

Software Design and Construction

159.251

Software licenses

Amjed Tahir
a.tahir@massey.ac.nz

Overview

We'll touch on the following topics:

- the rights of authors/creators
- how does copyright apply to software programs ...
- what sorts of licenses exist?
- common open source licensing
- how to apply licenses to your software

- **IMPORTANT**

- PLEASE DON'T TAKE ANY OF THE MATERIAL THAT FOLLOW AS A LEGAL ADVICE.
- For legal advice, consult a lawyer

Software license

- *A software license is a legal instrument (usually by way of contract law, with or without printed material) governing the use or redistribution of software ([Wikipedia](#)).*
- A software license grants the licensee (e.g., an end-user) permission to use one or more copies of software.

Software license

Cont'd

- All software must be legally licensed before it may be installed/used.
- All software is copyright protected
 - including documentations, executable components and source code.
- There are different types of licenses and licensing contracts, and different vendors may use different terms to describe their licenses.
- End User License Agreements (EULAs) should be always viewed/maintained.

Why are licenses necessary

- to protect the author (e.g., vendor)
- To protect Intellectual Property (IP).
- to control copying
- to retain the notice of original authorship
- to limit damages
- to limit where the software can be used

Typically, software is not sold, it's licensed

- People think of software like a *toaster*: you buy it and it's yours
 - this is not the case
 - when you purchase software, you (usually) purchase a LICENSE TO USE IT
 - software can be easily replicated
 - *if it was truly yours, you could copy and resell it*
 - *this is usually not the case*

Software tools

- Software tools may come with any condition the author deems appropriate.
 - e.g. **"You agree that all the compiled programs created with this compiler become the property of XXX"**
it's draconian but possible
 - if you use a tool, you agree to these terms
 - if you don't, find another tool
 - if there isn't one, that's your problem, not the vendors
- Software libraries may also come with specific conditions

Intellectual property & Copyright

- The creators of original work are given protection under the law.
- Copyright is a legal concept, enacted by most governments, giving the creator of an original work exclusive rights to it, usually for a limited time.

Copyright law

- Copyright is a legal construct
 - it is established and enforced by Governments
 - it's territorial - it differs from country to country
 - However, many international agreements exist:
In NZ: the copyright law is included in the NZ Copyright Act 1994- including software systems!
- Read: [NZ Copyright Act 1994](#)*
- Cultural difference may influence the perception of "ownership", especially of artistic work

What does copyright cover?

- **Copyright in New Zealand**
 - Copyright automatically applies (no registration required) to original works in the following categories.
 - Literary works (novels, poems, song lyrics, computer programmes, compilations of data)
 - Dramatic works (scripts for films or plays)
 - Artistic works (paintings, plans, maps, photographs, sculptures, models, buildings)
 - Musical works (scores and arrangements)
 - Sound recordings (of musical, literary or dramatic works)
 - Films
 - Broadcasts (radio, TV, cable)
 - Typographical arrangement of published editions (this exists independent of copyright in the published work, if any).

Software copyright in NZ

- Software
 - Categorised together with sound recording and films.
 - Follows similar roles, but different in a few areas such as decompilation or backups.
 - Duration of copyright
 - software follows the rules for literary work
 - at the end of the period of 50 years from the end of the calendar year in which the work is made; or
 - if it is made available to the public by an authorised act before the end of that period, 50 years from the end of the calendar year in which it is so made available

What if you have a multiple devices (i.e., a desktop and a laptop?)

- you can't use both at once
- You can't install multiple copies on multiple devices
- it would appear that to comply with the license it is necessary to purchase multiple copies.

- What is "an installation"?
 - what constitutes "an installation" is not clear cut
 - being licensed to 'install' the software on one machine/ is ambiguous.
 - *what about remote users?*
 - Such ambiguity must removed by spelling out the conditions in the license.

license agreements are complex

- [Microsoft Software License Terms \(MSLT\) for Microsoft Office 2016](#) from

This license is **~14 pages long**

- designed to remove ambiguity
- in fairly plain English but still not easy to read

