

# Slides to Accompany ECE/CPSC 352: Copyrights/Software Licenses

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## A Few Motivation(s)/Questions: Part 1

1. 'I just wrote a 'killer'<sup>a</sup> app. I plan to sell it. How do I keep others from simply copying it?'
2. 'My friend had some software and gave me a copy. Am I free to use it? Can I give it to others (legally)?'
3. 'I just found a 'killer' app. I plan to modify it and then sell it. Can I do this (legally)?'
4. I wrote a 'killer' app and sold a copy to someone. Now they have set up an online website and are giving it away for free by downloading. What can I do? What rights do I have?'
5. I just wrote a 'killer' app (maybe in `ocaml` or `SWI-Prolog` or `MS-Windows`). If I now want to sell this app, do I owe anything to the purveyors of the software I used?'

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<sup>a</sup>Here we mean an extremely valuable or useful piece of computer software, not a violent video game.

## A Few Motivation(s)/Questions: Part 2

*(Perhaps not surprisingly), answers to most of the preceding questions are:*

- (a) Impossible, without a significant amount of additional information; and therefore
- (b) Specific to each case.

## Background: Property and Legal Systems

Note:

1. Most legal systems convey rights to the holder of property. Almost no one wants to live in a world where 'if it's not nailed down, it's free'.
2. Legal systems vary from jurisdiction to jurisdiction, **especially** country to country.

## The Concept of 'Intellectual Property'

1. Intellectual Property (IP) may be thought of as rights or ownership attached to 'the product of the mind or the intellect'. This includes software (from two viewpoints: copyright and patents; we only address copyright here).
2. Point of confusion: *the term 'intellectual property' refers to the legal rights IP holders may have or exercise*, not the (intellectual) work itself.

1. Intellectual Property (IP) law is a domain for various legal entitlements which attach to intellectual property.
2. The holder of this legal entitlement may exercise various 'exclusive' rights in relation to the IP.
3. 'Exclusive' means that the holder can control some aspects of the use of the property. Usually this is by 'excluding' certain practices involving the property.
4. For example, a copyrighted computer program license may allow the user to use the program for personal (non-business) use, but could exclude the user from selling or otherwise distributing copies of the program.

## Jurisdiction, Enforcement and Harmony

1. The acquisition (often some form of registration) and enforcement of IP rights varies from jurisdiction to jurisdiction, *especially* country to country.
2. International treaties such as the 1994 World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) are an attempt to standardize the rights and broaden the jurisdiction.

3. **The potential holder of IP rights usually has responsibility for acquiring these rights under the laws of the jurisdiction.**

Fortunately, in the U.S., this is easy.

4. In addition, where necessary, *the initiation of enforcement falls on the holder.*

**This is often a very significant and practical concern,** especially when the cost of enforcement of the rights greatly exceeds any foreseeable financial return from the property to the holder.



## Forms of Property and Associated Rights

For our purposes, the major items of interest are:

1. **Copyright:** applies to creative and artistic works (e.g. books, movies, music, paintings, photographs, *and software*). A copyright holder has the exclusive right to control reproduction or adaptation of these works for a certain period of time <sup>a</sup>. *We hereafter focus on copyright.*
2. **Patent:** granted for a new, useful, and *non-obvious* invention. A patent gives the holder an exclusive right to commercially exploit the invention for a certain period of time.
3. **Trademark:** a distinctive sign which is used to distinguish the products or services of a business.
4. **Trade secret:** confidential or secret, non-public information concerning the commercial practices or proprietary knowledge of a business.

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<sup>a</sup>For works created after January 1, 1978, this term is the life of the author plus 70 years. In the case of a 'Work for Hire, the term is 95 years from the date of first publication or 120 years from the date of creation, whichever expires first.

## Who Is the Copyright Holder ('Author')?

- (Unless the following holds), the author of a work owns the copyright for the work.
- (Under U.S. Copyright Law), the author of a work 'made for hire'<sup>a</sup> is considered to be the employer.

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<sup>a</sup>A work prepared by an employee within the scope of employment.

## Is Copyright Law Simple?

- No. Copyright law is complex and situation-based.
- See 'Frequently Asked Questions About Copyright' available at:  
<http://www.copyright.gov/help/faq/>.

