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CSC 301 Computers and Society
Cal State University Dominguez Hills
Midterm Exam Oct. 31, 2016
Prof. Rosenthal

Each question is worth 8 points. There is also an extra credit worth 5 points at the end. You can write your answers with a list of points (where applicable) or in paragraphs.

1. Describe two of Kant's major ideas about ethics.
 - a. Universality – The behavior must be applicable to everyone**
 - b. Logic/Reason can be used to determine if an action is ethical – Use reason, rationality and judgment rather than emotions when determining what is ethical.**
 - c. Ethical rules are absolute – it is never okay to lie**
 - d. One must never treat people as a means to an end, but rather as the ends themselves.**
 - e. It is the motive for the act itself, not the consequence that matters**

2. Explain the difference between act and rule utilitarianism giving an example of each.
 - a. Act utilitarianism judges each action by its net total impact and will only perform the act if the aggregate utility is positive – Each lie is considered on its individual merit**
 - b. Rule utilitarianism applies the same considerations but to general ethical rules as opposed to individual rules – Lying is considered in general, although it would support lying in individual cases where the good might outweigh the bad (i.e. Misleading the enemy in wartime)**

3. Briefly describe the difference between negative and positive rights (liberties and claim rights). Give an example of a negative right and a positive right.

Negative Rights

 - a. Rights without interference**
 - b. Others can't overrule or interfere with these rights**
 - c. Life, property, speech, religion, etc. are such rights**
 - 1) Embodied in much of the Bill of Rights**
 - 2) Often denied in authoritarian states**

Example – you can choose where you want to work

Positive Rights

 - a. Claimed or created**
 - b. Impose an obligation from one group to another**
 - 1) Imposing a requirement on one person or group to hire another person**
 - 2) Social justice is based on the premise that claim rights are legitimate and even ethically required**

Examples including paying for someone else's health care or food

4. Describe the "Veil of Ignorance" and at least two outcomes that John Rawls saw if it was used. Give two examples of what people are ignorant of in this definition.

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Rawls maintain that people in the original position would choose the following special conception of justice:

- a. Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.**
- b. Social and economic inequalities are to be arranged so that they are to the greatest benefit of the least advantaged and are attached to offices and positions open to all under conditions of fair equality of opportunity.**
- c. There will be equal opportunity for everyone to climb the economic and/or social ladder and that any social or economic inequalities that are allowed must be arranged so that they improve the access to Primary Goods for the Least Advantaged.**
- d. He believed that if no one knew his or her position or circumstance that they would look to ensure the greatest level of equality and Social Justice.**

Rawls states that the veil of ignorance provides a way for you to make ethical decisions without knowing your own position in society, ensuring that should make you unaware of the following when making ethical choices:

- a. Race**
 - b. Age**
 - c. Sex**
 - d. Economic Circumstances**
 - e. Education**
 - f. Other talents**
5. Briefly describe what an "opt-in" policy is and an "opt-out" policy is. Let's say you were filling out a survey for an online magazine. Give an example of what you'd see that would distinguish an opt-in from an opt-out policy.

Opt-in procedures require that you affirmatively agree to the reuse of personal information for reasons specified as a part of the agreement. Opt-in procedures often include inducements such as access to information as a part of the agreement. Opt-in procedures are supposed to provide you with enough information to ensure informed consent. Essentially you check one or more boxes indicating the permissions you are giving.

Opt-out procedures require that you ask to be removed from a list, or that your information not be used in a particular way. You are presumed to have agreed to a release of information unless you check a box or click on a link to remove you from a list or service.

With an opt-in procedure you will be given a number of boxes to check indicating your agreement to share your information with different groups. In other words you will say yes.

With an opt-out procedure you will presumed to agree to have your information distributed unless you explicitly say no.

6. What does the term re-identification mean? Give one example.

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Re-identification is the process of identifying individuals using anonymous data. Your search history could identify who you are. Working backwards from the metadata to identify an individual is often possible with enough computing power and data. Reporters often use anonymous data as they work towards identifying individuals.

7. Describe and compare the difference between the Query Driven and Update Driven approaches to data mining.

Query Driven:

This is the traditional approach to integrate heterogeneous databases.

