

Assignment Questions

1. Bar Codes vs. RFID

You work in the Efficiency Analysis department of one of the largest retail companies in the world, with multiple stores in every state and many other countries. For the past 25 years, the company has used bar code readers at checkout counters that scan the bar code on products to determine from a database the price to charge customers. The company is considering replacing the bar code readers with radio frequency identification, RFID. The reader receives the code identifying the product via a chip with an antenna that is part of the box or label on the outside of the product. Analyze and discuss the impact such a change would have on the company, its suppliers, and its customers. Present your findings to the class.

2. Carpal Tunnel Syndrome

While attending college part-time for the past two years, you have worked as a data entry clerk. Recently, you began to feel an unusual pain in your right wrist. Your doctor diagnosed the problem as carpal tunnel syndrome, which is most well-known of a series of musculoskeletal disorders that fall under the umbrella of repetitive strain injuries (RSIs). Your doctor made several recommendations to relieve the pain, one of which was to find a new job. Before you begin job hunting, however, you want to learn more about this debilitating injury. Use the Web and/or print media to investigate carpal tunnel syndrome. Prepare a presentation to include information about carpal tunnel syndrome warning signs, risk factors, suggestions about proper workstation ergonomics, and procedures for healing the injury.

3. Increase Storage Capacity

Many computer users feel that they can never have too much storage. Your manager at MJ Bank where you are employed as an analyst, however, would prefer other options to buying more hardware to meet the bank's storage needs. She wants you to investigate alternative ways to increase storage capacity. Use the Web and/or print media to learn more about hard disk partitions and data compression as a means of increasing storage capacity. Evaluate the differences among various data compression algorithms. Prepare a presentation that shows how partitions and compression increase the capacity of hard disks. Include the following in your presentation: What kind of data compression is most suitable for storage devices? What are the most well known data compression algorithms? How can compression ratios of different algorithms be compared? What are some formats for data compression archives?

4. Transmission Media

You work as an intern in the IT department for a local newspaper. Your manager has been asked to recommend the type of transmission media (wired or wireless) to use for the newspaper's local area network. He has asked you to prepare a presentation that summarizes the advantages of wired versus wireless transmission media for the building. He also requested that you include the following information in your presentation: Which transmission media would have a greater startup cost? Which transmission media do you think is the most secure? Do the walls in the building present a problem for a wireless network? Does a wireless network present any health hazards?

5. Ensuring Safety and Security Online

You work in an IT department for a large enterprise. You notice that an increasing number of users are contacting the help desk complaining of slow computer performance. When a help desk representative troubleshoots the problem, he or she nearly always attributes the decreased performance to malware that is installed on the computer. Although security software is installed on each computer, users also must do their part in making sure that their computers do not become compromised. Technical support is spending too much time and money troubleshooting and cleaning these computers. As a result, they have asked you to prepare a presentation for employees that will teach them how to guard against malware and other security threats. This presentation should include information such as which Web sites are safe and unsafe, whether it is okay to download programs from the Internet and install them, and how users can protect their computers when they are away from their desks.