CSE/ISE 312

Chapter 9: Professional Ethics and Responsibilities

Chapter outline

- What is professional ethics
- Ethical guidelines for computer professionals
- Scenarios

What is "Professional Ethics"?

- 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
- A professional has a responsibility to act ethically
- Many professions have a code of ethics that professionals are expected to abide by
  - Medical doctors, Lawyers and judges, Accountants
- Honesty is one of the most fundamental ethical values; however, many ethical problems are more subtle than the choice of being honest or dishonest

Why Professional Ethics?

- Because of some special aspects
  - Professional is an expert in a field that most customers know little about
    - Customers have little ability to protect themselves, they rely on the knowledge, expertise, and honesty of the professional
    - This is regardless of whether they are the direct or indirect customers of the product
  - Products of many professionals (e.g., Highway bridges, investment advice, surgery protocols, computer systems) profoundly affect large number of people
  - Professionals must maintain up to date skills and knowledge

Professional Codes of Ethics

- These codes provide
  - a general statement of ethical values in the profession
  - reminders about specific professional responsibilities
  - guidance for new/young members of the profession

Professional Codes of Ethics

- Codes of two main computer professional orgs
  - ACM code of ethics and professional conduct

    ACM: Association of Computer Machinery

  - Software engineering (SE) code of ethics and professional practice

    IEEE-CS: Inst. for Electrical & Electronics Engineers, Computer Society

The SE Code (8 Principles)

1. Public: shall act consistently with the public interest

2. Client and employer: act in the best interest

3. Product: ensure to meet the highest standards possible

4. Judgment: maintain integrity and independence

The SE Code (8 Principles)

1. Management: ethical in management of software development and maintenance
2. Profession: advance the integrity and reputation
3. Colleagues: be fair to and supportive of their colleagues
4. Self: participate in lifelong learning in their profession

Total: 80 clauses

The ACM Code (24 Imperatives)

- General moral imperatives: as an ACM member, I will
  - Contribute to society and human well-being
  - Avoid harm to others
  - Be honest and trustworthy
  - Be fair and take action not to discriminate
  - Honor property rights including copyrights, patents
  - Give proper credit for IP (must not take credit for other's idea or work)
  - Respect the privacy of others
  - Honor confidentiality

The ACM Code (cont'd)

- More specific professional responsibilities
  - Acquire and maintain professional competence,
  - Know and respect existing laws,
  - Honor contracts, agreements, and assigned responsibilities, …
- Organizational leadership imperatives
  - Articulate social responsibilities, encourage their full acceptance
  - Manage to design & build systems that enhance quality of life, …
- Compliance with the code
  - Uphold and promote the principles of this code, …

Guidelines, Professional Responsibilities

- Understand what success means
- Include users (such as medical staff, technicians, pilots, office workers) in the design and testing stages
- Do a thorough, careful job when planning and scheduling a project and when writing bids or contracts

Guidelines, Professional Responsibilities

- Design for real users
- Don't assume existing software is safe or correct
- Be open and honest about capabilities, safety, and limitations of software
- Require a convincing case for safety
- Pay attention to defaults
- Develop communication skills

Methodology for Analyzing Scenarios

Brainstorming phase

- List all the people and organizations affected (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

Methodology for Analyzing Scenarios

Analysis phase
- Identify responsibilities of the decision maker
- Identify rights of stakeholders
- Consider the impact of the options on the stakeholders (consequences, risks, benefits, harms, costs)
- Categorize each potential action as ethically obligatory, prohibited, or acceptable
- When there are multiple options, select one, considering the ethical merits of each, courtesy to others, practicality, self-interest, personal preferences, etc.