



A FREE LUNCH: FREE AND OPEN-SOURCE SOFTWARE MARCH 10, 2023

MONEY MONEY MONEY (MONEY)

Software! Call ‘em apps, call ‘em programs, just don’t call ‘em late for dinner. With software running on our computers we can do our accounting, write our novels, create art and music, make 3d models we can animate in video productions, code games, do any number of awesome things. Most people who write such software do so as a form of business, in that license to use such software is exchanged for money. You know, commerce. You’re familiar. You get this software in a baked, finalized form. Binary code, unintelligible to human programmers. The cake, but not the recipe.

You click Agree after scrolling through 10,000 words of legalese in the End-User License Agreement, not knowing what on Earth you’re signing away, agreeing to binding arbitration, offering your firstborn for sacrifice, etc. If you say you *own* software, you’re super wrong.

There is another way, though; a counterpoint to a model of software development that *restricts* use that instead explicitly *expands* use.

FREE AS IN FREEEEEDOOOOM



*William Wallace,
strong proponent of
the GPL3 license.*

When you hear “free” software, naturally you think, “oh, nice. It doesn’t cost money.” This is often true. However, vehement camps of passionate nerds disagree on the connotations and definitions of “free.”

Free as in no money – sometimes called “free as in free beer” – is the no-cost sense. “Free as in free speech” is the other idea. Not necessarily that the software has no cost, but that you the user have freedom to inspect and alter the underlying code.

The Free Software Foundation¹ defines four essential freedoms for the software user, nerdily starting at 0:

0. The freedom to run the program as you wish, for any purpose.
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.
2. The freedom to redistribute copies so you can help others.
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. Access to the source code is a precondition for this.

Software can then be released under various **licenses** that allow/spell out various levels of permissions to use and modify. The details distinguishing each are too tedious even for me to slog through, but the long and short of it is that you are much more free in using the software and if you wish you can examine the source code on GitHub or GitLab to make sure nothing nasty is in it. If it makes any sense to you, of course, but if it does you aren't probably in this class.

BE ADVISED

The software you will see next is not necessarily easy to use. It might look a little wonky; help and support may be slight or nonexistent, and installation can occasionally be weird. But it's free. And ethical. And exciting.

Now the centerpoint of the class: A big table of options for replacing paid software. You won't get the experience of seeing them in this handout, but c'est la vie.

¹I can't let it go without mention that the FSF is heavily involved with Richard Stallman, passionate and foundational free software activist, but also stubborn, overbearing, and very creepy and unsavory character. Many in the free software community want nothing to do with him.

THE GREAT GRID OF SUBSTITUTION

Program Purpose	Pro Program	Program Name	Website	Windows?	Mac?	Linux?
Office Suite	Microsoft Office	LibreOffice	libreoffice.org	yes	yes	yes
Photo Editing	Adobe Photoshop	GIMP	gimp.org	yes	yes	yes
Video Editing	Adobe Premiere, Apple Final Cut Pro, etc.	Openshot	openshot.org	yes	yes	yes
Vector Graphics	Adobe Illustrator	Inkscape	inkscape.org	yes	yes	yes
Desktop Publishing	Adobe InDesign	Scribus	scribus.net	yes	yes	yes
Archive Management	WinZip, WinRAR, etc	7Zip	7zip.org	yes	no	no
Media Player	Quicktime, Windows apps	VLC	videolan.org	yes	yes	yes
Web Browsing	Chrome, Edge, Safari, etc.	Firefox	mozilla.org	yes	yes	yes
Email	Outlook	Thunderbird	thunderbird.net	yes	yes	yes
Password Management	LastPass, ² 1Password, etc.	KeePass or Bitwarden	keepass.info , bitwarden.com	yes	yes	yes

THE WHOLE MEGILLAH

As we have seen, any number of tasks can be met by free and open-source software. But what if we thought bigger? Like, *much* bigger? What if free and open-source software ran the entire computer – was its **operating system**? It can.

² Don't use LastPass; they've had an inexcusable run of security disasters lately.

Aside from a couple of other options you'll basically never encounter,³ the player in this field is a bewildering number of variations on **GNU/Linux**. Linux itself is just the **kernel** of the operating system⁴ - the barebones basics that allow programs and processes to actually run on a computer. Different distributions of Linux then hang all the various necessities of the userspace off the kernel. If you can't afford Windows or a Mac computer, or don't want to be monitored and bothered and harassed into privacy-destroying services and telemetry, try Linux!

Caveats: the world is still made primarily for Windows and Macs, and tinkering with settings below the surface instantly becomes baffling and requires extensive use of a command line. But there's a good chance you won't need to ever do that. A few more approachable "distros" that I like for ease of use:

- Ubuntu
- Pop! OS
- Zorin
- Fedora

Now go out and try some free software! Fire off some questions to fwalther@cityofmillvalley.org, and I'll see you at the next class. ... Right?



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³ Sorry, BSD and Haiku and ReactOS.

⁴ Created by Linus Torvalds in the early '90s. Unfortunately, Torvalds is also a stubborn, egotistical, berating jerk, though less odious than Stallman.