8: Mobile Internet

Client Specific Performance Objectives and Examples ... 1-2
Mobile Web Initiative ... 3
Wireless Markup Language ... 4
Limits of Mobile Computing ... 5
Connecting Applications ... 6
Mobile Applications ... 7
Displaying HTML Content within an App ... 8
Data Message Service ... 9
SDK ... 10
Mobile Security ... 11
Network Management ... 12

Chapter 9: Database for the Web

Client Specific Performance Objectives and Examples ... 1-2
Remote and Local Databases ... 3
Web to Database Connectivity ... 4
DBMS ... 5
Commercial Databases ... 6
Open Source Databases ... 7
Working with Tables and Programmability Objects ... 8
What Does SQL Do? ... 9
Database ... 10-11
Relational Database ... 12
Client/Server ... 13
Logical Database Components ... 14
Tables ... 15
Designing Tables ... 16
Specifying a Column Data Type ... 17
Character Data ... 18
Date and Time Data ... 19
Numeric Data ... 20
Integer Data ... 21
Decimal Data ... 22
Approximate Numeric Data ... 23
Monetary Data ... 24
Primary Key Constraints ... 25
Foreign Key Constraints ... 26
UNIQUE Constraints ... 27
CHECK Constraints ... 28
DEFAULT Definitions ... 29
Allowing Null Values ... 30
Database Server Architecture ... 31
SQL CLI: Call Level Interface ... 32
ODBC CLI ... 33
OLE DB and ADO ... 34
JDBC ... 35

Chapter 10: Transactions

Client Specific Performance Objectives and Examples ... 1-2
Transactions ... 3
Atomicity ... 4
Consistency ... 5
Isolation ... 6
Durability ... 7
Enforcing Transactions ... 8
Physical Integrity of Each Transaction ... 9
Starting Transactions ... 10-11
Ending Transactions ... 12-13
Specifying Transactions Boundaries ... 14
Transaction Statements ... 15-16
Implicit Transactions ... 17-18
Rollbacks in Stored Procedures and Triggers ... 19-20

Chapter 11 Languages and Development Tools

Client Specific Performance Objectives and Examples ... 1-2
Server-side Business/Presentation Logic Programming ... 3
Server-side Database Programming ... 4
Client-side UI ... 5
Client-side Design ... 6
Client/Server Event-driven Interaction ... 7
Microsoft Tools ... 8
Java Tools ... 9
PHP ... 10
AJAX ... 11
CSS ... 12
IDEs ... 13
Ruby ... 14
ASP.NET ... 15
Component based programming ... 16
Web and Mobile SDKs ... 17