



# Ethical Issues in Computing

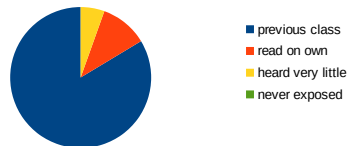
Fall 2020

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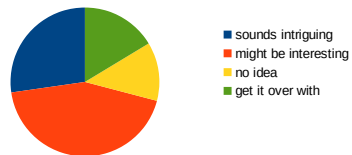
**Know, first, who you are; and then adorn yourself accordingly.**  
-- Epictetus

# Survey Results (55 of 73 responses)

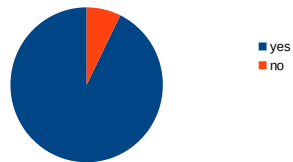
The study of Ethics is a topic:



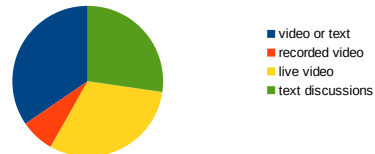
My feeling about this class is:



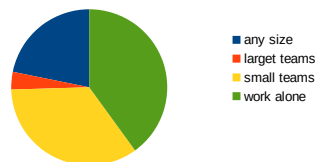
I feel confident learning and navigating in an online course



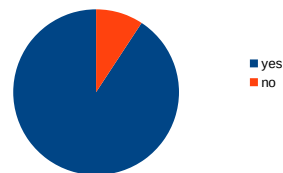
My feelings about using online discussion tools is



Given the choice to collaborate on a project



I feel I have a fast internet connection





Where we're headed





# What is Ethics?

- Systematic study of moral behavior
- Branch of philosophy:  
Socrates, Kant, Mills, Confucius, many more
- **Normative** Ethics deals specifically with the **correct** moral action
- How can we know what is the correct moral action?  
Ask a philosopher
- Can we determine an *objective* moral framework for everything?  
Don't be evil?



# Identifying Ethical Issues

- Not every action is a *moral* action:
  - Involuntary actions
  - Actions by amoral agents
  - No harm or benefit to others (society)
- Ethical issues in technology especially important:
  - Cascade of moral issues
  - Unintended consequences



# Ethical Theories

- Five working ethical theories for this course:
  - **Kantianism** – categorical imperative: act as you would have others act
  - **Act Utilitarianism** – Greatest Happiness Principle: weigh the good vs. bad of an action's *utility*
  - **Rule Utilitarianism** – weigh the good and bad of a *rule's* utility
  - **Social Contract Theory** – we implicitly accept society's rules to experience society's benefits
  - **Virtue Ethics** – what would a virtuous person do?



# Ethical Analysis

Rationally determine the proper course of action based on ethical theories

1. What are the voluntary moral choices in a situation?
2. Who benefits from each choice?
3. Who is harmed by each choice?
4. Is the choice desirable and/or necessary?





# Networked Communication

- The Internet and cellular networks have fundamentally transformed life on Earth.
- Clear benefits and harms, but also gray areas
- How do we ethically analyze spam, bots, sexting, internet addiction?
- How do we ethically analyze our own actions on the internet and cellular?



# Free Speech

- Freedom of speech (expression) in the US is protected in the First Amendment to the Constitution
- Not absolute but balanced against the public good
- The pervasive use of social media (Twitter, Facebook, etc.) has led to a deluge of “expression”
- What is legal? What is ethical?
- Government is not equipped to monitor and enforce.
- Internet is international, which country’s laws apply?



# Intellectual Property

- Private property of the mind
- How do we protect it from being stolen?
- Government grants the right to copy to the creator of the expression.
- The creator controls (sells or licenses) the right to copy.
- Other IP is more functional and less about the form.
- Protected with a patent.



# Plagiarism

- Copying original material without giving attribution to the author
- Several ways to plagiarize:
  - Copy verbatim without quotes and a citation
  - Paraphrase without citation
  - Use figures or drawings without citation
  - Use facts without citation
  - Use ideas or theories without giving credit
- Severe consequences include failing grade, dismissal, expulsion



# Software Licensing

- Any software code you write is automatically copyrighted – the same as if you had written a poem
- You can keep, sell, or give that copyright to whomever you choose.
- Many software licenses to choose from:
- Open Source, MIT, BSD, Apache, etc.
- Controls how software can be used to derive other software.



# Information Privacy

- Not every piece of information about us is private
- We should have some control over our personal information – a “ladder of privacy”
- Information is increasingly being gathered about us: browsing history, location data, on-line purchases, etc.
- Collecting and analyzing consumer information is a large and growing industry.
- What are the ethical considerations?



# Security

- Threats to our personal information:  
Identity theft, credit card fraud, doxing, blackmail, etc.
- Techniques used by criminals:  
Scamming, phishing, synthetic identity, ATM skimming, swiping credit card info, cracking, viruses, worms, etc.
- We are in a position to learn and understand best practices
- Help others (friends and families) stay safe



# Computer Reliability

- As more and more of our society's infrastructures run on software, reliability becomes crucial
- Software systems can be responsible for life-and-death decisions
- Programmers bear a moral responsibility to design and test reliable software
- Advances in software engineering are leading to better processes for producing software





# Professional Ethics

- Many professions such as medicine and law, have a license and certifying requirement
- Software engineering is “anything goes”
- A degree from an accredited institution is a good start.
- Continue professional development
- Join a professional society
- Pledge to abide by a professional code of conduct
- A Code of Ethics for software was developed by ACM and IEEE



## Course Unboxing



## Course Information

- Syllabus
- Blackboard Demo
- Student Presentations

# How to Succeed

Activity	Hours / Week	Weeks	Total
Reading and Studying	3	11	33
Learning Assessments	6	9	54
Challenge	4	5	20
Oral	10	1	10
Total			117

# Code of Conduct

DO	DON'T
Show respect	Profanity or vulgarity
Be helpful	Offensive language
Be friendly	Politics
Be civil	Threats or abuse
Express your ideas	Cheat or plagiarize

