*Technology in Action*

Chapter 8

mobile computing:  
keeping your data on hand

CHAPTER REVIEW

Buzz Words/Word Bank

|  |  |  |
| --- | --- | --- |
| Bluetooth | microbrowser | PDA |
| cell phone | MMS | processor speed |
| cradle | mobile computing devices | SMS |
| crib | MP3 player | stylus |
| flash memory card | notebook | synchronize |
| GPS | pager | tablet PC |

**Instructions:** Fill in the blanks using the words from the Word Bank.

Kathleen’s new job as a sales rep is going to mean a lot of travel. She knows she’ll need to buy one or more of the **(1) mobile computing devices** available today to stay productive when she’s out of the office. Because she needs voice communication and not just text exchange, she’ll be selecting a(n) **(2) cell phone** rather than a(n) **(3) pager**. With her cell phone, she’ll be able to exchange text messages with her coworkers using **(4) SMS**. When she accesses the Internet from her phone, she’ll use **(5) microbrowser** software to check the latest stock prices.

Because she travels a lot and loves music, she has been considering buying a digital **(6) MP3 player**. However, she has instead decided to purchase a more expensive **(7) PDA** that includes MP3 capabilities. That way, she can use the device as more than just an MP3 player. She also invests in a removable **(8) flash memory card** on which she’ll store her MP3 files. Because she’s a hiker, she wants to use her PDA as a navigation device, so she may buy a(n) **(9) GPS** accessory to go with it.

To make sure she is getting the best device with the most powerful processor, Kathleen has been comparing benchmarks that measure **(10) processor speed**. In addition, she wants to make sure she can **(11) synchronize** her PDA with her desktop computer, so that the files on both match. Thus, she bought a PDA that includes the wireless **(12) Bluetooth** technology, as well as an external **(13) cradle** that connects her PDA to her PC through a USB port. Because she still needs to run powerful software packages when she’s out of the office, she bought a(n) **(14) tablet PC** as well. It was a better choice than a full-sized **(15) notebook** because she carries it with her all day, taking notes while standing on the production floor.

**Self-Test**

**Instructions:** Answer the multiple choice and true/false questions below for more practice with key terms and concepts from this chapter.

**MULTIPLE CHOICE**

1. Mobile computing is a terrific help for:
   1. professions that require a lot of travel.
   2. work that requires intensive graphics.
   3. work that is heavily computational.
   4. All of the above

ANSWER: A

1. Currently, cell phones are designed without:
   1. a microprocessor.
   2. ROM.
   3. an operating system.
   4. a hard disk drive.

ANSWER: D

1. Cell phones use ROM:
   1. to store phone numbers.
   2. to store their operating system.
   3. Both a and b
   4. Cell phones have no ROM.

ANSWER: B

1. The number of songs that can be stored on a personal media player depends on:
   1. the file format of the song.
   2. the sampling rate used when the song was digitized.
   3. the amount of memory on the player.
   4. All of the above

ANSWER: D

1. Flash memory is:
   1. available at up to 1 GB per card.
   2. volatile and is erased when power is disconnected.
   3. used in PDAs, PMPs, and digital cameras.
   4. All of the above

ANSWER: C

1. The device that would be best suited to quiet note-taking during a meeting is:
   1. a PMP with attached voice recorder.
   2. a PDA with a keyboard.
   3. a tablet using a digital stylus.
   4. a notebook.

ANSWER: C

1. GPS stands for:
   1. general purpose scanner.
   2. global positioning system.
   3. greater place sensor.
   4. geo positioning system.

ANSWER: B

1. The Intel Pentium M processor is:
   1. used only in desktop computers.
   2. used commonly in mobile computing devices.
   3. used only in PDAs.
   4. used mainly in high-performance computers such as tablets.

ANSWER: B

1. Additional ports can be added to a notebook:
   1. using a PC card or an external hub.
   2. only if you have a FireWire port.
   3. only if you have the Windows XP operating system.
   4. if the battery is removable.

ANSWER: A

1. Portable devices that can provide Internet access include:
   1. tablets, notebooks, PDAs, and cell phones.
   2. iPods and cell phones.
   3. pagers and GPS units.
   4. any device with Bluetooth.

ANSWER: A

**TRUE/FALSE**

**False** 1. Hard disk drives are useful only in desktops, notebooks, and tablet PCs.

**True** 2. PMPs with a built-in hard drive generally are able to carry more songs than those with flash memory.

**True** 3. A Bluetooth-enabled PDA can wirelessly exchange data with a Bluetooth-enabled cell phone.

**True** 4. MMS is short for Multimedia Message Service.

**False** 5. Wireless Internet access covers the entire United States.

**Critical Thinking Questions**

**1. Mobile Devices and Society**

Do you think we will ever become a completely wireless society? Will there always be a need for some land lines (physical wired connections)? How will broadband wireless communication infrastructure impact a city’s social and economic development? Will there be more social interaction? Less? Will mobile computing promote increased understanding between people? More isolation?

