Monthly Maturity Report - 05.24

May 2024 monthly report using Bitergia analytics

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References

- Previous Monthly Report - [April] [2024] Here
- Previous Quarterly Report - [Q1 Jan-Mar] [2024] Here

Glossary

Full description for the terms used in the document is available here: [Glossary]

Summary

During the month of May 2024 there were notable changes in the development activity within Cardano Projects. While the overall commit activity decreased across all time zones, there were significant updates and improvements in key Projects. The total modified files and added lines surged in specific projects, indicating major development efforts. The number of issues reported increased, suggesting more rigorous issue tracking or an uptick in activity for certain projects.

General Observations

Organizational Contributions:

- **Input Output (IOHK)**: The number of commits decreased from 1,104 in April to 896 in May, while the number of authors increased from 50 to 57. There was a substantial increase in both added lines (from 118,267 to 945,415) and removed lines (from 37,866 to 107,445), indicating extensive updates.
- **Intersect MBO**: The number of issues reported decreased from 117 in April to 63 in May, with a significant improvement in the median time to resolve issues (from 28.395 days to 8.042 days).
- **BinarApps**: Saw a decrease in commits from 190 in April to 124 in May, but an increase in added lines from 42,865 to 119,029, suggesting focused development efforts.

Geographical Distribution of Commits:

- The majority of contributions continued to come from the UTC 0 → +3 time zones, indicating that the majority of our contributors are located in Europe. Other time zones saw a decrease in activity, indicating a need for broader diversity.

Project-Specific Insights:

- **Plutus Project**: Significant increase in modified files from 2,561 in April to 4,432 in May and in added lines from 52,621 to 69,890, indicating major development efforts.
- **Cardano Node Project**: Remarkable increase in added lines from 89,197 to 659,312, suggesting substantial updates or new features. The number of modified files also increased significantly.
- **GovTool Project**: Increase in added lines from 57,311 in April to 160,374 in May, showing continued development efforts despite a slight decrease in the number of developers.
- **Cardano Base Project**: Emerged in May with 2,032 modified files and 181,785 added lines, indicating the start of a new or revived project.

Repository Activity:

- **GovTool Repository**: Increased activity with commits rising from 211 in April to 297 in May. Notable increase in added lines (from 53,874 to 137,421) and removed lines (from 23,170 to 35,218).
- **Cardano Node Repository**: Slight decrease in commits from 309 in April to 290 in May, but the added lines increased significantly, indicating substantial updates or feature additions.
- **Plutus Repository**: Emerged with noticeable activity in May, showing 85 commits, 36,928 added lines, and 30,491 removed lines, indicating major updates or new feature implementations.

Conclusion

Open-Source development in the Cardano ecosystem continues to show robust activity with contributions from diverse organizations and geographies. The emergence of new projects and substantial increases in activity for key projects like Plutus and Cardano Node indicate significant development efforts. The evolving geographical spread and the influx of new active developers are positive signs of growth and diversification. Moving forward, maintaining the momentum in project contributions and enhancing community engagement will be crucial for sustaining growth and innovation in the Cardano ecosystem.

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:

May 2024 - **1681 commits** made by **88 authors** in **26 repositories.**

For May 2024, the GitHub activity for Cardano open-source projects shows a slight decrease in the number of commits compared to April 2024. However, the number of authors increased, and there was an increase in the number of active repositories, indicating ongoing development and possibly new internal initiatives being initiated.

