

Python Education for Geoscience: Lessons from Project Pythia's Modernization



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What is Project Pythia?

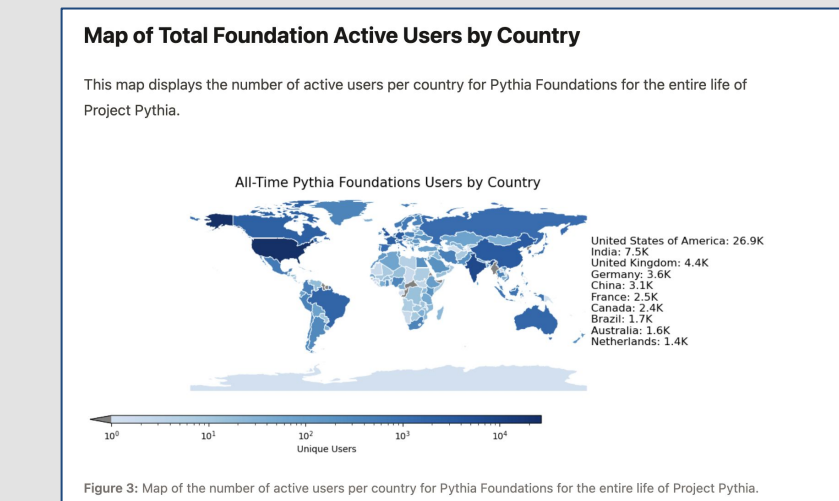
Project Pythia is an open-source platform that teaches geoscientists how to use Python for scientific data analysis.

- It provides modular learning resources, including:
- **Foundations:** Python basics, tools, and workflows
 - **Cookbooks:** Domain-specific examples (e.g. radar cookbook)
 - **Portal:** A central landing page linking all educational content

Built using Jupyter Book and rendered as fully interactive web pages.



