

# Session 4

FLOSS: Free Libre Open Source Software



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# Quizz about last session



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# Presentation

Is there a difference between free softwares and open source softwares ?

# 4 freedoms of Free Software

0: the freedom to **run the program for any purpose**, any way you like.

1: the freedom to help yourself by **changing the program** to suit your needs.

2: the freedom to help your neighbor by **distributing copies** of the program.

3: the freedom to help build your community by publishing an **improved version** so others can get the benefit of your work.



**Richard Stallman**

Free Software Foundation  
(1985)

General Public Licence  
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# 10 principles of Open Source

**1. Free Redistribution**

**2. Source Code**

**3. Derived Works**

**4. Integrity of The Author's  
Source Code**

**5. No Discrimination Against  
Persons or Groups**

**6. No Discrimination Against  
Fields of Endeavor**

**7. Distribution of License**

**8. License Must Not Be Specific  
to a Product**

**9. License Must Not Restrict  
Other Software**

**10. License Must Be  
Technology-Neutral**



**Bruce Perens & Eric  
Raymond**

Open Source Initiative  
(Founded 1998)

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Free software  
activists



Open source  
boosters



“Open Source is a development methodology, Free Software is a social movement”

Stallman

# Public Code

# What's your stack?

Open Source software is not only geeky stuff, black screens and green font.

Here is mine:



<https://espanso.org/>



<https://maccy.app/>



<https://rambox.app/>



# Typology of open source software

- Languages (Ruby, Python)
- Frameworks (Rails, Django, Node.js)
- Databases (MySQL, MongoDB)
- Web and applications and servers (Apache, Nginx)
- Protocols (HTTP, POP, TCIP)
- Encryption and security (OpenSSL and OpenSSH)
- OS (Debian, Android)
- Browsers (Firefox, Chromium)

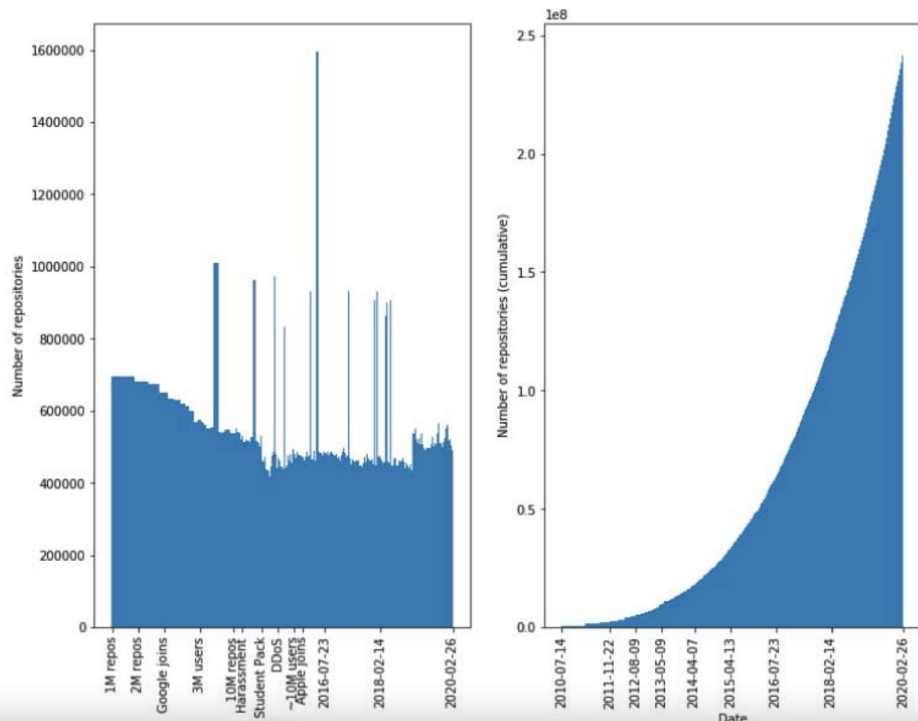
Inventory resource <https://libraries.io/>

# Who's making public code?

- Independent developers
- Companies
- Universities
- Public institutions

And ... AI nowadays.

Figure 26.2. Increase in number of repositories on GitHub between 2010 and 2020



Source: GitHub (2020[14]), The Rise of GitHub,  
<https://github.com/bugout-dev/mirror/blob/master/notebooks/rise-of-github.ipynb>.

*"Software is eating the world"*

Marc Andreessen

Open source made software cheap  
and allowed more project to launch.

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# Open source won even Microsoft is doing it ...

