




# Computers and Society

## *ACM Code of Ethics*

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# Making Decisions

- Ethics
  - Ethics is the means of determining *how* to act.
  - Morals provide “principles to live by”; ethics provide a principled way of choosing between outcomes.
- How should we interact with others?
- How should we live our lives?

# Making Decisions

- Ethics
  - Ethics is the means of determining *how* to act.
  - Morals provide “principles to live by”; ethics provide a principled way of choosing between outcomes.
- Theory of conduct: There are right and wrong actions
- We should live by a set of principles
  - “Do unto others as you would have them do unto you.”
  - “An eye for an eye.”
  - “It is wrong to kill, steal, or lie.”

# Making Decisions

- Ethics
  - Ethics is the means of determining *how* to act.
  - Morals provide “principles to live by”; ethics provide a principled way of choosing between outcomes.
- Theory of value: We should act so as to maximize happiness.
- The right thing to do is that which provides the greatest good or benefit (not just for ourselves).
  - “The needs of the many outweigh the needs of the few.”

# Making Decisions

- Ethics
  - Ethics is the means of determining *how* to act.
  - Morals provide “principles to live by”; ethics provide a principled way of choosing between outcomes.
- Theory of natural law
- Human beings all have a set of natural rights; we should act so as to preserve these rights.
  - “Everyone has the right to life, liberty, and the pursuit of happiness.”

# Professional Ethics

- Decisions of how to act are not confined to abstract debates.
- Most professions have an ethical code.
  - Medicine
  - Biotechnology
  - Law
  - Public Policy/Government
- Violations of ethical code can lead to professional censure.
- Question: why do professions establish such a code?

# ACM

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- Association for Computing Machinery
  - Voluntary organization
  - Conferences, research, networking, education
- Like most professional organizations, the ACM would like to serve as a self-governing body.
- A code of ethics is one component of this.

# Why have a Code of Ethics?

- Provide evidence that external monitoring is not needed
  - Enhance public trust
- Clarify responsibility to society
- Provide either a set of rules/prohibitions or a set of ideals
- Aid in decision making

# Basics of the ACM Code

- General Moral Imperatives
  - Contribute to society and general well-being
    - Protect human rights, respect diversity
    - Minimize negative consequences of computing systems
    - Ensure that products will be used in socially responsible ways
    - Consider environmental impact
  - Are there controversial issues in here?

# Basics of the ACM Code

- General Moral Imperatives
  - Avoid harm to others
    - Loss of information, property damage
    - Harm to users, employees/employers, general public
    - Minimize malfunctions by testing thoroughly
    - Assess social consequences
- How to balance these against each other?

# Basics of the ACM Code

- General Moral Imperatives
  - Be honest and trustworthy
  - Be fair and take action not to discriminate
  - Honor property rights including copyright and patent
  - Give proper credit for IP
  - Respect the Privacy of others
  - Honor confidentiality
- Can there be conflicts between these?

# Case Study

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- A section of the ACM code of ethics says that we should “not give unfair treatment to anyone because of irrelevant prejudices.” and “discrimination based on national origin is a violation of ACM policy and will not be tolerated.”
- Suppose that you are a programmer who came to the US from Afghanistan 10 years ago. You need to hire six new employees. Because of the widespread poverty and destruction in your homeland, you have decided to hire only Afghans.
- Is this ethically justifiable? Does it conflict with the ACM code?

# Basics of the ACM Code

- Professional Responsibilities
  - Strive to achieve highest quality, effectiveness and dignity
  - Acquire and maintain professional competence
    - Education does not stop after graduation
  - Know and respect existing laws
  - Accept and provide professional review
  - Give comprehensive evaluations of computer systems
  - Honor contracts and agreements
  - Access computing resources only when authorized

# Basics of the ACM Code

- Organizational Leadership Imperatives
  - Articulate and encourage responsibilities to team members
  - Manage personnel and resources to enhance quality of working life
  - Support proper use of the organization's computing resources
  - Ensure that systems are designed and validated to address user needs.
  - Articulate and support policies that protect the dignity of affected users.

# Basics of the ACM Code

- Compliance
  - Uphold and promote the principles of the code
    - Should also encourage its adoption/adherence
  - Treat violations as inconsistent with ACM membership

# Case Studies

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- In evaluating these case studies, we'll want to think about the following questions:
  - Who are the stakeholders?
  - What are the potential risks and benefits?
  - What are possible actions?
  - What are the impacts of these actions?

# Case study

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- CS480 Consulting gets a contract with a local hospital to help them manage patient information, including names, addresses, conditions, and treatments, across three sites. They want to be able to share information between the sites, and also on laptops and Blackberries that the administrators use when they travel. They have a tight budget and need to minimize cost.
  - What are some potential risks?
  - What are our obligations as professionals here?

# Case Study

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- GloboChem Corporation would like to buy some new payroll software, and has hired CS480 Consulting to help them evaluate bids from vendors. Prof. Brooks' wife works for McSoftware, and helped prepare one of the bids. He thinks the bid is excellent, and that McSoftware makes a great product.
  - What should we tell GloboChem?

# Case Study

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- Jean is working on a database for a commercial company. She is behind schedule, and her boss wants her to be done in two days. One of her co-workers has access to the source for a competitor's database from a previous job. Jean uses part of this code to finish her project, but doesn't tell anyone.
- What aspects of the ACM code has Jean violated?
- What if Jean just looked at the code and wrote her own version?

# Case Study

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- Giving proper credit for intellectual property
- Violating copyright
- Complying with existing laws

# Case Study

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- Bob is consulting on the design of a personnel database for a medium-sized company. He has involved the client in the process, working with the CEO, CIO, and personnel director. The system will store personal information, such as medical records, salaries, performance evaluations, etc.
- The clients want to minimize cost, and ask for a less secure system. Bob is worried that this will not protect employee data adequately.
- What should Bob do?

# Case Study

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- Obligation to preserve data integrity
- Obligation to verify that systems are designed to protect personal privacy
- Obligation to assess needs of all affected by a system
- Obligation to educate company officials
- Obligation to contractual responsibilities

# Case study

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- Jane is a QA engineer with a company that makes inventory software for shoe stores. The software manages accounting, shipping and ordering. Jane is concerned that their software has not been adequately tested, although they have done the contractually required tests.
- Jane's employers are pressuring her to sign off on the software; if it is late in shipping, the company could go out of business. If the company ships buggy software, their clients could be financially harmed.
- What should Jane do?

# Case study

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- Avoid harm to others
- Professional integrity
- Be honest
- Commitments to employer
  - If Jane signs off, should she notify the client?

# Case Study

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- CS480 Consulting gets a contract with the USF to develop a new accounting and financial system. It consists of report submissions, internal processing, and a user interface.
- The system meets the contract requirements, but the users find the user interface very difficult to work with. The university decides that they will not spend more money on our product, and return to their old system.
- How could the Code of Ethics help to avoid this problem?

# Case Study

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- Strive to achieve the highest quality
- Harm - cost to students, university
- Failure to follow a quality process
- Implement a review process
- Failure to consider all users of the system