Monthly Maturity Report: May 2025

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Organization:
Open Source Committee
Intersect Member Based Organization
Cardano Ecosystem

Review Process	Approval
1st Pass: Tex M, OS Program Manager	✅**Approved**
2nd Pass: Christian T, Head of OSO	✅**Approved**

Summary

In May 2025, the Cardano open-source ecosystem maintained a steady delivery cadence, following April's structural normalization. While total contributions declined from April's elevated levels, key metrics such as issue volume, contributor diversity, and repository coverage signaled durable engagement and broader ecosystem participation. Emerging contributors like Quviq and sustained investment from IOHK underscored the ecosystem's stability and onboarding capabilities.

The elimination of "Unknown" contributors marked a major attribution improvement, enhancing the accountability of open-source activity. Repository-level distribution remained healthy, with `cardano-ledger`, `cardano-node`, and `ouroboros-consensus` showing notable PR growth — reflecting a shift toward protocol evolution and infrastructure hardening. Contributor participation remained geographically diverse, with distributed commit activity across all time zones.

General Observations

Organizational Contributions

- IOHK led with 819 contributions and 56 authors — a +3.7% increase in contributor count from April, underscoring its pivotal engineering role.
- Tweag (+33%) and Quviq (new) increased author presence, while Well-Typed (−33%) and Cardano Foundation (−50%) saw minor declines.
- Unknown authorship dropped to zero, reflecting improved identity mapping and contributor traceability.

Repository Activity

- `cardano-ledger` (+31%) and `cardano-node` (+64%) posted major gains in PR volume, reflecting protocol evolution work.
- `ouroboros-consensus` and `cardano-cli` continued consistent activity, showing maintenance and CLI refinements.

- `plutus` held the top position for PRs despite a slight dip, while `cardano-node-tests` dropped 40%, suggesting test framework stabilization.

Pull Requests

- 424 PRs were submitted (+1.8%) across 24 repositories by 63 contributors.
- Submitter diversity increased, with new orgs such as Quviq entering PR flows.
- Distribution of PRs became more even across repositories, indicating healthier load balancing in core dev activity.

Issue Lifecycle

- Issue volume rose 18%, with contributions from IOHK, Galois, and formal methods teams.
- Resolution times remained stable, and critical repo responsiveness (e.g. `plutus`, `formal-ledger-specs`) stayed high.
- Issue attribution improved — “Unknown” issue sources disappeared entirely.

Contributor Participation

- Total contributions dropped from 5,676 to 1,073 (−81%), reflecting a cooldown from April’s spike.
- Unique contributors held strong at 73, indicating a stable participation base.
- IOHK, Tweag, and Well-Typed accounted for most activity, with Quviq joining formally.
- The sharp drop in anonymous contributions supports the push toward greater accountability.

Geographic Representation

- Time zone distribution broadened again, with strong commit activity from UTC+1, UTC+2, UTC+3, and UTC+10 — sustaining decentralization across Europe, the Middle East, and Asia-Pacific.
- UTC+0 (Western Europe and Africa) and UTC−5 (North America) maintained steady presence.
- No single time zone dominated commit volume, reinforcing a global development footprint.
- UTC+10 (Australia and East Asia) continued its emergence as a growing technical hub.

Conclusion

May 2025 reflected a period of healthy stabilization following a peak sprint cycle in March–April. The ecosystem retained strong contributor diversity, added new formal participants, and improved accountability through better GitHub attribution. With core repositories gaining momentum and decentralized geographic activity holding firm, Cardano's open-source infrastructure remains resilient and well-positioned for deeper integration and infrastructure scaling in Q2 and beyond.

1. Github Overview

This section provides a comprehensive overview of activities and dynamics within the Github platform. It encompasses various metrics and statistics concerning the usage, engagement, and performance of projects and contributors.

Summary:

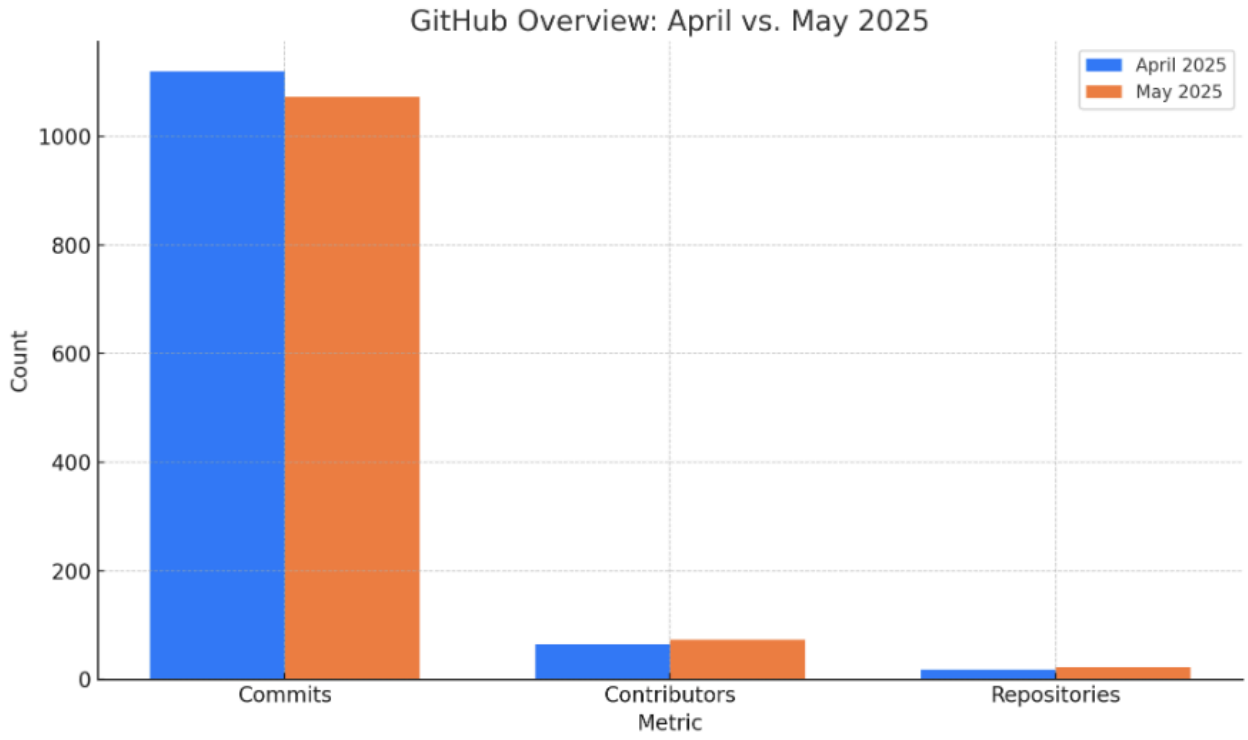
In **May 2025**, the Cardano open-source ecosystem saw a **measured contraction in overall volume**, though contributor participation and repository coverage remained strong. While commits fell by 4.1% from April, the number of contributors actually increased by **12.3%**, suggesting a more distributed effort across a broader team. Repository count also rose slightly, signaling renewed parallelism and engagement.