## Software Licenses and Copyrighted Software

1. A **software license** grants a user permission to do things with **copyrighted computer software**. This is often necessary to allow actions related to the software which are prohibited by default by copyright law. For example, a software license could give permission to make and distribute copies of the software with restrictions or constraints.
2. These restrictions or constraints indicated in the software license often are stated as 'terms and conditions'. If these terms and conditions are not followed by the user, then the normal restrictions of copyright law hold.
3. Free software and open source software is usually distributed under the terms of a unilateral software license, meaning there is no negotiation or compromise.

## How Do I Get Copyright Protection?

Assume we are primarily interested in protections in the U.S. jurisdiction.

Some of this information comes from the site for U.S. copyright law:

<http://www.copyright.gov/>

1. The securing of copyright protection on current (present-day) works in the U.S. is straightforward and frequently misunderstood.
  - **Copyright is secured automatically when the work is created.**
  - **No publication or registration or other action in the Copyright Office is required to secure copyright under U.S. law.**
  - In addition, under international agreements, such as the WTO's TRIPs Agreement, any software written is automatically covered by copyright.

## Then Why All the Legalese?

1. While the use of a copyright notice is no longer required under U.S. law, it is often **VERY** beneficial, especially if you need to seek copyright protection.
2. **The notice informs the public that the work is protected by copyright, identifies the copyright owner, and shows the year of first publication.**
3. When a work is published, it may bear a notice of copyright to identify the year of publication and the name of the copyright owner and to inform the public that the work is protected by copyright<sup>a</sup>.
4. To summarize: the notice for 'visually perceptible copies' should contain three elements:
  - (a) The symbol ©(the letter C in a circle), or the word 'Copyright'; and
  - (b) The year of first publication of the work.
  - (c) The name of the owner of copyright in the work.

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<sup>a</sup>Copies of works published before March 1, 1989, must bear the notice or risk loss of copyright protection.

## 'Copyleft' and Open Source Software

1. 'Copyleft' is an informal term used to describe license agreements that uses copyright in an unconventional manner to encourage public disclosure of improved versions of a particular piece of software.
2. Open source definitions:
  - (a) controversial/ multiple definitions (e.g., Open Source Initiative)
  - (b) 'open' means 'able to get, inspect'
  - (c) Look up Free software, 'software libre' or 'libre software'

## Free and open-source software (FOSS)

- There are license agreements which prevent third parties from copying a given piece of source code *unless said third parties agree to make their improvements to the source code available to the public under similar open source terms when they distribute the program.*
- Who might just try to take the software?
- Who might try to later copyright the software?
- The intent is to keep the software 'free' and 'open'.



## The GPL

Source (checked 3/12/2015):

<http://www.gnu.org/licenses/>

- The Gnu Public License applies to any program which contains a notice placed by the copyright holder saying it may be distributed under the terms of the General Public License.
- The GPL applies to the program or 'a work based on the Program'<sup>a</sup>.

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<sup>a</sup>Any derivative work under copyright law.

## GPL Rights and Terms

A basic summary of the provisions and rights conveyed follows<sup>a</sup>.

You may copy and distribute the Program (or a work based on it) in object code or executable form provided that you also do one of the following:

1. Accompany it with the complete corresponding machine-readable source code or;
2. Agree to provide a complete machine-readable copy of the corresponding source code; or
3. Accompany it with the information you received as to the offer to distribute corresponding source code.

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<sup>a</sup>The licensee is addressed as 'you'.

## How to Apply The GPL to New Programs

See: <http://www.gnu.org/licenses/gpl.html>

1. Attach the following notice to the program. Each file should have at least the 'copyright' line and a pointer to where the full notice is found.

```
one line to give the program's name and an idea of what it does.  
Copyright (C) yyyy  name of author
```

```
This program is free software; you can redistribute it and/or  
modify it under the terms of the GNU General Public License  
as published by the Free Software Foundation; either version 2  
of the License, or (at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
```

2. Also add information on how to contact you by electronic and paper mail.
3. If the program is interactive, make it output a short notice when it starts in interactive mode. You have seen this with `ocaml` and SWI-Prolog.
4. If the program is graphical, contact information and licensing information is often found in the 'Help' menu, often under 'About'.

