Open Source

Free software: what it is (and what it's not)

https://github.com/maZahaca/inclusive-opensource/blob/main/talks/introduction-to-opensource/intro-to-opensource.md

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About me

- Andrew Reddikh, passionate software engineer and tech geek with more than 15 years in software development, micro service architecture, and cloud infrastructure. On daily basis, Andrew uses Node.js, TypeScript, Golang, and DevOps best practices to build a better tech world by contributing to open-source projects and building various fintech startups.

AndrewRedUK

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Open:UK

Early days of free software

- "Can you fix my printer?”

- In 1980, Richard Stallman at the AI Lab were

refused access the source code for the Xerox 9700.

- This experience convinced Stallman of people's need to be able to freely modify the software they use.

Birth of GNU Project

- 1983: Richard Stallman announces the GNU Project.

- Motivation: Create a free Unix-like operating system

- **The GNU Manifesto** (1985)

  - Emphasis on freedom to modify and share software.

  - Opposition to proprietary software's restrictions.

  - Encouragement of a cooperative programming community

- GNU/Linux: Combination of GNU components and the Linux kernel creates a complete free operating system

GNU GPL Principles

- Freedom to run the program for any purpose.

- Freedom to study and modify the program.

- Freedom to redistribute copies.

- Freedom to distribute modified versions.

Open Source Initiative (OSI)

- In 1998, a group of individuals, replaced the term "free software" with "open source". Term that would appeal to business executives and software developers.

- The Open Source Initiative (OSI) was founded in February 1998 to promote and protect open source software.

- The OSI's mission is to educate about and advocate for the benefits of open source and to build bridges among different constituencies in the open source community.

Is Open Source == FREE?

- Open source software is not always free, but it is generally available at no cost.

- The term "free" in open source refers to the freedom to use, modify, and distribute the software, not to its price.

Values of Open Source

- **Transparency**: Open source software makes its source code available for anyone to view, understand, and verify.

- **Collaboration**: Open source projects thrive on collaborative contributions from a diverse community of developers. This collective effort results in more innovative, robust, and high-quality software.

- **Freedom**: Users of open source software have the freedom to use, modify, and distribute the software.

- **Community**: A vibrant community forms around open source projects, providing support, sharing knowledge, and driving the software's development and improvement through collective effort.

- **Security**: The open nature of the code allows many developers to review, identify, and fix vulnerabilities quickly.

- **Cost-effectiveness**: Open source software is generally free to use, reducing or eliminating the costs associated with licensing fees.

Open Source Licenses

- Open source license is a legal agreement that define the terms under which software can be used, modified, and distributed.

- These licenses grant users the freedom to use, modify, and distribute the software while ensuring that the software remains open source.

- Some of the most popular open source licenses include the GNU General Public License (GPL), the Apache License, and the MIT License.

Types of OSS Licenses

- **Copyleft** Licenses:

  - Require derived works to be distributed under the same license terms.

  - Aim to ensure software remains free and open.

  - Example: GNU General Public License (GPL).

- **Permissive** Licenses:

  - Allow more flexibility in how software can be used and redistributed.

  - Permits proprietary use of the code.