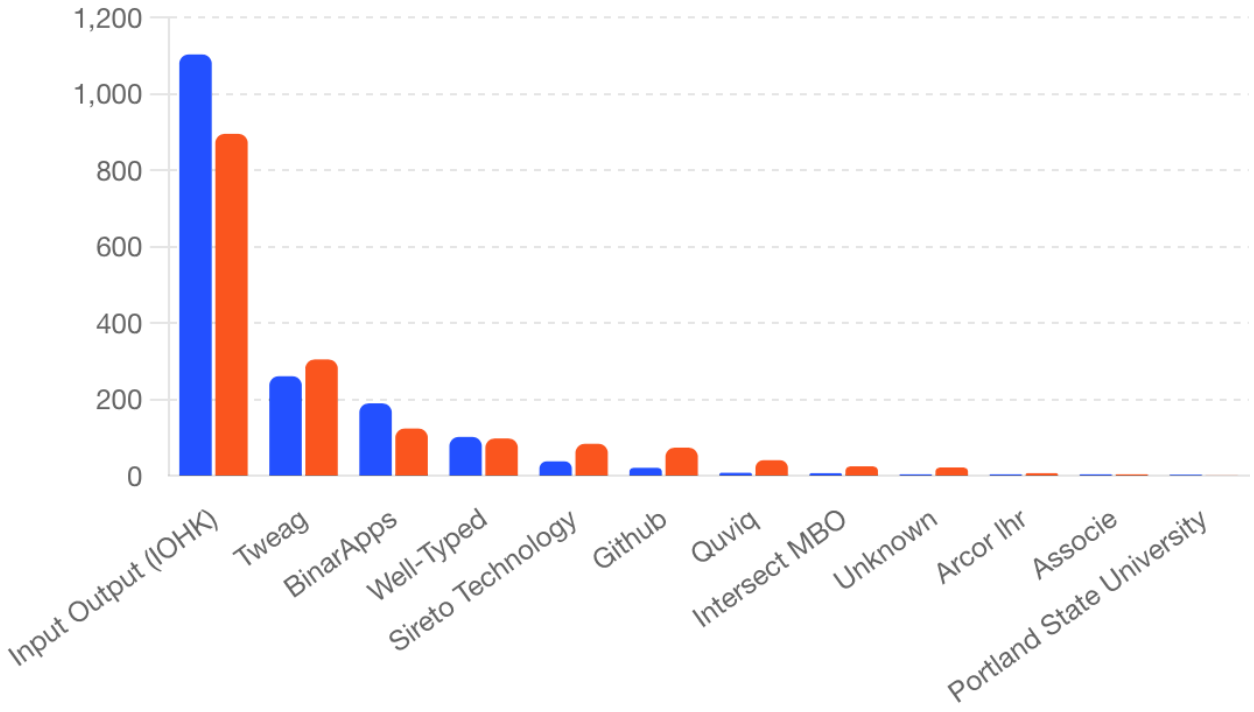
	Previous month - April	Current month - May
Commits	1745	**1681**
Authors	85	**88**
Active Repos	24	**26**

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.

Top organizations

Organization	Commits	Authors	Touched Files	Added Lines	Removed Lines	Projects	Repositories	Avg. Lines/Commit
Input Output (IOHK)	896	57	9360	945,415	107,445	10	22	1175.067
Tweag	305	6	1171	69,192	42,659	6	8	366.725
BinarApps	124	6	594	119,029	28,461	1	1	1189.435
Well-Typed	98	6	387	8,837	4,378	4	5	134.847
Sireto Technology	84	1	317	12,027	2,387	2	2	171.595



Observations:

1. **IOHK** remains the top contributor even though it experienced a notable reduction in the number of commits, dropping from 1104 in April to 896 in May. Despite this decrease, the organization saw a substantial rise in both added and removed lines of code, suggesting that significant updates or restructuring efforts took place during the month. The number of authors contributing also increased from 50 to 57.
2. The activity from **Tweag** showed a slight increase in the number of commits. This increase was accompanied by a significant rise in the amount of added and removed lines, suggesting ongoing development and refinement of their projects.
3. **BinarApps** saw a reduction in the number of commits from 190 in April to 124 in May. However, the amount of added lines increased substantially, from 42,865 to 119,029. This suggests that while the frequency of commits decreased, the changes being made were larger and more substantial. The number of authors remained stable at 6.
4. The contributions from **Well-Typed** remained relatively consistent, with a slight decrease in the number of commits from 102 in April to 98 in May.
5. Emerging as a new significant contributor in May, **Sireto Technology** was not present in the top contributors list for April. In May, they made 84 commits with 12,027 lines added and 2,387 lines removed. This new involvement highlights a growing diversity in contributors, which is a positive sign for the ecosystem's inclusivity and collaborative efforts.

