

Study Guide for Exam 1

I. Chapter 1: Why Computers Matter to You, Becoming Computer Literate

- a. Why Should You Become Computer Literate?
 - i. Computers are everywhere in our society
 1. Credit cards even interact with computers
 - ii. Being **computer literate** means that you are familiar enough with computers that you understand their capabilities and limitations, and you know how to use them
 1. Benefits:
 - a. Use computer more wisely and be a knowledgeable consumer
 - b. Computer literate employees are sought after in almost every vocation
 - c. Help you better take advantage of future technologies
- b. Becoming a Savvy Computer User and Consumer
 - i. Avoid hackers and viruses: these can threaten a computer's security
 - ii. Protecting your Privacy: identity theft prevention
 - iii. Understanding the real risks: Cookies, Firewalls
 - iv. Using the Internet and the Web Wisely: finding information vs. finding good information
 - v. Avoiding Online Annoyances: junk email, spam
 - vi. Being Able to maintain, upgrade, and troubleshoot your computer: diagnose and fix problems, how to integrate new projects
- c. Being Prepared for Your Career
 - i. **Information Technology** is a field of study focused on managing and processing information and the automatic retrieval of information.
 1. Includes computers, telecommunications, and software deployment
 2. The 7 fastest growing careers are all computer related
- d. Computers in Today's Careers
 - i. Retail: Working in a Data Mine
 1. Use **data mining** or the process of searching huge amounts of data with the hope of finding a pattern
 - a. Ex: usually study information gathered from register terminals to determine which products are selling on a given day and in a specific location

- b. Opens the door to more detail, can use this data to determine that if a certain product is to sell well, sometimes you must cut the price (especially if done at other stores, or recently had a price cut)
- c. Allows to respond to consumer buying patterns
- d. Data Mining can keep track of the purchases people are making, where they live, past buying purchases, and things they looked at, but didn't buy.

ii. Business: Data on the Go

1. UPS uses a sophisticated data base and a highly efficient package tracking system that follows the packages as they move around the world
 - a. Smart Label at packing, contains customer numbers but also the MaxiCode
 - i. MaxiCode is a specially designed, scannable sticker that resembles an ink blot and contains all the important information about the package.
 - ii. Devices with **Bluetooth technology**, a type of wireless communication, to transmit the scanned data through radio waves to terminal
 - iii. To track: use delivery acquisition devices that feature wireless networking capability, GPS positioning, infrared scanners, and an electronic pad to capture customer signatures, then made available to the customers.

iii. Art: Ink, Paints, and a Notebook?

1. Dancers can be attached to sensors that are connected to a computer that captures the dancer's movements
 - a. The computer operator can easily manipulate the dancer, change her costume for instance.
 - b. Photoshop, Illustrator, Corel Painter
 - c. Digital Art that is drawn through computers and cameras that track your movement, making the picture different each time it is viewed.

iv. Video Game Design: A long Way from PacMan

1. Computer gaming topped \$21 billion in revenue in 2008 and is expected to go up
2. Computer games are best designed for a local market, making it seem better because then it won't be offshored (sent to other countries) like most other computer programming jobs.

- v. Education: Teaching and Learning
 - 1. Many colleges require students to have their own computers, BlackBoard, Moodle
 - 2. Internet has advantages in the classroom, research tool, simulations, instructional software, interactive.
 - 3. Museums have virtual tours on their websites
 - a. You can download the audio tours to your iPod through wifi
- vi. Law Enforcement: Put down that Mouse You're Under Arrest
 - 1. Computers are in police cars and crime labs and are used to solve an increasing number of crimes
 - 2. Facial Reconstruction programs can turn a skull into a face, helping figure out who the person is
 - 3. Use Law enforcement databases to link crimes together and find similarities
 - 4. May be able to use wireless networking to look at criminal's emails and chats
 - 5. **Computer forensics** is a specialty that analyzes computer systems with specific techniques to gather potential legal evidence
 - 6. FBI and TSA use computer based training to recognize lies and evasive behavior, studying microexpressions (the brief 1/25th of a second) flashes of emotion, reveal truth behind lies
- vii. Military Careers
 - 1. ASVAB is required to enter, need internet and electronics to study for the exam, libraries with example ASVAB tests
 - 2. Air Force uses unmanned aerial vehicles called UAV's or drones to perform surveillance operations and to deliver missiles.
- viii. Agriculture: High-Tech Down on the Farm
 - 1. Must look out for diseases and such in their cows and animals
 - a. They can be managed and minimized with **radio frequency identification tags** that are small versions of the roadway electronic toll systems used in many states to collect tolls automatically as drivers pass, these look like little buttons attached to the cows ear and record the cows locations.
 - i. If that cow gets sick, it can track back where that cow was and what other ones ate it too and can prevent problems.
- ix. Automotive Technology: Sensors and CPU's