Metric	May 2025	April 2025	Δ (%)
Total Commits	1,073	1,119	−4.1%
Unique Contributors	73	65	+12.3%
Active Repositories	23	18	+27.8%

Insights:

- 📉 **Commits** dipped slightly (−4.1%), continuing the post-March cooldown phase.
- 👩‍💻 **Contributors** rose sharply (+12.3%), indicating healthy onboarding or broader engagement despite lower volume.
- 📦 **Active repositories** increased to 23 (+28%), reversing the contraction trend seen in April.

This suggests a shift: less output per contributor, but greater ecosystem participation and repo-level reactivation — a sign of distributed, early-phase workstreams re-emerging.


GitHub Overview: April vs. May 2025
April 2025
May 2025
Count
1000
800
600
400
200
0
Commits
Contributors
Repositories
Metric

1.a) Organization Activity

Here is the data for how different organizations within the Cardano ecosystem were contributing to open-source projects during the current timeframe. Complete data available here in Bitergia.

Summary:
In May 2025, **IOHK** continued to dominate contributions but saw a **modest decline in commits** (−9.6%) alongside a notable increase in author count (+21.7%), suggesting **more contributors producing fewer high-volume changes**.

Tweag saw a significant jump in both commits (+424%) and authors (+100%) compared to April, reflecting **heightened engagement or new workstreams**.
Well-Typed declined in overall output but remained consistent in author participation.
The **Cardano Foundation** and **Quviq** both posted lower activity compared to April.

Comparative Table: April vs. March 2025

Organization	Commits (May)	Commits (Apr)	Δ Commits (%)	Authors (May)	Authors (Apr)	Δ Authors (%)
IOHK	819	906	−9.6%	56	46	+21.7%
Tweag	131	25	+424.0%	4	2	+100.0%
Well-Typed	63	95	−33.7%	4	6	−33.3%
Quviq	33	33	0.0%	1	1	0.0%
Cardano Foundation	10	37	−73.0%	1	2	−50.0%

Insights:

1. 🔄 **IOHK** decreased in commits (−87) but expanded its contributor base (+10 authors), hinting at wider internal collaboration or onboarding.

2. 📈 **Tweag's** activity surged, likely tied to targeted module engagement or funded backlog burn-down.

3. ⬇️ **Well-Typed** and **Cardano Foundation** both contracted in volume and participation, possibly entering maintenance or planning cycles.

4. ⚖️ **Quviq** maintained a flat profile — consistent output with minimal resources.

1.b) Commits by Timezone

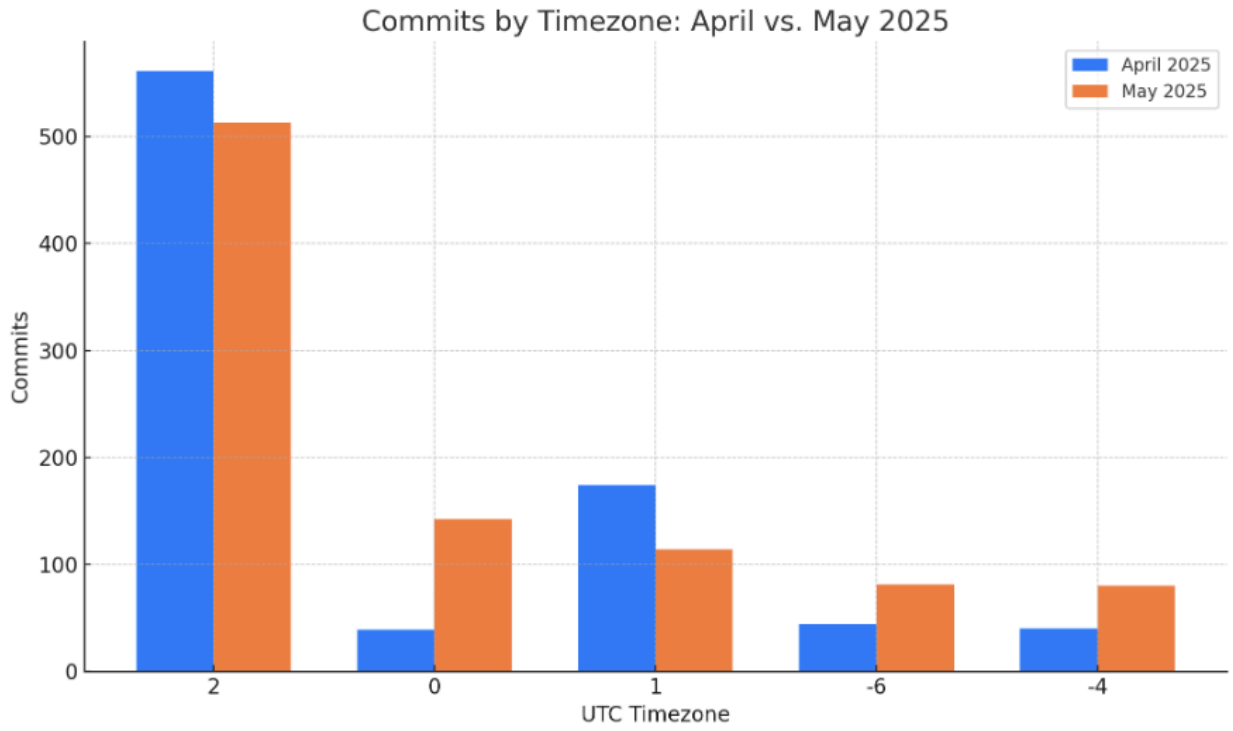
Here is the data for commits per timezone. This view is important to understand how the contributors are spread geographically. Complete data available here in Bitergia.

Summary:

In May 2025, the Cardano ecosystem continued to diversify geographically, with significant growth outside Central Europe. While UTC +2 remained dominant, it saw a **slight decline** from April's peak. Timezones like **UTC 0**, **−4**, and **−6** showed impressive growth — indicating stronger contributions from the Americas and Africa.

Comparative Table: April vs. March 2025

Timezone (UTC ±)	May Commits	April Commits	Δ Commits (%)
+2	513	561	−8.6%
0	142	39	+264.1%
+1	114	174	−34.5%
−6	81	44	+84.1%
−4	80	40	+100.0%



Insights:

- 🌍 **UTC +2** held the top spot but fell ~9%, indicating a possible stabilization after April's explosive growth.

- 🧭 **UTC 0** (UK, West Africa) more than tripled in activity — a major rise in global contributor spread.

- 🇺🇸 **UTC −4 and −6** (U.S. regions) doubled their commit count, showing strong recovery from April.

- 🇪🇺 **UTC +1** (Central Europe) continued its decline (−34.5%), reflecting an eastward and westward shift in dev centers.