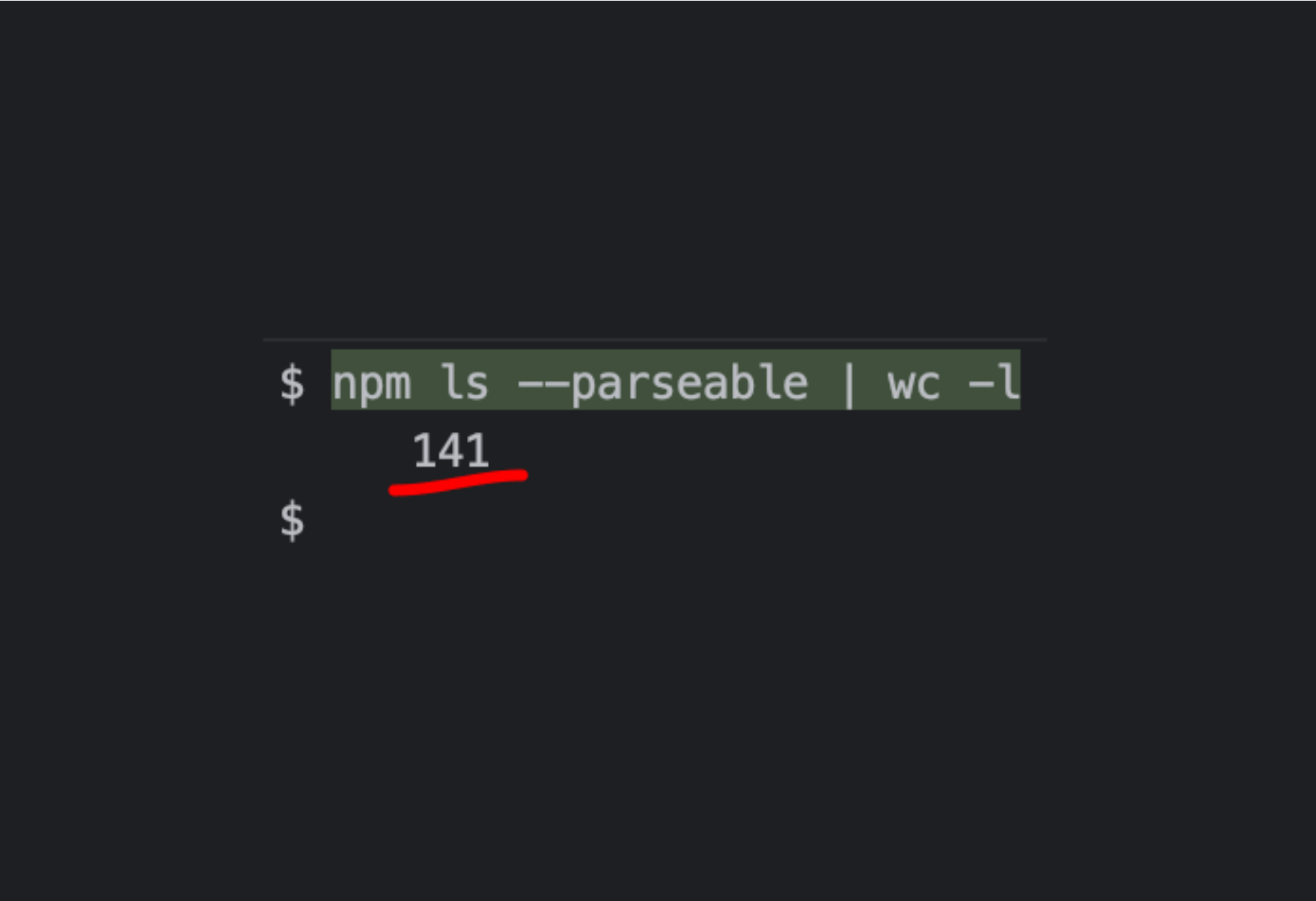 - Examples: MIT License, Apache License 2.0

Open Source Licenses
Comparison

snyk	Copyleft					Permissive			
	GPLv3	AGPLv3	LGPLv3	EPL 1.0	MPL	Apache	MIT	BSD	Unlicense
Permissions in addition to commercial use, distribution, modification:									
Patent use	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Private use	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Conditions									
Disclose source	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴	🔴
License & copyright notice	🟢	🟢	🟢	🟢	🟢	🟢	🟢	Source	🔴
Network use is distribution	🔴	🟢	🔴	🔴	🔴	🔴	🔴	🔴	🔴
Same license	🟢	🟢	Library	🟢	File	🔴	🔴	🔴	🔴
State changes	🟢	🟢	🟢	Some	🔴	🟢	🔴	🔴	🔴
Limitations/Disclaimers									
Liability	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Warranty	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Trademark use	No explicit limitation				🟢	🟢	🔴	🔴	🔴

Choosing the Right License

- Project Goals: Determine whether to enforce open source (copyleft) or allow proprietary use (permissive).

- Community and Ecosystem: Consider the norms and expectations of the project's community.

- Legal Requirements: Understand the legal implications and compliance needs.

We use open source
even though we don't know it

- **Package Managers** - unlock the speed we use OSS to build our products

- pip install (Python)

- npm install (JavaScript)

- go get (Golang)

- brew install (MacOS)

The Role of Community in Open Source

- **Collaboration and Contribution**
  - Collective Development, Diverse Perspectives
- **Support and Mentorship**
  - Knowledge Sharing, Mentorship Programs
- **Quality Assurance**
  - Peer Review, Testing and Feedback
- **Sustainability**
  - Continued Development, Funding and Resources

