FSF, GNU and GPL

The concept of free software

Final presentation

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Agenda

- Free Software Song
- Categorization of software - Terminology
- Free Software Definition – Open Source
- Copyright Law - Copyleft
- The Free Software Foundation
- The GNU project
- The GNU General Public License
- Stakeholders of free software
- Videos

What is free software?

Terminology I

- Free software:
  - software that comes with permission for anyone to use, copy, and distribute, either verbatim or with modifications, either gratis or for a fee

- Non-free software:
  - any software that is not free, including semi-free software and proprietary software

- Proprietary software:
  - software offered for sale or license where the vendor controls the source code of the software
  - use, redistribution or modification is either prohibited, or requires to ask for permission

Terminology II

- Semi-free software:
  - software that is not free, but comes with permission for individuals to use, copy, distribute and modify for non-profit purposes

- Freeware:
  - commonly used for software where redistribution is permitted but modification is not

- Shareware:
  - software which demands that anyone who continues to use a copy of the software after a certain trial-period is required to pay a license fee

Free Software I

Richard Stallman:

'free' as in 'free speech',
not as in 'free beer'

Free Software II

- Fundamental interpretation of free software: software can not be owned
- Freedom to run, copy, distribute, study, change and improve software
- Free = not having to ask for permission
- Free refers to freedom, not to price
- Freedom to sell copies is an important way to raise funds for free software development

Free Software Definition

- Freedom 0: The freedom to run the program, for any purpose.

- Freedom 1: The freedom to study how the program works, and adapt it to your needs.*

- Freedom 2: The freedom to redistribute copies so you can help your neighbor.

- Freedom 3: The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.*

* Access to the source code is a precondition for this.

Open Source Software

- 1998

  Foundation of the Open Source Initiative (OSI)

- Aim: replace the term 'free software' with a less controversial term

- Principle of open source

- No position on whether software can be owned – focus on the technical aspects

- OSI: 'marketing program for free software'

Definition of Open Source Software

- Source code must be distributed with the software or otherwise made available for no more than the cost of distribution.

- Anyone may redistribute the software for free, without owing royalties or licensing fee to the author.

- Anyone may modify the software or derive other software from it and then distribute the software under the same terms.

Free vs. open source software

- OSI: focus on the treatment of technical aspects and methods of development
- FSF: consider cultural effects and impacts on society
- FSF and OSI are like two political camps within the Free Software movement
- FOSS: Free and Open Source Software
- FLOSS: Free, Libre and Open Source Software

Basic principles of Copyright Law I

- Copyright is automatically attached to every novel expression of an idea

    → no registration

- Copyright grants authors of protected works a comprehensive set of exclusive rights in order to control the exploitation of their works

- Works protected by copyright law can not be copied, displayed, or otherwise commercially exploited by any person other than the creator for the life of the copyright

- Only the creator has the right to create 'derivative works'

Basic principles of Copyright Law II

- Period protected by copyright lasts for the life of the creator plus 70 years for works of literature (including computer programs), musical arts and visual arts

- After that period: work goes into the public domain

- Copyright vs. Patent:
  - Copyright protects the expression of an idea
  - Patents protect the underlying substance of an idea

The Concept of Copyleft

- Method for making a program free software and requiring all modified and extended versions of this program to be free software as well

- Copylefted software = free software, whose distribution terms do not let redistributors add any additional restrictions when they redistribute or modify the software

  → copyleft guarantees that every user has freedom because anyone who redistributes the software must pass along the freedom to further copy and change it

The Free Software Foundation (FSF) and the GNU Project

FSF I

- 1960s/1970s: MIT Artificial Intelligence Laboratory was a major center for the development of software

- Late 1970s/early 1980s: growth of proprietary software started to show an impact on the MIT community