- a. Builds wrappers and integrators on top of multiple heterogeneous databases. These integrators are also known as mediators.**
- b. When a query is issued to a client side, a metadata dictionary translates the query into one or more queries, appropriate for the individual heterogeneous site involved.**
- c. Now these queries are mapped and sent to the local query processor.**
- d. The results from heterogeneous sites are integrated into a global answer set.**
- e. Advantages**
 - 1) Data is not permanently replicated and stored reducing possibility of future alternative or illegal uses**
- f. Disadvantages**
 - 1) The Query Driven Approach needs complex integration and filtering processes.**
 - 2) It is very inefficient and very expensive for frequent queries.**
 - 3) This approach is expensive for queries that require aggregations (constant regrouping) of data**

Update-driven approach

- a. In the update-driven approach, the information from multiple heterogeneous sources is integrated in advance and stored in a warehouse.**
- b. This includes data scrubbing – the process of validating data for correctness in advance**
 - 1) This information is available for direct querying and analysis.**
- c. Advantages**
 - 1) This approach provides high performance.**
 - 2) The data can be copied, processed, integrated, annotated, summarized and restructured in the semantic data store in advance.**
 - a) In other words, we store data in the way(s) we want to look at it**
 - 3) Much less intrusive and resource intensive to pull the data once, rather than whenever you want to query**
- d. Disadvantages**
 - 1) Data is now permanently in the hands of the government**

The whole debate on the Patriot Act centered on whether or not the government could continuously collect and store metadata from the ISPs and cell/land-line

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phone providers -A political/privacy argument conflicted with a technical argument

8. List four different United States government agencies that collect information about citizens
 - a. **Social Security – and the SSN has become a de facto ID for many purposes**
 - b. **The IRS (which uses the SSN)**
 - c. **The DMV – for a while the SSN was displayed on your license or ID in many states**
 - 1) **Your license is now part of the Real ID program and is the minimum needed to get onto a plane (in lieu of a passport)**
 - d. **The Transportation Safety Administration (TSA) which keeps track of all your airplane travels, and is ready to greet you when you return from abroad**
 - e. **The Census Bureau – although this is supposed to be anonymous**
 - f. **Your school or university – many use your SSN as your ID**
 - g. **Medical records are often collected and shared with the government**
 - h. **Social Welfare agencies**
 - i. **Police, the FBI, other law enforcement agencies**

9. List and describe two provisions of the Patriot Act of 2001.
 - a. **Title I: Enhancing domestic security against terrorism**
 - 1) **Section 102 expresses the Sense of Congress condemning discrimination against Arab and Muslim Americans.**
 - b. **Title II: Enhanced surveillance procedures**
 - 1) **Includes enhanced wiretapping under court supervision**
 - 2) **Allows law enforcement to seize voice mail messages.**
 - 3) **Allows law enforcement to subpoena additional subscriber records from service providers such as “records of sessions and durations” and “means and source of payment.”**
 - 4) **Allows information to be gathered prior to collection of a warrant in time critical situations**
 - c. **Title III: Anti-money-laundering to prevent terrorism**
 - d. **Title IV: Border security**
 - e. **Title V: Removing obstacles to investigating terrorism**
 - 1) **Authorizes the Attorney General to make funds available for the payment of rewards for assistance in combating terrorism.**
 - 2) **Includes payments to an individual who furnishes information leading to the prevention of terrorism or the identity of someone “who holds a key leadership position in a terrorist organization” in the State Department’s rewards program.**
 - 3) **Authorizes federal officers who conduct electronic surveillance or physical searches to acquire foreign intelligence information, to consult with other Federal law enforcement officers to coordinate efforts to protect against terrorist attacks or clandestine intelligence activities by a foreign power or its agent.**
 - 4) **Allows law enforcement easier access to telephone toll and transactional records, financial records, and consumer reports.**
 - f. **Title VI: Victims and families of victims of terrorism**

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- g. Title VII: Increased information sharing for critical infrastructure protection**
 - 1) Greater cooperation between FBI, NSA, CIA, Immigration, State Law Enforcement, etc.**
- h. Title VIII: Terrorism criminal law**
- i. Title IX: Improved intelligence**
 - 1) Again the emphasis was on coordination amongst agencies**
- j. Title X: Miscellaneous**

Modified in 2015 to restrict bulk collection of phone records

- a. This could hurt data mining efficiency and ability to track terrorist activities – proponents believe it is a necessary control on excessive government power**

10. Describe and compare the differences between Brandeis and Thomson with respect to privacy rights.

- a. Brandeis – The Right To Privacy (1890)**
 - 1) Privacy is a distinct right requiring its own laws and protections**
 - 2) Distinct from libel, slander etc., personal data deserves its own protections**
 - 3) Ahead of its time in foreseeing these problems**
- b. Thomson - The Right To Privacy (1975)**
 - 1) Privacy is not a separate right but derives from other rights, in particular property rights**
 - 2) You can waive property right to privacy either directly or inadvertently, but it is a property right**
 - a) Reading a magazine in public waives the right**
 - b) Spying on someone is a violation of the right**