Examples

Private Source
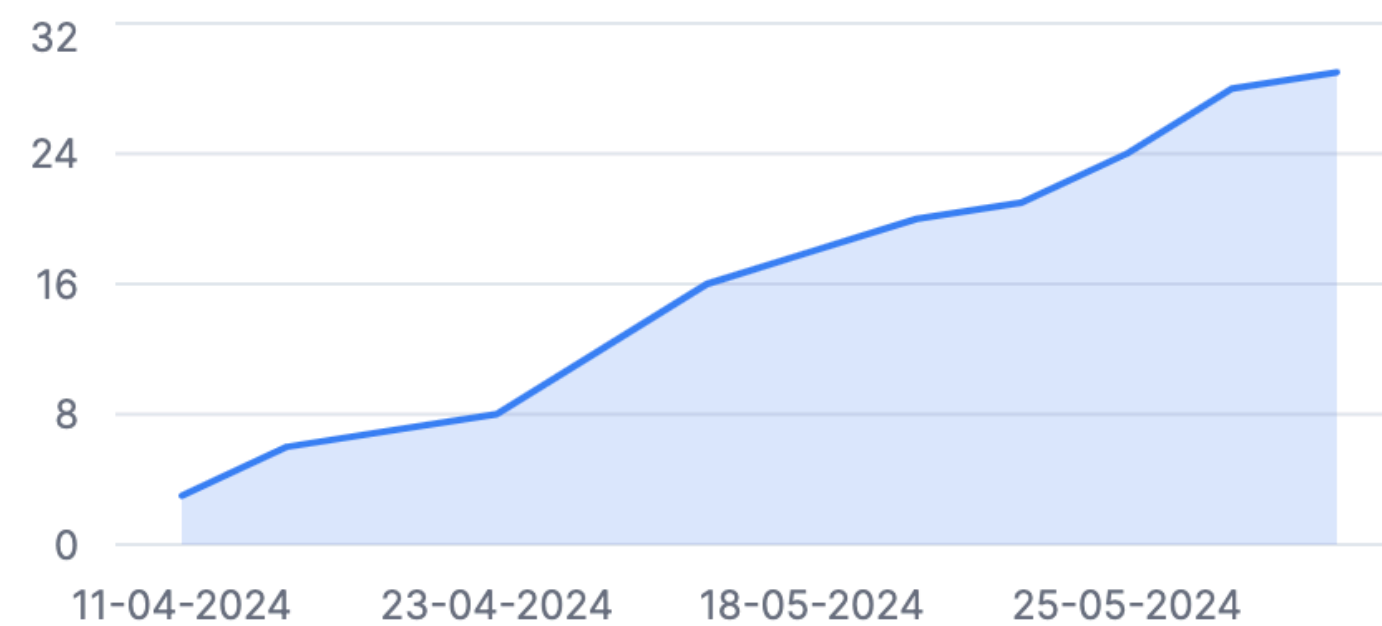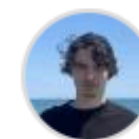## burned out / project died
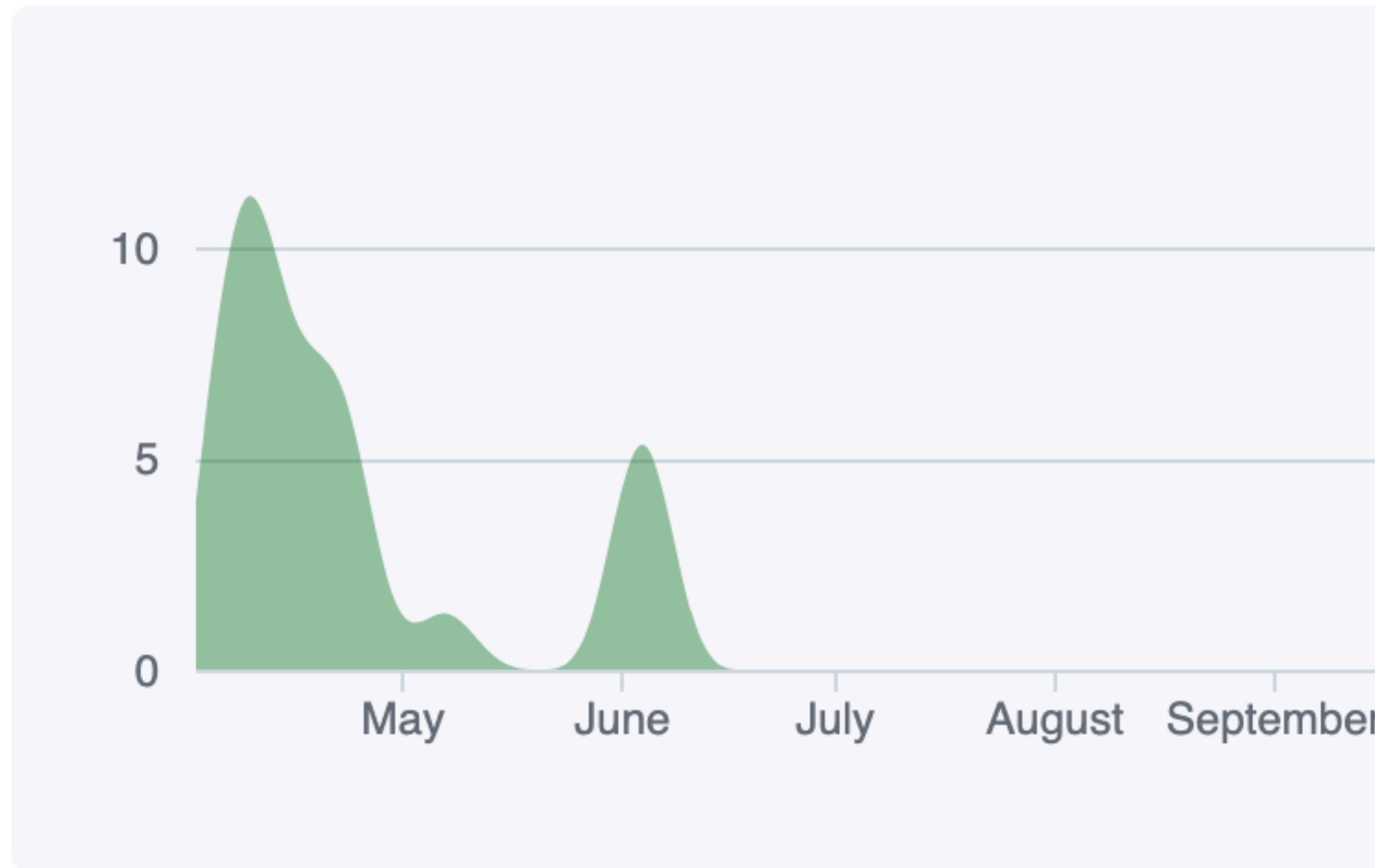
Open Source Project Metrics