- Microsoft acquired Github for 7.5 Billion in 2018 and is now one of the largest Open Source contributor

Source <https://opensourceindex.io/>

Q Organizations...		Industry	August	2023
RANK	ORGANIZATION	ACTIVE CONTRIBUTORS	TOTAL COMMUNITY	
1	Google	5633 +201	10355 +274	>
2	Microsoft	3999 +184	7945 +314	>
3	Red Hat	3128 +85	4615 +100	>
4	Intel	1940 +114	3951 +120	>
5	Amazon	1626 +87	3474 +144	>
6	IBM	1400 +58	2986 +133	>
7	Oracle	810 +34	1404 +43	>
8	VMware	787 +27	1321 +45	>
9	SAP	730 +33	1234 +47	>
10	GitHub	655 +18	1407 +50	>

# Why open source?

## Developers

- Cheaper to build
- Easier to distribute
- Solve problems once
- A way to show your skills and get hired

## Companies

- Innovation speed of innovation cycles
- Public image / advocacy
- Hiring policy



# Digital infrastructure

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# Several wake up calls

- Heart bleed, 2011 (OpenSSL)
- Log4Shell, 2015 (Log4J)
- Leftpad (2016)

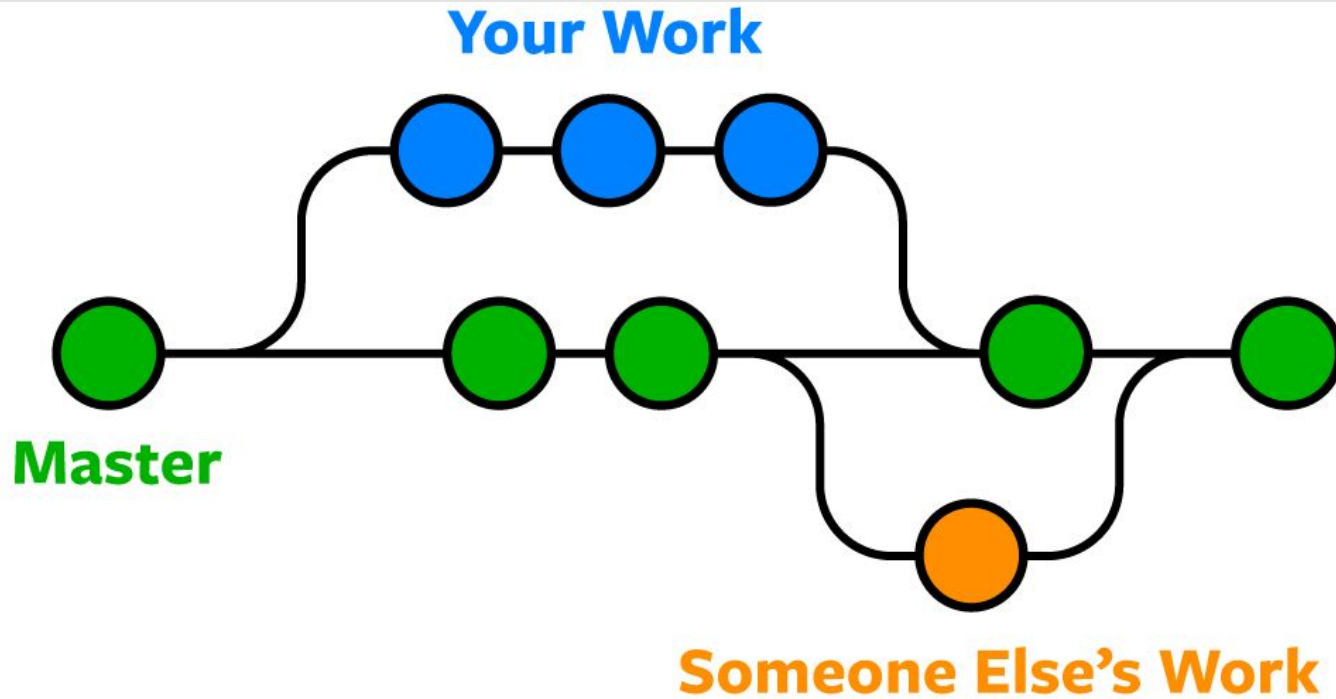
# Open Source challenges

- Maintainers burnout
- Hype cycles (Open source is always legacy, Always something new)
- Not always a clear business Model (no immediate risk of downtime -> no model)
- Funding issues (Overhead cost, works only for large projects)
- Threatened independence (Big tech are now largest contributors)
- More usage, less quality contribution
- Diversity issues (only 5.4% of contributors are women vs 15% in cies)
- Governance issues



# Hands on time!

# Git



# An example

The screenshot shows the GitHub repository page for 'decidim / decidim'. The repository is public and has 346 issues, 44 pull requests, 6 projects, 3 security issues, and 53 watchers. The current branch is 'develop'. The repository contains 80 branches and 130 tags. The commit history shows 5,785 commits. The file list includes:

File	Description	Time
.devcontainer	Add Visual Code Remote Containers support (#6638)	3 years ago
.github	Update Node.js from v16.13.0 to v18.17.1 (#11564)	3 weeks ago
bin	Add script for checking the status of the backports (#11065)	2 months ago
config	Redesign: filters help (#11520)	2 weeks ago
decidim-accountability	Redesign: admin (#11144)	3 days ago
decidim-admin	Redesign: admin (#11144)	3 days ago
decidim-api	Remove consultations module (#11171)	2 months ago
decidim-assemblies	Redesign: admin (#11144)	3 days ago
decidim-blogs	Redesign: admin (#11144)	3 days ago
decidim-budgets	Redesign: admin (#11144)	3 days ago