11. Describe two methods that parents can use to restrict access to inappropriate material on the Web.

- a. Set appropriate filtering controls on the router**
- b. Use filtering software to define sites that can be accessed**
- c. Set parental controls on the child's log on account controlling which programs can be accessed**
- d. Educate the child on proper use of the Internet**

12. What is meant by net neutrality? List one argument in favor of and one argument against net neutrality.

Net neutrality determines:

- a. How do telephone and cable companies interact with the broadband customers**
- b. How do they set charges for services**
- c. If they can charge premium fees for higher rates of access to some services**

Pros:

- a. Network neutrality avoids ISPs charging online services such as Xbox Live, PlayStation Plus, Skype, and Netflix for "fast lanes".**

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- 1) These extra costs for "fast lanes" are problematic because they can make the services more expensive for internet users and also may prevent small companies from obtaining the capacity to compete with the big companies who have the budget to reach agreements with ISPs
- 2) Interestingly many companies that are not telecommunications providers, including Amazon, Netflix and Google, amongst others argue for net-neutrality
 - a) They worry about telecommunications providers that are also content providers skewing the net in their favor
- b. Net neutrality avoids discrimination among users ensuring similar access to information for people of different socio-economic status.
 - 1) Telecoms that are also content providers can bias networks in their favor
 - 2) Without neutrality, high-speed Internet for entertainment could be prioritized over education.
 - 3) ISPs could change premium fees ("pay-to-play") to enjoy special access to public libraries, benefiting the richest people.
- c. Network neutrality helps to promote freedom of choice, as ISPs cannot obstruct or incentivize particular contents or sites over others
- d. Anti-blocking and anti-discrimination rules prevent the capacity of ISPs to arbitrary decide to limit access or promote some type of content.
 - 1) The role of ISPs is to only "transport" data to the users that have paid for delivery, and therefore they should not shape content consumption patterns.
- e. Net neutrality promotes a level playing field for competing companies.
- f. There is not enough competition available in the network provider industry to avoid the temptations and abuses of near monopolies

Cons

- a. Regulation imposing net neutrality would limit new business ideas and concepts and could be considered against free market rules.
- b. Sponsored content and "pay-to-play" schemes may go against the net neutrality spirit, but they can help companies improve the overall service they offer.
 - 1) Heavier Internet users may be charged more.
 - a) On-line heavy use game players can absorb tremendous amounts of bandwidth – is that really neutral
 - 2) With that extra money ISPs could increase the bandwidth for all Internet users.
- c. Thanks to sponsorships some mobile telecom operators may offer free Internet Access to some contents.
 - 1) This may enable those who don't have data contracts on their smartphones to surf some areas in the Internet for free.
 - 2) Similarly, it would reduce the consumption of other users' data allotments.
- d. Regulation for net neutrality may limit the tools of governments and ISPs to fight against online "piracy".
 - 1) Material infringing copyright laws will be easily shared using P2P software. ISPs or governments won't be able to block or filter these contents, if net neutrality is fully respected.

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- 2) **Net neutrality rules make more difficult to monitor and control controversial adult content.**
 - e. **Some defenders of net neutrality question government intervention. For them it should emerge organically or naturally but not imposed through laws.**
 - 1) **What harm is there in the current system requiring new regulations?**
 - 2) **Are we creating new claim right?**
13. List two ways that repressive regimes can control the Internet.
- a. **They can monitor all communications**
 - b. **They can filter out information it doesn't want distributed**
 - 1) **This can include news, religious information, political or economic information, government malfeasance, disaster information including type, results and government actions, etc.**
 - 2) **Restrict social networking, searches, or other types of collaborative activities**
 - c. **They can retaliate based on e-mails or other postings**
 - d. **Goal is to suppress dissidents and foreign ideas**

Extra Credit. Give a definition of what ethics is. (5 extra points). Must be explicit to earn extra credit.

- a. **Dictionary Definition**
 - 1) **The branch of philosophy that deals with morality. Ethics is concerned with distinguishing between good and evil in the world, between right and wrong human actions, and between virtuous and non-virtuous characteristics of people.**
- b. **Base Definition**
 - 1) **What does it mean to do the right thing, given that people are rational and free to make choices**