⭐ Stars

💪 Contributors

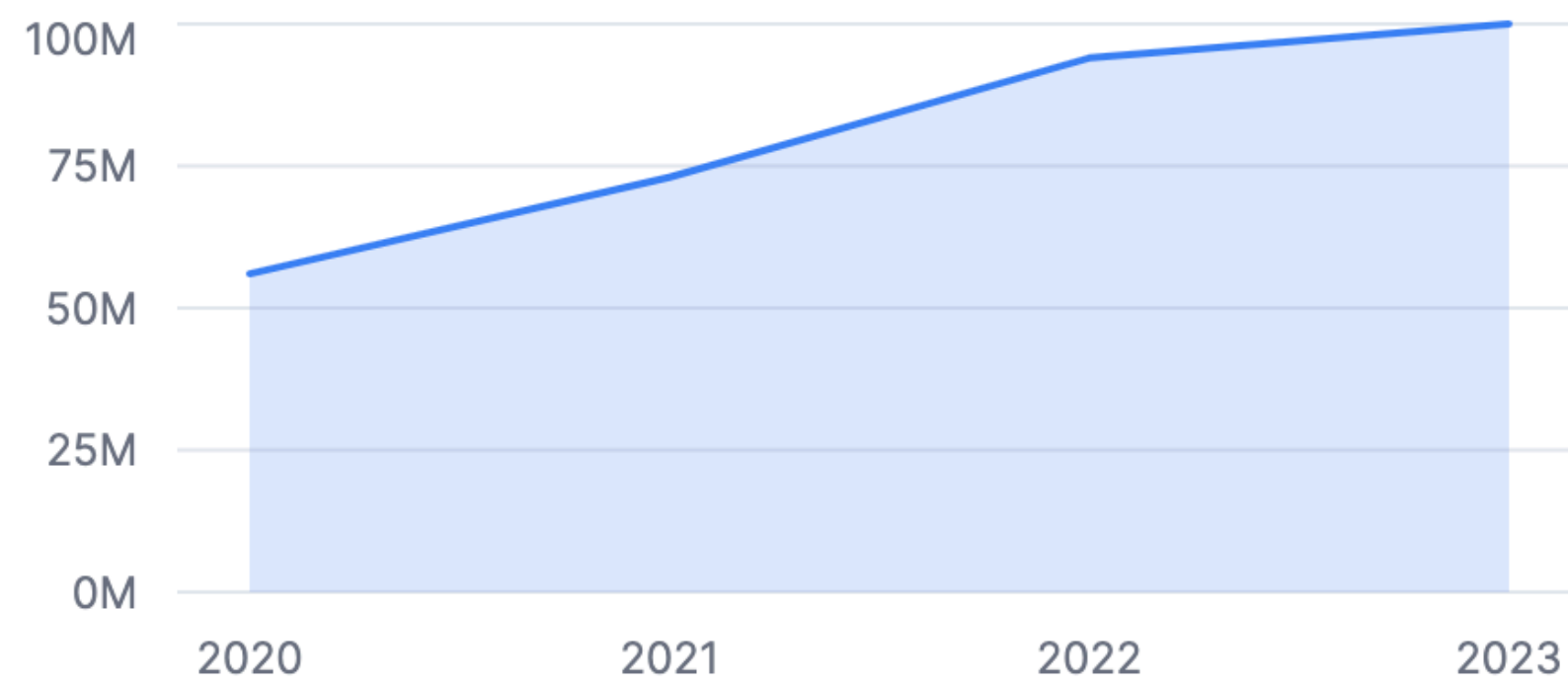|	
🧑 Darginec05	579
👩 maZahaca	26
🧑 silverlila	2
🧑 leach-mrt	2
🧑 ori-avraham	1