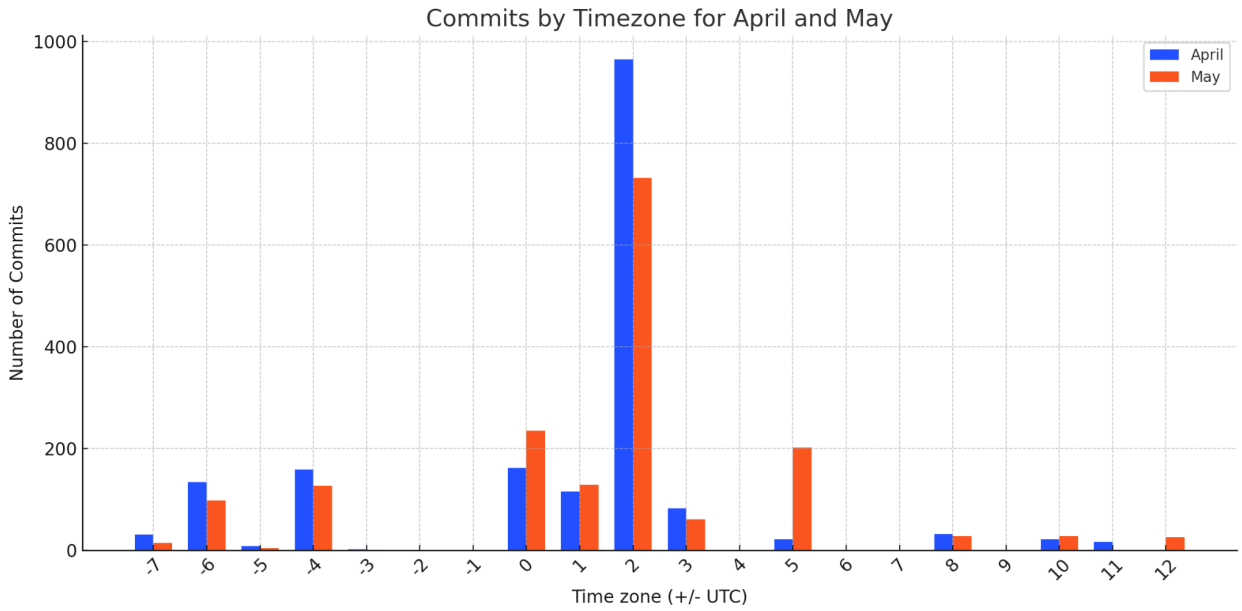
1.b) Commits by Timezone

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.

May 2024:

Time Zone (+/- UTC)	# Commits
-7	14
-6	98
-5	4
-4	126
-3	1
-2	0
-1	0
0	235
1	129
2	732
3	60
4	0
5	202
6	0
7	0
8	27
9	0
10	28