Most licenses are not designed to give you rights

- Software licenses are typically used to limit what you can do:
- *Obligations and Restrictions.*
- *4.1 Adobe Runtime Restrictions. **You will not Use any Adobe Runtime on any non-PC device or with any embedded or device version of any operating system.** For the avoidance of doubt, and by example only, **you may not Use an Adobe Runtime on any***
- *(a) mobile device, set top box (STB), handheld, phone, game console, TV, DVD player, media center (other than with Windows XP Media Center Edition and its successors), electronic billboard or other digital signage, Internet appliance or other Internet-connected device, PDA, medical device, ATM, telematic device, gaming machine, home automation system, kiosk, remote control device, or any other consumer electronics device,*
- *(b) operator-based mobile, cable, satellite, or television system or*
- *(c) other closed system device.*
- *No right or license to Use any Adobe Runtime is granted for such prohibited uses. For information on Software license terms for non-PC versions of Adobe Runtimes please visit http://www.adobe.com/go/runtime_mobile_EULA. For information on licensing Adobe Runtimes for distribution on such systems please visit <http://www.adobe.com/go/licensing>.*
- *– reformatted from http://www.adobe.com/products/eulas/reader/x/eula_en_gb.html*

Types of licenses

- Software license can be classified into two categories:
 - **Proprietary license**

The software owner provides a license to use one or more copies of software; however, the ownership of the software remains with the owner.

 - Defined in the end user agreement
 - Several rights will be reserved by the owner/publisher
 - Such as the number of installation, access to remote services etc...

- May even prevent you from publishing data obtained from the software such as performance data!
- May include after-sale services such as maintenance ...
- May have special conditions for special use such as educational licenses.

– Free and open-source software licenses (FOSS)

- Several definitions and licenses are available
- They all help the same purpose: ***free software*** (more or less!)
- Two main movements: the Free Software movement and the Open Source Movement.
 - [Free Software](#) means software that respects users' freedom and community- users have the freedom to run, copy, distribute, study, change and improve the software.
 - [Open Source](#) : The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.



Richard Stallman and 'Copyleft' licenses

- Richard Stallman has led a campaign advocating the freedom to use software anyway you wish.
 - *The free software movement is a social and political movement with the goal of ensuring software users' four basic freedoms:*
 - The FS community argues, that otherwise, unlike objects you would own, you give the vendor unacceptable amount of power over you.
- Note that he does **not say** that the software should be free to acquire,
only that having acquired it, you should be free to **run, copy, study, change, improve and distribute it.**

Richard Stallman's four essential freedoms

- A program is *free software* if the program's users have the four essential freedoms:
 - **The freedom to run the program**, for any purpose (freedom 0).
 - **The freedom to study how the program works**, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
 - **The freedom to redistribute copies** so you can help your neighbor (freedom 2).
 - **The freedom to distribute copies of your modified versions to others** (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

from <http://www.gnu.org/philosophy/free-sw.html>

- Free Software vs. Open Source ...
 - Both are similar
 - Free software focuses more on the freedom philosophy!
 - Free Software licenses are more free
 - Open source license does not enforce ***copyleft***
 - See freedom 3 in the previous slide!

Open source is a development methodology; free software is a social movement.

Richard Stallman

Common Open Source licenses for software

- There are dozens of open source licenses
 - see <http://opensource.org/licenses/alphabetical>
- Several have become more widely used:
 - [Common Public License](#)
 - [Gnu General Public License](#)
 - [BSD License](#)
 - [MIT Licenses](#)
 - [Apache License](#)
 - [Eclipse Public License](#)
 - A comparison between licenses can be found [here](#)...

Example of MIT

BSD & MIT Licenses

you can do anything you like with this, keep my name on it, don't infer I'm endorsing your product, and don't blame me.

Apache License

Like BSD but includes the right to use code that is covered by patents held by the author.

GPL - Gnu Public License

if you use any code from the GPL licensed work, if you distribute the work, you must release the source for derived work under a GPL license as well.

Implications of using open source licensed software

- you may be **required to release the complete source code of your product** (GPLv2)
- including sufficient for the user to use derived software (GPLv3)
- Your source code may be used in other commercial (proprietary) software (MIT or BSD)
- If you wish to use a product that's GPL licensed without releasing the source, the author may license it to you under differing conditions. e.g. the Qt GUI Toolkit is dual licensed: GPL or commercial

<http://qt-project.org/products/licensing>

Using the BSD license

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<one line to give the program's name and a brief idea of what it does.> Copyright (C) <year> <name of author>

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Known projects

- Well-known projects
 - Apache license
 - Apache projects (such as HTTP, Hadoop and OpenOffice)
 - MIT license
 - jQuery, Rust and GitLab
 - GPL
 - Linux kernel and Git
 - EPL
 - Sub-projects on Eclipse!
- Now ➔ the multiple licenses model!

Be careful when you choose a license for your project, and when you use code from other projects!