

CSE312/ISE312

Read Chapter 9:
Professional Ethics and Responsibilities

Slides prepared by Cyndi Chie, Sarah Frye, and Sharon Gray. Revised by R. Kelly.



What We Will Cover

- What is Professional Ethics?
- Ethical Guidelines for Computer Professionals
- Scenarios

Corresponding page number: 403



Review of Ethical Views

- Deontological
 - Absolute rules (e.g., Do not lie)
 - Actions are intrinsically true because they follow from logic
- Utilitarianism
 - Considers the consequences
 - Increase happiness or utility



Rights

- Natural rights – respect a set of fundamental rights of others (e.g., life, liberty, and the pursuit of happiness)
- Negative rights (liberties)
 - The right to act without interference (e.g., free speech)
- Positive rights (claim-rights)
 - An obligation of some people to provide certain things for others (e.g., education)



What is "Professional Ethics"?

- Includes relationships with and responsibilities toward 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
 - Information Technology professional ethics are much less standard and are usually not enforced

Corresponding page number: 404-405



Aspects of Professional Ethics

- The following two facts create responsibilities for the professional
 - A professional is an expert in a field that most others know little about
 - Customers rely on the knowledge, expertise, and honesty of the professional
- Responsibilities include
 - Reduce the likelihood of problems
 - Maintain an expected level of competence

Corresponding page number: 405-406



Professional Licensing

- Many professional organizations have a code of practice that guides members in their work
- Professional ethics are often included in the code of practice of professional organizations
- Failure to comply with the code can result in expulsion from the professional organization
- Examples
 - American Dental Association
 - American Medical Association
 - American Bar Association

Corresponding page number:



Professional Licensing

- Typical steps
 - Education
 - Exams
 - Field training
 - Maintenance of standards
 - Enforcement
- Some work requires a licensed professional
 - Government regulations
 - Concern over lawsuits

Corresponding page number:

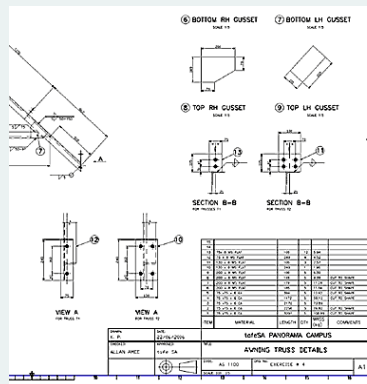
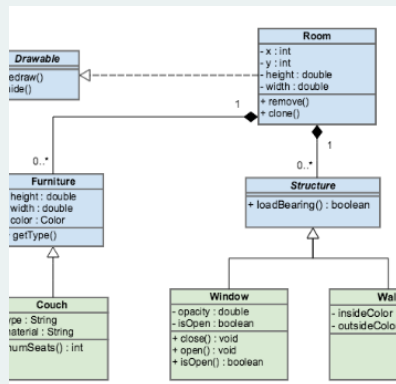
IT State of Licensing

- Are there education requirements?
- Are there licensing exams for
 - Software engineering?
 - System design?
 - Infrastructure support?
- Is there field training?
- Is there enforcement?
- Does some computer work require a licensed software engineer?
- Is there malpractice insurance for IT?

Corresponding page number:

Example – Engineering Design

- Why are engineering design and software design handled so differently?



Corresponding page number:



Professional Codes of Ethics

- Professional Codes of Ethics
- Provide a general statement of ethical values
- Remind people in the profession that ethical behavior is an essential part of their job
- Provide guidance for new or young members
- IT related organizations (and codes)
 - ACM
 - IEEE Computer Society

Corresponding page number: 406-407



ACM Code (Ethics Portion)

- 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 and patents
 - Give proper credit for intellectual property
 - Respect the privacy of others



Software Engineering Code


- Code of Ethics and Professional Practices
- ACM/IEEE-CS

Software engineers shall commit themselves to making the analysis, specification, design, development, testing and maintenance of software a beneficial and respected profession. In accordance with their commitment to the health, safety and welfare of the public, software engineers shall adhere to 8 principles (next slide)



Eight Principles ...

- Public – Software engineers shall act consistently with the public interest.
- Client and Employer – Software engineers shall act in a manner that is in the best interests of their client and employer, consistent with the public interest.
- Product – Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.
- Judgment – Software engineers shall maintain integrity and independence in their professional judgment.



... Eight Principles

- Management – Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance
- Profession – Software engineers shall advance the integrity and reputation of the profession consistent with public interest
- Colleagues – Software engineers shall be fair to and supportive of their colleagues
- Self – Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession

Corresponding page number:



Personal Principles

- Never steal data for personal gain
- Never distribute or sell proprietary information obtained as a part of your work on a software project
- Never maliciously destroy or modify another person's programs, files, or data
- Never violate the privacy of an individual, a group, or an organization
- Never hack into a system for sport or profit
- Never create or promulgate a computer virus or worm
- Never use computing technology to facilitate discrimination or harassment



Discussion Questions

- Is the licensing of software engineers and IT professionals sometime in the next 20 years feasible? Is it desirable?
- As a computer professional, what can you do to promote licensing?



Scenarios

Introduction and Methodology

- 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

Corresponding page number: 411

Scenarios

Introduction and Methodology

- 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.

Corresponding page number: 411-412

Practice Scenario 2: Email with Ads

- Your company is developing a free email service that will include targeted advertising based on the content of the email messages (similar to Google's Gmail). You are part of the team designing the system. What are your ethical responsibilities?
 - Brainstorming**
 - Who are the stakeholders?
 - What are problem and risks
 - What are the benefits
 - List possible actions
 - Analysis**
 - Stakeholder rights
 - Impact of options
 - Ethical view of options

Corresponding page number: 414-415

Scenario 12: Kickbacks

You are an administrator at a major university. Your department selects a few brands of security software to recommend to students for their desktop computers, laptops, tablets, and other devices. One of the companies whose software you will evaluate takes you out to dinner, gives you free software (in addition to the security software), offers to pay your expenses to attend a professional conference on computer security, and offers to give the university a percentage of the price for every student who buys its security package.

Brainstorming

- Who are the stakeholders?
- What are problem and risks
- What are the benefits
- List possible actions

Analysis

- Stakeholder rights
- Impact of options
- Ethical view of options

Corresponding page number: 426-417

Scenario 15: A Gracious Host

- You are the computer system administrator for a mid-sized company. You can monitor the company network from home, and you frequently work from home. Your niece, a college student, is visiting for a week. She asks to use your computer to check her email. Sure, you say.

Brainstorming

- Who are the stakeholders?
- What are problem and risks
- What are the benefits
- List possible actions

Analysis

- Stakeholder rights
- Impact of options
- Ethical view of options

Corresponding page number: 430