

The challenges of maintaining a popular open-source project

EuroPython 2018 — July 27, 2018

Raphael Pierzina

**Thanks to the organizers and volunteers
for a great event! 🇨🇦**

\$ whoami

- Maintainer and core developer of pytest and Cookiecutter and related projects
- I also write, speak, and tweet about these and other open source projects
- I currently live in Berlin, Germany and work as a Senior Test Engineer for Firefox at Mozilla



<https://raphael.codes/>



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moz://a

Agenda

1. Maintaining a popular open-source project
2. Challenges of a growing community
3. Frustrations for maintainers
4. Take-aways for maintainers



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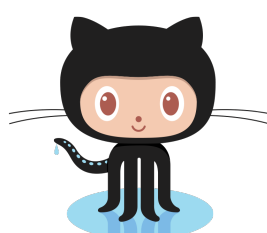
Maintaining a popular
open-source project



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Cookiecutter

- Command-line utility that creates projects from templates
- Project templates can be in any programming language or markup format
- Cross-platform: Windows, Mac, and Linux are officially supported
- Works with CPython 2.7, 3.4, 3.5, 3.6 and PyPy



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[https://github.com/audreyr/](https://github.com/audreyr/cookiecutter)
[cookiecutter](https://github.com/audreyr/cookiecutter)



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Community

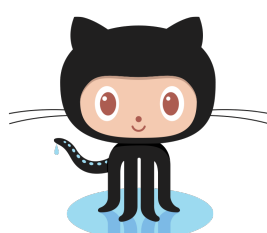
- Free and open-source software: permissive BSD-3 license
- 180 individual contributors from around the world
- More than 1000 public templates on GitHub
- Multiple talks at community conferences



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Templates

- <https://github.com/audreyr/cookiecutter-pypackage>
- <https://github.com/pydanny/cookiecutter-django>
- <https://github.com/pytest-dev/cookiecutter-pytest-plugin>
- ...



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Contributing

- Development of Cookiecutter is community-driven
- Connect with other Cookiecutter contributors and users on Gitter
- Everyone is invited to contribute! 😊🍪



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```
$ pip install cookiecutter
```



