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COMPUTER PROFESSIONAL ETHICS IN PRESENT SCENARIO

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Abstract

The scope of the term "computer ethics" varies considerably. It can include such social and political issues as the impact of computers on employment, the environmental impact of computers, whether or not to sell computers to totalitarian governments, use of computers by the military, and the consequences of the technological and thus economic divisions between developed countries and poor countries. It can include personal dilemmas about what to post on the Internet and what to download. Professional ethics includes relationships with and responsibilities toward customers, clients, coworkers, employees, employers, others who use one's products and services, and others whom they affect. We examine ethical dilemmas and guidelines related to actions and decisions of individuals who create and use computer systems.

Keywords: computer ethics, Professional ethics, ACM, IEEE, ADS, Skipping Test

The decision to distribute software to convert files from formats with built-in copy protection to formats that can be copied more easily has an ethical component. So too does the decision about how much money and effort to allocate to training employees in the use of a new computer system. We have seen that many of the related social and legal issues are controversial. Some ethical issues are also. There are special aspects to making ethical decisions in a professional context, but the decisions are based on general ethical principles and theories. Are describes these general principles. It would be good to reread or review it now. We consider ethical guidelines for computer professionals.

Special Aspects of Professional Ethics

Professional ethics have several characteristics different from general ethics. The role of the professional is special in several ways. First, the professional is an expert in a field, be it computer science or medicine that most customers know little about. Most of the people affected by the devices, systems, and services of professionals do not understand how they work and cannot easily judge their quality and safety. This creates special responsibilities for the professional. Customers rely on the knowledge, expertise, and honesty of the professional.

A computer professional's work can affect the life, health, finances, freedom, and future of a client or members of the public. A professional can cause great harm

through dishonesty, carelessness, or incompetence. Often the victims have little ability to protect themselves. The victims, often, are not the direct customers of the professional and have no direct control or decision-making role in choosing the product or making decisions about its quality and safety. Thus, computer professionals have special responsibilities not only to their customers, but also to the general public, to the users of their products, regardless of whether they have a direct relationship with the users. These responsibilities include thinking about potential risks to privacy and security of data, safety, reliability, and ease of use.

Professional Codes of Ethics

Many professional organizations have codes of professional conduct. They provide a general statement of ethical values and remind people in the profession that ethical behavior is an essential part of their job. The codes provide reminders about specific professional responsibilities. They provide valuable guidance for new or young members of the profession who want to behave ethically but do not know what is expected of them, people whose limited experience has not prepared them to be alert to difficult ethical situations and to handle them appropriately. There are several organizations for the range of professions included in the general term *computer professional*. The main ones are the ACM and the IEEE Computer Society (IEEE CS).1 they developed the Software Engineering Code of Ethics and Professional Practice (adopted jointly by the ACM and IEEE CS) and the ACM Code of Ethics and Professional Conduct.

Methodology

The cases we present here, some based on real incidents, are just a few samples of the kinds that occur. They vary in seriousness and difficulty, and they include situations that illustrate professional responsibilities to potential users of computer systems in the general public, customers or clients, the employer, coworkers, and others. Ethical issues are often even more difficult than some of the others we have covered, and there could well be disagreement among computer-ethics specialists on some points in the cases considered here. In any real case, there are many other relevant facts and details that affect the conclusion.

Discussions will usually include many of these elements:
1. *Brainstorming phase*
- List all the people and organizations affected. (They are the *stakeholders*.)
- List risks, issues, problems, and consequences.
- List benefits. Identify who gets each benefit.

- In cases where there is no simple yes or no decision, but rather one has to choose some action, list possible actions.

2. *Analysis phase*

- Identify responsibilities of the decision maker. (Consider responsibilities of both general ethics and professional ethics.)
- Identify rights of stakeholders.
- Consider the impact of the action options on the stakeholders. Analyze consequences, risks, benefits, harms, costs for each action considered.
- Find sections of the SE Code or the ACM Code that apply. Consider the guidelines in Kant's and Mill's approaches. Then, categorize each potential action or response as ethically obligatory, ethically prohibited, or ethically acceptable.
- If there are several ethically acceptable options, select an option, considering the ethical merits of each, courtesy to others, practicality, self-interest, personal preferences, and so on. (In some cases, plan a sequence of actions, depending on the response to each.)

Protecting Personal Data

Your customer is a community clinic. The clinic works with families that have problems of family violence. It has three sites in the same city, including a shelter for battered women and children. The director wants a computerized record system, networked for the three sites, with the ability to transfer files among sites and make appointments at any site for any other. The most vulnerable stakeholders here are the clients of the clinic and their family members, and they are not involved in your negotiations with the director. You, the director, the clinic employees, and the donors or agencies that fund the clinic are also stakeholders. Suppose you warn the director about unauthorized access to sensitive information by hackers and the potential for interception of records and e-mail during transmission.