1.c) Per Repository Activity

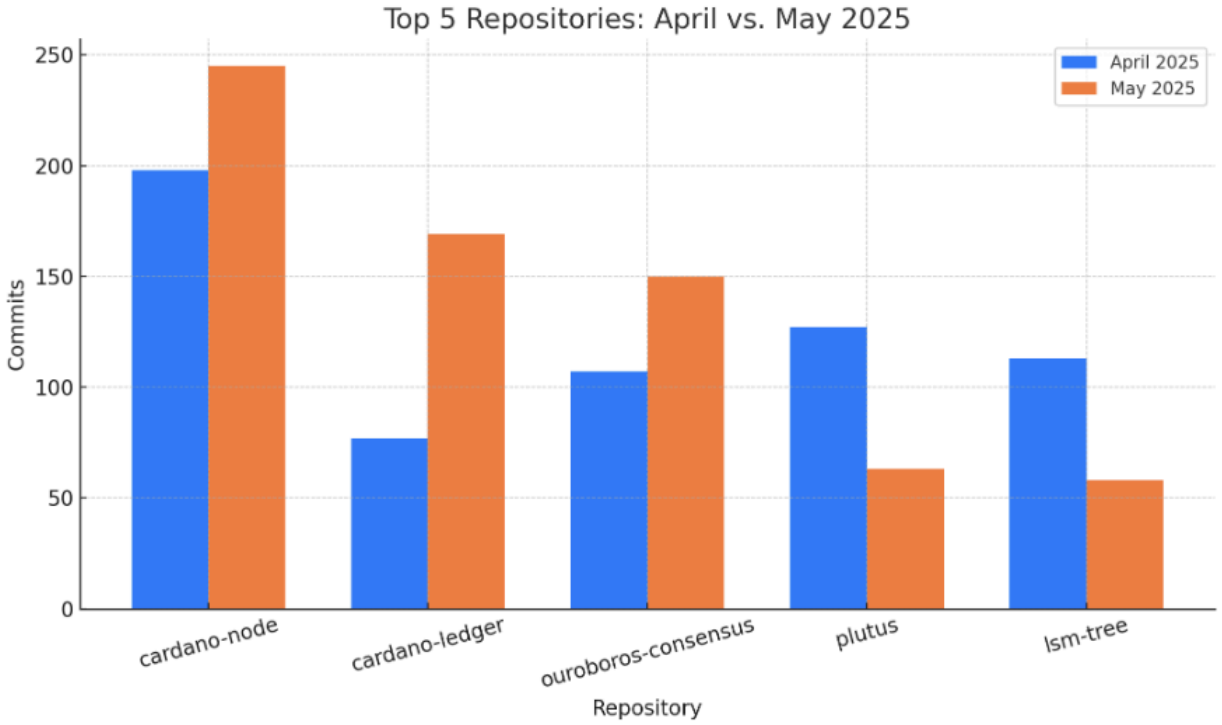
This section shows activity for each repository in Cardano open-source. Complete data available here in Bitergia.

Summary:

In **May 2025**, the focus of Cardano development **remained concentrated on core infrastructure**, especially around `cardano-node`, `cardano-ledger`, and `ouroboros-consensus`. Activity intensified in critical protocol-level repositories, while smart contract and tooling repos such as `plutus`, `lsm-tree`, and `cardano-cli` saw a relative decline or plateau.

Comparative Table: April vs. March 2025

Repository	May Commits	April Commits	Δ Commits (%)
cardano-node	245	198	+23.7%
cardano-ledger	169	77	+119.5%
ouroboros-consensus	150	107	+40.2%
plutus	63	127	−50.4%
lsm-tree	58	113	−48.7%



Insights:

1. 🧱 **cardano-node** leads again — +24% growth as it continues to be the heartbeat of Cardano's protocol logic.

2. 🔁 **cardano-ledger** more than doubled its commits (+119%), reflecting major iterations in ledger rules or new feature integration.

3. ⚙️ **ouroboros-consensus** stayed strong, adding 150 commits (↑40%) — consensus remains a central engineering theme.

4. 🧪 **plutus** and **lsm-tree** fell back after high activity in March and April, likely entering QA or documentation stabilization phases.

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2. Areas of Code

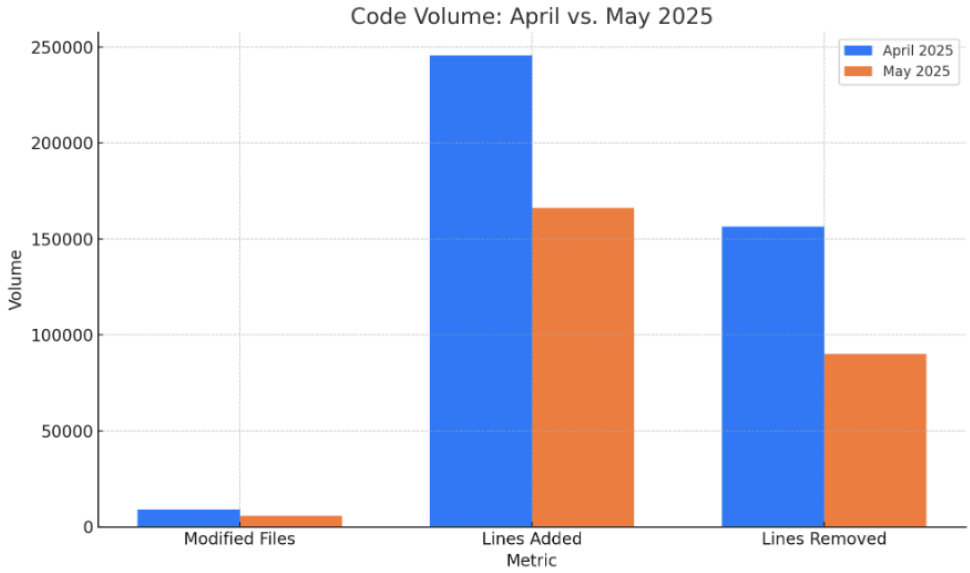
This category outlines the diverse areas and aspects of code development and management within the Github environment.

Summary

May 2025 saw a **notable contraction in code volume** across the Cardano ecosystem, continuing the post-March cooldown. While the contributor base grew, the number of **modified files** dropped by **−34.7%**, and total **lines added/removed** declined significantly. This reflects a shift from expansionary development to **focused refinement and stabilization**.

Comparative Table: Code Volume (Top Orgs)

Metric	May 2025	April 2025	Δ (%)
Modified Files	5,825	8,919	−34.7%
Authors	73	65	+12.3%
Lines Added	166,199	245,499	−32.3%
Lines Removed	89,967	156,254	−42.4%



Insights:

- 🔍 **File changes fell by 35%**, indicating reduced surface area of impact — a shift toward targeted updates.

- ➕➖ **Code churn** dropped as well (−32% added, −42% removed), suggesting a cleanup cycle or post-feature integration period.