```
$ cookiecutter gh:pytest-dev/cookiecutter-pytest-plugin
```



```
$ cookiecutter gh:pytest-dev/cookiecutter-pytest-plugin
full_name [Raphael Pierzina]:
email [raphael@hackebrot.de]: raphael@mozilla.com
github_username [hackebrot]:
plugin_name [foobar]: emoji
module_name [emoji]:
short_description [A simple plugin to use with pytest]: Add emojis to the test report log
version [0.1.0]:
pytest_version [3.5.0]: 3.6.3
Select docs_tool:
1 - mkdocs
2 - sphinx
3 - none
Choose from 1, 2, 3 [1]:
Select license:
1 - MIT
2 - BSD-3
3 - GNU GPL v3.0
4 - Apache Software License 2.0
5 - Mozilla Public License 2.0
Choose from 1, 2, 3, 4, 5 [1]: 5
```




pytest-emoji/

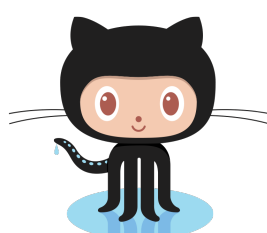
- LICENSE
- MANIFEST.in
- README.rst
- appveyor.yml
- docs
 - index.md
- mkdocs.yml
- pytest_emoji.py
- setup.py
- tests
 - conftest.py
 - test_emoji.py
- tox.ini

My contributions

- Created and published several Cookiecutter templates
- Converted the test suite from unittest to pytest
- Helped users with problems on the issue tracker and chat
- Reviewed pull requests from other contributors

My contributions

- Developed a number of features and bug fixes
- Created poyo to overcome installation issues of YAML parsers
- Created jinja2-time to make it easier to retrieve the current time
- Created pytest-cookies to make testing templates easier



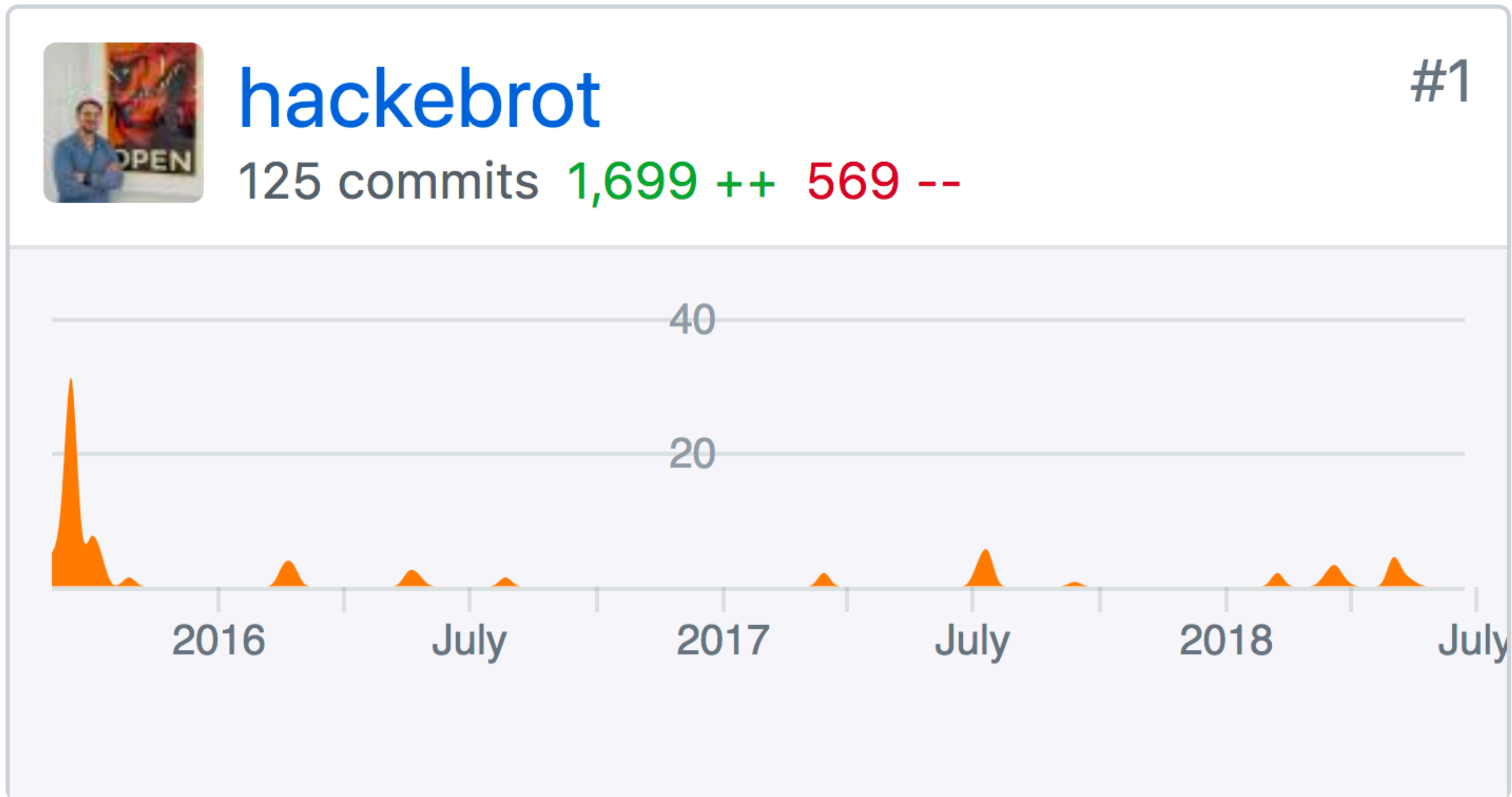
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Cookiecutter



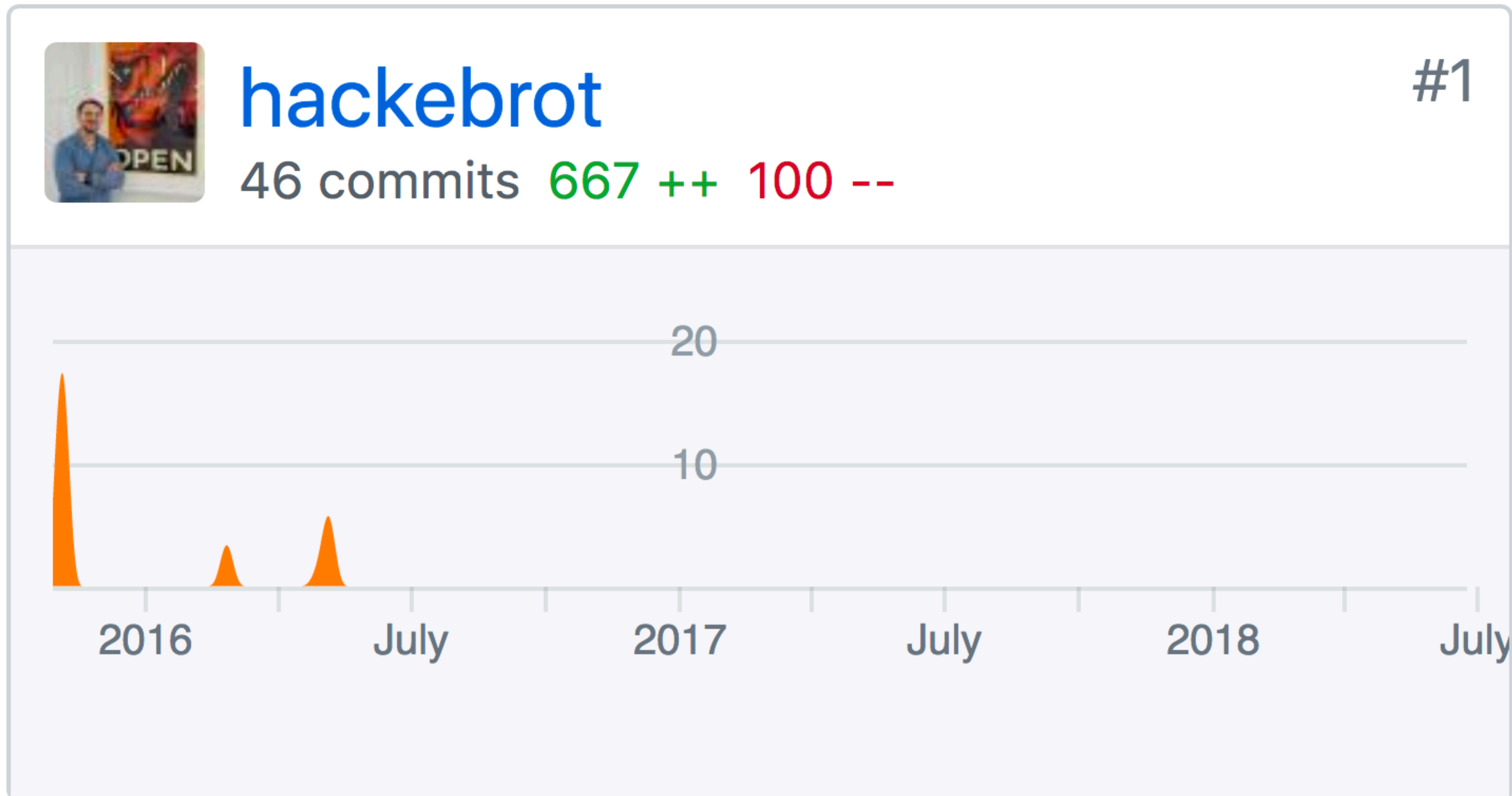
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pytest-cookies



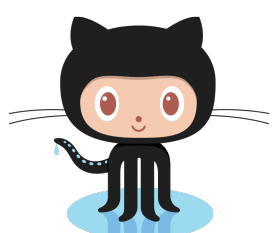
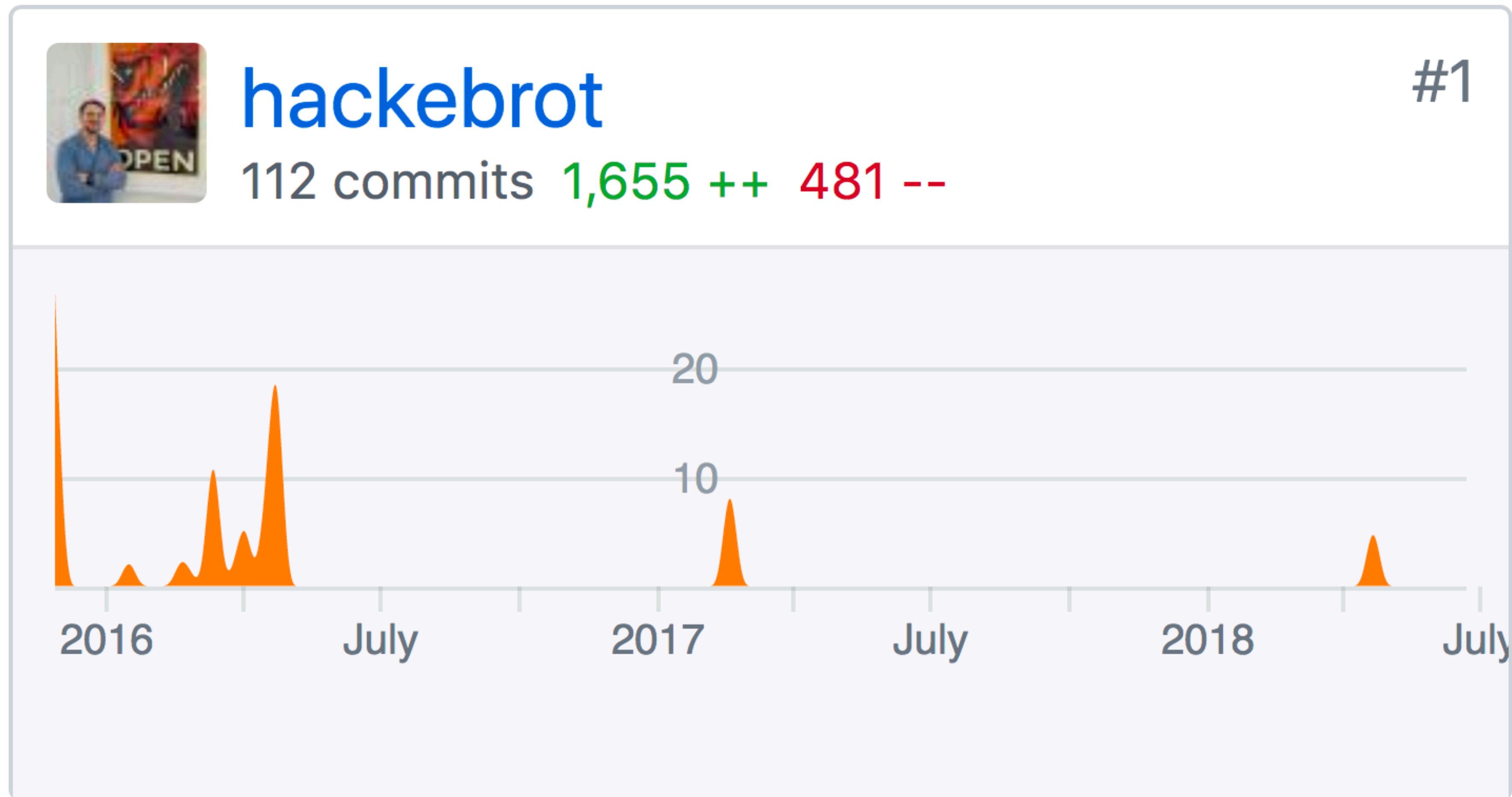
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jinja2-time



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poyo



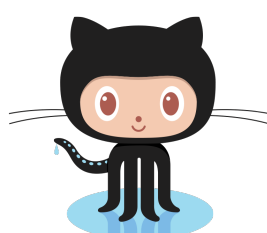
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Becoming a maintainer

