

Slides #14

Legal and Ethics

CMPT 276
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Topics

- 1) What is open source?
- 2) Keeping secrets
- 3) Are there any ethical issues as a developer?
- 4) How gender-diverse is software development?

Open source development

Open source development

- Open source development is:
software development where the source code of a system is published and volunteers are invited to participate in its development.
- Open source systems
 - Linux operating system:
 - Used in servers, developers, mobile phones, etc
 - Android, Apache web server, MySQL (database), LibreOffice.

Open source issues

- Open Source Issues:
 - Should our product use open source components?
 - Should our product be developed as open source?
- More companies are using open source development.
 - Business model is not reliant on selling software but on...
- Possible advantages of open source:
 - developed cheaper and faster,
 - creates a community of users for the software.

Open source licensing

- Open-source =..
 - Does not mean that anyone can do as they wish with that code.
- Developer (company or individual) still owns the code and can...
- Carefully consider the license of
 - Ex: File-system, network "stacks", audio decoders, etc.

License models

- GNU General Public License (GPL)
 - "Reciprocal" license, "copyleft", "Viral open source"
 - If your program includes any GPL code, then..
- GNU Lesser General Public License (LGPL)
 - If you statically-link to LGPL code, it too must be LGPL
 - If you dynamically link to the code (like a DLL), it need not be LGPL (could have any licence).
- Berkley Standard Distribution (BSD) License
 - Non-reciprocal license...
 - Code may be included in proprietary systems that are sold for profit (closed-source).

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<one line to give the program's name and a brief idea of what it does.>
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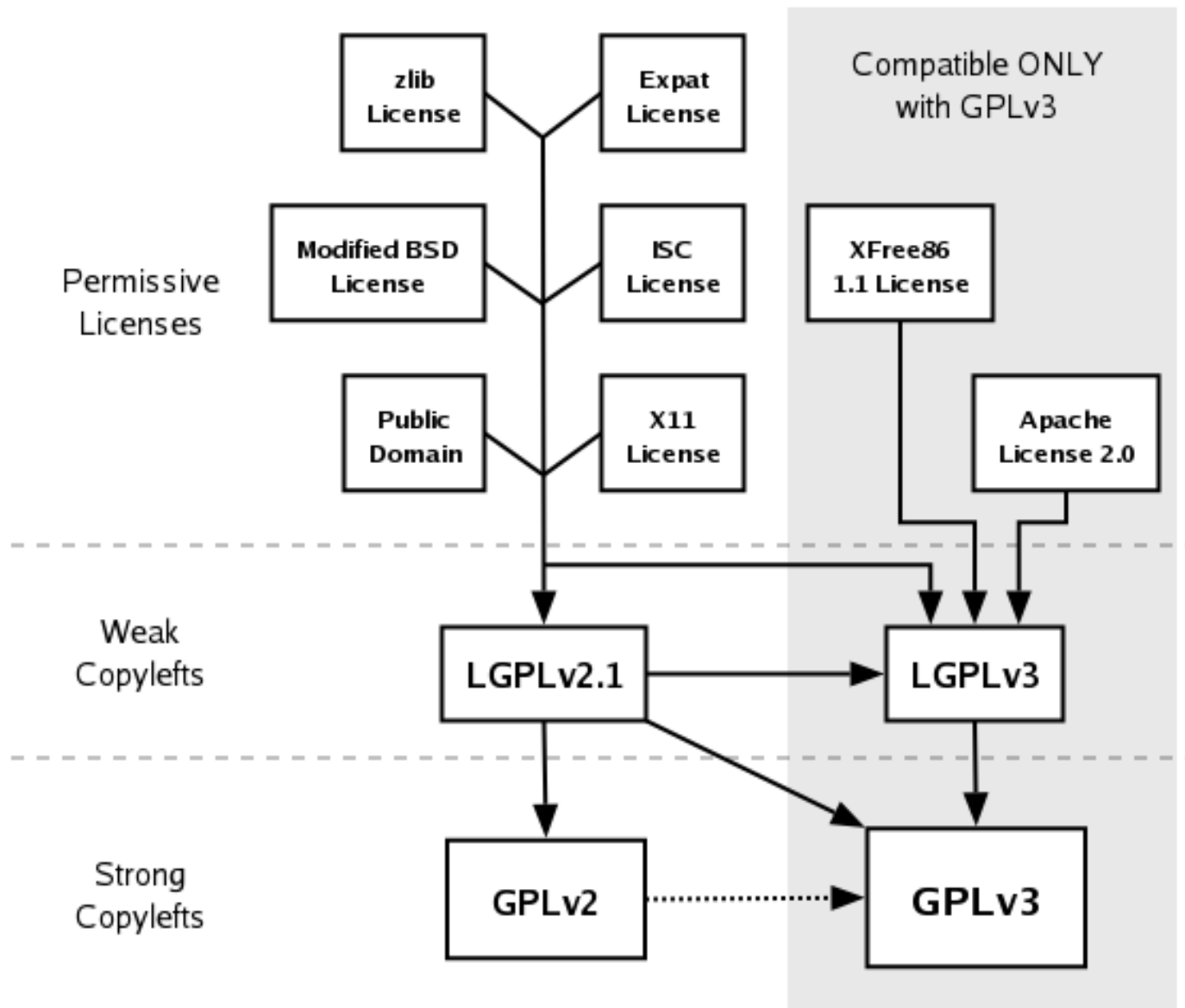
GPLv3 License Details