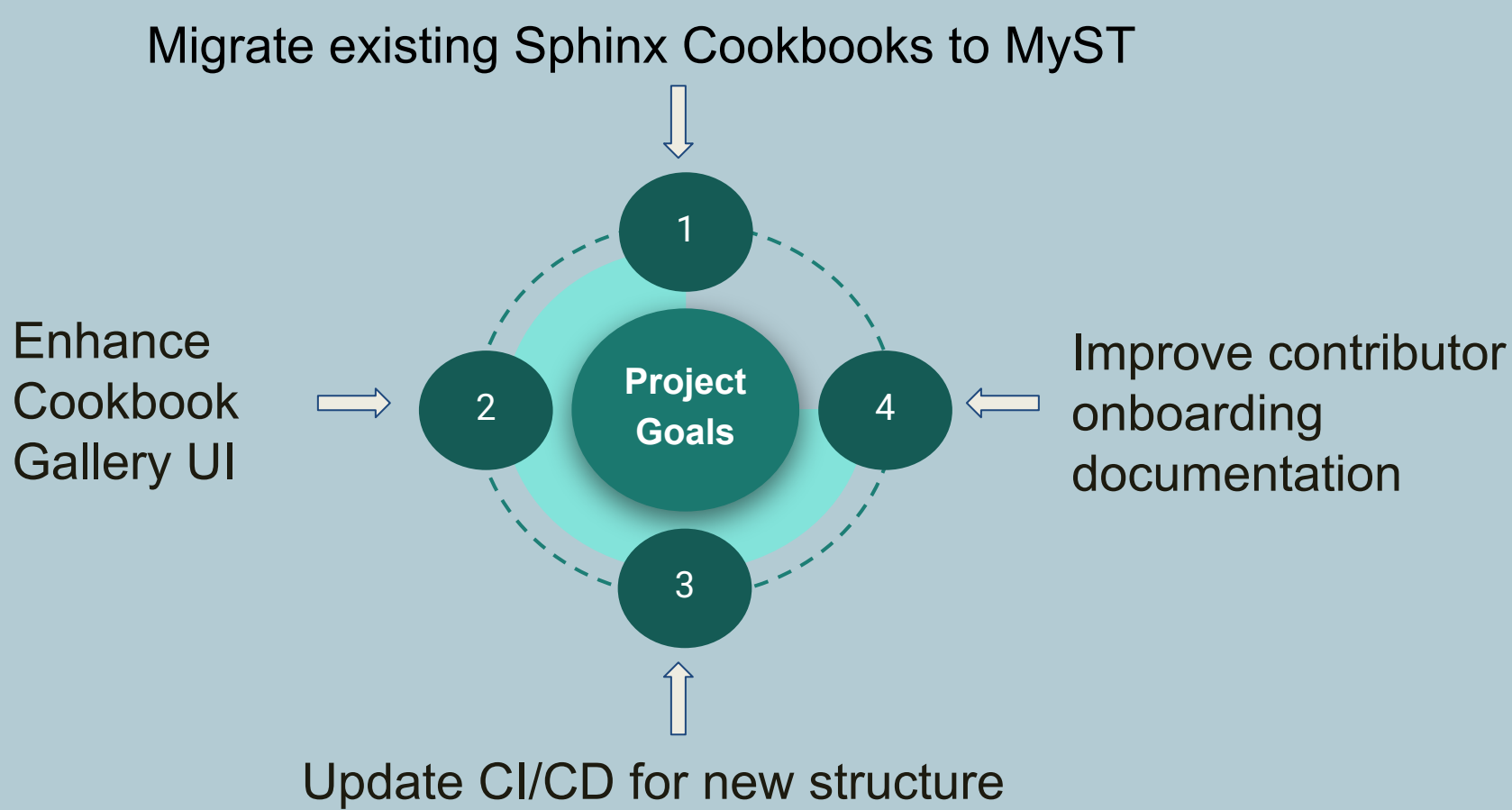
Why We Do What We Do



- Importance**
- Used by scientists around the world
 - Supports community-driven learning



