Professional Ethics and Responsibilities

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What is professional ethics?

- Professional ethics cover the personal, organizational and corporate standards that are expected of professionals.

  -Includes issues involving relationships or responsibilities with:

  - Employees, employers, and other people who use the products or services.

Honesty

- Honesty is one of the most fundamental ethical values.
  - We all make hundreds of decisions each day.
  - A lie disrupts an essential activity of being human.
    - Taking in information and making decisions based off of that information.
  - Falsifying research can be considered a form of theft.
  - The indirect harm of a lie can be very large.

Issues of a Computer Professional

- General issues a computer professional must face everyday include:
  - How much risk is acceptable in a system?
  - What uses of another company's intellectual property are acceptable?
- Example: A private company asks your software company to develop a database of information obtained from government records.
- Question: Would you accept the contract and develop the system?

Possible Choices

- **Accept the contract**:
  - On the grounds that the records are already publically available to anyone.
- **Refuse to take the contract**:
  - You do not like the secondary use of information that people did not voluntarily provide.
- **Accept the contract but refuse to make the marketing lists**:
  - Posner's Principle suggests that negative information should be public domain.

Special Aspects of Professional Ethics

▸ Professional ethics have several characteristics that differ from general ethics.

▸ A professional is expected to be:

  ◦ Expert in a field that many people know little about

  ◦ Competent and skillful (Keep up-to-date – Constantly research)

  ◦ Act in an ethical way

▸ Being a professional also creates responsibilities you must uphold. (what are there?)

Responsibilities of a Professional

- As a professional, you advertise your expertise and therefore have an obligation to provide it.
  - The customers rely on the knowledge, expertise, and most importantly the honesty.
- The products of professionals generally affect a large number of people.
  - Dishonesty, carelessness or incompetencecould negatively affect all of them.
- A computer professionals work could potentially affect the life, health, and finances of a client.

Responsibilities of a Professional (cont.)

- Computer professionals not only have responsibilities towards their direct customers, but also the general public.
  - Thinking about potential risks
  - Taking action to correct these risks
- Responsibilities for noncomputer professionals:
  - Knowing/learning enough about the system to understand potential problems

Professional Codes of Ethics

- Ethical values which is provided to remind people in the profession that ethical behavior is an essential part of their job.
- Main Organizations:
  - Association for Computing Machinery (ACM)
  - IEEE Computer Society (IEEE CS)
- These Organizations:
  - Developed Software Engineering Code of Ethics, Professional Practice, and ACM Code of Ethics and Professional Conduct.
  - The code emphasizes on the basic ethical values of honesty and fairness and on areas that are particularly vulnerable from computer systems.

Guidelines and Professional Ethics

▶ Principles for producing good systems which concerns software developers, programmers, consultants, and others who make decisions about obtaining systems for large organizations.

▶ There are many more specific guidelines in the SE Code and in the ACM Code, which will be explained and defined in the scenarios.

▶ Principles:

◦ *Understand what success means.*

• Developers and institutional users of computer system's must view the system's role and their responsibility in a wide context.

Guidelines and Professional Ethics (cont.)

- *Include users in the design and testing stages to provide safe and useful systems.*
  - Mistakes or accidents occur when technical people developed systems without sufficient knowledge of what is important to users.

- *Design for real users*
  - People make typos, get confused, or are new at their job. So, system designers and programmers must provide clear user interfaces .

- *Don't assume existing software is safe or correct*
  - Software used from another application must be verified for suitability for the current project.

Guidelines and Professional Ethics (cont.)

- *Be open and honest about capabilities*
  - Emphasizing your best qualities and being dishonest is not always clear, but it should be clear that hiding known, serious flaws and lying to customers are on the wrong side of the line.
- *Require a convincing case for safety*
  - One of the difficult ethical problems that arise in safety-critical applications is deciding how much risk is acceptable.
  - Ethical decision makers should always consider the balance of risk taken when undergoing a project.

Guidelines and Professional Ethics (cont.)

- *Pay attention to defaults*
  - System designers should give serious thought to default settings as protection, ease of use, and compatibility with user expectations is a priority.

- *Develop communication skills*
  - Computer professionals have to explain technical issues to clients and coworkers.
  - One's presentations can be more effective by organizing information, distinguishing what is important.

Guidelines and Professional Ethics (cont.)

- Example: You are a programmer at a bank and you found flaws in your program which is used in ATMs. Would you tell your employer?

Guidelines and Professional Ethics (cont.)

- Solution: You have to be honest. Inform your employers and try to fix the program. The consequences for hiding faulty programs would be worst than admitting   your mistakes.
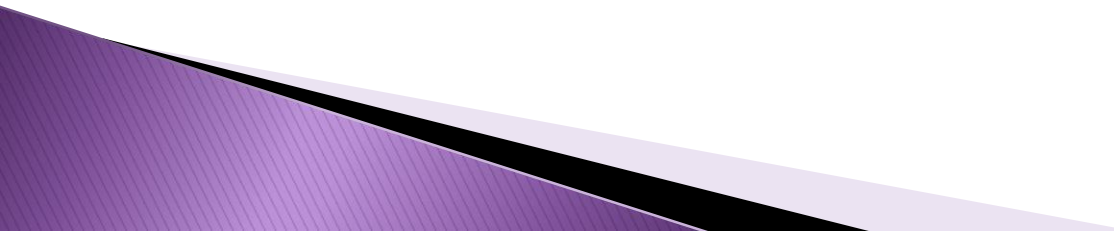
Scenarios

▶ Developing a computerized record system for a community clinic. The director says that the budget is small and wants to keep costs to a minimum.

◦ The director may be aware of the risks of losing sensitive client information, but she may not know the possible risks of the computer system.

◦ You, as the computer professional, have an obligation to inform her of these risks and how they are to be handled.

Stakeholders

- Clients of the clinic
  - Positive rights: To the privacy of their sensitive information
  - Negative rights: To choose whichever clinic they want to go to
- You, the computer professional
  - Negative rights: To accept or deny any job
- The director of the clinic
- Clinic employees
  - Negative rights: To choose where they want or do not want to work
- The government

  - Question: Can you think of any possible solutions?

Possible Solutions

- The director realizes the risks of the computer system and agrees to pay for the security measures.
- You develop the system cheap and vulnerable.
- Add the security features and do not charge for them.
- Work out a compromise and add a few features you believe are essential.

  ◦ Question: Which solution do you think is the best?

Best Solution

▸ You help the director realize the possible risks of the computer system and the consequences of these risks. She then agrees to pay for the extra security features.

◦ The director is ethically obligated to choose this outcome because there rules of privacy protection that she must follow.
◦ Everyone's happy.

Code of Ethics

- ACM Code 1.2
  - To avoid harm to others.
- SE Code 1.03
  - Software should only be approved if they have a well-founded belief that it is safe, meets specifications, passes appropriate tests, and does not diminish quality, privacy or harm the environment.
- SE Code 3.10
  - To ensure adequate testing, debugging, and review of software and related documents on which they work.

Conclusion

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  - What is it?
  - How it differs from general ethics.
- Ethical Guidelines for Computer Professionals
  - Special aspects of professional ethics
  - Professional codes of ethics
  - Professional responsibilities
- Scenarios