

Software freedom

... it's about freedom, not price.

Free software

- A piece of software is free if
 - 0: you are free to use it for any purpose
 - 1: you are free to study and modify it
 - 2: you are free to share it with your friends
 - 3: you are free to contribute modifications for the community
- Freedoms 1 and 3 require the availability of source code
- Proprietary software denies you some of these freedoms

Aka = Free Libre Open Source Software (FLOSS)

It's about freedom, not price

- Cheap or gratis software can be non-free
- Commercial software can be free
- Public domain software can be non-free
- Freely downloadable software can be non-free
- Free software is not freeware
- Free software is not encumbered by patents
- Free software is open source
- Some open source software is non-free

Why prefer free software

- Independent scrutiny for security issues
- Anyone can modify to add features and fix bugs
- Avoid expensive vendor lock-in
- Don't have to be anti-social for legal reason
- Fair competition rather than monopolistic control
- Illegal copies of proprietary software may create expensive lock-in
- Promote efficient software development by minimising re-inventing wheels

Freeing your software

- You hold the copyright to your software
- Release the source code
- Offer license to grant more freedom to your users
- Free software license: GNU GPL, revised BSD license, Apache license
- Irrevocably release any associated patents you hold

Protecting the freedom

- Some free license allows non-free derivative
- Use copyleft license. Grant users freedom on the condition that they grant the same freedom on any derivatives
- Copyright restricts. But copyleft offers freedom.
- GPL is a very strict copyleft license
- GPL version 3 includes explicit patent retaliation
- LGPL (Lesser GPL) allows linking to non-free software

GPL considered dangerous?

- It is a “viral” license
 - it spreads freedom
- It is a coercion
 - it’s easier to comply with GPL than with non-free licenses
- Businesses can’t use it
 - it resists to their anti-competitive “embrace and extend” strategy

History: The GNU project

- 1970's: Software was always free
 - Stallman worked for MIT AI lab, freely sharing source code within a community of cooperating hackers
- 1980's: The rise of proprietary software
 - Sharing has become piracy
 - Software modification was the sole right of the publisher
 - Developers must sign non-disclosure agreements, making source sharing illegal
 - Stallman refused to work under such anti-social agreements, considering it a betrayal to his fellow
- 1984: The start of the GNU project
 - Stallman quit MIT and decided to develop an operating system conducive to sharing and cooperation, rather than secrecy and selfishness

- The first free software was commercial
 - The first usable GNU software was Emacs
 - Available by ftp at no charge, and on tape for \$150
 - Other GNU software: gcc, bash, gdb, gnu make
 - The GNU distribution included the GNU manifesto
- 1985: The Free Software Foundation was created
- 1991: Linus Torvalds developed Linux, a free kernel
- 1992: GNU/Linux formed a complete operating system
- 1996-97: Desktop became available to GNU/Linux
 - KDE, a desktop based on non-free Qt toolkit, was released (Qt was eventually released under GPL)
 - GNU project started GNOME, a free GTK-based desktop
- 1998: “Open Source” began, focusing on technical quality rather than freedom

Free software business

- Distribution
- Support and training
- In-house development
- Value-added
(e.g. customized bundling of free software)
- Custom hardware

Challenges

- Secret hardware
- Non-free libraries and toolkits
 - e.g. Motif, Win32, Java
 - Temptation: convenience, forgetting freedom
- Non-free standards
 - e.g. Java API (no formal spec)
DVD with CSS restriction (circumvention is illegal),
MP3 (patented), Microsoft doc (undocumented)
- Software patents
 - e.g. LZW compression, Japanese input
- Lack of free documentation
 - Manual should be freely modifiable to cater for software modification
 - Use GNU Free Documentation License

Activity 10 & 11

- 10: Is GPL software really free? Discuss this issue.
- 11: Read text on Pg 266-268, Sara Baase, “A Gift of Fire, 2nd Edition”