E-Business , 8th Edition

Chapter 2 Solutions

Review Questions

1. **Describe in two paragraphs the origins of HTML. Explain how markup tags work in HTML, and describe the role of at least one person involved with HTML's development.**

   Answer: In 1989, Tim Berners-Lee was trying to improve the laboratory research document handling procedures for his employer, CERN: European Laboratory for Particle Physics. CERN had been connected to the Internet for two years, but its scientists wanted to find better ways to circulate their scientific papers and data among the high-energy physics research community throughout the world. Berners-Lee proposed a hypertext development project intended to provide this data-sharing functionality.

   Over the next two years, Berners-Lee developed the code for a hypertext server program and made it available on the Internet. HTML, which Berners-Lee developed from his original hypertext server program, is a language that includes a set of codes (or tags) attached to text. These codes describe the relationships among text elements. For example, HTML includes tags that indicate which text is part of a header element, which text is part of a paragraph element, and which text is part of a numbered list element. One important type of tag is the hypertext link tag. A hypertext link, or hyperlink, points to another location in the same or another HTML document.

2. **What were the main forces that led to the commercialization of the Internet? Summarize your answer in about 100 words.**

   Answer: The Internet was born out of the need for the U.S. government, specifically the Defense Department, to communicate with its weapons installation distributions all over the world. This idea, in the hands of researchers and scientists, evolved even further, allowing those researchers the capability to communicate with their colleagues at other universities. As personal computers became more popular and affordable, companies increasingly wanted to construct their own networks. This all led to the dramatic increase in business activity, but the commercialization of the Internet was really spurred by the emergence of the World Wide Web. The software that allowed computers to communicate while on the Internet is still the largest category of traffic today.

3. **In about 400 words, describe the similarities and differences between XML and HTML. Provide examples of at least two situations in which you would use XML and two situations in which you would use HTML.**

    Answer: Hypertext Markup Language (HTML) was derived from the more generic meta language SGML. HTML defines the structure and content of Web pages using markup symbols called tags. Over time, HTML has evolved to include a large number of tags that accommodate graphics, Cascading Style Sheets, and other Web page elements. Hyperlinks are HTML tags that contain a URL. The URL can be a local or remote computer. HTML editors facilitate Web page construction with helpful tools and drag-and-drop capabilities.

    Although Extensible Markup Language (XML) is also derived from SGML, it differs from HTML in two important respects. First, XML is not a markup language with defined tags. It is a framework within which individuals, companies, and other organizations can create their own sets of tags. Second, XML tags do not specify how text appears on a Web page; the tags convey the meaning (the semantics) of the information included within them.

4. **Use your favorite search engine and the links in the Online Companion (under the heading Internet Connection Options) to search for more information about broadband satellite connections, DSL connections, wireless connections, and cable connections.**

    Prepare a four-column table (one column for each technology) in which you list the advantages and disadvantages of each connection method. Include at least two advantages and two disadvantages for each connection method.

    Answer: Answers will vary but should include the following:

	Satellite	**DSL**	**Wireless**	**Cable**
Advantages				
Upstream transmission	125–150 Kbps	100– 640 Kbps	10-2000 Kbps	300–1,500 Kbps
Downstream transmission	400–500 Kbps	500–10,000 Kbps	10-350 Kbps	500–10,000 Kbps
Disadvantages	Unusable for people living in large cities or on the wrong side of an apartment building	Installation can be quirky	Information security is questionable	Connection bandwidth varies with the number of subscribers

5. In about 200 words, compare the POP e-mail protocol to the IMAP e-mail protocol. Describe situations in which you would prefer to use one protocol or the other and explain the reasons for your preference.

Answer: A POP message can tell the e-mail server to send mail to the user's computer and delete it from the e-mail server; send mail to the user's computer and not delete it; or simply ask whether new mail has arrived. The POP provides support for Multipurpose Internet Mail Extensions (MIME), which is a set of rules for handling binary files, such as word-processing documents, spreadsheets, photos, or sound clips that are attached to e-mail messages.