🧑 penghuili	1
🧑 eddiejaoude	1
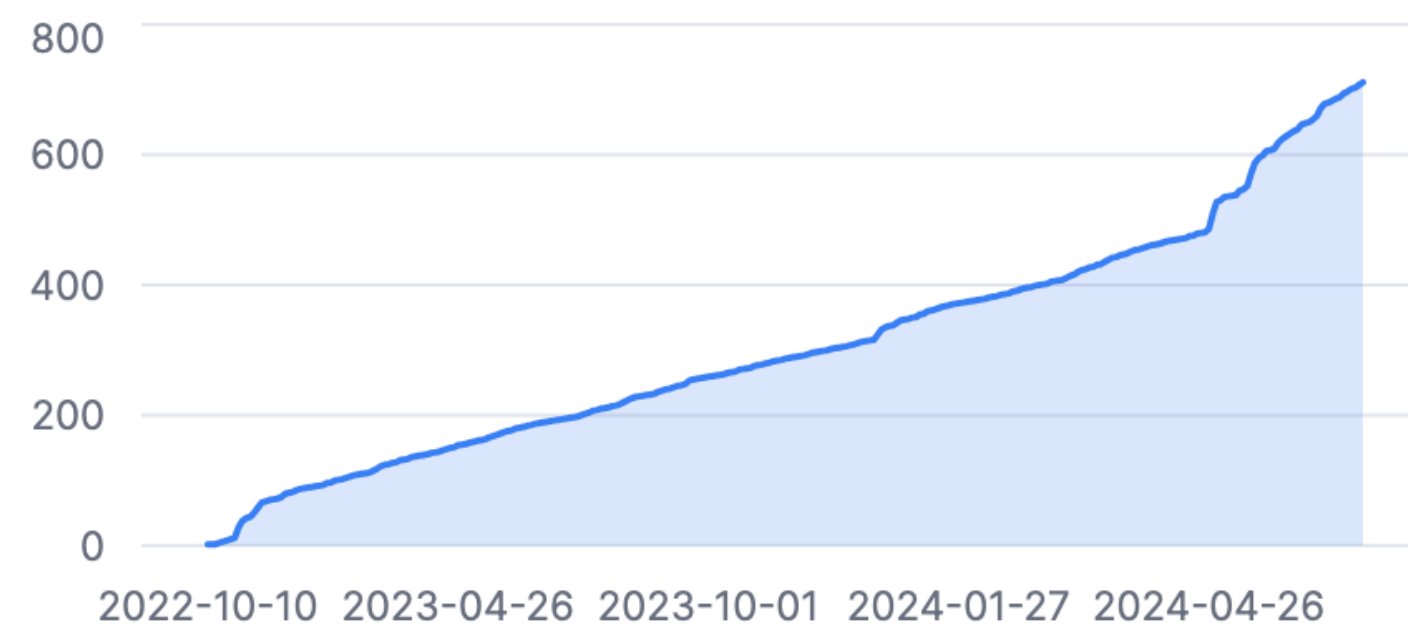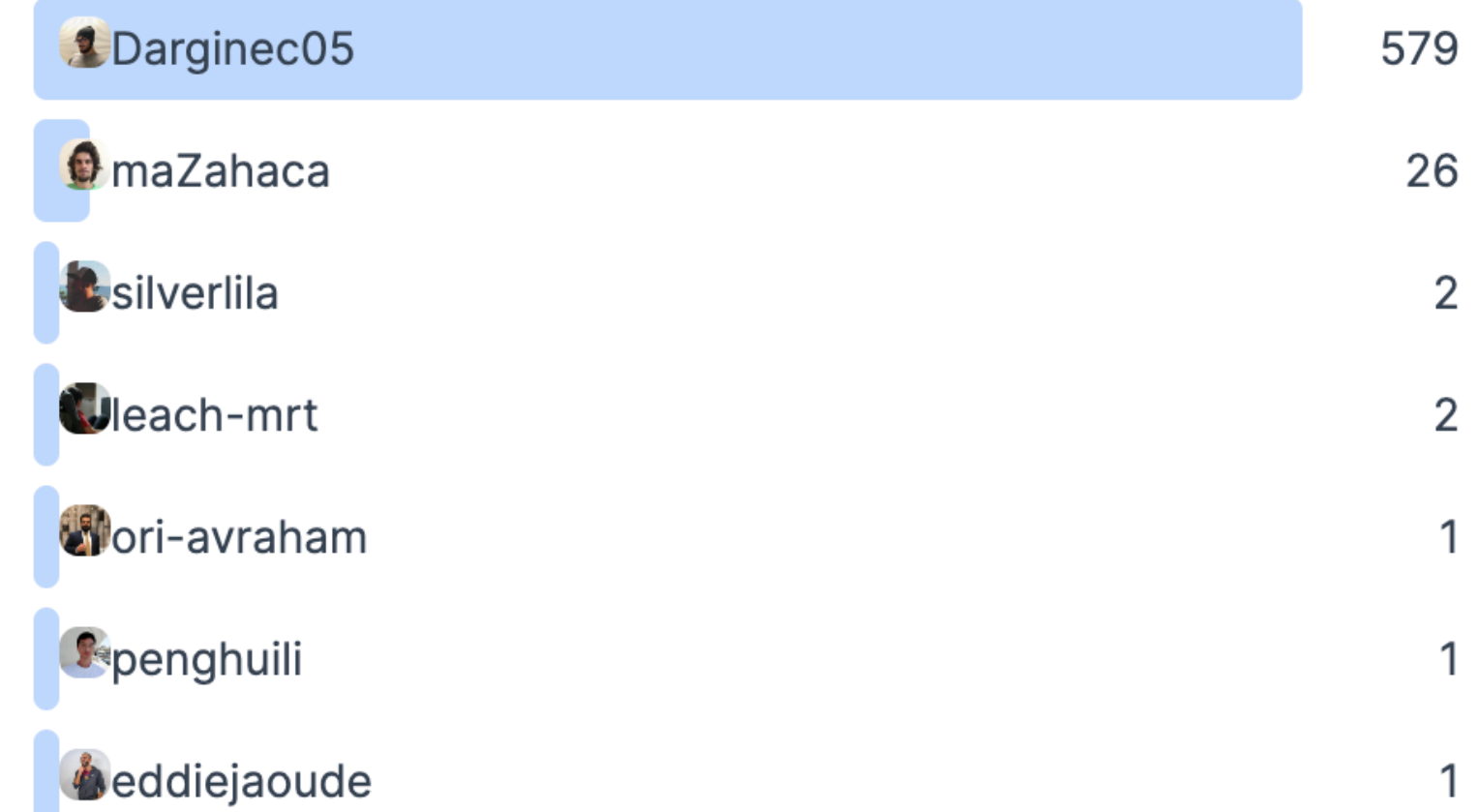
🤝 Community Members