11	0
12	25



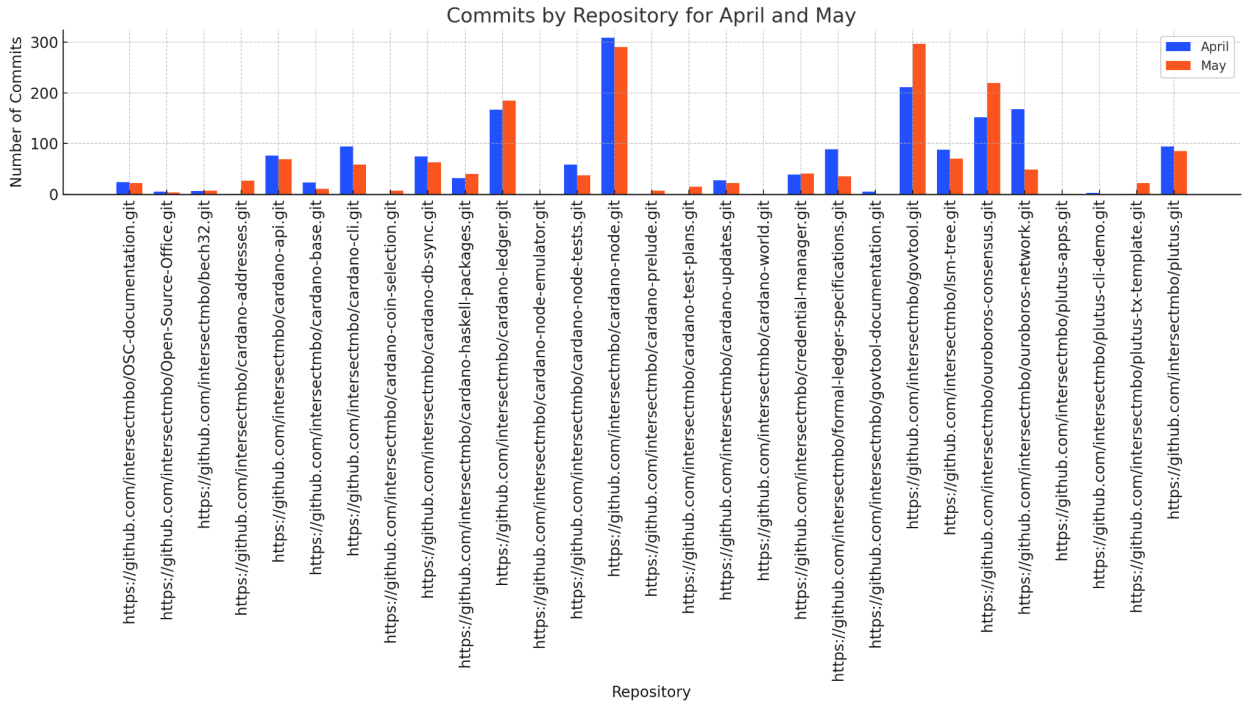
Observations:

1. UTC+0 (Greenwich Mean Time): There was a significant increase in the number of commits from this timezone, rising from 162 in April to 235 in May. This indicates an uptick in activity from contributors located in this timezone.
2. UTC+2 (Central European Time): Although still high, the number of commits decreased from 964 in April to 732 in May, indicating a slight reduction in activity from this major contributor timezone.
3. UTC+5: This timezone saw a substantial increase in commits from 21 in April to 202 in May, suggesting a significant rise in contributions from this region.
4. UTC-7 and UTC-6: Both timezones saw a decrease in commits. UTC-7 dropped from 31 to 14, and UTC-6 decreased from 134 to 98, indicating reduced activity from contributors in these regions.
5. Minimal or No Activity in some timezones: Several timezones, including UTC-4, UTC-3, UTC-2, UTC-1, UTC+4, UTC+6, and UTC+9, showed minimal or no activity in both months, reflecting stable but limited contributions from these areas.

1.c) Per Repository Activity

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

Repository	Commits	Authors	Organizations	Added Lines	Removed Lines	Avg. Lines/Commit	Avg. Files/Commit
intersectmbo/govtool.git	297	9	4	137,421	35,218	581.276	4.175
intersectmbo/cardano-node.git	290	24	3	23,095	19,290	146.155	3.500
intersectmbo/ouroboros-consensus.git	219	16	4	35,971	16,819	241.050	5.763
intersectmbo/cardano-ledger.git	185	13	4	14,926	6,188	114.130	4.919
intersectmbo/plutus.git	85	11	1	36,928	30,491	793.165	27.388



Observations:

1. The **govtool** repository saw a significant increase in activity, with commits rising from 211 in April to 297 in May. The number of added lines more than doubled. Despite the increased activity, the number of authors slightly decreased from 11 to 9, suggesting more

concentrated efforts by fewer contributors.