- Richard Matthew Stallman

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FSF II

- Foundation in 1985
- Non-profit organization based in Boston
- 3 sister organizations:
    - FSF Europe
    - FSF India
    - FSF Latin America
- Spread the ideas of the Free Software movement
- Spread the use and knowledge of free software
- Support the GNU project
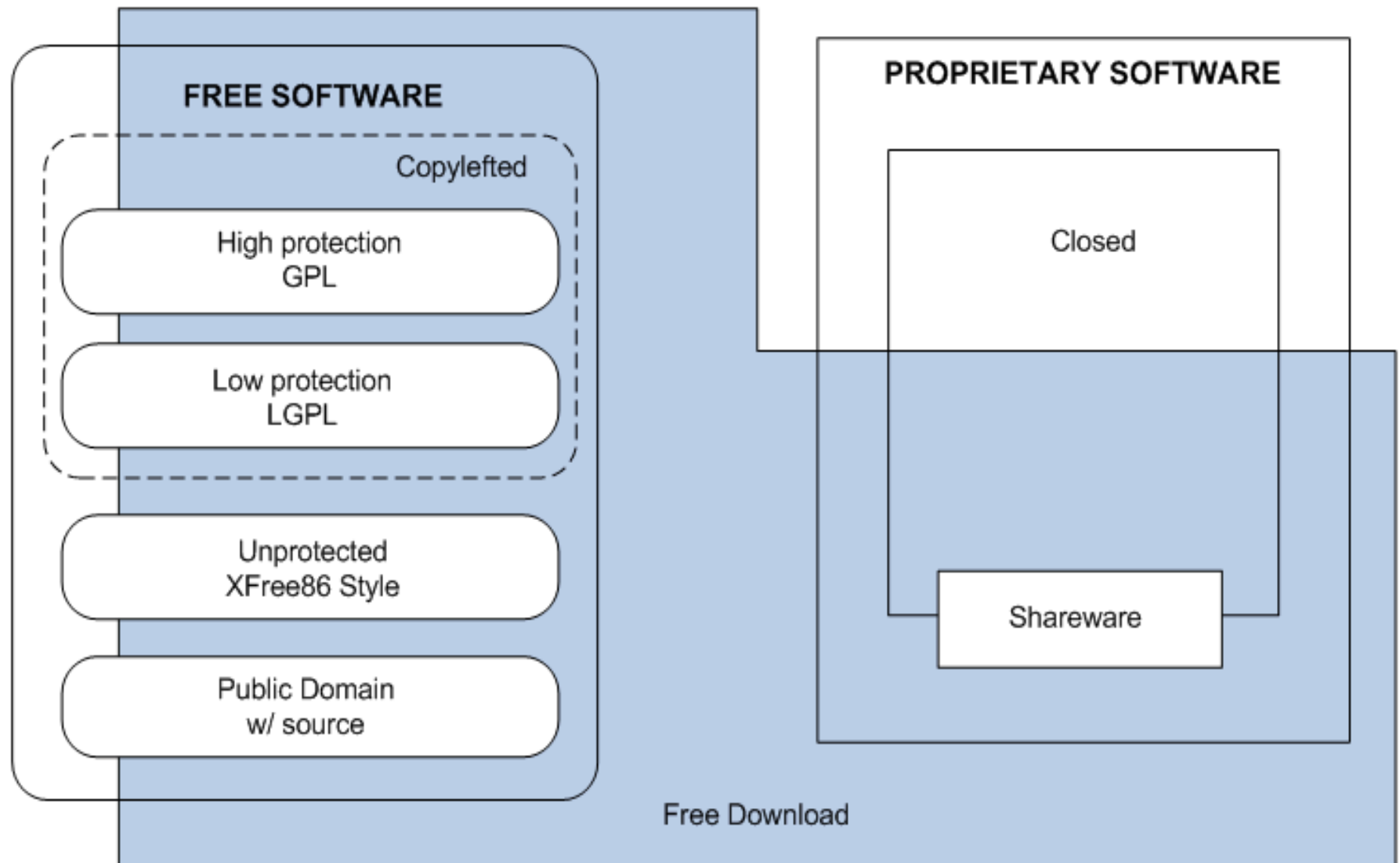- Represent the members of the Free Software community

