CH 5

**• What is Data Mining? Give two real examples that illustrate the use of data mining by a private entity or the government that may cause privacy concerns.**

Data Mining is the process of searching through many records in one or more databases looking for patterns or relationships. Data Mining collects some sensitive information about their users like credit card info, date of birth, purchasing info, and much more. Netflix tried to anonymize their database records for a contest but with little information given out participants demonstrated they could identify their database and revealing potentially sensitive information. AOL also tried to anonymize their dataset with a random integer identifier. However researchers who studied the dataset determined almost immediately that examining a set of queries with the same integer identifier often provided enough information to identify the user.

**• Explain the difference between an ‘opt-in’ policy and an ‘opt-out’ policy. Who benefits and who is harmed by each of these policies?**

Opt-in policies are policies where the user needs to provide the company with permission to send them emails or ads or other items. Opt-out policies are placed on the user to discontinue their service usually by unsubscribing or contacting through email or by phone. In both, the Companies benefit from each of these policies.

**• Discuss the issues of privacy associated with 2 of the following:**

**o RFID tags**

RFID’s are not turned off after product purchase and can be used to track your movements.

**o Cookies and Flash cookies**

Flash cookies carry 25 times more information than a browser cookie. Flash cookies are not controlled by browser privacy settings. If you try to delete a flash cookie it can be respawned by another regular cookie.

CH 6

**• What are the four categories in Daniel Solove’s taxonomy of privacy? For each one, give an example of a government activity in that category.**

**1. Information collection**

Census records, government collects data of its people such as age, gender, wages, cars, house size… etc…

**2. Information processing**

IRS, Collects your information on your wages and deductions and deteremins if you have to pay additional taxes or if a refund is necessary.

**3. Information dissemination**

FERPA allows students 18 of age or older to review or request to make changes to their records as well as have them kept private unless specified.

**4. Invasion**

Loud television commercials are now stopped under the CALM act where every commercial must play at the same volume as the program.

**• Choose one of the following pieces of federal legislation and explain how it limits the amount of information private entities can collect from individuals:**

**o Employee Polygraph Protection Act**

This act prevents most private employers from using lie detector tests under most situations.

**• Choose one of the following pieces of legislation and explain how it restricts the dissemination of personal information that organizations have collected.**

**o Video Privacy Protection Act**

Prevents any online or local video providers from disclosing any rental record without written consent from the customer. They must also destroy personally identifiable information about rentals within a year of the date when this information is no longer needed for the purpose of which it was collected.

**• What are the five tenets of the Code of Fair Information Practices? To what information does the code refer?**

**1.)** There must be no personal data record-keeping systems whose very existence is secret.

**2.)** There must be a way for a person to find out what information is in a record and how it is used.

**3.)** There must be a way for the person to prevent information from becoming public.

**4.)** There must be a way for a person to correct their info.

**5.)** Organizations must assure the reliability of the data for their intended use.

**CH 7**

**• What is malware? Briefly describe four different kinds of malware.**

Malicious software. Viruses are self-replicating code embedded within another program. Worms are self-containded programs that spread through a computer network. Trojans are programs with a benign capability that conceals a sinister purpose. Rootkits are a set of programs that provide privileged access to the computer.

**• List four hacker activities criminalized by the Computer Fraud and Abuse Act.**

Computer Fraud, Computer Extortion, Transmitting classified government information, Transmitting code that causes damage to a computer system.

**• What is a cyber attack? List and briefly describe two different types of cyber attacks.**

Cyber attacks are attempts are retrieving sensitive information from secure or insecure databases. Cyber attacks are also attempts at forcefully taking down a website or service by DDOSing them. DDOS or Distributed Denial of Service attacks are done by using thousands of computers to request a website or service. With enough attempts at once the service will crash. Phishing is a large scale attack to gain sensitive information from gullible computer users by pretending to be the site they wanted to visit. The user types in their username and password or credit card information and now the phishing website now has your sensitive information.

**• What is a ‘hacktivist’? Give two examples of hacktivist activity.**

A hacktivist is a computer hacker whose activity is aimed at promoting a social or political cause.

Anonymous DDoS’s the churce of Scientology after they took down a video interview of Tom Cruise.

Anonymous DDoS’s the RIAA and MPAA after they had contracted Aiplex to launch DDoS attacks on BitTorrent sites including the Pirate Bay.

