

CS 4873: Computing, Society & Professionalism

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Week 10: Professional Ethics

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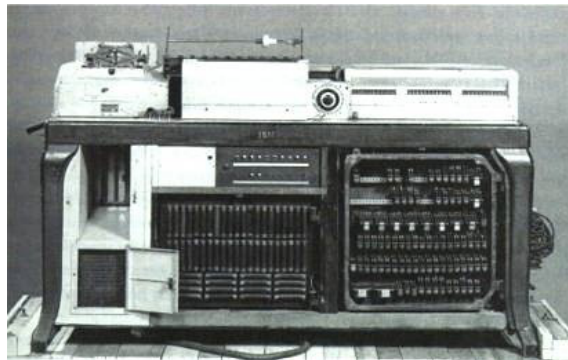
Slides adapted from Sauvik Das, Munmun de Choudhury, and Amy Bruckman

A fundamental question you should have an opinion on after this class:

Do computer professionals need to worry about ethics like lawyers or physicians?
Why or why not?

A Computer Professional's Story

- Jacobus Lentz, Dutch inspector of population registries before World War II.
 - Created forge-proof ID.
- Denied by Dutch authorities as an affront to democratic sensibilities.
- Partnered with the Nazis
 - Role in Hitler's Final Solution.



What is a profession?

- A vocation that requires a high level of education and practical experience in the field
- A fully developed Profession has a well-organized infrastructure for certifying new members and supporting those who already belong to the profession
- Professionals have a special obligation to ensure their actions are for the good of those who depend on them

Characteristics of a Profession

Initial professional education

Accreditation

Skills development

Certification

Licensing

Professional development

Code of ethics

Professional society

History

Software engineering is not a fully developed profession (e.g., license, certification, formal training and/or apprenticeship not required to be a programmer or a system analyst)

IEEE Board of Governors established steering committee (May, 1993).

ACM Council endorsed Commission on Software Engineering (Late 1993).

Joint steering committee established by both societies (January, 1994).

Joint Commission Steering Committee

4 goals:

- Adopt standard definitions.
- Define required body of knowledge and recommended practices.
- **Define code of ethics**
- Define educational curricula for undergraduate, graduate (Masters), and continuing education (for retraining and migration).

What is The Code?

Provides support for Software Engineers and managers of software engineers who need to take positive action in a specific case by documenting the ethical stance of the profession.

Preamble of Code of Ethics

- Software engineers have opportunities to do good or do harm and **ought to be committed to doing good**
- Eight principles identify key ethical relationships and obligations within these relationship
- Code should be seen as a whole, not a collection of parts
- Concern **for the public interest** is paramount

Software Engineering Code of Ethics: 8 Key Principles

- Public
- Client and Employer
- Product
- Judgment
- Management
- Profession
- Colleagues
- Self

PUBLIC - Software engineers shall
act consistently with the public
interest

1.01 Accept full responsibility for their own work

1.02 Moderate the interests of the engineer, employer, client and the users with the public good.

1.03 Approve Software Only If It Is Safe



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

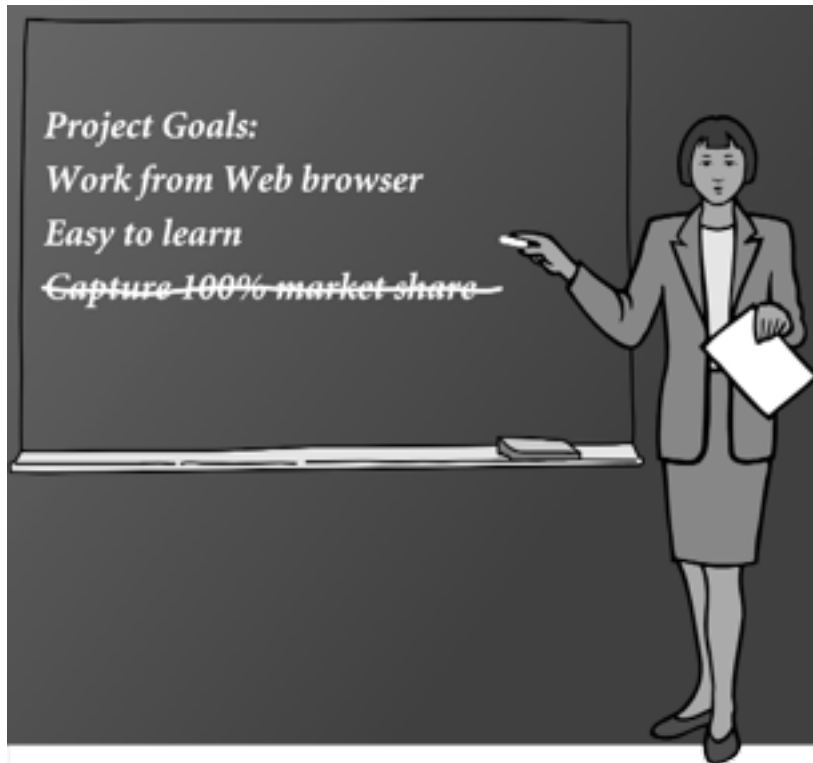
2.01 Provide service in their **areas of competence**, being honest and forthright about any limitations of their experience and education.