2. The **cardano-node** repository experienced a slight decrease in commits from 309 in April to 290 in May. The added lines also decreased significantly by more than 50% (from 74,322 to 23,095), indicating maybe smaller updates or maintenance work. The number of authors remained relatively stable.
3. **Ouroboros Consensus** repository showed a significant increase in activity, on all dimensions: commits (from 152 in April to 219 in May), added lines and the number of authors involved.
4. **Cardano-ledger** repository showed stability, with a moderate increase in commits, from 167 in April to 185 in May.
5. The **Plutus** repository, which was not among the top contributors in April, showed significant activity in May with 85 commits and a high number of added and removed lines.

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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

In May 2024, the number of modified files and added lines saw significant fluctuations across different projects. Key projects such as govtool and cardano-node experienced notable changes in their development activities.

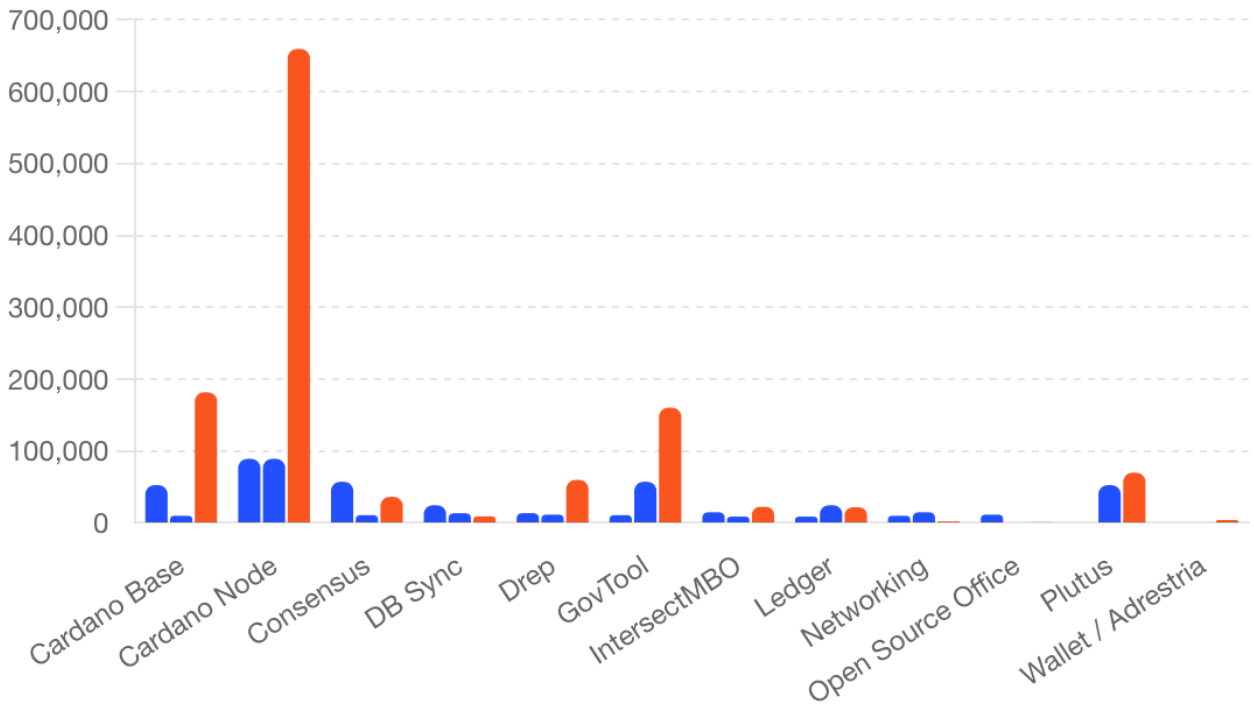
Previous Month (April 2024) vs. Current Month (May 2024):

Metric	Previous Month (April 2024)	Current Month (May 2024)
Files	117,174	214,841
Authors	71	63
Lines Added	178,515	289,333
Lines Removed	61,993	107,066

2.a) Projects

May Numbers:

Project	Modified Files	Developers	Added Lines	Removed Lines
Plutus	4432	13	69890	42208
Cardano Node	2887	28	659312	29037
Cardano Base	2032	16	181785	41
GovTool	1480	9	160374	35994
Consensus	1302	16	36343	17122



Observations:

1. **Plutus** experienced a significant increase in both the number of modified files (from 2561 in April to 4432 in May) and the lines of code added (from 52621 to 69890). This indicates a major development push, likely involving new feature implementations or significant updates to the existing codebase.
2. **Cardano Node** saw a substantial rise in added lines (from 89197 in April to 659312 in May), which is a massive increase. This should be investigated further, do see why this 9x increase.
3. **GovTool** maintained high activity levels, with a slight decrease in the number of modified files (from 1592 in April to 1480 in May) but a significant increase in added lines (from 57311 to 160374). This suggests ongoing development and possibly extensive refactoring or enhancement of existing functionalities.
4. **Cardano Base** emerged as a new active project in May, with 2032 modified files and 181785 added lines. The minimal removed lines (41) should be investigated.
5. **Consensus** showed an increase in activity, with the number of modified files rising from 1096 in April to 1302 in May and added lines increasing from 24557 to 36343. This suggests continued development and improvements within this project.
6. **Ledger**, **DB Sync**, and **Explorer** projects showed consistent activity, with Ledger having a slight increase in the number of commits and modified files. The added lines for Ledger were consistent (24557 in April and 14926 in May). DB Sync had a moderate increase in modified files and lines of code. The steady activity in these projects suggests stable development and maintenance work.

7. **Sireto Technology** and **BinarApps** contributed to the ecosystem, albeit with lower activity levels compared to other projects. Their consistent involvement highlights the diverse contributions from various organizations.

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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

The data for May shows a significant increase in the number of issues and a reduction in the average time issues remained open. This reflects a positive trend in the Cardano ecosystem's ability to identify and resolve issues efficiently. The broader participation from the community and the increased number of repositories with issues indicate growing engagement and active management across projects.

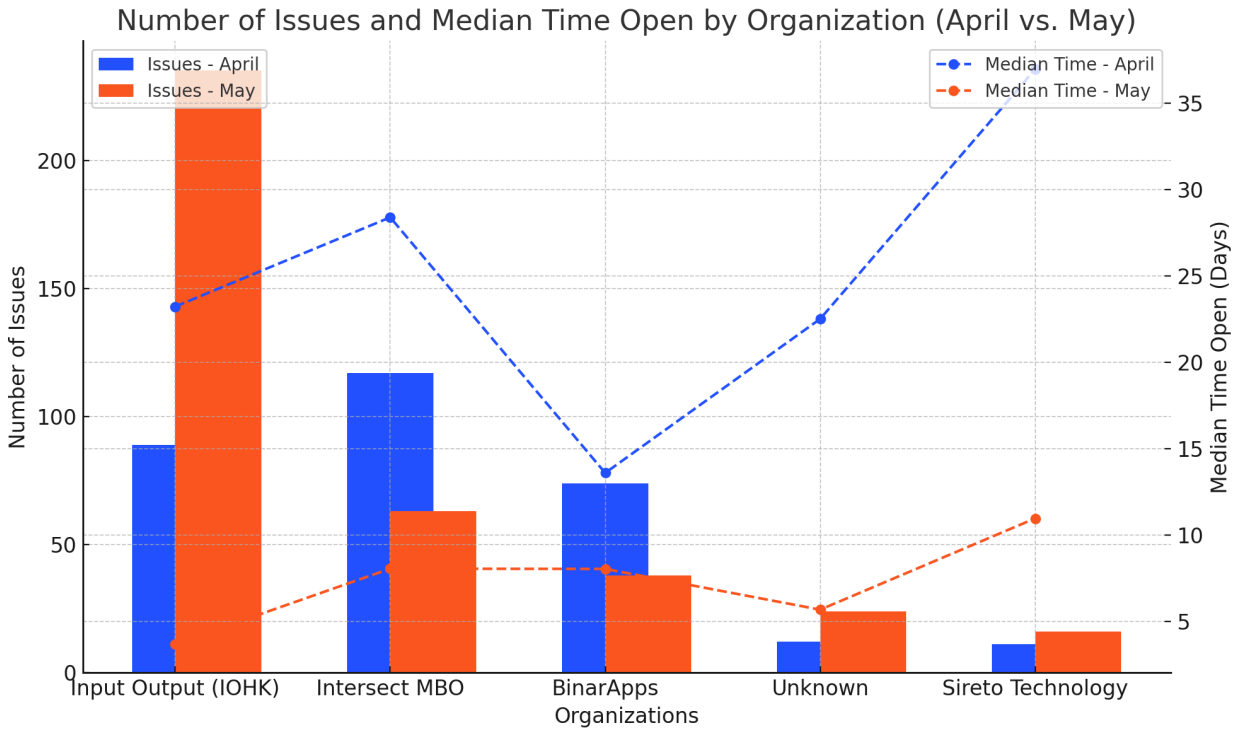
Previous Month (April 2024) vs. Current Month (May 2024):

