

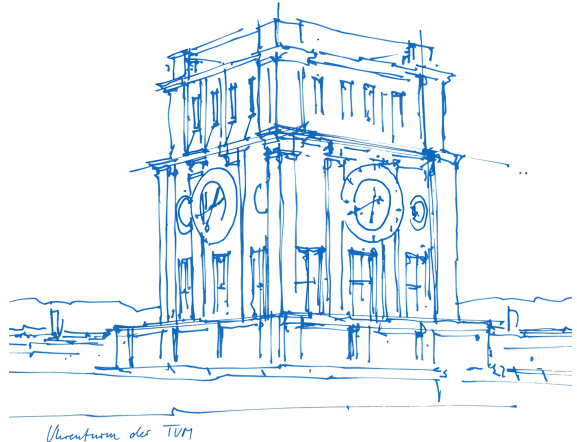
Open Source Lab

Open Source and FOSS

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Chair of Connected Mobility
TUM School of Computation, Information and Technology
Technical University of Munich

Garching, October 23, 2023



Outline

- 1 Open Source Concepts
- 2 FOSS
- 3 Impact on Society

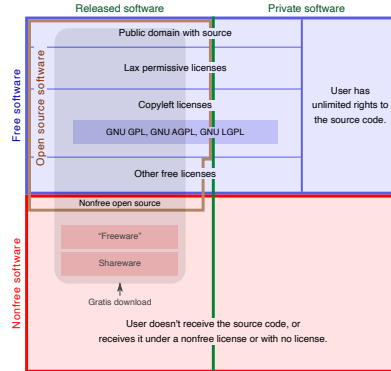


Figure 1 Categories of Free and Nonfree Software ¹

¹<https://www.gnu.org/philosophy/categories.en.html>



Figure 2 Logo of the Free Software Foundation

The FSF grants the user **four essential rights**.²

0. The freedom to run the program as you wish, for any purpose.

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Figure 2 Logo of the Free Software Foundation

The FSF grants the user **four essential rights**.²

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1. The freedom to study how the program works, and change it so it does your computing as you wish. (Access to the source code is a precondition for this.)

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2. The freedom to redistribute copies so you can help others.
3. The freedom to distribute copies of your modified versions to others.

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Meaning of *free*

„Think of "free speech", not "free beer".“ ³
- Richard Stallman

³<https://quotepark.com/quotes/1950888-richard-stallman-think-of-free-speech-not-free-beer/>

What is open source?

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Recap

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Comparison: What is free software?

Recap

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What is open source software?

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Comparison: What is free software?

Free software is software that comes with permission for anyone to use, copy, and/or distribute [...].

The Open Source Way

Following the “*open source way*”⁴ requires the following principles:

Transparency:

Collaboration:

Release early and often:

Inclusive meritocracy:

Community:

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Following the “*open source way*”⁴ requires the following principles:

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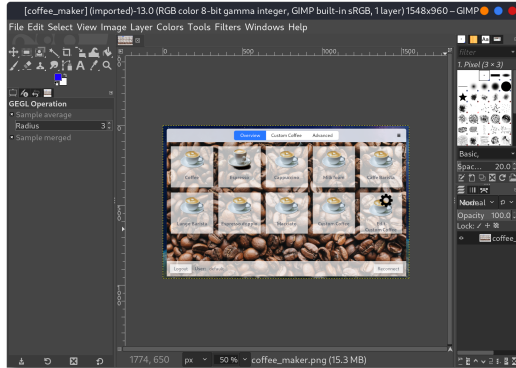
Release early and often: Rapid prototypes can lead to rapid discoveries.

Inclusive meritocracy: The best ideas should win. Include diverse perspectives.

Community: Shared values guide decision making.

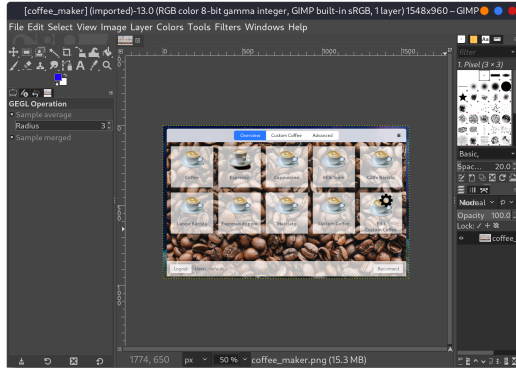
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Example: GIMP



Is GIMP “open source”?

