Programming Structures and Abstractions (CS 2334)
Lab 9 Notes

December 5, 2010

Due: during the lab session.

Objectives

By the end of this laboratory exercise, you should be able to:

1. read and analyze ethical principles from a range of sources, and

2. apply ethical principles to specific scenarios.

Problem Context

For this lab, you may find the following resources of use:

- Your ethics book and the ethics reading posted on D2L

- The US constitution: http://www.usconstitution.net/const.html

- The Declaration of Independence:
  http://www.earlyamerica.com/earlyamerica/freedom/doi/text.html

- The ACM code of ethics: http://www.acm.org/about/code-of-ethics

- The net in general

Case 1: Web Site Accessibility

Name(s):

In the court cases Access Now, Inc. versus Southwest Airlines (2002) and National Federation of the Blind versus Target Corporation (2006), it was argued that blind customers could not make effective use of the companies' web sites. Furthermore, it was asserted that the *1990 Americans With Disabilities Act* compels these companies to alter their websites to make them more accessible to this population.

Briefly describe the ethical theories/principles that could be brought to bear to argue in favor of or against this assertion. Is this assertion invoking a positive or a negative right?

For discussion:

1. *Kant: "Treat people as ends in themselves"*

2. *Utilitarianism: "increase happiness/utility". When we look at aggregate utility (customer versus company), one can argue that there are limits to how far a company must go to serve the customer*

3. *Declaration of independence: "... all men ... are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness"*

4. *ACM code of ethics: "Be fair and take action not to discriminate"*

5. *ACM code of ethics: "Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work."*

This is a positive right, as the assertion compels a company to action.

Make a brief argument for where the "line" should be: which types of commercial services/information should be compelled to be accessible to this population? Does the line change if it is the company making the decision?

For discussion:

1. *This is an incredibly hard line to draw. Possible tests include: how universal is the service (do many people require use of the service in their regular activities)? Does this population make substantial use of the service? Are there (good) alternative means of accessing this information?*

2. *The line for a specific company likely changes because the population using their services is probably different than that covered by the law.*

Suppose the web site of the *State Elections Board* (a state government organization) were in question. Should this organization be compelled to serve this population?

For discussion:

1. *I would argue that because information provided by this agency is vital to the proper functioning of our democracy and government, that this agency should take extraordinary measures to serve this population.*

Suppose the population in question spoke only Cherokee. Should the State Elections Board be compelled to serve this population? What about Basque? Spanish?

For discussion:

1. *Wikipedia and Cherokee.org: The Cherokee Nation is a federally recognized tribe and constitutes approximately 5% of the population of Oklahoma. (incidentally, the Cherokee Nation itself has a 180 years of experience with a democratic-style government)*

2. *The population of Basque-only speakers in Oklahoma is likely to be extremely small.*

3. *Wikipedia estimates that 5.4%-9.9% of the population of Oklahoma speaks Spanish in the home.*

4. *Oklahoma voters last month approved a constitutional amendment declaring that English is the official language of the state. This restricts state services to be provided in English only (though Native American languages are also allowed).*

Case 2: Microsoft Kinect

Name(s):

With much fanfare, Microsoft released its *Kinect* product last month and has sold 2.5 million units to date (and expects to reach 5 million by the end of the holiday season). This device includes a visible light camera (normal images) and a structured-light 2 1/2 D camera (it uses an infrared laser to project a grid into your living room in order to infer how far away something is at the resolution of the image pixels). The latter camera system enables the Kinect to infer where people are in the room and to identify where their head, arms and legs are (and how they are moving). The visible light camera can be used to recognize individual faces (and their emotional states), to count the number of people in the room, and to even make inferences about the types and styles of clothing that are worn by those in the room. All of this information is combined in various ways to produce a novel gaming interface for Microsoft's XBox that does not require the use of physical joysticks or other game controllers. Furthermore, the gaming system is connected to the Internet, allowing for the download of new software and for the upload of information (e.g., for gaming experiences across households).

List two or more ways (other than gaming) that Microsoft and its collaborators can use the data that are gathered by the Kinect system.

Discussion points:

1. *Targeted advertising: by identifying individuals and correlating these individuals with game playing (and other network activity), advertisements can be selected that will be of the most interest to the person viewing.*

2. *Feedback on advertising: by looking at what people do during specific advertisements (their behavior and even the emotions that they express), one can start to make better inferences about what advertisement types and styles are of the most interest to the specific viewer(s).*

List two or more ethical principles that we would like Microsoft to consider in the design

and use of this system. Cite the source of each of these principles and discuss how they apply to this scenario.

Discussion points:

1. *Privacy (protecting a person from having information gathered about them): the fact that identity and behavioral information is being collected is a serious privacy concern. Note that this information could be collected even when the gaming system is not being explicitly used.*

   Also - images from the living room could be collected.

   The 4th and 9th amendments are interpreted as protecting privacy. The ACM code of ethics calls for a "respect for the privacy of others".

2. *Confidentiality (protecting information that has already been gathered about someone): Besides gaming: how will Microsoft use this information internally? Will these data be used to affect the behavior of the gaming system (including advertising)? And will this information be shared with partners of Microsoft?*

   The ACM code of conduct asks its members to "Honor Confidentiality."

3. *Opacity: the privacy, confidentiality and security implications of these devices are not made clear to the customers. The ACM code of ethics calls for members to "improve public understanding of computing and its consequences." One way to begin to address this issue would be to be explicit in the documentation of these devices about the implications of the data being collected and to require customers to "opt into" tracking and identification services. It would also be appropriate for users to control how their information is used (e.g., by Microsoft itself or by its partners).*