*Although it is true that people will be having fewer “face-to-face” meetings, the level of interaction and connectivity between them will be substantial, promoting communication across states and countries. Telecommuters may miss direct contact with their colleagues, but webcam technology should reduce their feelings of isolation.*

**2. The Ultimate Mobile Devices**

As devices become lighter and smaller, we are seeing a combining of multiple functions into one device.

1. What would the ultimate convergent mobile device be for you? Is there a limit in weight, size, or complexity?
2. America Online Instant Messenger (AIM) service is now available on many cellular phone systems. Would the ability to be alerted to IM buddies on your cell phone be useful to you? What would you be willing to pay for this feature?

*Students have quickly become accustomed to having text messaging, e-mail, and the ability to send pictures and video over their cellular networks and would not be quick to give up these features.*

**3. Protecting Intellectual Property**

The recording industry, recording artists, the motion picture industry, and consumers find themselves in a complex discussion when the topic of peer-to-peer sharing systems is brought up.

1. What solution would you propose to safeguard the business interests of industry, the intellectual property rights of the musicians and actors, and the freedoms of consumers?
2. Have you ever downloaded music or video off the Web? If so, did you download from a legal site? Do you think illegal download sites should be allowed to exist?

*Many students feel that they have the right to “share” music files with their friends, and there should be no charge for doing so. Many will have downloaded music files both legally and illegally. This question will cause some interesting debate.*

**4. Privacy Concerns: Bats**

Consider the implications of the bat tracking device we discussed in the Trends in IT feature. Would you agree to be “tracked” at work if it meant a more convenient way to use communication tools? What sorts of privacy risks do such devices pose?

*Many students may not wish to be monitored that closely in the workplace. Many would consider it a sign of distrust, although having your files follow you around the network wirelessly would be a great benefit to workers.*

**5. Privacy Concerns: GPS**

Consider the following questions related to GPS security risks:

1. Your employer asks you to carry a GPS-enabled cell phone. The GPS chip inside allows a private service (**www.ulocate.com**) to gather information on your last location, the path you took to get there, and your average speed from point to point. What are the privacy issues this presents? Would you agree to take the phone?
2. Would you agree to insert a GPS-enabled tracking device into your pet? Your child? What legislation would be required if tracking data were available on you? Would you be willing to sell that information to marketing agencies? Should that data be available to the government if you were suspected of a crime?

*Many students do not wish to be monitored that closely by their workplaces. When technology limits one’s sense of freedom, it causes discomfort. As to the pet/child question, it is a huge topic for debate. Many may feel that it is OK to track the activities of criminals, but that innocent citizens should have a sense of freedom.*

**6. Wearable Computer Applications**

What applications can you think of for the wearable computer technology discussed in the Trends in IT feature? Do you currently own anything that you would consider a wearable computer? What sorts of wearable computers do you think you would be likely to purchase?

*Wearable devices that could monitor critical health issues, such as blood sugar levels or constriction of the bronchial tubes (for asthma patients), could prevent catastrophes. There are many potential and imaginative answers to this question, and students should enjoy discussing it.*

**7. Nanotechnology Applications**

The Trends in IT feature on nanotechnology describes a number of ways in which nano-sized computers may one day be used. What other applications for such powerful and tiny computers can you think of? Can you think of any security or privacy risks associated with such nano-sized computers?

*The possibility of theft of such devices is a major concern. Privacy could become a serious issue if someone could stand next to another person and monitor their health concerns, then store that information secretly. Similarly, it would seem to be very easy to implant such a computer in an unsuspecting person to monitor their activities or to install a nano-computer in a room for eavesdropping purposes.*

**Team Time**

**Assessing Mobile Computing Needs**

*This exercise gives students a chance to explore the practical applications of mobile devices in the workplace and assess the pros and cons of their various uses. The following rubric may be useful for grading purposes.*