- Was granted the commit bit by the core team
- Started managing releases on GitHub and pushing to PyPI
- Continued to develop bug fixes and new features

Being a maintainer

- Review pull requests and triage issues
- Speak about Cookiecutter at EuroPython, PyData and local user groups
- Explored various ways of getting funding for Cookiecutter
- ...



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Emails



Challenges of a growing community

Community

- Cookiecutter attracts users at a faster rate than contributors
- Cookiecutter attracts contributors at a faster rate than people, who have the desire and time available to maintain the project
- Thousands of users, hundreds of contributors, 5 maintainers



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Learnings: Community

- Make your project easier to contribute to
- Adopt a Code of Conduct and enforce it
- Have empathy towards others and yourself
- Write good documentation
- Lead by example

Project scope

- People use your software in ways in which you might not have intended or anticipated, but they are still valid use cases
- Newcomers encounter problems with Cookiecutter templates and create issues on the Cookiecutter issue tracker



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Learnings: Project scope

- Encourage building tools on top of your project
- Ask contributors to develop automated tests and write documentation for new features in the same pull request
- Write documentation describing the project and its scope

Breaking changes

- Maintaining backwards compatibility becomes increasingly important
- All changes must be carefully considered and thoroughly reviewed
- Releases to PyPI, Conda, Mac Homebrew, Debian, ...

Learnings: Breaking changes

- Be careful about adding new features
- Test your projects for supported Python versions and platforms
- Write documentation describing the project and its scope