Metric	Previous Month (April 2024)	Current Month (May 2024)
Total Issues	323	412
Total Submitters	65	67
Total Repositories	13	18
Avg. Time Open (Days)	23.259	5.478

3.a) Organizations

Top five for May:

Organization	Issues	Submitters	Median Time Open
Input Output (IOHK)	235	27	3.684
Intersect MBO	63	4	8.042
BinarApps	38	6	8.029
Unknown	24	13	5.667
Sireto Technology	16	3	10.955



Observations:

1. **Input Output (IOHK)** saw a significant increase in the number of issues from 89 in April to 235 in May. Despite the increase in issues, the median time open decreased substantially from 23.226 days to 3.684 days, indicating a more efficient resolution process.
2. **Intersect MBO** had a decrease in the number of issues from 117 in April to 63 in May, while maintaining the same number of submitters. The median time open improved from 28.395 days to 8.042 days, reflecting faster issue resolution.
3. **BinarApps** experienced a decrease in the number of issues from 74 in April to 38 in May, with the number of submitters remaining the same. The median time open also improved from 13.588 days to 8.029 days, indicating more efficient handling of issues.
4. **Sireto Technology** saw an increase in the number of issues from 11 in April to 16 in May, while the number of submitters remained the same. The median time open decreased from 36.971 days to 10.955 days, indicating a more efficient resolution process.
5. **Unknown** submitters had an increase in the number of issues from 12 in April to 24 in May, with the number of submitters increasing from 9 to 13. The median time open improved significantly from 22.511 days to 5.667 days, indicating better efficiency in resolving issues reported by these submitters.
6. Other organizations with fewer issues also contributed to the overall trend of faster resolution times, indicating a widespread improvement in handling issues across the ecosystem.