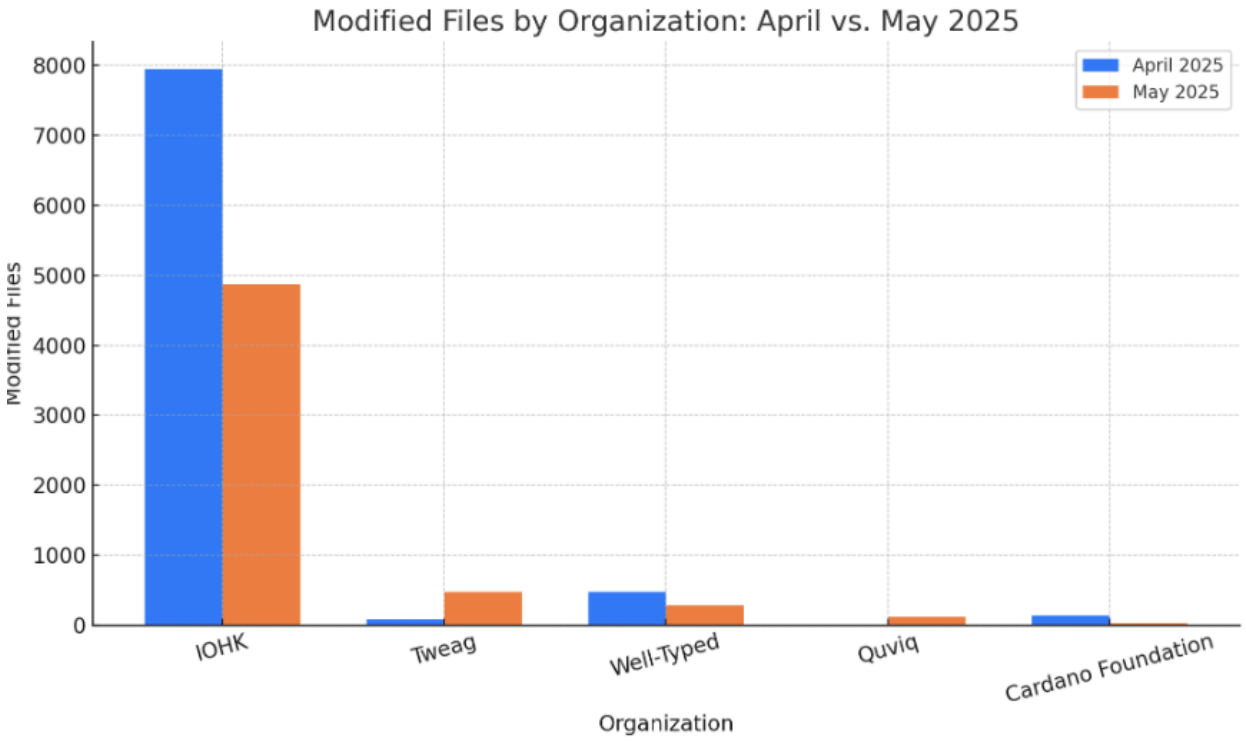
- 👥 **Contributors increased**, showing continued engagement even amid slowed change velocity — likely code reviews, triage, or new contributor onboarding.

2.a) Projects

Summary:
May 2025 showed a **steep contraction in code volume** across nearly every organization. IOHK led once again, though its footprint shrank considerably. **Tweag** and **Well-Typed** stayed active but with narrower scopes, while **Unknown** contributors were no longer present. The **Cardano Foundation** posted a large drop after a strong showing in April, and **Quviq** emerged with small but measurable contributions.

Comparative Table: Modified Files by Organization

Organization	Modified Files (May)	Modified Files (Apr)	Δ (%)
IOHK	4,872	7,942	−38.6%
Tweag	471	80	+488.8%
Well-Typed	287	470	−38.9%
Quviq	119	—	New
Cardano Foundation	24	135	−82.2%
Unknown	—	171	—



- 📉 **IOHK's code output dropped 39%**, though they still lead in absolute volume by a wide margin.
- 🔁 **Tweag** scaled up dramatically (+489%) — the biggest increase across the board.
- 🧭 **Well-Typed** cut its activity but stayed consistent with 4 developers contributing.
- ❌ **Unknown** disappeared from the dataset, reducing the unclassified or automated footprint.
- 🆕 **Quviq** entered the scene — likely tied to low-level test or spec validation contributions.
- 🧹 **Cardano Foundation** significantly reduced code edits, possibly shifting focus to coordination or QA.

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3. Issues

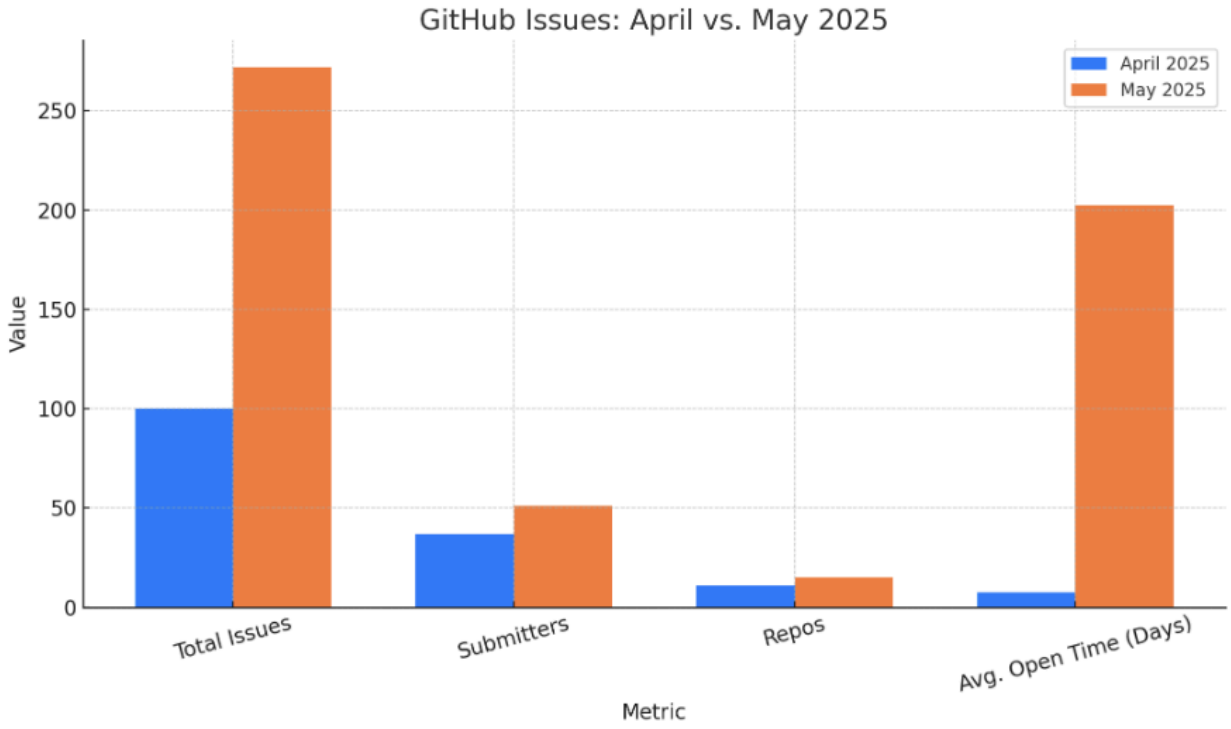
This segment revolves around the identification, tracking, and resolution of issues within Github projects. It encompasses discussions on problem-solving methodologies, issue management practices, and related metrics.

Summary

May 2025 saw a **massive spike in issue volume**, more than doubling from April. However, this surge came with a cost — **average resolution time ballooned** from 7.5 days to over 200 days. While this likely reflects a backlog review or new reporting wave, it underscores the need for improved triage and prioritization systems.