GNU Project

- 'GNU`s Not Unix'
- Launched in 1984 by Richard M. Stallman
- Develop a complete Unix-like operating system which is free software
- GNU Manifesto
- Components of the GNU operating system put together
- Kernel missing
- Linus Torvalds: Linux
- Linux ↔ GNU/Linux

GNU General Public License (GPL)

Software Categories/Licensing Models

FREE SOFTWARE

Copylefted

High protection
GPL

Low protection
LGPL

Unprotected
XFree86 Style

Public Domain
w/ source

Free Download

PROPRIETARY SOFTWARE

Closed

Shareware

GPL I

- Formulated by Richard Stallman
- First released by the FSF in 1989
- GPLv2 released in 1991
- Software licensed under the GPL can not be made proprietary
- Derivative works from free software must also be free
- Not permitted to combine a free program with a non-free program unless the entire combination is then released as free software under the GPL

  → 'viral clause'

GPL II

- Preamble of the GPL:

  'The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU GPL is intended to guarantee freedom to share and change free software to make sure the software is free for all its users.'

- Primary purpose of the GNU GPL is to preserve users' freedom to use, share and modify free software

- GPL does not hinder that software is commercially exploited

GPLv3 I

- First major update since 1991
- Co-authors: Richard Stallman & Eden Moglen
- January 16, 2006: release of the first public draft of the GPLv3
- July 27, 2006: release of the second draft
- 1-year public review for proposing changes and finalizing the GPLv3
- Final version is expected by spring 2007
- Products licensed under GPLv2 will have to be relicensed for GPLv3

GPLv3 II

- Much more complex and detailed than the previous versions
- Changing environment:
  - New restrictions
  - Worldwide expansion of the free sw community
- License that acts consistently in many different legal systems
- Improve compatibility with other free sw licenses
- Automatic patent license free of charge / clause aimed at prohibiting developers from adding restrictions to their GPL-based products

Digital Rights Management (DRM) I

- Protect high-value digital assets
- Control distribution and usage
- Offer content protection against unauthorized access to the digital content
- Core concept: use of digital licenses which specify certain usage rules for a digital content
- Consumer purchases a license granting certain rights to him instead of buying the digital content

DRM II

- FSF: 'Digital Restrictions Management'
- DRM technology places limits on how consumers can play movies, music or other digital content
- DRM systems ...
  - ... take control out of people's hands or violate their privacy
  - ... do not respect the rights of free software users
- DRM is fundamentally incompatible with the purpose of the GPL which is to protect users' freedom

DRM III

- GPLv3 ensures that the software it covers will neither be subject to, nor subject other works to, digital restrictions from which escape is forbidden

- GPL software cannot use digital restrictions unless users can control them

- License does not prohibit the implementation of DRM

  → but DRM features that can not be removed

- Clauses only clarify points that were already implied in previous drafts

Stakeholders of free software

Stakeholders of free software

- Programmers / Developers
  - Why work on free software?

- Users
  - Why use free software?

Factors of Motivation I

- Community plays a crucial role
- Utilize the collective knowledge and expertise of hundreds of developers
- Intellectual challenge
- Creativity and pride for achieving something
- Social contact with people who share the same interests and ideas
- Reputation within the community

Factors of Motivation II

- Joy
- Work on a project without instructions from a superior
- Curiosity / Experimentation
- Ego-Satisfaction
- Charity
- Thankfulness

Advantages for Users

- No license fee / Available for limited cost or totally free of charge
- Can be freely and legally copied and used on an unlimited number of devices
- Access to source code makes it easier to correct errors
- Errors can be found and fixed faster
- Faster improvement in quality
- Adaptability to individual needs
- Independence from software publishers

Videos