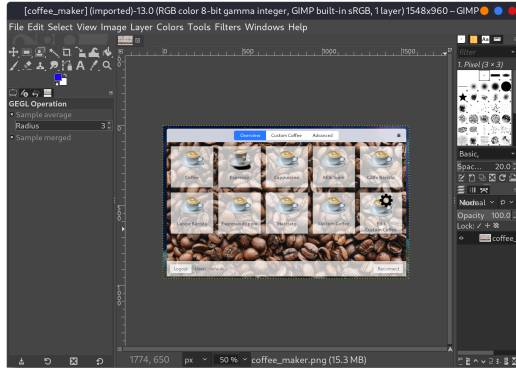
Example: GIMP



Is GIMP “open source”?

- Can be modified: **Yes**
- Can be shared: **Yes**
- Source Code:
<https://www.gimp.org/source/#gimp-source-code>

Example: GIMP

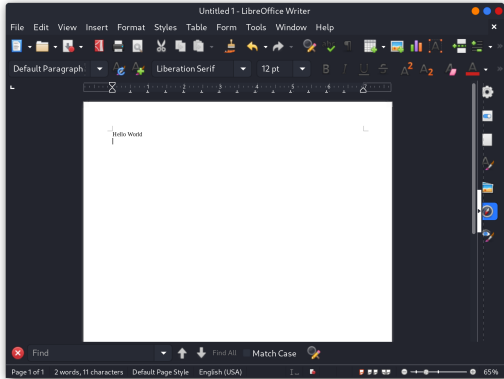


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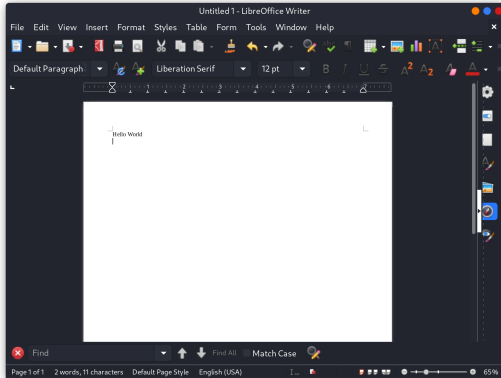
⇒ **YES**

Example: LibreOffice



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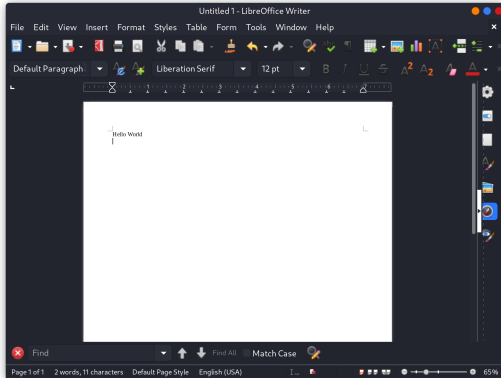
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Is LibreOffice “open source”?

- **Can be modified:** Yes
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- **Source Code:** <https://gerrit.libreoffice.org/admin/repos>

Example: LibreOffice



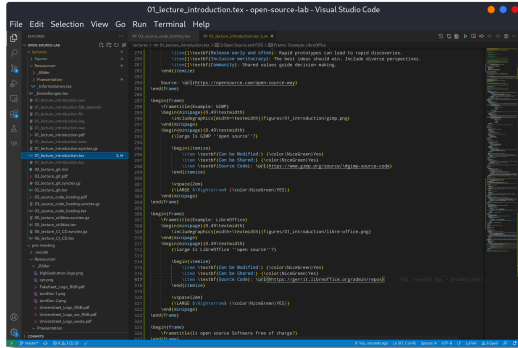
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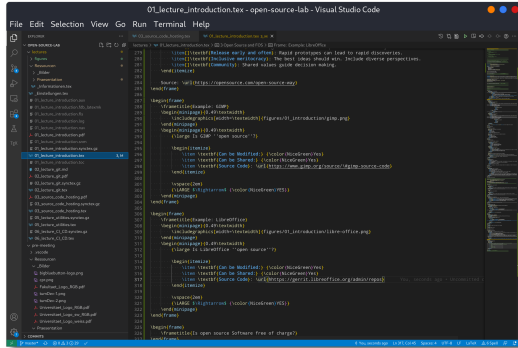
Example: Visual Studio Code



Is Visual Studio Code “open source”?