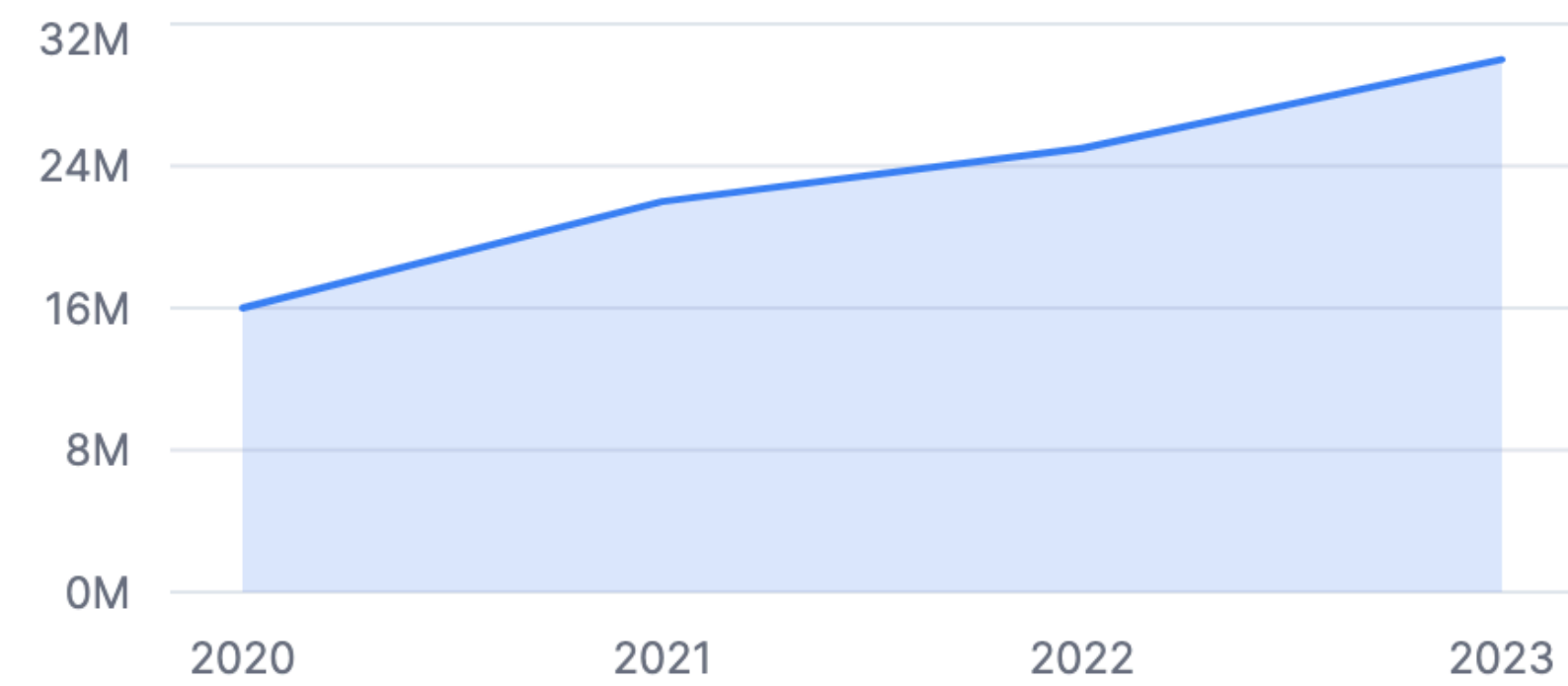1 sponsor has funded Darginec05's work.