- Say “NO” 🤖

Workflows

- Asynchronous communication makes it difficult to make decisions
- We established guidelines for merging code to ensure new code is maintainable, idiomatic Python, tested and documented
- Lack of tools for maintainers on GitHub

Learnings: Workflows

- Set up meetings on IRC/Gitter/Slack or video calls for discussions that are hard to have over email or GitHub issue comments
- Document decisions made in a GitHub issue or the documentation
- Work towards making yourself redundant
- Reach out to other maintainers and suggest product enhancements

Maintainers are humans too

- Maintainers are humans and volunteer their free time to lead the project
- They don't always have a time or resources to dedicate to the project
- Every maintainer had their own reasons and motivations for taking on that responsibility and they might have changed over time



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Learnings: Maintainers are humans too

- Stick to best-practices, use automated testing and code checks, add automation and integrations
- Document the process of bringing on new maintainers and guidelines for reviewing and merging changes
- Do not tolerate toxic and abusive behavior from community members!

Expectations

- Managing expectations is really hard! 🙄



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Learnings: Expectations

- Write documentation for different audiences

#WriteTheDocs



Frustrations for maintainers

Bike-shedding 🚲



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“We need this at work...” 😡



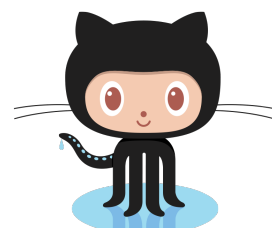
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“You broke our deployment” 🙄



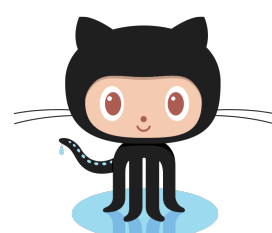
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“...and this ‘poyo’ introduction is a great example how direction of cookiecutter can seem immature to my eyes from times to times” 🙄