## Examples of Copyright Notification

Here's an example, seen when starting SWI-Prolog (swipl:)

```
$swipl
```

```
Welcome to SWI-Prolog (Multi-threaded, 64 bits, Version 6.6.4)
Copyright (c) 1990-2013 University of Amsterdam, VU Amsterdam
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software,
and you are welcome to redistribute it under certain conditions.
Please visit http://www.swi-prolog.org for details.
```

And another:

```
$octave
```

```
GNU Octave, version 3.8.1
```

```
Copyright (C) 2014 John W. Eaton and others.
```

```
This is free software; see the source code for copying conditions.
```

```
There is ABSOLUTELY NO WARRANTY; not even for MERCHANTABILITY or  
FITNESS FOR A PARTICULAR PURPOSE.  For details, type 'warranty'.
```

And yet another (ocaml):

The Compiler is distributed under the terms of the Q Public License version 1.0 with a change to choice of law.

The Library is distributed under the terms of the GNU Library General Public License version 2.

See:

<http://ocaml.org/docs/license.html>

(Examples checked 3/12/2015)

## Public Domain Software

'Public domain' refers to works that are not protected by copyright and are publicly available. They may be used by anyone, anywhere, anytime without permission, license or royalty payment.

1. Being in the public domain is not a license—rather, it means the material is not copyrighted and no license is needed.
2. **Very often a disclaimer accompanies PD software, usually to protect the owner/creator from liability if the software is used.**
3. Interestingly, works in the public domain can be copyrighted, but the copyright protects only the original contribution(s) to the public domain work added by the author.



## Tools and Libraries – Another Story

- Here, it is often useful to distinguish between a **tool** and a **product**.
- See how GNU handles it:

<http://gcc.gnu.org/onlinedocs/libstdc+/manual/license.html>+

<http://www.gnu.org/licenses/gcc-exception-faq.html>

<http://www.gnu.org/licenses/gpl-faq.html>

## Libraries: Another Solution

An excerpt:

SWI-Prolog licensing aims at a large audience, combining ideas from the Free Software Foundation and the less principal Open Source Initiative.

The license aims at:

- Make SWI-Prolog itself and its libraries are ‘As free as possible’.
- Allow for easy integration of contributions.
- To achieve this, different parts of the system have different licenses.

## The Other End of The Spectrum

1. Microsoft's intellectual property includes<sup>a</sup>:  
'copyrights, trademarks, trade secrets, trade dress, and technical know-how'.  
'This portfolio includes source code, schemas, protocols, and documentation ...'
2. You can find, view, and print the license terms for various Microsoft retail software at:  
<http://www.microsoft.com/en-us/legal/intellectualproperty/copyright/default.aspx>  
(checked 3-12-2015)

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<sup>a</sup><http://www.microsoft.com/about/legal/> checked on 4/16/2014.

## Redistributing Visual C++ Files

(Visual Studio 2012 Example)

*When you deploy an application, you must also deploy the files that are required to support it. If any of these files are provided by Microsoft, check whether you are permitted to redistribute them. To review the Microsoft Software License Terms, see [License.htm](#) on the Visual Studio 2012 installation media. To view the "REDIST list" that is referenced in the "Distributable Code" section of the Microsoft Software License Terms for certain editions of Visual Studio 2012, see [License Extensions for Visual Studio 2012 and Visual Studio 2012 SDK](#) on the Microsoft website. For more information about redistributable files, see [Determining Which DLLs to Redistribute and Deployment Examples](#).*

From: [http://msdn.microsoft.com/en-us/library/vstudio/ms235299\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/vstudio/ms235299(v=vs.110).aspx)  
(checked 3-12-2015)

## When Things Go Wrong

- Techniques to identify software copying ('Software Forensics'). See:  
<http://spectrum.ieee.org/computing/software/software-forensics-tools-enter-the-courtroom>  
(checked 3-12-2015)
- We occasionally use MOSS:  
Moss (for a Measure Of Software Similarity) is an automatic system for determining the similarity of programs. To date, the main application of Moss has been in detecting plagiarism in programming classes and since its development in 1994, Moss has been very effective in this role.

## An Interesting Topic: Does This Apply to the US Government?

- *A work of the United States government, as defined by United States copyright law, is 'a work prepared by an officer or employee' of the federal government 'as part of that person's official duties.'* **In general, such works are not entitled to domestic copyright protection under U.S. law.**

- If a Work Was Created By a Contractor Under a U.S. Government Contract, Who Holds the Copyright?

Unlike works of the U.S. Government, works produced by contractors under government contracts are protected under U.S. Copyright Law.

- Does the U.S. Government have any special rights to use copyrighted material?

No, the U.S. Government can be held liable for violation of the Copyright Laws.

For the full picture, see:

<http://www.cendi.gov/publications/04-8copyright.html> (checked 3-12-2015)