Github Reports
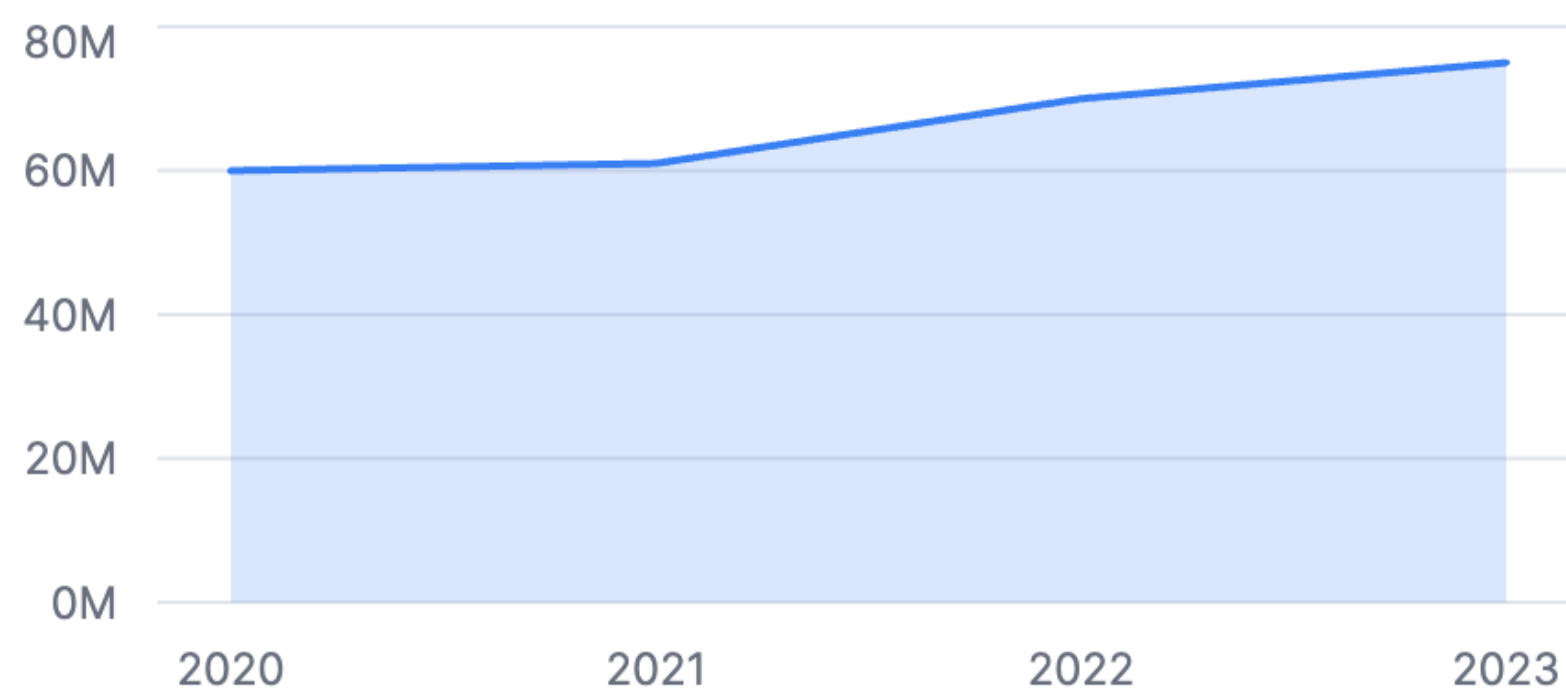## 2020-2023 years

Total Developers

New Users

New Repositories