- It's copy-left or “viral” open source. Ex:

Section 5. Conveying Modified Source Versions

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Copyleft Licences



Legal: NDA & Non-Compete

NDA

- To do business or be employed, confidential information is exchanged.
- NDA
 - ..
 - It is an agreement that confidential information and ideas are of value and must not be shared with others.
- Non-compete
 - A document where one agrees not to compete with the company for a period of time.

NDA Activity

- What are you worth?
 - In 2 years, as a Software Developer, I'd like to earn:
\$ _____ per year

NDA Activity

- Job Offer!
 - You are offered a job at Evil Empire Inc paying twice what you asked for!
 - On the first day of your job, they ask you to sign the NDA found on the following pages.
- Read the legal document carefully.
 - Would you sign it?
 - What issues do you find with this document?

See the NDA linked with the notes.

Ethics

Software engineering ethics

- Software developer's responsibility:
 -
 -
- Ethical:
 - more than upholding the law:
must follow
morally correct principles.



Issues of Professional Responsibility

- Confidentiality
 - Abide by NDA (Non-disclosure agreement)
 - Respect employer confidentiality w/ or w/o NDA.
- Competence
 - Accurately represent one's level of competence...
- Intellectual Property (IP) rights
 - Understand and protect IP: patents, copyright, etc.
- Computer misuse
 - Don't misuse technical skills or other's computers (playing games at work, spreading viruses).

ACM/IEEE Code of Ethics

- Professional societies have..
 - Members agree to the code of practice when they join.
- Software engineers have significant opportunities:
 - to..
 - to enable others to do good or cause harm,
 - to influence others to do good or cause harm.

ACM Code of Ethics:

"To ensure, as much as possible, that their efforts will be used for good, software engineers must commit themselves to making software engineering a beneficial and respected profession."



The ACM/IEEE Code of Ethics

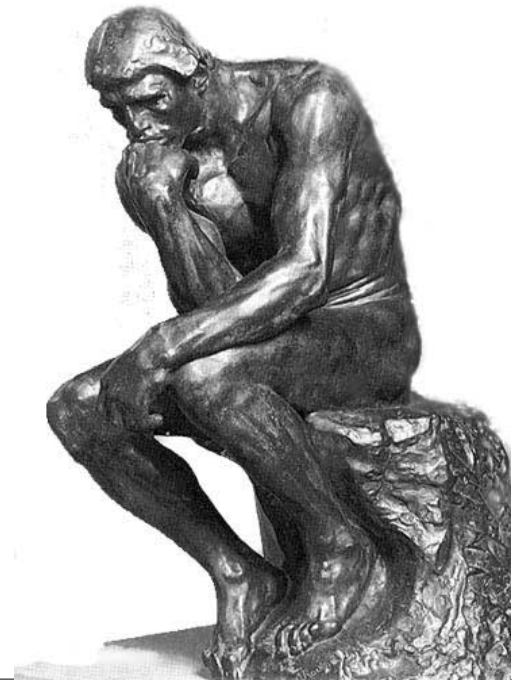
Software engineers shall:

1. PUBLIC: ...act consistently with the public interest.
2. CLIENT AND EMPLOYER: ...act in a manner that is in the best interests of their client and employer consistent with the public interest.
3. PRODUCT: ...ensure that their products and related modifications meet the highest professional standards possible.
4. JUDGMENT: ...maintain integrity and independence in their professional judgment.
5. MANAGEMENT: ...subscribe to and promote an ethical approach to the management of software development and maintenance.
6. PROFESSION: ...advance the integrity and reputation of the profession consistent with the public interest.
7. COLLEAGUES: ...be fair to and supportive of their colleagues.
8. SELF: ...participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

Possible ethical dilemmas

- Software developers may face ethical dilemmas:
 - with the policies of senior management.
 - Pressure to releases a safety-critical system ..
 - Participation in the development of military weapons systems or nuclear systems.

