Session 4

FLOSS: Free Libre Open Source Software

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Presentation

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

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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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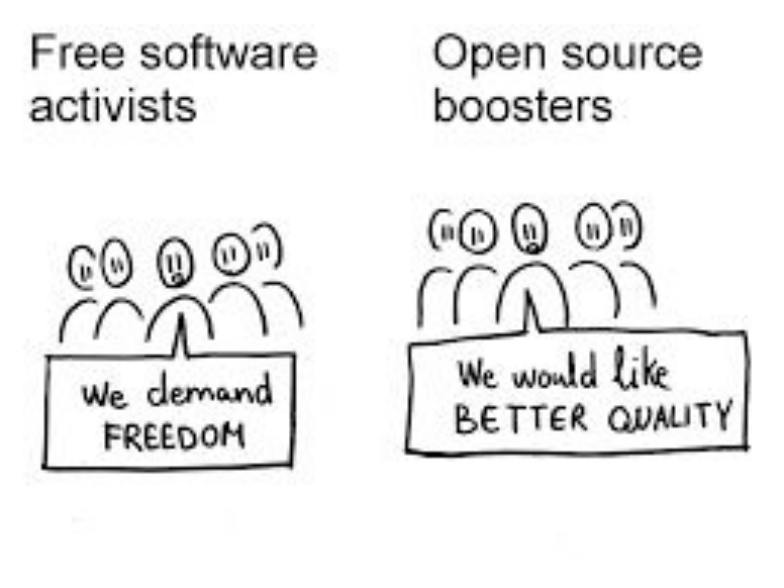

“Open Source is a development methodology, Free Software is a social movement”

Stallman

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Public Code

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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/

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Who’s making public code?

- Independent developers
- Companies
- Universities
- Public institutions

And … AI nowadays.

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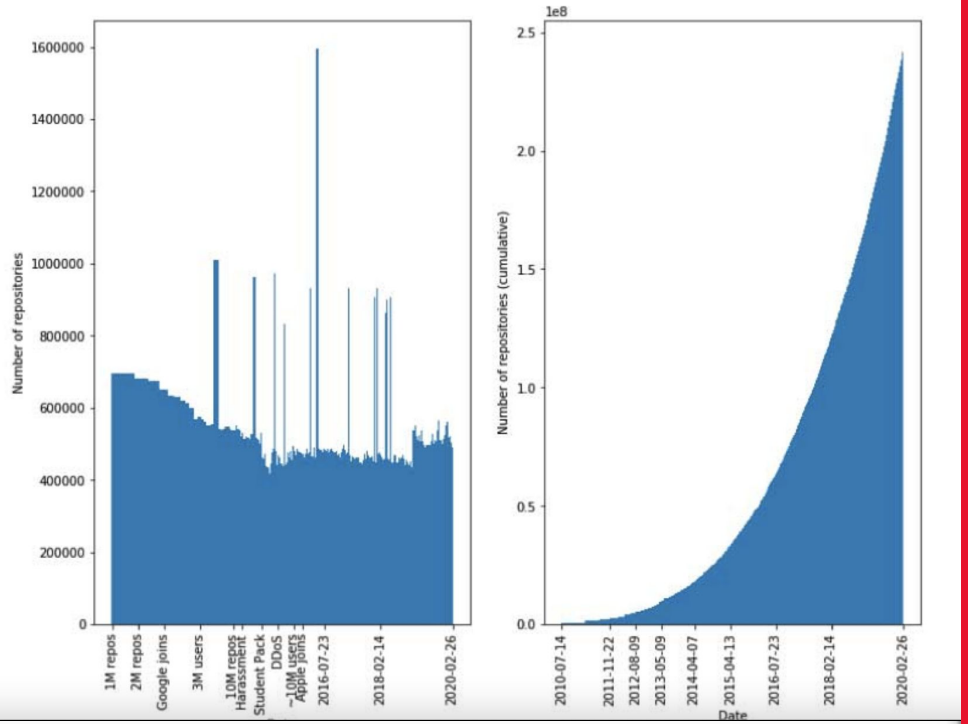
Figure 26.2. **Increase in number of repositories on GitHub between 2010 and 2020**



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/

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

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Digital infrastructure

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Several wake up calls

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

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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

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Hands on time!