It include a user ID and password for each staff member, coded to allow access only to information that the particular worker needs, a log function that keeps track of who accessed and modified the records, and monitoring and controls on employee e-mail and Web activity. Note that your ability to provide these suggestions is dependent on your professional competence, currency in the field, and general awareness of relevant current events.

Designing an E-Mail System with Targeted ADS

Your company is developing a free e-mail service that will include targeted advertising based on the content of the e-mail messages—similar to Google's Gmail. You are part of the team designing the system. Obviously you must protect the

privacy of e-mail. The company plans a sophisticated text analysis system to scan e-mail messages and select appropriate ads. No human will read the messages. Marketing for the free e-mail will make clear that users will see targeted ads. The privacy policy will explain that the content of the e-mail will determine which ads appear. So, the marketing director contends, you have satisfied the first principle of privacy protection, informed consent.

 We know that leaks, theft, or demands by a government agency might compromise the privacy of such data. The set of ads displayed to a particular user could provide a lot of information about the person, just as one's search queries do. Some of it will be incorrect or misleading information because of quirks in the ad-targeting methods.

Figure: 1 Release of Search query data

The system design team needs to determine what records are necessary, which need to be associated with individual users, how long the company will store them, how it will protect them (from hackers, accidental leaks, and so on), and under what conditions it will disclose them. Now, back up and reconsider informed consent. Telling customers that they will see ads based on the content of their e-mail is not sufficient if the system stores data that can link a list of ads with a particular user. You must explain this to potential users in a privacy policy or user agreement. But we know that most people do not read privacy policies and user agreements, especially long ones. A click might mean legal consent, but ethical responsibility goes farther. Independent of what is in the agreement, the designers must think about potential risks of the system, consider privacy throughout the planning process, and design in protections.

Specifications

You are a relatively junior programmer working on modules that collect data from loan application forms and convert them to formats required by the parts of the program that evaluate the applications. You find that some demographic data are missing from some forms, particularly race and age. Any project should have specification documents approved by the client or managers of the company developing the project (or both). Your company has an ethical and business obligation to ensure that the specifications are complete and to produce a program that meets them. Ethical reasons for this include, but go beyond; doing what the company has agreed to do and had been paid to do.

Skipping Tests

Testing is one of the last steps in development, so when deadlines approach, testing schedules often shrink. Your team is working on a computer-controlled

device for treating cancerous tumors. The computer controls direction, intensity, and timing of a beam that destroys the tumor. Various delays have put the project behind schedule, and the deadline is approaching. There will not be time to complete all the planned testing. The system has been functioning properly in the routine treatment scenarios tested so far. You are the project manager, and you are considering whether to deliver the system on time, while continuing testing, and to make patches if the team finds bugs.

Copyright Violation

Your company has 25 licenses for a computer program, but you discover that it has been copied in to 80 computers. The first step here is to inform your supervisor that the copies violate the license agreement. An agreement about the use of the software, and you, as the representative of your company, are obligated to honor it. Because you did not make the copies, you have not broken the agreement directly, but you have responsibility for the software. Your name on the license could expose you to legal risk, or unethical managers in your company could make you a scapegoat. Thus, you might prefer to report the violation or quit your job and have your name removed from the licenses to protect yourself.

Release of Personal Information

We will look at two related scenarios. Here is the first: You work for the IRS, the Social Security Administration, a movie-rental company, or an Internet service provider. Someone asks you to get a copy of records about a particular person. He will pay you $500. The first option, selling the records, is clearly wrong. It almost certainly violates rules and policies you have agreed to abide by in accepting your job. As an employee, you must abide by the guarantees of confidentiality the company or agency has promised its customers or the public. Depending on the use made of the information you sell, you could be helping to cause serious harm to the victim.

Conflict of Interest

Conflict-of-interest situations occur in many professions. Sometimes the ethical course of action is clear. Sometimes, depending on your connection with the people or organizations your action affects, it can be more difficult to determine.

Kickbacks and Disclosure

Disclosure is a key point. Many organizations encourage their members to get a credit card that provides a kickback to the organization. This is not unethical primarily because the kickback is made clear. It is even a selling point: Use this card and help fund our good cause. However, even if the university makes clear in its

recommendation that it benefits financially from sales of the product, there are good arguments against the arrangement. They are not computer professional issues, so we leave them for you to think about.

A Test Plan

The test plan is insufficient and this is an application where lives could be at risk. Testing should involve real firefighters inside buildings or in varied terrain, perhaps in an actual fire (perhaps a controlled burn). The programmers who work on the system know how it behaves. They are experienced users with a specific set of expectations. They are not the right people to test the system.

Conclusion

The company network contains employee records, customer records, and plenty of information about company projects, finances, and plans. Depending on what the company does, the system might contain other very sensitive information. Downtime, due to a virus or similar problem, would be very costly for the company. In an actual incident, someone in the family of a mortgage company employee signed up for a peer to- peer file sharing service and did not properly set the options indicating which files were to be shared. Mortgage application information for a few thousand customers leaked and spread on the Web. The point of this scenario is that you must always be alert to potential risks. Mixing family and work applications poses risks.

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