"A principle isn't a principle
until it costs you something."
- William Bernbach



Examples of Ethical Issues

- Project Maven

- In 2018 Google was working with the US DoD to apply its artificial intelligence to drone footage.

Google's AI would be used to identify and label activities in videos in a non-offensive capacity.

However, this AI could give the military information to conduct offensive “pattern of life” strikes.

- Google employees wrote a letter to the company in opposition to the project.
 - The backlash lead Google to not renew the contract and develop a policy on how to apply AI.

Google's Principles on AI

“AI Applications We Will Not Pursue

- Technologies that cause or are likely to cause overall harm...
- Weapons or other technologies whose principal purpose or implementation is to cause or directly facilitate injury to people.
- Technologies that gather or use information for surveillance violating internationally accepted norms.
- Technologies whose purpose contravenes widely accepted principles of international law and human rights.”

Examples of Ethical Issues

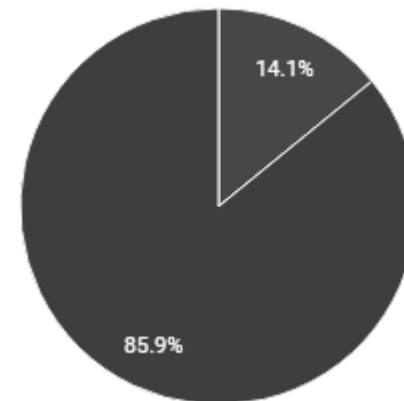
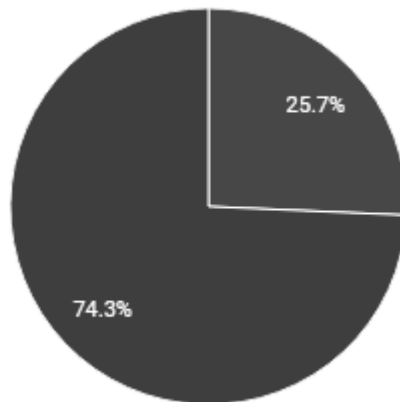
- Amazon's Rekognition
 - Amazon selling to police real-time facial recognition software, powered by Amazon Web Services.
 - Oregon police have an app to cross-reference faces with criminal records via a mug-shot database.
 - They discussed integrating it with body cameras.
 - Civil liberties groups concerned this becomes a tool for authoritarian surveillance.
 - Concern: once deployed, it cannot be un-done.
 - Amazon defends: project had found lost children and could greatly help fight crime.

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Diversity Problem

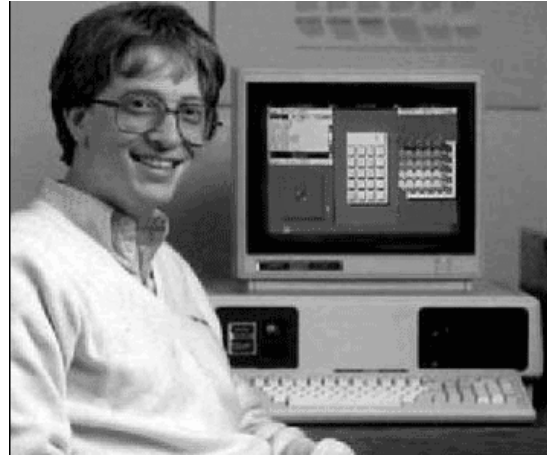
- Computing Science has a diversity problem
 - <20% CS Majors are Female (US)
 - Stack overflow 2015 survey:
92% respondents male
 - Views by gender % on my YouTube videos (- 2017)
 - Android ImageButton
 - Linux fork()



Unconscious Bias

- Identical job applications evaluated differently based on male vs female names.
- Assertiveness in men seen as..
Assertiveness in women seen as..
- Women asking for higher pay seen as less nice and more difficult to work with; men not perceived negatively.
 - SFU removing some flexibility in salaries to reduce gender differences
- Perceiving oneself as unbiased..

Culture Problem



1 person is not a programmer. Who?