2.02 Don't Use Software Obtained Illegally



PRODUCT - Software engineers shall ensure that their products and related modifications meet the highest professional standards possible

3.02 Ensure Proper and Achievable Goals



3.03 Identify, define and address ethical, economic, cultural, legal and environmental issues related to work projects.

JUDGMENT - Software engineers
shall maintain integrity and
independence in their
professional judgment

4.01 Temper all technical judgments by the need to support and maintain human values.

4.04 Not engage in deceptive financial practices such as bribery, double billing, or other improper financial practices.

MANAGEMENT - Software
engineering managers and
leaders shall subscribe to and
promote an ethical approach to
the management of software
development and maintenance

5.11 Not ask a software engineer to do anything inconsistent with this Code.

5.12 Not punish anyone for expressing ethical concerns about a project.

PROFESSION - Software engineers
shall advance the integrity and
reputation of the profession
consistent with the public interest

6.01 Help Create An Environment Supporting Ethical Conduct



6.12 Express concerns to the people involved when significant violations of this Code are detected

6.13 Report significant violations of this Code to appropriate authorities when it is clear that consultation with people involved in these significant violations is impossible, counter-productive or dangerous.

COLLEAGUES - Software engineers
shall be fair to and supportive of
their colleagues

7.03 Credit fully the work of others and refrain from taking undue credit.

7.08 In situations outside of their own areas of competence, call upon the opinions of other professionals who have competence in that area.

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

8.02 Improve Ability to Create High Quality Software



8.09 Recognize that personal violations of this Code are inconsistent with being a professional software engineer.

Ask Yourself: How do you feel about the ACM Code of Ethics?

The ACM Code in Practice

The code is expressed as collection of rules

The rules in turn are based on principles grounded in different ethical theories

When we encounter a situation when two rules conflicts, the preamble urges us to ask questions that will help us consider the principles underlying the rules

Analysis of the Code

Questions demonstrating the multifaceted grounding of the code:

- Who is affected? (utilitarianism – collective goodness)
- Am I treating other humans with respect? (Kantianism – mentally reversing roles)
- Would my decision hold up to public scrutiny? (Virtue ethics – reflection on moral character)
- How will those who are least empowered be affected? (Social contract theory – Rawl's principles)
- Are my acts worthy of the ideal professional? (Virtue ethics – imitation of morally superior role models or exemplars)

Alternative List of Fundamental Principles: Agnostic of profession

- Be impartial
- Disclose information that others ought to know
- Respect the rights of others
- Treat others justly
- Take responsibility for your actions and inactions
- Take responsibility for the actions of those you supervise
- Maintain your integrity
- Continually improve your abilities
- Share your knowledge, expertise and values

Whistle-Blowing

- A whistle blower is someone who breaks ranks with an organization in order to make an unauthorized disclosure of information about a harmful situation after attempts to report the concerns through authorized organizations channels have been ignored or rebuffed.
- Examples situations:
 - Actions/products of employer can potentially harm the public
 - Fraudulent use of tax dollars

Edward Snowden

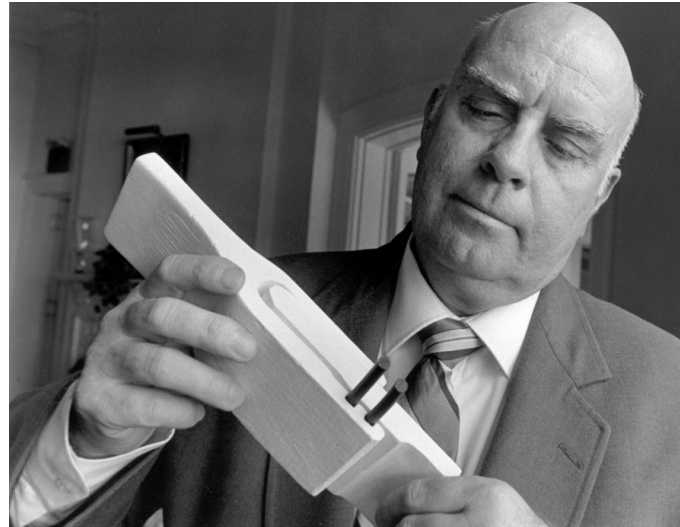
- NSA Contractor
- Noticed that the NSA had confidential agreements with many corporations to tap into people's personal data (e.g., ATT, Facebook, Google)
- Leaked that information via journalists



Did Snowden do the right thing?

Roger Boisjoly/NASA

- Engineer at Morton Thiokol – NASA contractor for the Challenger Space Shuttle
 - Met with accident 73 seconds after launch; gas leak from a booster rocket



Morality of Whistle-Blowing

- In most cases, whistle-blowers are punished
- Are they heroes or traitors?
 - Analyze their motives (virtue ethics theory)
- Do whistle-blowers cause harm?
 - Disruption of an organization's social and professional fabric
 - Generate bad publicity
 - Cause emotional distress and financial hardship to family
 - Assess the net public good – utilitarian perspective

Whistle-Blowing as a Moral Duty

- Richard De George's five questions:
 - Do you believe the problem may result in "serious and considerable harm to the public"?
 - Have you told your manager your concerns about the potential harm?
 - Have you tried every possible channel within the organization to resolve the problem?
 - Have you documented evidence that would persuade a neutral outsider that your view is correct?
 - Are you reasonably sure that if you do bring this matter to public attention, something can be done to prevent the anticipated harm?
- Whistle-blowing is your right if you answer "yes" to the first three questions. If you answer "yes" to all five, then it is your moral duty.