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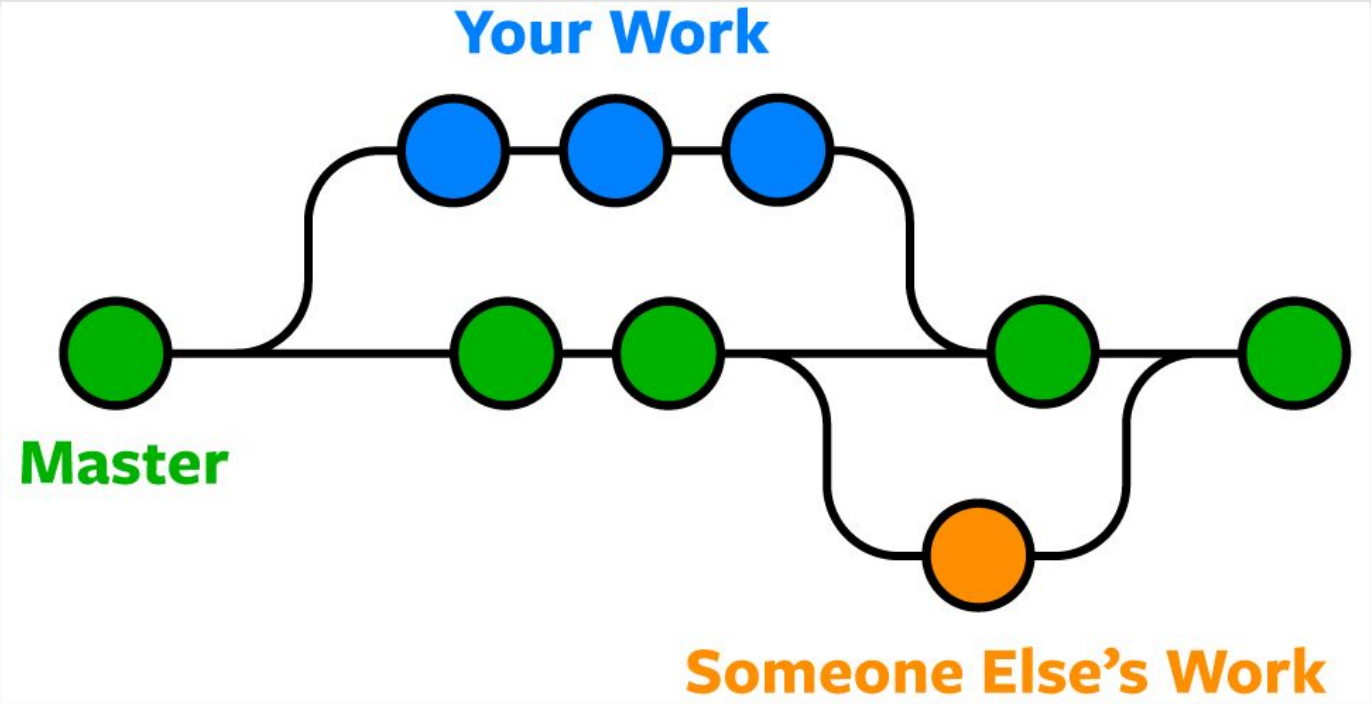
Git



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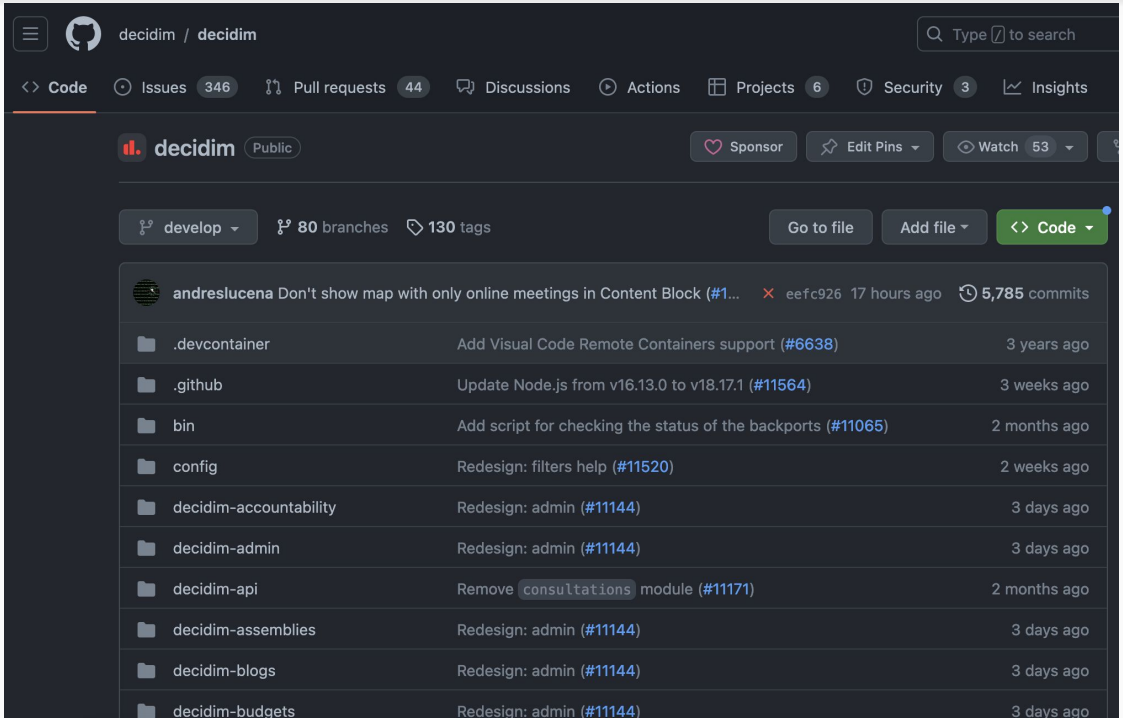
An example



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