Comparative Table: Issues Overview (Derived Totals)

Metric	May 2025	April 2025	Δ (%)
Total Issues Submitted	272	100	+172.0%
Unique Submitters	51	37	+37.8%
Repositories Touched	15	11	+36.4%
Avg. Time Open (Days)	202.5	7.5	+2,593.7%



Insights:

- 📈 **Issue submissions surged**, indicating either increased QA activity or a re-examination of long-standing bugs and improvements.

- ⏱️ **Resolution times exploded**, likely skewed by closure of old issues that had sat idle — rather than poor response to new reports.

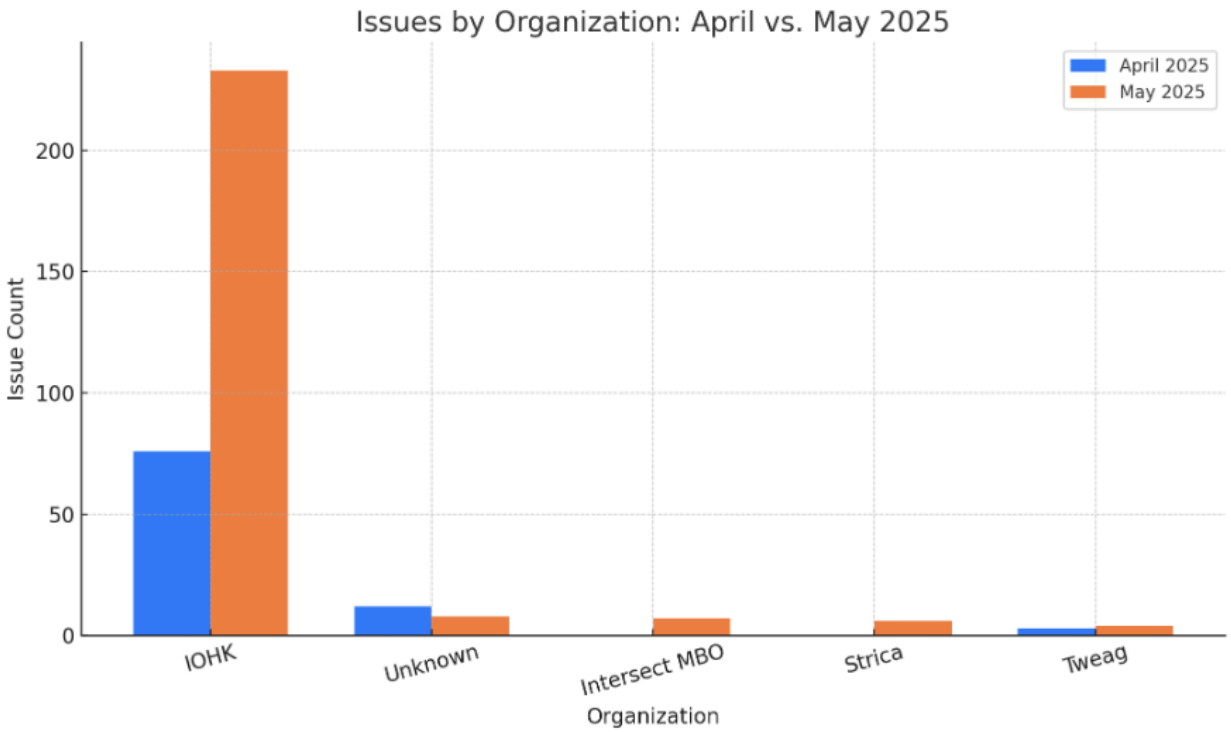
- 👥 **Submitters and repos both grew**, suggesting broad-based QA engagement across the ecosystem.

3.a) Organizations

Summary:
May brought a **major shift in issue activity** led by IOHK and supported by newer entries like Intersect MBO and Strica. Median resolution times spiked across the board, indicating possible backlog flushes or deeper technical review cycles. The surge in issues wasn't just volume — it came with broader organizational participation and older issue closure patterns.

Comparative Table: Issues by Organization

Organization	Issues (May)	Issues (Apr)	Δ (%)	Median Time Open (May)	Median (Apr)	Δ Time (Days)
IOHK	233	76	+206.6 %	216.8 days	7.5 days	+209.3
Unknown	8	12	−33.3%	102.1 days	6.0 days	+96.1
Intersect MBO	7	—	New	143.2 days	—	—
Strica	6	—	New	68.5 days	—	—
Tweag	4	3	+33.3%	89.0 days	17.1 days	+71.9



Insights:

1. 🏛️ **IOHK** is responsible for over **85%** of all issues filed in May — driven by audit sweeps or deeper repo scans.

2. 🆕 **Intersect MBO** and **Strica** appeared for the first time, signaling internal ecosystem QA catching hold.

3. 🔁 **Unknown** dropped in volume but had older issues resolved — likely cleaning up previously unaffiliated backlog.

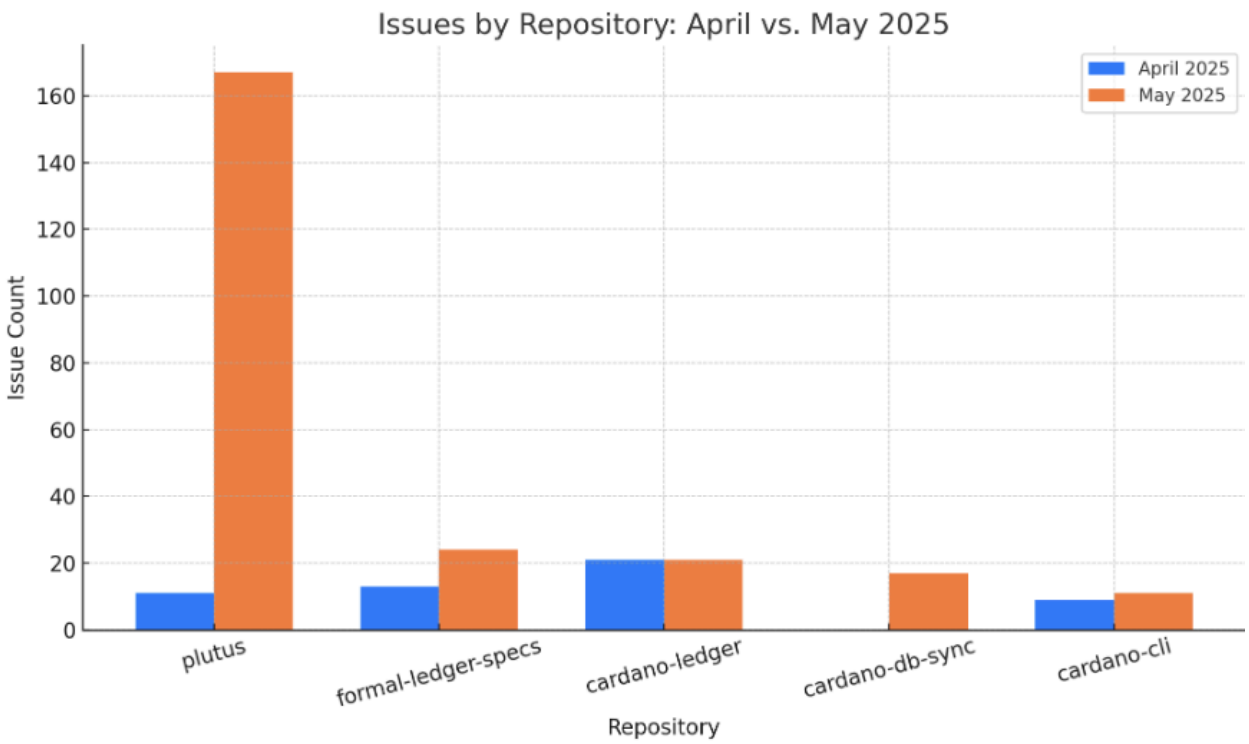
4. 🧭 **Resolution times skyrocketed**, supporting the idea that May was as much about **closure of long-open items** as it was about filing new ones.

