Professional Ethics and Responsibilities IEEE code of ethics

SE-441: Software Engineering Professional Ethics

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Professional Ethics?

■ **Professional Ethics**: concerns one's conduct of behavior and practice when carrying out professional work, e.g., consulting, researching, teaching and writing

■ **Professional Ethics must take into accounts:**

- Relations between professionals and clients

- Relation between profession and society

- Relations among professionals

- Relations between employee and employer

- Specialized technical details of the profession

Professional Ethics?

A computing professional must understand

- Cultural, social, legal, and ethical issues in computing

- Responsibility and possible consequences of failure

■ Professional organizations dealing with computing have code of ethics (e.g. IEEE, ACM, and NSPE)

Professional Ethics?

Professional code of ethics:

➔ Symbolize professionalism
➔ Protect group interests
➔ Specify membership etiquette
➔ Inspire good conduct
➔ Educate and discipline members
➔ Foster external relations
➔ Enumerate principles, express ideals
➔ Put forth rules, offer guidelines
➔ Codify rights

IEEE - Code of Ethics

- **In recognition of importance of our technology in affecting the quality of life we commit ourselves to conduct of the highest ethical and professional manner and agree to:**

  → accept responsibility in making decisions consistent with safety, health, and welfare of the public

  → avoid real or perceived conflicts of interest

  → be honest and realistic in stating claims or estimates

  → reject bribery in all forms

  → improve understanding of technology, its application, and potential consequences

IEEE - Code of Ethics

- **In recognition of importance of our technology in affecting the quality of life we commit ourselves to conduct of the highest ethical and professional manner and agree to:**

  - ➔ maintain and improve our technical competence and undertake technological tasks for others only if qualified.
  - ➔ seek, accept, and offer honest criticism of technical work
  - ➔ acknowledge and correct errors
  - ➔ credit properly the contributions of others
  - ➔ treat all persons fairly regardless of race, religion, gender, disability, age, or national origin
  - ➔ avoid injuring others, their property, reputation, or employment by false or malicious action
  - ➔ assist colleagues and co-workers in their professional development and to support them in following this code of ethics

Computer Ethics

• **Computer ethics defined as the application of classical ethical principles to the use of computer technology**

• **Ethical problems related to computers are not unique but they tend to occur on a much larger**

➔ **Scope:** communications networks bring the world together

➔ **Anonymity:** beneficial but creates problems of integrity

➔ Reproducibility

Computer Ethics

Aspects of computer ethics:

➔ Analysis of the nature of problems related to the social impact of computers

➔ Formulation and justification of policies needed to manage computer technology

Categories of computer ethics issues

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Categories of computer ethics issues

- **Privacy**
  - ➔ Computers create a false sense of security
  - ➔ People do not realize how vulnerable information stored on computers are

- **Property**
  - ➔ Physical property
  - ➔ Intellectual property (in both copyright and patent)
  - ➔ Data as property

- **Access**
  - ➔ Access to computing technology
  - ➔ Access to data

- **Accuracy**
  - ➔ Accuracy of information stored

Moral and Ethical Problems

- **Hacking, cracking and virus creation**

  ★ **Serious crimes that cannot be justified**

  ★ **Attempts at justifying such actions**

    ➔ Electrons are free- they do not belong to anybody

    ➔ Companies have weak protection

    ➔ Point out flaws and vulnerabilities in information systems

    ➔ Hacking or virus creation is right in a particular country or culture

Moral and Ethical Problems

■ **Software piracy**

➜ Unauthorized copying of software is stealing

➜ It is morally wrong as it constitutes a violation of someone else's rights

Problems with Codes of Ethics

- A legal system is not a complete and correct guide to moral behavior

- Codes of ethics are mostly voluntary

- May encounter situations for which the code makes no explicit recommendations

- Goodness cannot be defined through a list of Dos and Don'ts

- You must use your internal sense of ethics

Computer Ethics Awareness and Educational Issues

■ How to raise the moral consciousness and ethical level

■ Possibilities of developing global computer ethics codes

■ Computer ethics education should include:

- ➔ Explanation of disruptive potential of even a single user
- ➔ Understanding of importance of ethics and lack of laws in computer/information technology
- ➔ Explanation of information security & related problems
- ➔ Making people aware of ethical impact of their actions
- ➔ Training and education by professionals

Computing Ethics and Guidelines - Example

- Respect privacy of other users and do not share your account with others

- Respect appropriate laws and copyrights

- Obey established guidelines for any network or system used

- Do not use computer resources for unauthorized purposes

- Do not use computer resources for commercial endeavors

- Do not use computer resources in ways detrimental to normal operation

Conclusions

• Must understand cultural, social, legal and ethical issues related to computing

• Expect to face variety of ethically difficult situations

• Hold to highest possible ethical standards

• Use your internal sense of ethics

• Making the wrong ethical choice begins with focusing on short-term self-interest

▪ Ethical behavior is a way of life, best learned through experience

• Living ethically requires strong and sincere motivation