- Can be modified: **Yes**
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- Source Code: <https://github.com/microsoft/vscode>

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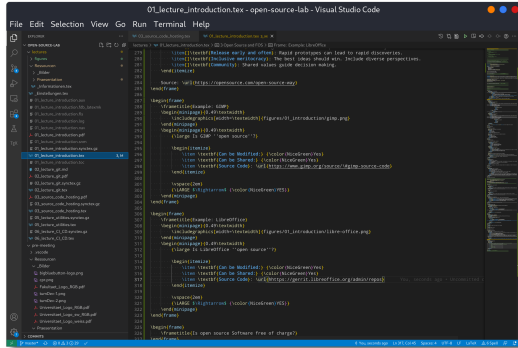
■ Can be modified: **Yes**

■ Can be shared: **Yes**

■ Source Code: <https://github.com/microsoft/vscode>

⇒ **YES**

Example: Visual Studio Code



Is Visual Studio Code “open source”?

- Can be modified: **Yes**
- Can be shared: **Yes**
- Source Code: <https://github.com/microsoft/vscode>

⇒ **YES**, but actually **NO!**

The actual executable (binary) you download is **not** open source since it is licensed under a not-FOSS license and contains telemetry/tracking.

Alternative: VSCodium: <https://vscodium.com/>

Is Open Source Software (OSS) free of charge?

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NO.

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What is FOSS?

FOSS stands for: **Free**-and-Open-Source-Software

In simple terms, FOSS is software that allows users to not only freely run the program for any purpose, but also provides users access to the code. Moreover, it also allows them to modify as they wish, as well as freely distribute copies of the original version or their altered version.

Source: <https://www.fosslinux.com/25393/what-is-foss-and-how-does-it-differ-from-freeware.htm>

TLDR: If you have to pay for it, it usually is not FOSS.

Example: Linux Kernel

The Linux Kernel Archives



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Protocol	Location
HTTP	https://www.kernel.org/pub/
GIT	https://git.kernel.org/
RSYNC	rsync://rsync.kernel.org/pub/

Latest Release
5.14.13


mainline:	5.15-rc6	2021-10-18	[tarball]	[patch]	[inc. patch]	[view diff]	[browse]
stable:	5.14.13	2021-10-17	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	5.10.74	2021-10-17	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
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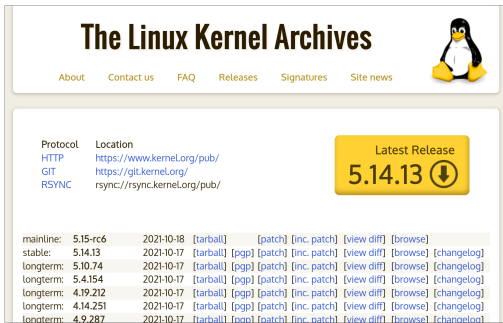
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Is Linux Kernel “FOSS”?

- Is it open Source: Yes
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⇒ YES

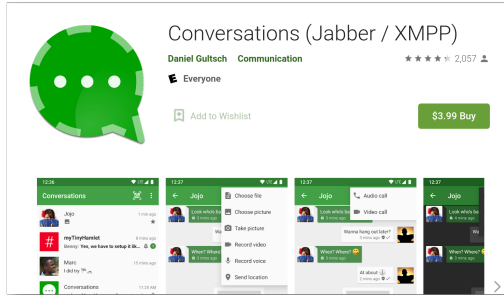
But only since it's under the GNU GPL (General Public License).

This happened one year after its initial release.

Anybody who tells me I can't use a program because it's not open source, go suck on rms. I'm not interested. 99% of that I run tends to be open source, but that's my choice, dammit.

