

Open Source { Free } Software

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Open Source (Free) Software

A methodology “single-handedly” invented by an MIT researcher
Richard Stallman



“Free software” is a matter of liberty, not price. To understand the concept, you should think of “free speech”, not “free beer.”

Software Freedoms: Freedom 0

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software.

Users have 4 essential freedoms:

- **Freedom 0:** The freedom to run the program, for any purpose.
- This is the freedom for any kind of person or organization to use it on any kind of computer system for any kind of job or purpose without telling the original developer.

Freedom 1

- **Freedom 1:** The freedom to study how the program works, and change it to make it do what you wish.
- To exercise this freedom you must have access to the source code of the program.
- Accessibility of source code is a necessary condition for free (open source) software.

Freedom 2 & 3

- **Freedom 2:** The freedom to redistribute copies so you can help other programmers.
- **Freedom 3:** The freedom to distribute copies of your modified versions to others. By doing this you can give the whole community a chance to benefit from your changes.
- The redistributed code must contain both the executable and source codes in order to be able to make changes.

Invention of Copyleft

- In order to “protect” the software or intellectual property that goes into the software, the concept of **Copyleft** was invented
- It is a new concept helping programmers to benefit from and to get credit for their work
- To understand Copyleft, we first study “Copyright”
- Copyleft is not the opposite of Copyright

Simplest Copyleft = No Copyright :(

- Copyleft is a general method for making a program free, and requiring all modified and extended versions of the program to be free as well.
- The simplest way to make a program free software is to put it in the public domain, without Copyright.
- This allows people to share the program and their improvements, if they cooperate.
- They can make changes, many or few, and distribute the result as a commercial product (sold for money).
- People who buy or receive the program in that modified form lose the freedoms given by the original author.

The Concept of Copyleft

- We want to give all users the freedom to distribute and change the software.
- So instead of putting our work in the public domain without copyright, we “copyleft” it.
- Copyleft says that anyone who distributes the software, with or without changes, must transfer the freedom.
- All future users and contributors of the software acknowledge the original maker.

Copyleft = Copyright + Distribution Terms



- To copyleft a program, we first state that it is copyrighted
- Then we add distribution terms: Everyone has the rights to use, modify, and redistribute the code only if the distribution terms are unchanged.
- Commercial software developers (Microsoft, Adobe) use copyright to take away the users' freedom.
- The “copyleft” concept uses copyright to guarantee the freedom of users and developers.

Examples

- Important open source projects and programs:
 - Wikipedia
 - Mozilla (Firefox)
 - Linux
 - Berkeley UNIX
 - Apache Web Server
- Important commercial projects and programs:
 - Encyclopedia Britannica
 - Adobe Photoshop
 - Microsoft Office
 - Oracle Database
 - Apple QuickTime

- The most successful open source project: <http://en.wikipedia.org>
- The reason for success: Anyone can contribute, not just programmers
- You can edit an existing entry, and write your version, and then publish!

Encyclopedia Britannica

commercial

selected authors can contribute
corrections take long time
constant until reprint
failure

Wikipedia

free (open source)

anyone can contribute
corrections are instantaneous
grows every day
success

Summary

- Richard Stallman's open source projects: GNU, Emacs, Gnash, Coreboot, Octave, GNU PDF
- More details on Copyleft: <http://www.gnu.org/copyleft/gpl.txt>
- Turkish: <http://www.gnu.org/copyleft/copyleft.tr.html>
- © All rights reserved © All wrongs reserved