The Interactive Mail Access Protocol (IMAP) is a newer e-mail protocol that performs the same basic functions as POP, but includes additional features. For example, IMAP can instruct the e-mail server to send only selected e-mail messages to the client instead of all messages. IMAP also allows the user to view only the header and the e-mail sender's name before deciding to download the entire message.

One would choose IMAP if there is a need to access an email account from different computers, at different times.

Exercises

1. As you learned in this chapter, XML allows users to define their own markup tags. You also learned that this flexibility can lead to problems when IT professionals who have developed tag sets for their own organizations are asked to share information with other organizations that are using other tag sets. One way organizations can avoid this problem is to agree to follow common standards. A common standard for financial information is XBRL. Accountants and financial analysts around the world have agreed to use XBRL to format financial statements and other reports. In about 300 words, outline the advantages that companies and financial analysts can obtain by using the XBRL standard. You can research this subject in your school library or online using your favorite search engine and the links provided for this exercise in the Online Companion.

Answer: Answers will vary, but some advantages that companies and financial analysts can obtain by using the XBRL standard include the following: the ability to share information easily with other organizations; costs saved by not having to develop a new standard; and community support of organizations using the same standard.

2. Frieda Bannister is the IT manager for the state of Iowa's Department of Transportation (DOT). She is interested in finding ways to reduce the costs of operating the DOT's vehicle repair facilities. These facilities purchase replacement parts and repair supplies for all of the state's cars, trucks,

construction machinery, and road maintenance equipment. Frieda has read about XML and thinks that it might help the DOT send orders to its many suppliers throughout the country more efficiently. Use the Online Companion links, the Web, and your library to conduct research on the use of XML in state, local, and federal government operations. Provide Frieda with a report of about 1000 words that includes sections that discuss what XML is and explain why XML shows promise for the ordering application Frieda envisions. Your report should also identify other DOT business processes or activities that might benefit from using XML. The report should also include a summary of the main disadvantages of using XML today for integrating business transactions. End the report with a brief summary of how the W3C Semantic Web project results might help the DOT operate more efficiently in the future.

Answer: Responses should include the following points:

- XML uses markup tags to describe the meaning or semantics of the text.
- XML records are embedded in HTML documents.
- With XML, tags can be created that identify all the record details for the ordering application that Frieda envisions.
- The extensibility of XML is also its weakness. Sharing data across organizations means that the organizations must use the same tag names. For example, Frieda's organization might create a tag called "PurchaseOrderNumber," and one of her suppliers might call the same item "OrderNum".
- The W3C Semantic Web will allow XML tags to be read by software agents, which will result in better, less-timely searching on the Web for information. This would allow the DOT to research pricing, availability, etc. of parts from suppliers.

3. **Bridgewater Engineering Company (BECO), a privately held machine shop, makes industrial-quality, heavy-duty machinery for assembly lines in other factories. It sells its presses, grinders, and milling equipment using a few inside salespeople and telephones. This traditional approach worked well during the company's start-up years, but BECO is getting a lot of competition from abroad. Because you worked for the company during the summers of your college years, BECO's president, Tom Dalton, knows you and realizes that you are Web savvy. He wants to form close relationships with the steel companies and small parts manufacturers that are BECO's suppliers so that he can tap into their ordering systems and request supplies when he needs them. Tom wants you to investigate how he can use the Internet to set up such electronic relationships. Use the Web and the links in the Online Companion to locate information about extranets and VPNs. Write a report that briefly describes how companies use extranets to link their systems with those of their suppliers, then write an evaluation of at least two companies (using information you have gathered in your Web searches) that could help develop an extranet that would work for Tom. Close the report with an overview of how BECO could use VPN technologies in this**

type of extranet. The three parts of your report should total about 700 words.