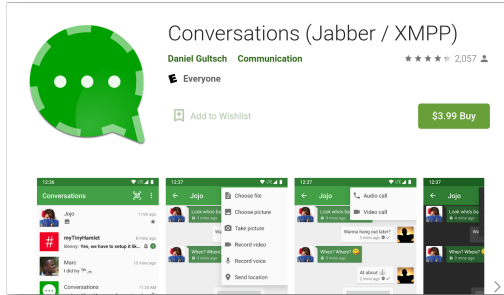
Source: Linus Torvalds

Example: Conversations



Is Conversations “FOSS”?

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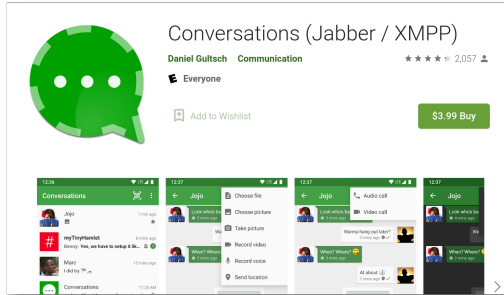


Is Conversations “FOSS”?

■ Is it open source: **Yes**

■ Is it free of charge: **No**

Example: Conversations



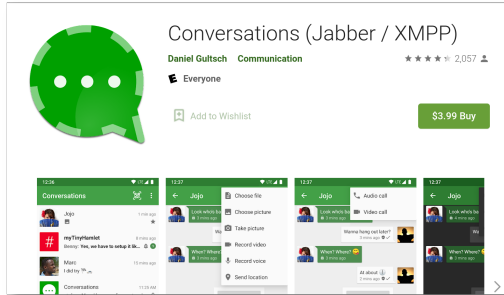
Is Conversations “FOSS”?

■ Is it open source: **Yes**

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⇒ **NO** and **YES**

Example: Conversations



Is Conversations “FOSS”?

■ Is it open source: **Yes**

■ Is it free of charge: **No**

⇒ **NO** and **YES**

Another popular open source but not FOSS example is Redhat Enterprise Linux. It is open source, but you need a license to properly use it.

To make money, open source companies usually sell paid support for their FOSS software.

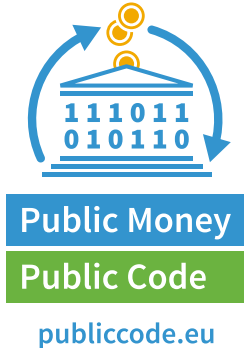
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Public Money Public Code

*Public Money? Public Code*⁵ aims to establish free software licenses as a standard in the public sector. **Idea:** Publicly financed software should be accessible to everyone.

⇒ This software should be **common property**!



⁵<https://publiccode.eu/de/>

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Public Money

Public Code

publiccode.eu

Immediate advantages:

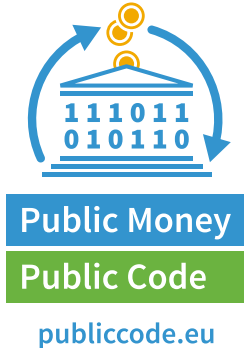
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- Software does not have to be rewritten
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Proclaimed longterm implications:

- Improves general welfare
- Reduces the costs of software and therefore saves money, which then e.g. can be used for social matters

⁵<https://publiccode.eu/de/>

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- **Abfallnavi API** - Access to the dates of garbage collection.
- **Ausbildungssuche API** - Access to the Bundesagentur für Arbeit.
- **Autobahn App API** - Up-to-date traffic data, images and Construction site information.
- **DIP API** - Everything related to the Deutscher Bundestag.
- **NINA API** - Civil Protection information (e.g. hazardous material dispersal or storms).
- **Interpol Notices API** - Retrieve people wanted or missing by Interpol via API.
- **Feiertage API** - API for all public holidays.
- **Ladesäulenregister** - Access to the charging station register.
- **Marktdatenstammregister API** - Register for the German electricity and gas market.
- **Polizei Brandenburg API** - News, flood, traffic, and forest fire warnings for Brandenburg.
- **SMARD API** - Access to electricity market data from the Federal Network Agency.
- **And many more!** <https://bund.dev/apis>