Name:

Information Assurance: Homework 8

Due November 28, 2007.

1. YoYoDyne has created a great new program that analyzes key aspects of the environment, your history, your genetics, and your mental state to predict the future which greater than random probability. They have copyrighted the current version of the program. Which of the following scenarios are legal? Why or why not?
    a. You install the program and then make a back up of your system.
    b. You make a backup of the install media and put the original in a safe place.
    c. You post the install media on your web server so your friends can try it out.
    d. You tire of the program, so you uninstall your version and give a copy of the install media to your little brother.
    e. You tire of the program, so you uninstall your version and sell the install media to your neighbor.
    f. You write a web program wrapper that takes questions from a web page, feeds the questions to the YoYoDyne program, and creates a new web page with the answers.
    g. You figure out their prediction algorithm, and you write your own version of their program.

2. Consider the case of searching for electronic information.
    a. What is the main federal law that covers domestic electronic search?

    In each of the following cases, determine whether the search is legal and why or whether additional actions must be undertaken to make the search legal.
    b. Denise sits a coffee shop with an open wireless network and sets up her computer to gather all packets.
    c. Eric, the owner of the coffee shop, notices that his wireless network is not behaving well, so he sets up his computer to gather all packets to diagnose the problem.
    d. The FBI gathers information about what other entities Martin is communicating with from his home computer.
    e. The FBI gathers information about what other entities Martin is communicating with from all computers Martin uses on a daily basis.
    f. The FBI copies all conversations Martin has over his home computer with other entities.
    g. Nelson works for Oscar. Oscar thinks that Nelson is moonlighting for a competitor and passing them company secret information. Monitors all of Nelson's company email.

3. Consider the example in the book where two airline agents are attempting to reserve one of two blocks of three contiguous seats for their respective clients. The reservation program is operating on a table with the attributes “Passenger-name” and

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"Seat-number". Both agents are attempting to update the rows with "Seat-number" equal 11D, 11E, and 11F. Using ACID transactions and a two-phase commit, the database should ensure that one reservation will complete and the other one will not. Sketch out how the database manager could log and store data to ensure that this is the case.

4. In general, returning information about groups in a database does not impact privacy (e.g., how many students at UIUC are receiving financial aid or what is the average value of a financial aid package or how many students live in a particular dorm). However, of the sample set is too small or if results of multiple queries can be linked, one can deduce information about individuals from these group queries. One approach suggested to ensure privacy is to reject (return no result) if the result is computed from a too small set. Consider the student database discussed in the text. It has attributes of "Student-name", "Dorm", "Financial-aid-amount", "Gender", and it will refuse to return a result if it was computed over four or fewer entries. Show how you can still make multiple queries to return information about the sensitive "Financial-aid" attribute.

5. Consider again the student database with attributes "Student-name", "Netid", "Major", "Dorm", "Grade", "Gender", "Amount-Due", "GPA", "Financial-aid-amount".
    a. The University has determined that any individual should be able to access, "Student-name", "Dorm", and "Major". Write the view definition that enables this access.
    b. A student should be able to access this all information about himself. Write the view definition that enables this access.