**• List at least three benefits and three risks associated with online voting.**

Benefits:

Votes counted quicker

Elections online would cost less

No ambiguity

Risks:

No possible way to recount

Increase in opportunities for vote solicitation and vote selling

Obvious targets of DDoS attacks

**CH 8**

**• For each of the following kinds of errors, define the error type and give an actual occurrence of an error of that type: data-entry error, data-retrieval error, software bug.**

Data-entry errors are caused from incorrect records. In the November 2000 general election, Florida disqualified thousands of voters because prelection screening falsely identified them as felons. This error may have affected the outcome of the presidential election. Data-retrieval errors are from people misinterpreting the correct data as something or someone else. Sheila Jackson Stossier was arrested in New Orleans by police who confused her for Shirley Jackson who was wanted in Texas. A Software bug can be caused my bad coding algorithms that misuse the users’ information. Qwest’s billing software caused it to charge its customers as much as $600 per minute for the use of their cell phones.

**• Explain three ways computer simulations are validated.**

1.) compare the simulation with real world results. (Car crash simulation vs real car crash)

2.) Use data from the past and see if simulation can predict the outcome

3.) predicting the nearby future and compare with results when the day comes.

**• Explain the mistakes that led to two of the following incidents:**

**o Failure of the Patriot missile system**

The tracking system relied on the system clock which used a floating point variable with insufficient precision and truncated the time. After adding the truncated values for an extended period of time the result was already half a mile behind its target.

**o Failure of the AT&T long-distance network**

If a switch were to crash it would redirect traffic to every other switch and when it would restart it would send out an OK to those same nodes. Because of redirected traffic and OK messages, other switches would crash and redirect and spout an OK to every node and so on.

**CH 9**

**• In what ways are computer-related jobs similar to fully developed professions? How are computer-related careers different from a fully developed profession?**

Similar: We have the ability to harm the public.

Different: Computer related jobs do not require certifications or degrees.

**• Using the alternate list of fundamental principles for the ‘Software Engineering Code of Ethics”, analyze the pros and cons of the following scenario:**

**You are the manager of a software development group within a large corporation. Your group would be more productive if their PCs were upgraded, but there is no money left in your annual budget. Because of employee turnover, you do have plenty of money left in your personnel budget. Corporate rules do not allow you to spend personnel funds on equipment. Overspending your equipment budget would cause a negative performance review. Money left in a budget at the end of the year cannot be carried over to the next. Any leftover funds are lost to your group. The manager of another group has the opposite problem. There is plenty of money left in her equipment budget but is in danger of exceeding her personnel budget unless she does something. She offers to buy $50,000 of equipment for your group if you will pick up some of the personnel expenses of her group.**

**Pros:** Treat others justly; Everyone deserves fair wage and credit for work performed. They deserve upgraded PC’s to perform the task faster and more efficient.

**Cons:** Disclose information that others ought to know. They are manipulating the budget numbers just so they can deceive their bosses and obtain positive performance reviews in exchange for new PC’s.

**• What is a whistle-blower? What harms does it cause? What benefits does it provide? Why is it rare?**

Someone who breaks ranks with an organization in order to make an unauthorized disclosure of information about a harmful situation after attempts to report the concerns through authorized organizational channels have been ignored or rebuffed. They harm their company by generating bad publicity, disrupt the social fabric of an organization, and make it more difficult for everyone to work as part of a team. It alarms the public of potential harm. Whistle blowers are treated harshly and unfairly so that it discourages the behavior.

**CH 10**

**• What is “the digital divide”? Describe the two fundamentally different dimensions of the digital divide.**

The digital divide is the separation of wealth communities and their quickness at purchasing new technology. Global divide is how third world countries don’t have access to the internet and similar technologies as 1st world countries do. Social Divide is the divide between age groups and their quickness at adapting of new tech.

**• What are the two models of technological diffusion? How do they differ.**

The Normalization model is that eventually everyone will adapt to the new technology. The Stratification model is the eventual adoption rate of technology is lower for less advantaged groups.

**• What is globalization? Provide two arguments for globalization and two arguments against globalization.**

Globalization is the process of creating a worldwide network of businesses and markets.

1.) Free trade can increase everyones standard of living.

2.) People in poorer countries deserve jobs too.

1.) outsourcing jobs

2.) exploitation of 3rd world countries

**• What is net neutrality? Give two arguments for maintaining net neutrality and two arguments against maintaining net neutrality.**

Net neutrality is legislation that would require ISP’s to treat all packets as the same.

FOR:

1.) ISP’s wont be able to silence websites who don’t fit their political agenda

2.) ISP’s wont be able to throttle connections to websites that compete with their own.

AGAINST:

1.) ISP’s say that they need to have a tiered service to provide VOIP.

2.) It can benefit the consumer where they can pay more for faster data retrieval.

**• What is a ‘winner take all society’? Discuss at least three harms caused by this kind of society.**

**Combination of chapters**

1.) increases wage gap between the rich and poor

2.) creates wastefull investment and consumption

3.) Not fair because it favors the top performers and does nothing for the ones who performed just below them.

**• Discuss the impact of smart phones with respect to privacy, security, computer crime, and globalization.**