How to become a contributor



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The door is open

Contributions since NetworKit Day 2024 (9 April 2024)

~210
pull requests merged

~25
first-time authors

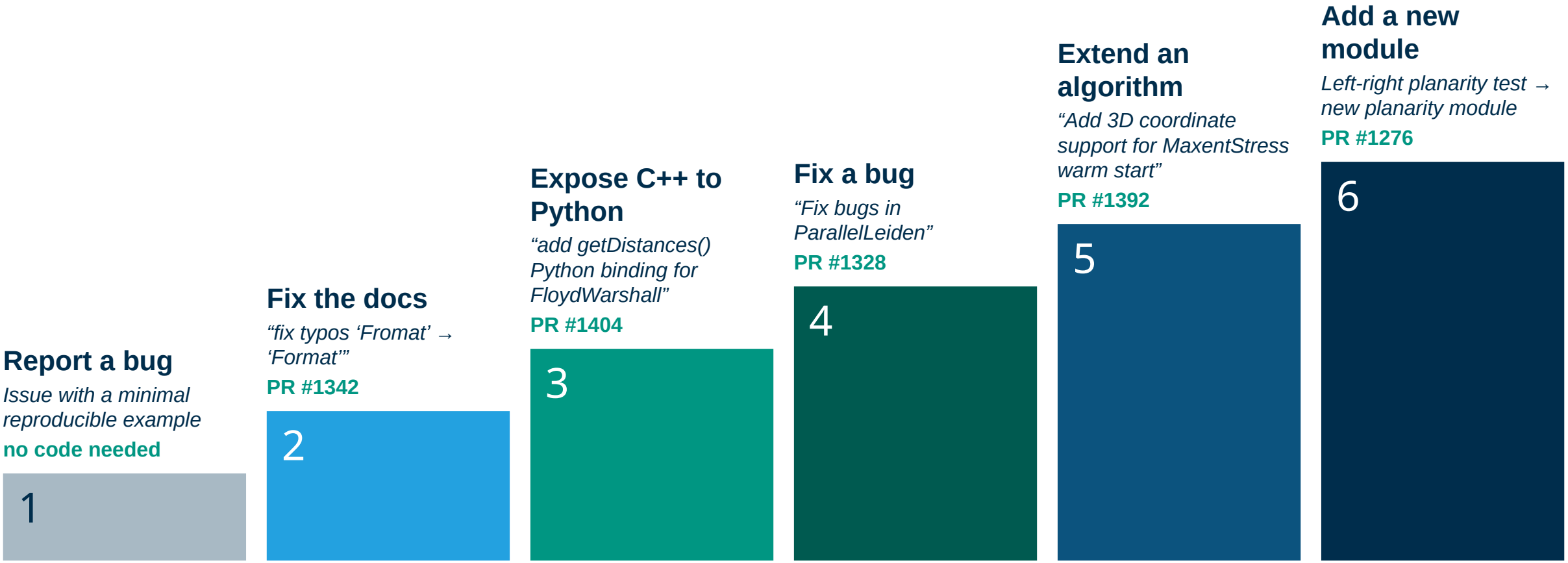
½
of them started with 1–2 commits

On average, **one new contributor every ~5 weeks**.

Source: git history of networkit/master, 9 Apr 2024 – 8 Nov 2026. Authors merged by name and e-mail; counts are approximate.

First contributions come in all sizes

Real first PRs since ND24: pick your step



From fork to merge

Six steps. One command each, the rest is in the DevGuide

1 Fork & clone

sets networkit/networkit as upstream (or use the browser)

```
gh repo fork networkit/networkit --clone
```

2 Build in place

editable install: Python now uses your code

```
python3 setup.py build_ext -j4
pip install -e .
```

3 Branch per topic

one topic per branch: fix/…, feature/…

```
git checkout -b fix/short-description
```

4 Code + tests

C++ tests: cmake -DNETWORKIT_BUILD_TESTS=ON

```
./networkit_tests --gtest_filter='DinicGTest.*'
python3 -m unittest discover networkit/test/
```

5 Check style

needs clang-format 22; CI runs the same check

```
./check_code.sh -w
```

6 Rebase & open PR

PR against networkit:master; force-push only your own branch

```
git rebase upstream/master
git push -f origin fix/short-description
```

Adding an algorithm: where things go

Example: Dinic max-flow (flow module, added 2025)

C++ core

Header	`include/networkit/flow/Dinic.hpp`	*class + Doxygen docs*
Source	`networkit/cpp/flow/Dinic.cpp`	*+ entry in CMakeLists.txt*
Test	`networkit/cpp/flow/test/DinicGTest.cpp`	*GTest*

Python layer

Binding	`networkit/flow.pyx`	*Cython wrapper + docstring*
Test	`networkit/test/test_flow.py`	*unittest*
Example	`notebooks/`	*optional, welcome*

Same interface everywhere

```
algo = nk.flow.Dinic(G, s, t)
```
inputs → constructor

```
algo.run()
```
parameterless run()

```
algo.getMaxFlow()
```
results → getters

C++:
```
class Dinic final
    : public Algorithm
```

Big plans? Open an issue first.

What reviewers check

...and what gets your PR merged faster

Tests

New or changed behaviour is covered by GTest and/or Python unittest

Documentation

Doxygen in headers, docstrings in .pyx; notebooks welcome

Style

check_code.sh and clang-tidy pass without complaints

API care

Discuss interface changes first; deprecate 2 releases before removal

One topic per PR

Small and focused, rebased on master: linear history

Green CI

Builds, tests, sanitizers, coverage and docs on every PR

Merge rules

≥ 1
maintainer review, not by the PR author

≥ 7 days
open after the last substantial change (critical fixes excepted)

3 OS
CI on Linux, macOS and Windows

Ready-made practice: AI-found bugs

Issue #1471: validated bug reports waiting for a fix

Where they come from

40

bug reports from an AI code review (local 27B open-weight model), each confirmed by running code

19

still open (9 Nov 2026)

Most

are corner cases: empty, single-node or edge-less graphs, NaN, bad node ids

Python only: no C++ rebuild

- #1472 `plot.py`: raise "string" gives a TypeError, not the message
- #1474 `multiprocessing_helper.py`: typo w.deamon, daemon never set
- #1479 `job.py`: Job.run() raises NameError, not NotImplementedError

C++ / Cython

- #1486 `ApproxCloseness`: inf / NaN score on a single-node graph
- #1487 `LaplacianCentrality`: normalized scores are NaN on edge-less graphs
- #1483 `TopCloseness`: duplicate nodes in the top-k list of edge-less graphs

Recipe: reproduce → failing test → fix → PR “Fixes #…”

Trust the reproduction, not the explanation: one report quoted code that doesn't exist (#1487).

Start today

Three ways in

Pick an issue

Filter by bug, doc or feature request. Leave a comment before you start.

github.com/networkit/networkit/issues

Read the guides

DevGuide + CONTRIBUTING.md: build, tests, style, Cython bindings.

networkit.github.io/dev-docs/DevGuide.html

Ask us

Mailing list, or an issue labelled “question”.

sympa.cms.hu-berlin.de/sympa/subscribe/networkit

Your feature request from the panel? Open an issue today.

Thank you!

Questions?



networkit.github.io · github.com/networkit/networkit