| **Rubric** | **Beginning**  **1 point** | **Developing**  **2 points** | | **Proficient**  **3 points** | | **Exemplary**  **4 points** | **Score** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Individual Effort** | There was very little effort or understanding of the topic shown. | There was evidence of effort but it lacked in preparation and understanding. | | Clear learning on the topic has occurred. | | A sound understanding of the topic was exhibited with enthusiasm and creativity. |  |
| **Team Effort** | Team members did not function as a group when given the opportunity. There was only individual work with no evidence of collaboration. | Team members had some major problems working as a group. There was little collaboration and teamwork evident. | | The team members mostly worked well together, with few problems. There could have been improvement in the level of teamwork that was utilized. | | The team worked as a cohesive unit. There was mature collaboration, compromise, and discussion evident at all times. |  |
| **Final Product** | The final presentation had major factual, grammatical, spelling, and formatting errors. It seemed rushed and incomplete. | The final presentation had factual, grammatical, spelling, or formatting errors but was complete. | | The final presentation was a carefully developed product with few factual, grammatical, spelling, or formatting errors. | | The presentation was developed with care and creativity making it interesting, polished, and error-free. |  |
| **Instructor Feedback** | Little or no attempt was made to receive or incorporate feedback from the instructor. | Feedback was received, but none of the suggestions were incorporated into the presentation. | | Feedback was received and some suggestions were incorporated into the presentation. | | Feedback was received and the suggestions were incorporated into the presentation. |  |
| **Evaluation** | 0 points  No assessments were completed and handed in to the instructor. | | 1 point  One assessment was completed and handed in to the instructor. | | 2 points  All assessments were completed and handed in to the instructor. | |  |

**Multimedia**

**ACTIVE HELPDESK**

These exercises are designed to provide the student with an interactive experience that will help them to extend their knowledge of topics in this chapter. The student plays the “role” of a Helpdesk analyst and provides answers to *commonly* asked questions in a rich, simulated online experience. Helpdesk calls can be found on the Train and Assess IT Web site, through your online course, or on the Student CD. After successfully completing the Helpdesk call, students will be able to access the Helpdesk Cheat Sheet, which summarizes the key points in each call.

The Helpdesk calls related to this chapter are:

* Using MP3 Players
* Using PDAs

***Using MP3 Players Helpdesk Cheat Sheet***

*1. Types of MP3 Players. MP3 is a format for efficiently storing music as digital files. An MP3 player is a portable device that enables you to carry your MP3 files around with you. There are two types of MP3 players:*

***A. Players that store MP3 files on an internal hard drive***

***B. Players that store MP3 files on a Flash memory card***

***2. Flash Memory.*** *The number of songs an MP3 player can hold depends in part on how much storage space it has. Some MP3 players store their songs on Flash memory cards. By buying a Flash memory card with more memory, you can increase the number of songs you can fit on your MP3 player.*

***3. Sampling.*** *The sampling rate is the number of times per second music is measured and converted to a digital value. Sampling rates are measured in kilobits per second (Kbps). The higher the sampling rate, the better quality the sound, but the larger the file size.*

***4. Storing Nonmusical Data on MP3s.*** *Some MP3 manufacturers are redesigning their software and operating systems so you can transfer and store nonmusical data, such as calendars, contact databases, and image files, as well.*

***5. Sharing MP3 Files.*** *Some MP3 download sites (such as iTunes) allow you to share MP3 files with a select number of friends, provided they are on the same network as you are. Check the rules for sharing on the sites you download music from to make sure you are not violating copyright laws.*

***Using PDAs Helpdesk Cheat Sheet***

*1. Components of a PDA. A personal digital assistant (PDA) allows you to carry digital information in a small package. Like any other computer, a PDA includes a processor, an operating system, memory, input and output devices, and ports.*

***A. PDA Processors: There are several popular PDA processors on the market today.***

***B. PDA Operating Systems: The two main PDA OSs are Palm OS and Pocket PC.***

***C. PDA Input Devices:*** *All PDAs feature touch-sensitive screens that allow you to enter data with a stylus. Other PDAs include integrated or folding keyboards.*

***2. PDA Operating Systems****. Both the Palm OS and the Pocket PC have pros and cons. Which operating system is best depends on your personal needs.*

***A. Palm OS: Offers features most commonly used by PDA owners, such as a calendar and to-do list.***

***B. Pocket PC: Supports Microsoft Office applications but costs more.***

***3. PDA Processors.*** *When comparing PDA processors, keep in mind its processor speed and PDA performance reviews (called benchmarks).*

***A. Processor Speed: Measured in hertz (Hz)****. If you’re going to run demanding software on your PDA, getting a fast processor is important.*

***B. Benchmarking Reviews:*** *Measure overall system performance. PDA reviewers run the same task on competing PDAs and compare the time it takes to complete the task.*

***4. PDA Memory.*** *In PDAs, ROM is used to hold the OS plus basic programs the PDA runs. PDAs do not contain hard drives. For memory needs beyond the built-in RAM, PDAs use Flash memory.*

***5. PDAs and the Internet.*** *You need a wireless Internet service provider and software called a microbrowser to connect a PDA to the Internet.*

***6. PDA File Transfer and Synchronization.***

***A. File Transfer:*** *You can transfer data between a PDA and a desktop computer in a number of ways: through a flash card, through a cradle, and wirelessly.*

***B. Synchronization:*** *To synchronize your desktop and PDA, you place the PDA in its cradle and touch a “hot sync” button. This process updates both sets of files to the most current version.*