

# CSE 303

## Concepts and Tools for Software Development

Magdalena Balazinska  
Winter 2007

Lecture 23 – Professional and Ethical  
Responsibility

# Three Short Essays

- Three essays on three different topics
  - Professional and ethical responsibility
  - Impact of computer engineering solutions
  - Contemporary issues of computing
- Due date: Monday, March 12<sup>th</sup>
- The detailed instructions for the essays are on the class website
- If you treat these essays seriously, you should get a good grade (I hope everyone will get a good grade)

# Ethics

- It is impossible to develop laws to describe and enforce all forms of behavior acceptable to society
- Instead, society relies on ethics or morals
- **Ethic: “Objectively defined standard of right and wrong”**
- In a given situation, however, several moral objectives may be involved, so people have to determine an action that is appropriate, considering all the objectives
- Two different schools of ethical reasoning...

References: the content of today's lecture is from “Security in Computing (3rd ed.). C. and S. Pfleeger. Prentice Hall. 2003”. Chapter 9.7.

# (1) Theological Theory of Ethics

- Consequence-based principles
  - Action to be chosen is that which results in the greatest future good and the least harm
  - **Egoism**: take the action with best results for you
  - **Utilitarianism**: take the action with best results for the entire universe

## (2) Deontology

- Rule-Based principles
  - Sense of duty
  - Certain things are good in and of themselves
  - These things that are naturally good are good rules or acts, which require no higher justification. Something just is good; it does not have to be judged for its effect
    - Truth, knowledge, justice, happiness, satisfaction, peace, security, honor, esteem, friendship,...
  - Certain universal, self-evident, natural rules specify our proper conduct
    - Fidelity, reparation, gratitude, justice, beneficence (obligation to help others and make their lives better), nonmaleficence (not harming others), self-improvement, ...

# Making and Justifying an Ethical Choice

- Understand the situation
  - What are the facts? Who are the actors involved?
- Know several theories of ethical reasoning
  - The theories/principles from the previous slide
- List the ethical principles involved
  - What different philosophies could be applied in this case?
- Determine which principles outweigh others
  - This is a subjective evaluation

# Ethics of Hacking or Cracking

Hector is a computer security consultant. In his spare time, Hector aggressively attacks commercial software systems for vulnerabilities. Hector is quite proud of the tools and approach he has developed and he is quite successful in finding flaws. When he finds a flaw, he usually does one of several things:

- a) Contacts the vendor and offers his services to fix their problem (for a big fee)... but sometimes vendors get court order to prevent the publication of the vulnerability details instead of fixing it
- b) He publishes the details of the vulnerability to warn the public
- d) Sometimes he does nothing because he feels lazy

Discuss the ethical implications of searching for vulnerabilities and then choosing one of the above courses of action

[Scenario adapted from “Security in Computing (3rd ed.). C. and S. Pfleeger. Prentice Hall. 2003”]