

Software Security
415.725SC
Lecture 2: Software Law
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2-Aug-00

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“The Age of Software Patents”
Kenneth Nichols
IEEE Computer, April 1999

“As a computer professional, it is highly unlikely that you have ever read a patent... however... patents will play a pivotal role in future software products and research.”

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Outline

- Tutorials
 - Essentials of US patent law, for software
 - US trade secrets and copyright, for software
 - Editorials
 - Why software is different from all other inventions
 - Why software patents don't work
 - Software patents may be harmful
 - Public good of encouraging invention, versus the harm of restricting use
- “... but software patents are neither inherently good nor bad.”

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What is a Patent?

“A patent is a **legal monopoly** granted for the **use, manufacture and sale** of an **invention**.” It is valid for twenty years.

Legal monopoly = your right to be “in control” of your invention, will be defended by the US government. This is a form of “intellectual property.”

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What is an Invention?

- An invention is a **device or process** that is both **novel** and **useful**.
- What is *not* an invention?
 - Anything that is neither a device nor a process. (Is software a device? A process?)
 - Anything that has been “disclosed” previously, including all patent applications filed earlier than yours.
 - Anything that is not in “the useful arts” including literary, decorative, or entertaining innovations: “A technique for constructing novels would not qualify for a patent.” (!)

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The Process of Patenting

1. You invent something.
2. You apply for a US patent prior to disclosure, or for a NZ patent within 12 months of first disclosure.
3. A patent examiner reviews your application, to decide if your description is sufficiently “enabling” to be a disclosure of an invention that is both novel and useful.
4. You answer any objections or questions the examiner may raise, possibly revising your “claims” that will define the coverage of your patent.
5. Your patent is “issued” (or it may be denied ;-).

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What Can You Do with a Patent?

- You may “assign” your patent to someone who will pay the (substantial) costs of filing and defending it.
 - You may sell licenses to your patent, allowing others to manufacture something containing your invention.
 - If you discover someone “infringing” your patent, you may offer to sell them a license, and you may refuse to let them use your patent.
- ☞ Why is your right of refusal in the public interest?

Trade Secrets for Software

1. You write some clever software.
2. You don't reveal your “secret” cleverness, except to people who have signed a “nondisclosure agreement” (NDA).
3. You can prosecute anyone who reveals your secret, if they have signed an NDA.
4. You have limited protection over people who “reverse engineer” your software to discover your clever idea.

Software Copyright

1. You write some software.
2. You obtain copyright protection (easy!).
3. You can prosecute (almost) anyone who copies your software.
4. Everyone has the right to make a “derivative work” by changing some visual or auditory elements.
5. The “look and feel” of the GUI for the Microsoft and Macintosh OS are protected by US copyright law.
6. Text-only interfaces (DOS, Unix) are not protected.
7. Crown Copyright differs from US Copyright, but there are international agreements.

Conclusion

- All software developers should know at least a little bit about patents, copyrights and trade secrets. This article is an excellent introduction.

“Encoding the Law into Digital Libraries”

Pamela Samuelson
Comm. ACM, April 1998

“One of the burning questions in the field of cyberlaw is to what extent law or public policy should intervene to tell technologists what they can and can’t code.”

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Outline

- How copyright constrains digital libraries
 - A copyright owner may restrict copying, within limits.
 - Libraries have a right to permit copying, within limits.
 - Technologists tend to oversimplify copyright limits, which are complicated for good reason.
- Privacy considerations (records of “who borrowed what”)
- “Code as code” = software can be like a legal system
 - Hacking = civil disobedience?
 - Laws may be passed (in the US and elsewhere) to circumvent anti-copying code. Do you care?

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Restrictions on Copying

- If a digital library has a license or contract saying “no more than three users can access a document at one time” then
 - you, as the software developer for the library, should enforce this restriction by limiting concurrent access.
 - If your code allows six concurrent accesses, then your library would be in violation of both contract law and copyright law (because authors have the right to control access).

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A Murky Question

If a copyright is about to expire, can the copyright owner insist that the document be “destroyed” after expiration?

- Yes, if the library agrees to sign the contract.
- No, such contracts are unenforceable because the “public good” served by a copyright (of a limited-term monopoly to control access) would be subverted. Note: the term is 75 years or more.
- Which legal theory will apply in the US? Elsewhere?

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Another Murky Question

Can a copyright holder insist that a digital library add software security, to severely limit unauthorised readings and “private performances”?

- Yes, this is a reasonable restriction, otherwise a single copy at an online library will make it very difficult for an author to sell any more copies of their work.
- No, private performances and “fair use” copying (e.g. for education and research, within limits) is expressly allowed by US copyright law.
- Which legal theory will apply in the US? Elsewhere?

Conclusion

- This article poses some intriguing questions in public policy, regarding how copyright does (and “should”) affect digital libraries.
- I would strongly recommend it to any computer science major who shows any interest in digital libraries, computer law, or public policy.

Readings for Next Week

- Monday:
 - Bibliography for 415.725SC, select a paper for your oral report!
- Wednesday:
 - C. Pfleeger, “Ethical issues in computer security” (§11.5 of *Security in Computing*)
 - C. Mann, “Who will own your next good idea?”, *The.Standard.com*, 19 June 2000.
 - P. Radatti, “CyberSoft, Incorporated Moral Guidelines”, www.cyber.com/papers/lock.html.
- Thursday:
 - Collberg & Thomborson, “Watermarking, Tamper-Proofing, and Obfuscation -- Tools for Software Protection”, July 2000.