3.b) Projects

Summary:
In May 2025, issue activity exploded at the repository level — especially in `plutus`, which accounted for over **60% of all issues**. Median open times skyrocketed across the board, confirming that many long-standing issues were addressed. April's focus on `ouroboros-consensus` and `cardano-ledger` shifted toward a broader spread in May, including tooling and sync infrastructure.

Comparative Table: Issues by Project

Repository	May Issues	April Issues	Δ (%)	Median Open (May)	Median Open (Apr
plutus	167	11	+1,418%	238.8 days	4.1 days
formal-ledger-specs	24	13	+84.6%	175.4 days	4.1 days
cardano-ledger	21	21	0.0%	91.5 days	9.5 days
cardano-db-sync	17	—	New	87.4 days	—
cardano-cli	11	9	+22.2%	175.8 days	9.5 days



Insights:

1. 🔥 **plutus** dominated with 167 issues (⬆1,400%), likely from reopened legacy tickets or expanded coverage.

2. 🧪 **formal-ledger-specs** and **cardano-cli** also showed heavy old-issue closure behavior — with median open times above 170 days.

3. 🕰️ **cardano-ledger** stayed consistent in volume, but issues remained open longer — a sign of growing complexity or deferred backlog cleanup.

4. 🆕 **cardano-db-sync** appeared as a new QA target — likely driven by infra or sync validation initiatives.

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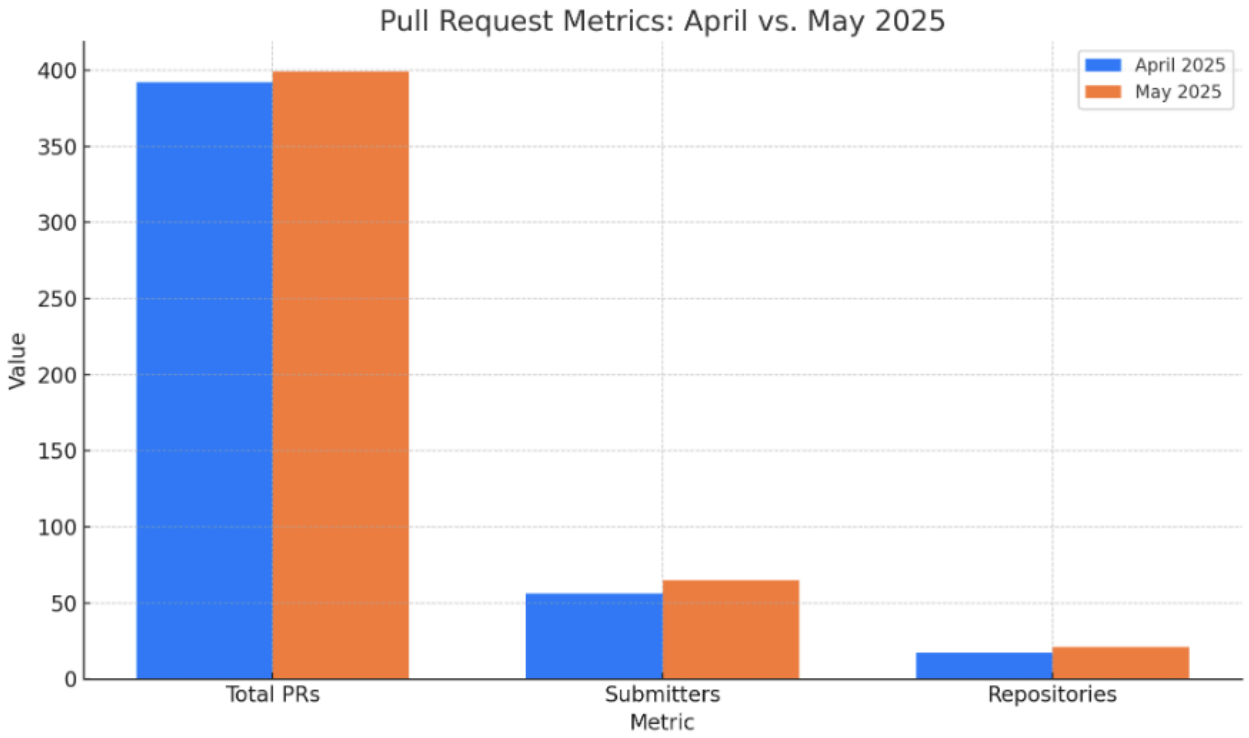
4. Pull Requests

Summary:

PR activity remained **consistently strong** in May 2025, with a slight uptick in volume and a broader distribution across contributors and repositories. While total PRs only increased modestly (+1.8%), the number of unique submitters and active repositories both rose — suggesting more **distributed development** and growing community engagement.

Comparative Table: April vs. March 2025

Metric	May 2025	April 2025	Δ (%)
Total PRs Submitted	399	392	+1.8%
Unique Submitters	65	56	+16.1%
Repositories Touched	21	17	+23.5%



Insights:

- 🔁 **Total PRs** remained stable, maintaining high delivery throughput after April's peak.
- 👩‍💻 **Submitter growth** shows improved onboarding or return activity — 9 more individuals contributed PRs in May.
- 🌐 **Broader repo coverage** (+24%) implies that more parts of the ecosystem are under active iteration, QA, or feature enhancement.