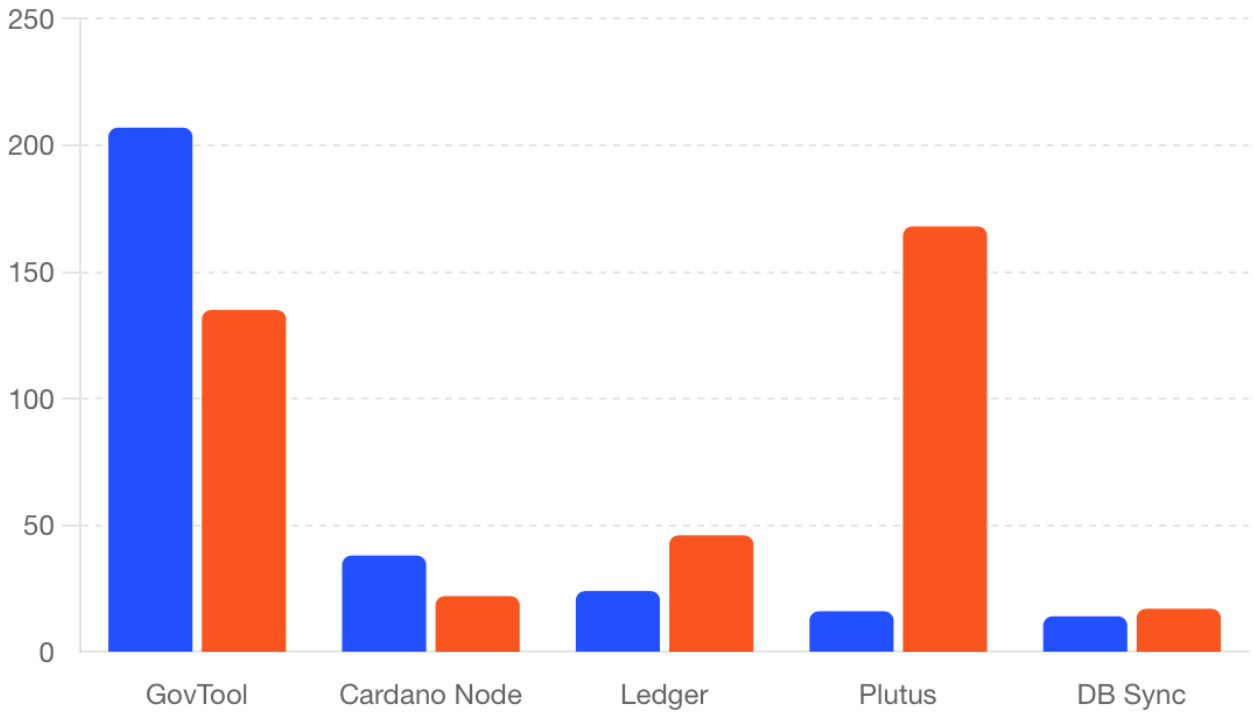
Conclusion:

The data for May indicates a significant improvement in the efficiency of issue resolution across most organizations, with a substantial decrease in the median time issues remained open. The increased number of issues reported and resolved reflects a growing engagement and active management of projects within the Cardano ecosystem.

3.b) Projects

Top Five Projects for May 2024

Project	Issues	Submitters	Repositories
Plutus	168	12	2
GovTool	135	16	1
Ledger	46	11	2
Cardano Node	22	14	4
DB Sync	17	8	1



Observations:

1. **GovTool** saw a decrease in the number of issues from 207 in April to 135 in May, while the number of submitters increased slightly from 15 to 16. The number of repositories remained constant at 1, indicating ongoing engagement and effective issue management.
2. **Cardano Node** experienced a decrease in the number of issues from 38 in April to 22 in May. The number of submitters decreased from 21 to 14, while the number of repositories increased from 3 to 4, suggesting a redistribution of efforts across more repositories.
3. **Ledger** showed an increase in issues from 24 in April to 46 in May. The number of submitters increased from 9 to 11, and the number of repositories remained the same at 2, indicating growing activity and engagement in the project.
4. **Plutus** experienced a substantial increase in the number of issues from 16 in April to 168 in May. The number of submitters increased from 7 to 12, and the number of repositories increased from 1 to 2, suggesting a significant surge in development and issue tracking.
5. **DB Sync** had a slight increase in the number of issues from 14 in April to 17 in May, with the number of submitters and repositories remaining constant. This indicates steady development and issue management.
6. **Networking** saw a decrease in issues from 12 in April to 4 in May, with the number of submitters decreasing from 5 to 2. The number of repositories remained constant, suggesting reduced activity or successful resolution of previous issues.
7. **Consensus** maintained a stable number of issues, with 7 in April and 6 in May. The number of submitters and repos remained unchanged, indicating consistent engagement.
8. **IntersectMBO** showed an increase in the number of issues from 1 in April to 7 in May. The number of submitters increased from 1 to 5, and the number of repositories increased from 1 to 2, indicating growing participation and issue management efforts.
9. **Cardano Base, Drep, and Open Source Office** appeared in May with a small number of issues and submitters, reflecting new or renewed focus on these projects.

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.