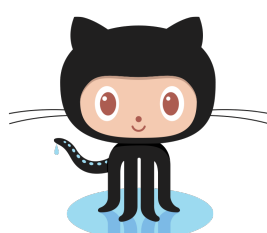
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“...can't you simply...” 🤔



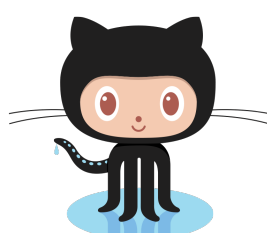
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“Not sure how much ‘sponsorship’ is needed,
but here is a site for allowing the crowd
to contribute as I know my organization
would be interested in helping..” 



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Unseen work: running sprints,
ordering stickers, exploring
sponsorship, submitting talks 🥲



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Suggested solutions oftentimes
require even more work from
maintainers 😞



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People do not respect boundaries
and send direct emails rather than
opening GitHub issues 📧



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Maintaining open-source projects
becomes work at some point, but
without compensation or clear
boundaries 🖥️



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~~Empathy~~ 🙄



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Take-aways for maintainers

Set expectations



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Work towards making yourself
redundant



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Say “NO”!



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Lead by example!



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Do not tolerate toxic and abusive
behavior from community members!



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Allow yourself to take breaks or
even walk away



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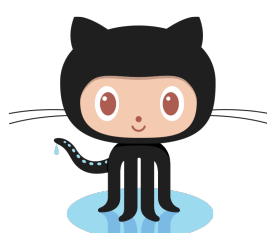
Take care of yourself!



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Thank you!

[https://speakerdeck.com/hackebrot/
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