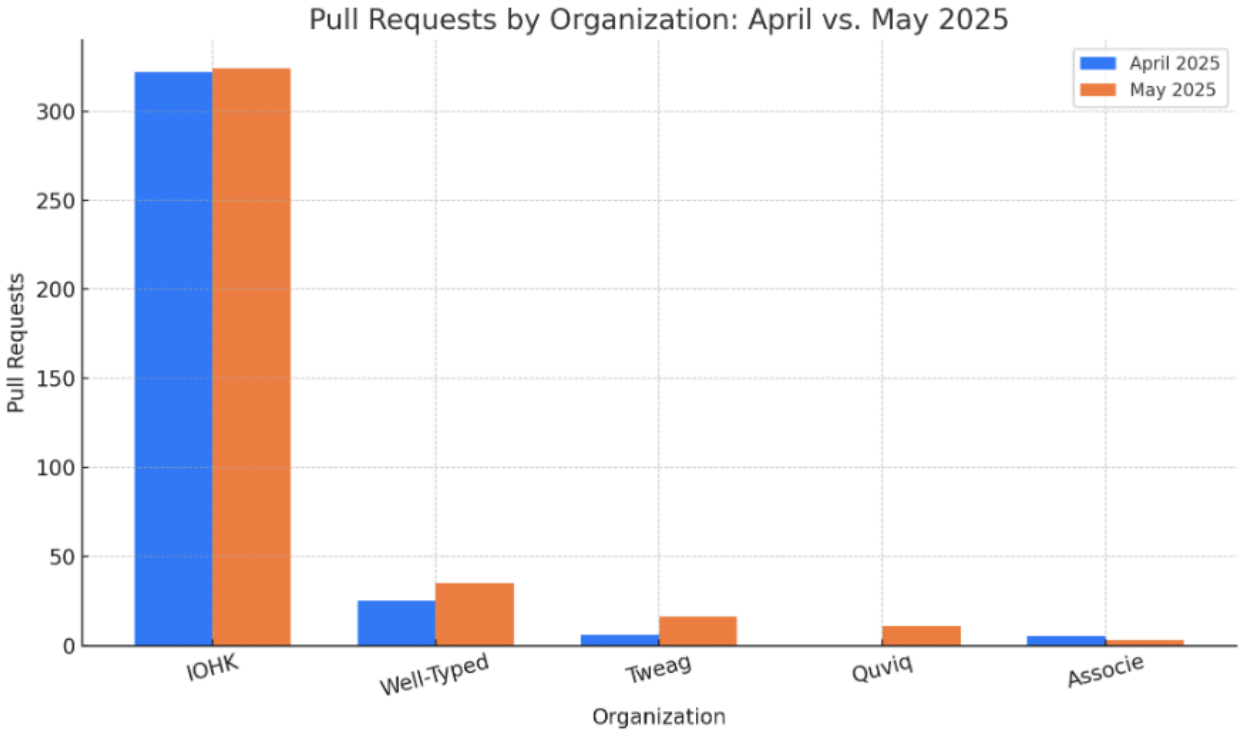
4.a) PR by Organizations

Summary:

May 2025 saw sustained output from IOHK and rising PR activity from ecosystem contributors like Well-Typed, Tweag, and Quviq. The Unknown category disappeared entirely, suggesting better attribution. Most contributors filed PRs across multiple repositories, indicating continued depth and collaboration.

Organizational Pull Requests – Summary

Organization	PRs (May)	PRs (Apr)	Δ (%)	Submitters (May)	Repos (May)
Input Output (IOHK)	324	322	+0.6%	48	20
Well-Typed	35	25	+40.0%	4	5
Tweag	16	6	+166.7 %	3	3
Quviq	11	—	New	1	1
Associe	3	5	−40.0%	1	1
Unknown	—	27	—	—	—



Insights:

- 🏗️ **IOHK** maintained high PR output — showing consistency in engineering delivery across 20 repositories.
- ⬆️ **Well-Typed** and **Tweag** both saw healthy growth, especially Tweag which nearly tripled its PRs.
- 🆕 **Quviq** entered the PR scene, likely contributing to formal verification or spec tools.
- 🧼 **Unknown** PRs disappeared, pointing to improvements in GitHub account attribution or project labeling.

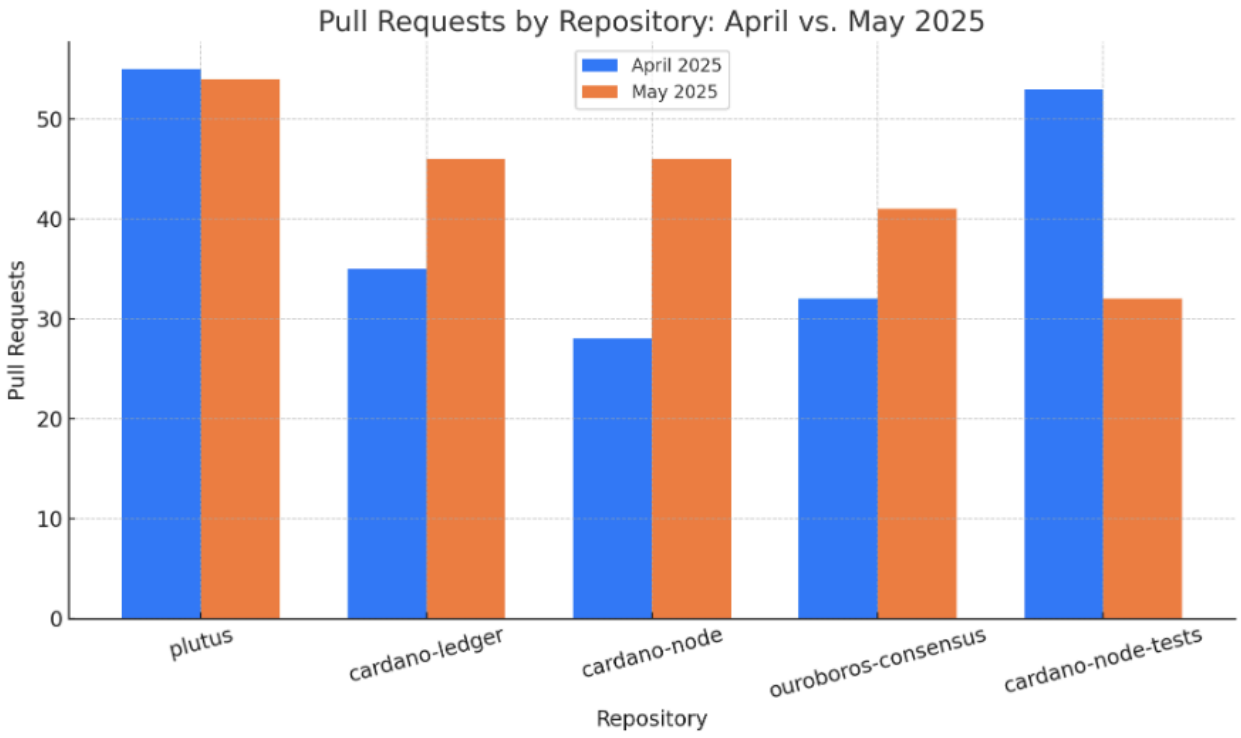
4.a) PR by Projects

The top five repositories remained largely consistent month-over-month, though the distribution shifted slightly. `plutus`, `cardano-ledger`, and `cardano-node` continued to anchor development, while `cardano-node-tests` dropped back after a surge in April. **Overall PR throughput remained high**, reinforcing the sustained dev momentum across the protocol stack.