Culture Problem

- CS stereotype: hackers coding all night
- 1960's Vocational interest scale for programmers:
 - Identified a..
 - Created self-fulfilling prophecy
- Companies are working to get beyond this:

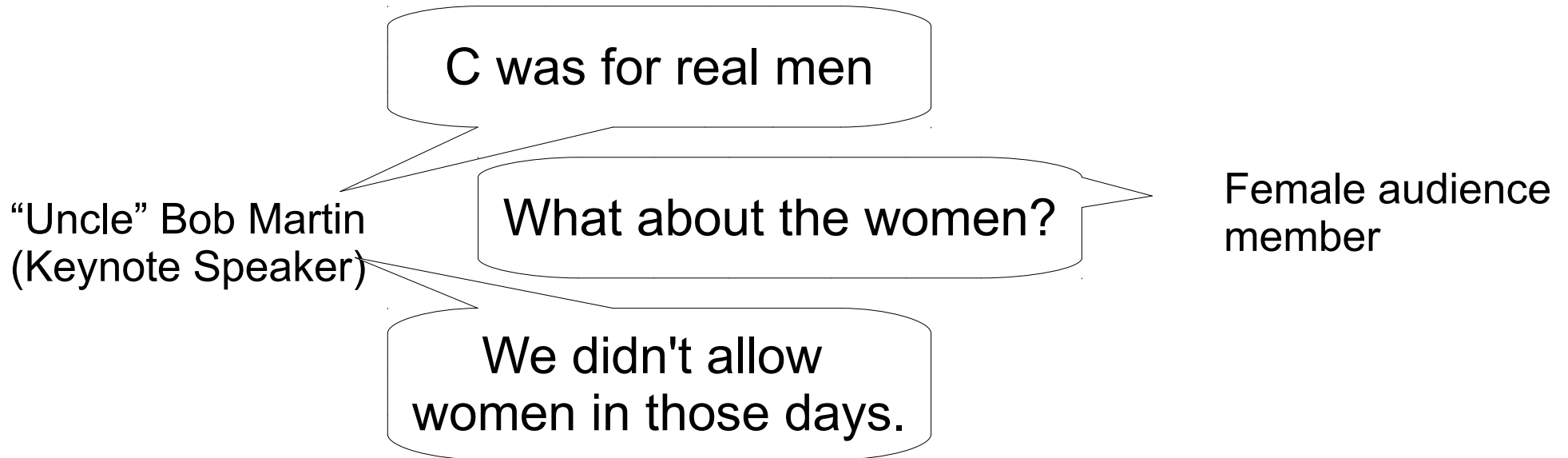


Micro Aggression

- Micro Aggression:..
 - Ex:
 - “Wow, you are good at programming for a woman!”
 - “Girls don’t play WoW.” (9330 google hits)
 - “Boys don’t play WoW” (3 google hits)
- It Adds Up
 - Single one not monumental;
many each day over the years add up!
 - Often done below level of consciousness

Actual Example

- At ACCU 2012 conference keynote address
from his apology posted to GitHub: <https://gist.github.com/unclebob/2508746>



- Comment Section Response
"Dear Uncle Bob, you should not apologize. It is time to stop this non-existent anti sexism thing and start caring about real problems."

“Google’s Ideological Echo Chamber”

- Google employee wrote 10 page anti-diversity memo
 - He attributed the gender pay gap and under-representation of women to biological differences.
- Memo criticized for:
 - Inaccurate use of study results (debated)
 - Categorizing all women in one way
- Author was fired
 - US National Labor Relations Board found firing legal: “statements regarding biological differences between the sexes were so harmful, discriminatory, and disruptive as to be unprotected [by free speech...]”

In class Examples

- Here are some examples of offensive behaviour I have noticed in course projects over the years:
 - Team members using offensive language (profanity)
 - Using sexual test data in their application
 - Belittling or overriding a female teammates opinions
 - Abrasive/argumentative approach to discussing team decisions
- This type of behaviour is not acceptable in a university or work place.
 - It gets people fired, and makes other people quit.

What you can do!

- When you notice offensive behaviour:
 - ..
People who are offensive can think everyone else agrees with them but are too chicken to say what they really think.
 - Raise the issue to encourage retrospection..
 - If it was a joke, ‘turn the tables’ with a comeback:
 - “Better people than you have been fired for less offensive jokes”
 - “If that was supposed to be a joke, shouldn’t it have been funny?”

Call to Action

- ..
 - An issue when devs are promoted to leaders without training.
- Formalize hiring and promotion criteria
 - Remove "gut feeling" to reduce bias.
- Don't rely on self-nomination or self-evaluation
 - Men more likely to over-rate themselves
- Pay attention to biases
 - Notice your own, and those of others around you
 - Call out your friends, team mates, and instructors!

Summary

- Open source development allows others to see and change the code
 - Can add complex licensing issues.
- NDAs are common-place, but read carefully!
- With great power, comes great responsibility.
- Gender diversity will only get better with all our conscious attention.