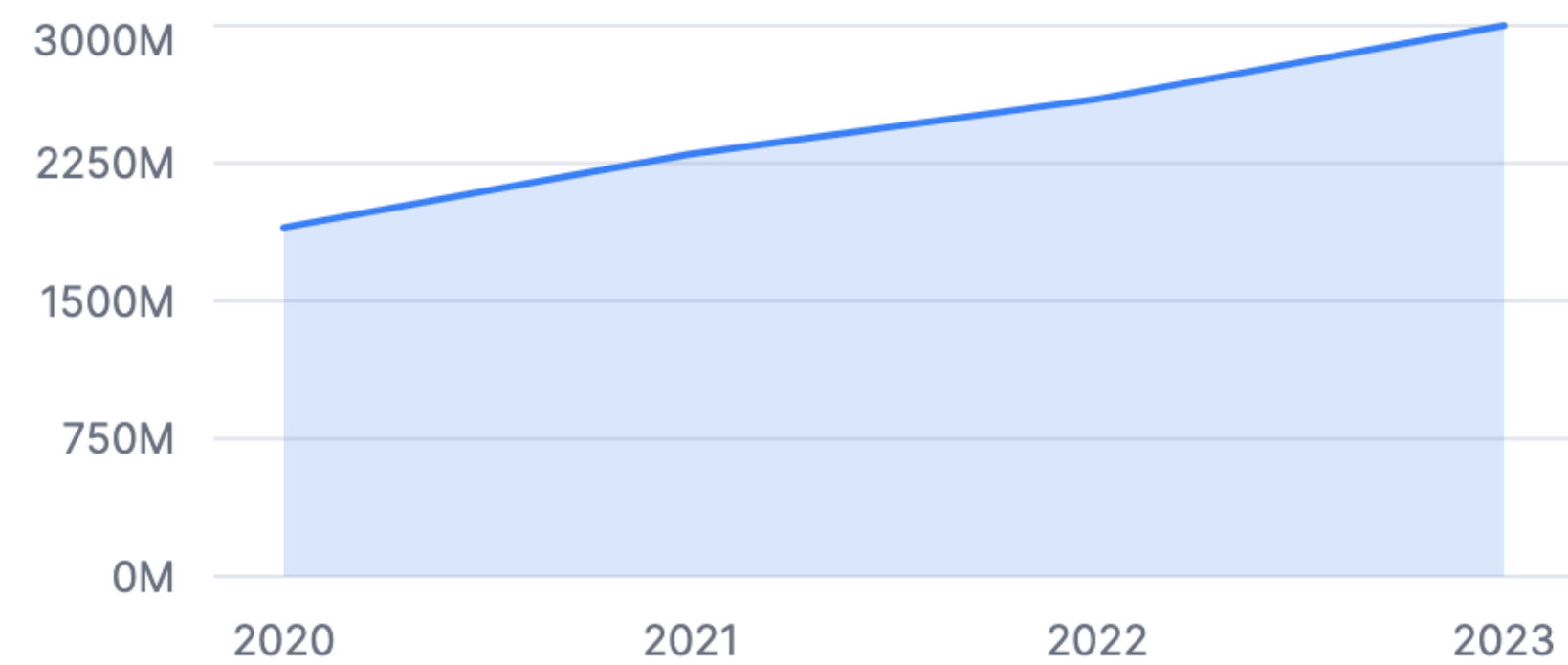### Total Contributions

Thoughts

- "We know open source is a recipe for innovation"

- - Rishi Sunak