Top 5 Repositories by PRs (May)

Repository	PRs (May)	PRs (Apr)	Δ (%)

plutus	54	55	−1.8%
cardano-ledger	46	35	+31.4%
cardano-node	46	28	+64.3%
ouroboros-consensus	41	32	+28.1%
cardano-node-tests	32	53	−39.6%



Insights:

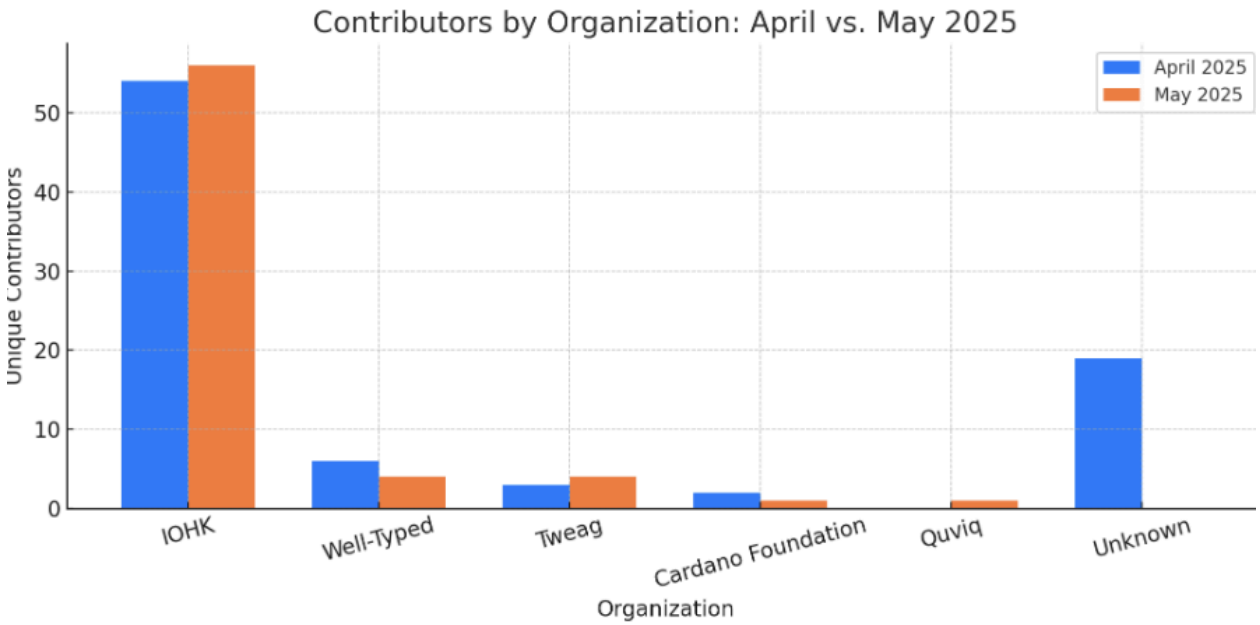
- 🔄 **plutus** held steady at the top with 54 PRs — a slight dip but still dominating.
- ⬆️ **cardano-node** and **cardano-ledger** posted strong growth — reinforcing protocol-layer innovation.
- 📉 **cardano-node-tests** dropped by 40%, indicating less test framework modification compared to April.
- 🔁 The tight grouping of PR counts across top repos reflects broad simultaneous investment across core layers.

5. Analysis of Contributions by Organization

Summary:
May 2025 showed a clearer consolidation of contributors under formally recognized organizations. IOHK further expanded its contributor base, while Tweag and Well-Typed maintained steady presence. Notably, the **Unknown** category vanished completely — suggesting improvements in attribution hygiene or the phasing out of bot-style activity. Quviq and Cardano Foundation also registered stable participation.

Comparative Table: Contributors by Organization

Organization	Authors (May)	Authors (Apr)	Δ Authors (%)	Organization
Input Output (IOHK)	56	54	+3.7%	Input Output (IOHK)
Well-Typed	4	6	−33.3%	Well-Typed
Tweag	4	3	+33.3%	Tweag
Cardano Foundation	1	2	−50.0%	Cardano Foundation
Quviq	1	—	New	Quviq
Unknown	—	19	—100.0%	Unknown



Insights:

- 🔵 **IOHK** continued its steady growth, adding two more contributors — reinforcing its dominant engineering role and capacity for onboarding.
- 🟠 **Well-Typed** saw a dip in contributor count (−33%), which may indicate narrowed team focus or resourcing shifts.
- 🟠 **Tweag** gained an additional contributor (up +33%), continuing its upward trend seen since March.
- 🟡 **Quviq** appeared for the first time in the contributor map — possibly onboarding through formal specification or testing workstreams.
- ✅ **Unknown** dropped to zero, a likely reflection of improved GitHub identity attribution and fewer unattributed commits.

Glossary

Report Technical Definitions:

- **Repository(Repo):** In Git, a repository, often abbreviated as "repo," is a storage space where your project's files and their entire revision history are stored. It typically includes various files such as source code, documentation, images, and more. Repositories can be either local (on your computer) or remote (hosted on a server like GitHub, GitLab, Bitbucket, etc.).
- **Issue:** An issue is a feature request, bug report, task, or any other item that needs to be tracked within a project. In Git repositories hosted on platforms like GitHub or GitLab, issues are commonly used for discussing and tracking tasks or problems related to the project. They can include labels, assignees, comments, and other metadata to facilitate collaboration and organization.
- **Pull Request (PR):** A pull request is a proposed change that a user wants to merge into a target branch of a repository. It's commonly used in distributed version control systems like Git to facilitate code review and collaboration. When a developer completes a feature or fixes a bug in a separate branch of the repository, they can initiate a pull request to merge their changes into the main branch or another designated branch. Pull requests often include a summary of the changes, discussions, reviews, and automated checks.
- **Contributor:** A contributor is anyone who participates in a project by making contributions such as code changes, documentation improvements, bug fixes, feature enhancements, etc. Contributors can be individuals or organizations, and their contributions can take various forms, from writing code to providing feedback, reporting issues, or reviewing pull requests.
- **Git:** Git is an open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It allows multiple developers to work on the same project simultaneously, coordinating their work through branching, merging, and version tracking. Git is widely used in software development for managing source code revisions and collaborating on projects.
- **GitHub:** GitHub is a web-based platform that provides hosting for Git repositories and offers collaboration features such as issue tracking, pull requests, code review, and project management tools. It's one of the most popular platforms for hosting Git repositories and facilitating collaboration among developers and teams. GitHub also provides additional features like wikis, continuous integration, and deployment services.
- **Commit:** In Git, a commit is a snapshot of the changes made to the files in a repository at a specific point in time. It represents a single revision or change set and includes a unique identifier (SHA-1 hash), a commit message describing the changes, and a pointer to the previous commit(s). Commits are fundamental to version control in Git, as they allow developers to track changes, revert to previous states, and collaborate on code changes.
- **Organization:** In Git and GitHub, an organization refers to a group or entity that can own repositories, manage access permissions, and collaborate on projects. Organizations are often used by companies, open-source projects, or groups of developers to centralize their repositories and manage their collective work. Organizations on GitHub can have multiple members with varying levels of access, allowing for collaborative development within a structured environment.
- **Project:** A project in the context of Git and GitHub typically refers to a specific software development endeavor or initiative. It encompasses all the related tasks, code,

documentation, issues, and resources needed to achieve a particular goal. Projects are often organized within repositories on GitHub, where developers can collaborate, track progress, manage tasks, and share code. A project may involve multiple contributors working together to develop and maintain software, with each contributor contributing to different aspects of the project.

- **Community:** In the Git and GitHub ecosystem, a community refers to the collective group of developers, users, contributors, and other stakeholders who are involved in a particular project, organization, or open-source initiative. Communities are essential for fostering collaboration, sharing knowledge, providing support, and driving the growth and sustainability of projects. They often gather around shared interests, goals, or values, and may interact through various channels such as forums, mailing lists, chat platforms, and social media. A strong and engaged community can contribute to the success and longevity of a project by providing feedback, contributing code, reporting issues, and supporting fellow members.