Answer: Responses can vary significantly in this exercise. Any recommendation for systems development should include the infrastructure required to support a supply-chain management extranet, as well as the costs and the anticipated benefits. The infrastructure for a private network requires a TCP/IP network, Web authoring software, and a firewall server. The benefits include lower communication costs, and more timely and accessible information, as well as convenient use.

4. **You are the assistant to Julie Davidson, the sales manager of Old Reliable Life Insurance Company. Julie is interested in equipping her sales force with the technology they need to sell Old Reliable's insurance products. Most of her salespeople visit customers in their homes or offices. Today, the salespeople carry a laptop computer to show value projections and cash flow summaries for various policies. Many of them also carry a PDA for appointments and a mobile phone. Julie would like to ensure that salespeople have access to the home office server computers while they are making their sales presentations to customers. This access will let salespeople download the latest product information and obtain online assistance from office staff and in-house experts when the salespeople get a question from a customer that they are not able to answer. A correct and quick answer to a customer's question can often help close a difficult sale. Julie asks you to investigate various options for giving salespeople wireless remote access to the home office server computers. She wants you to consider options that use the sales force members' laptop computers or that use their mobile phones or wireless PDAs. Prepare a report for Julie in which you briefly review at least three options, writing no more than two paragraphs for each option.**

   Then choose the best option and write a one-page evaluation of your choice's strengths and weaknesses. Use the Online Companion links and your favorite Web search engines to do your research.

Answer: Options to consider include:

iPass – Offers secure remote access products that let both Palm and Pocket PC-based PDAs connect wirelessly to corporate servers securely. iPass is the solution to choose if you have a mix of users who use both wireless and dialup accounts to reach the corporate server.

NetMotion Wireless – A wireless-only provider of secure remote data access services. NetMotion works just with Windows-based PDAs like Windows CE and Pocket PC, but its VPN-based secure data tunnel has a compelling advantage over other solutions like iPass.

Cases

Case 1: Covad

1.   Student responses will vary. Students should consider the fact that the Covad Wholesale Program allows partners to purchase Covad VoIP or broadband services on a wholesale basis and sell these services to their customers under their own brand names. Many of the nation's top Internet service providers and resellers rely on Covad to power their high-speed connectivity solutions. Partners benefit from Covad's streamlined provisioning and ordering systems, scalable, cost-efficient support infrastructure, and nationwide, facilities-based network.

2.   Answers may vary, but the main elements to Covad's success with direct access sales include:
    - Covad owned an extensive national network infrastructure before they started offering direct sales.
    - By selling directly to consumers Covad must invest in extra staff to offer the services the ISPs handled, but these costs could be offset by the significant increase in income by charging individuals for access and services.

3.   Covad's strengths compared to competing telephone and wireless companies include the ability to develop and offer novel, advanced services such as the "line-powered" VOIP telephone service, which helped to overcome the consumer's perceived limitations of VOIP service. Covad's weaknesses compared to competing telephone and wireless companies include its smaller size and limited investment in wireless services and infrastructure.

Case 2: Portable Fun Instruments

1. Features of each delivery system are in constant development. Students should use resources such as those listed below to investigate each content delivery system:

    DoCoMo: www.nttdocomo.com
    BREW: brew.qualcomm.com

2. Answers will vary based on system features found at the above sites at the time of research. Student may point out that BREW is used internationally, and so may be a good fit for PFI's global game development strategy. NTTDoCoMo however, only offers widespread service in certain countries in Asia and Europe.

3. Features of each delivery system are in constant development. BREW offers a software development kit that supports XML as well as Java and C/C++. The i-mode system used by DoCoMo networks is also compatible with XML, and in addition to hosting content from business developers such as PFI, even allows consumers to create Web sites that can be viewed using DoCoMo products.

SOUTH-WESTERN
CENGAGE Learning

4. Student responses will vary. They might include a general timetable, schedule of tasks, a brief explanation of how the applications would be coded in XML, and specific information on the portability of the XML applications to a variety of user devices.