**Understand Ethics and Security in the Programming Process**

**What is Computer Ethics?**

* According to Computer Ethics in the Computer Science Curriculum:

*“Applied professional ethics dealing with ethical   
 problems* ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by computer technology****”*

* + Computer Ethics in the Computer Science Curriculum  
    <http://www.southernct.edu/organizations/rccs/oldsite/resources/teaching/teaching_mono/bynum/bynum_computer_ethics.html>

**ACM Code of Ethics and Professional Conduct**

* Who is ACM?
  + Association for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Membership organization for computing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Provides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_development
  + Promotes \_\_\_\_\_\_\_\_\_\_\_\_ and research for the

benefit of society

* “This Code, consisting of \_\_\_\_\_\_ imperatives formulated as statements of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ responsibility, identifies the elements of such a commitment.”
  + **Section 1** deals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ethical considerations
  + **Section 2** deals with more \_\_\_\_\_\_\_\_\_\_\_ ethical considerations.
  + **Section 3** deals with specifically with those in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ roles.
  + **Section 4** deals with principles involving \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with the Code.
* <http://www.acm.org/about/code-of-ethics>
* The Code is also supplemented with a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Both the \_\_\_\_\_\_\_\_\_\_ and the Guidelines “are intended to serve as a basis for ethical \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ in the conduct of professional work.”

**Computer & Information Ethics**

* There are now research centers devoted to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ technology ethics.
* Centre for Computing and Social Responsibility  
  [http://www.ccsr.cse.dmu.ac.uk](http://www.ccsr.cse.dmu.ac.uk/)/
* The Research Center on Computing & Society  
  [http://www.southernct.edu/organizations/rccs](http://www.southernct.edu/organizations/rccs/)/

**Ethical Considerations**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Age
  + Due to the computer’s ability to store and manipulate large amounts of information
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Do not attempt to access the account of another user without authorization
  + Do not share your password – change it periodically
  + Use appropriate subject matter and language, and be considerate of other people’s beliefs and opinions.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Ethical issue
  + Computers record transactions, calls, etc.
    - These records can be used to learn a lot about you.
  + Because of privacy issues, many laws have been passed.
* Online \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Marketing technique where data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_about \_\_\_\_\_\_\_\_\_\_\_\_\_ visiting a website
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Text file created by the \_\_\_\_\_\_\_\_\_\_ computer when a user enters information into a website.
* Web beacons (web bugs or pixel tags)
  + Tiny, transparent \_\_\_\_\_\_\_\_\_\_\_\_\_\_located on web pages or in e-mail message that are used in combination with \_\_\_\_\_\_\_\_\_\_\_\_\_to collect data about web page users or email senders
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Policy
  + Legally binding document that explains how any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_information will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**US Information Technology Law**

* There are now many laws about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_technology in the US.
* Stanford Law School compiled a list of these laws.

<http://www.law.stanford.edu/program/centers/ttlf/law/us/it/>

**Technology Laws**

* **Identity \_\_\_\_\_\_\_\_\_\_Penalty Enhancement Act of 2004**
  + Establishes penalties for aggravated identity theft
  + Prohibits a court from giving parole, reducing any sentence or for providing for concurrent terms of imprisonment.
* **Federal Information Security Management Act of 2002 (FISMA)**
  + Requires federal agencies to \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_an agency-wide program to provide information \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **Consumer \_\_\_\_\_\_\_\_\_\_\_ Reporting Reform Act of 1996**
  + Amended the Fair Credit Reporting Act (FCRA) of 1970
  + Addresses data collection by credit, insurance and employment agencies
  + Gives individuals the right to see information maintained about them
  + Restricts who may access credit files to only those with a court order or the written permission of the individual whose credit is being checked.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Act of 1974**
  + Restricts the way in which \_\_\_\_\_\_\_\_\_\_\_\_\_data can be used by federal agencies
  + Individuals must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ access to information stored about them and may correct any information that is incorrect.
  + Agencies must insure both the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of any sensitive information.
* **Right to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Privacy Act of 1978**
  + Requires government authorities have a subpoena, summons or search warrant to access an individual’s financial records
  + When records are released, the financial institution must notify the individual of who has had \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to them.
* **Electronic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Privacy Act of 1986 (ECPA)**
  + Makes it a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to access electronic data without authorization
  + Prohibits unauthorized release of such data
* **Electronic \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of Information Act of 1996**
  + Requires federal government agencies to make certain agency information available for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inspection
  + Designed to improve public access to agency records
* **Children’s Online Privacy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Act of 1988 (COPPA)**
  + Requires commercial websites that collect personal information from children under the age of \_\_\_\_\_\_\_\_\_\_\_ to obtain parental \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **Safety and Freedom through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Act of 1999 (SAFE)**
  + Gives Americans the freedom to use any type of encryption to \_\_\_\_\_\_\_\_\_\_\_\_ their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ information.
  + Prohibits the government from monitoring people’s communications without their knowledge or consent.
* **Provide Appropriate Tools Required to Intercept and Obstruct Terrorism (PATRIOT) Act of 2001**
* Gives law enforcement the ability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_individual’s \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ activity

**Acceptable Use Policies**

* Use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ language
* Do not reveal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ information
* Do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_inappropriate materials
* Do not access another’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Use of the network for \_\_\_\_\_\_\_\_\_\_\_ business is prohibited.
* Only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ installed software may be used on the computers. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or modifying installed software is not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Implications of Computer Use**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + The science that studies safe work environments.
  + Repetitive stress injuries, eye strain, etc.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concerns
  + Power & paper waste
  + Disposal of outdated hardware
* Employee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Issues with computers in the workplace
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of privacy
  + Identity theft

**Protecting Software and Data**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Protection of \_\_\_\_\_\_\_\_\_\_\_ information
  + NET (No Electronic Theft) Act of 1997
    - Protects against \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ infringement
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Illegal copies being distributed
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Program or series of instruction that can replicate without the user’s knowledge
  + Trojan Horse
    - Appears as something else
  + Worm
    - Program that is able to reproduce itself over a network
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ programs**
  + Install on computers to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ code before it can replicated or damage data
* **Precautions to take**
  + Update virus software
  + Do not open email attachments without scanning.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Illegal act to gain access to large computer systems to perform acts of vandalism.
  + Electronic Communications Privacy Act of 1986 makes it a federal offense.
  + Most networks have a firewall to prevent this type of access.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Act of sending an email to a user falsely claiming to be a legitimate business in an attempt to trick the user into revealing personal information that could be used for crimes like identity theft.