Project Goals

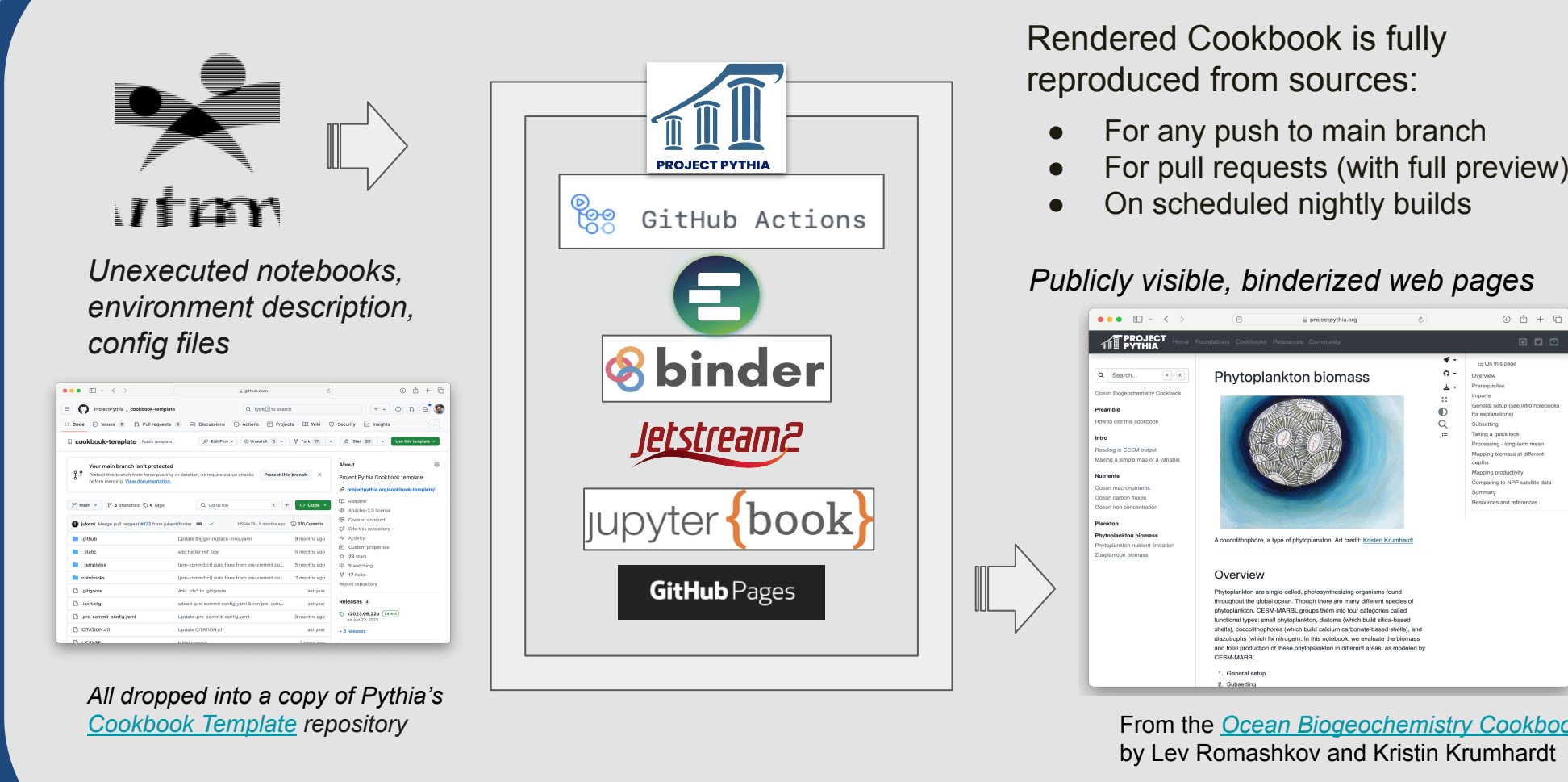


Future Work

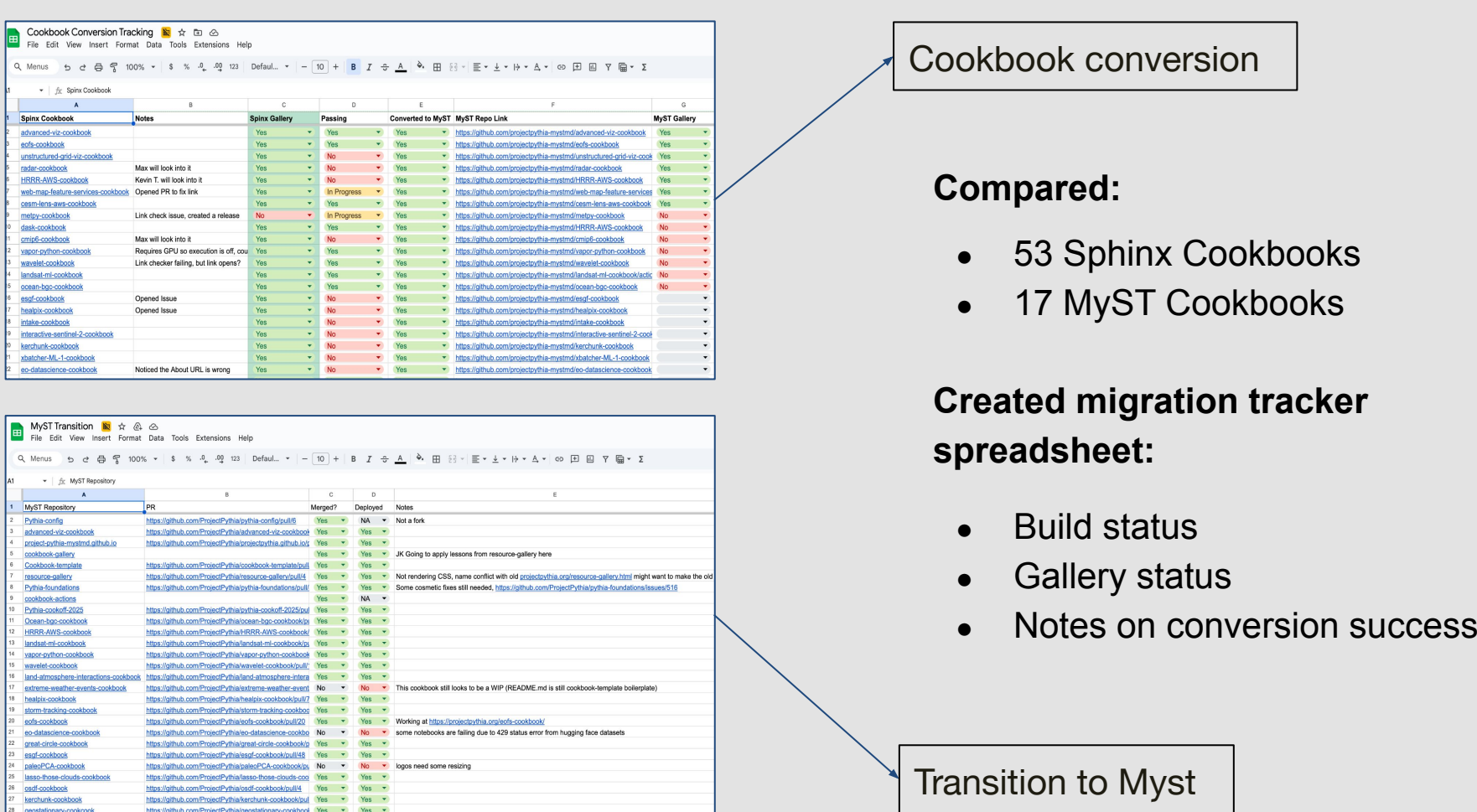
- Add newly converted Cookbooks to the Gallery
- Finalize Cookbook Gallery UI fixes (filtering, rendering, navigation)
- Polish and publish Contributor Guides
- Open pull requests to merge MyST changes back into main repositories and scrub any stale unused code
- Hackathon/ Cook Off – **August 5 - 8**

My Contributions: Migration, Infrastructure & UI

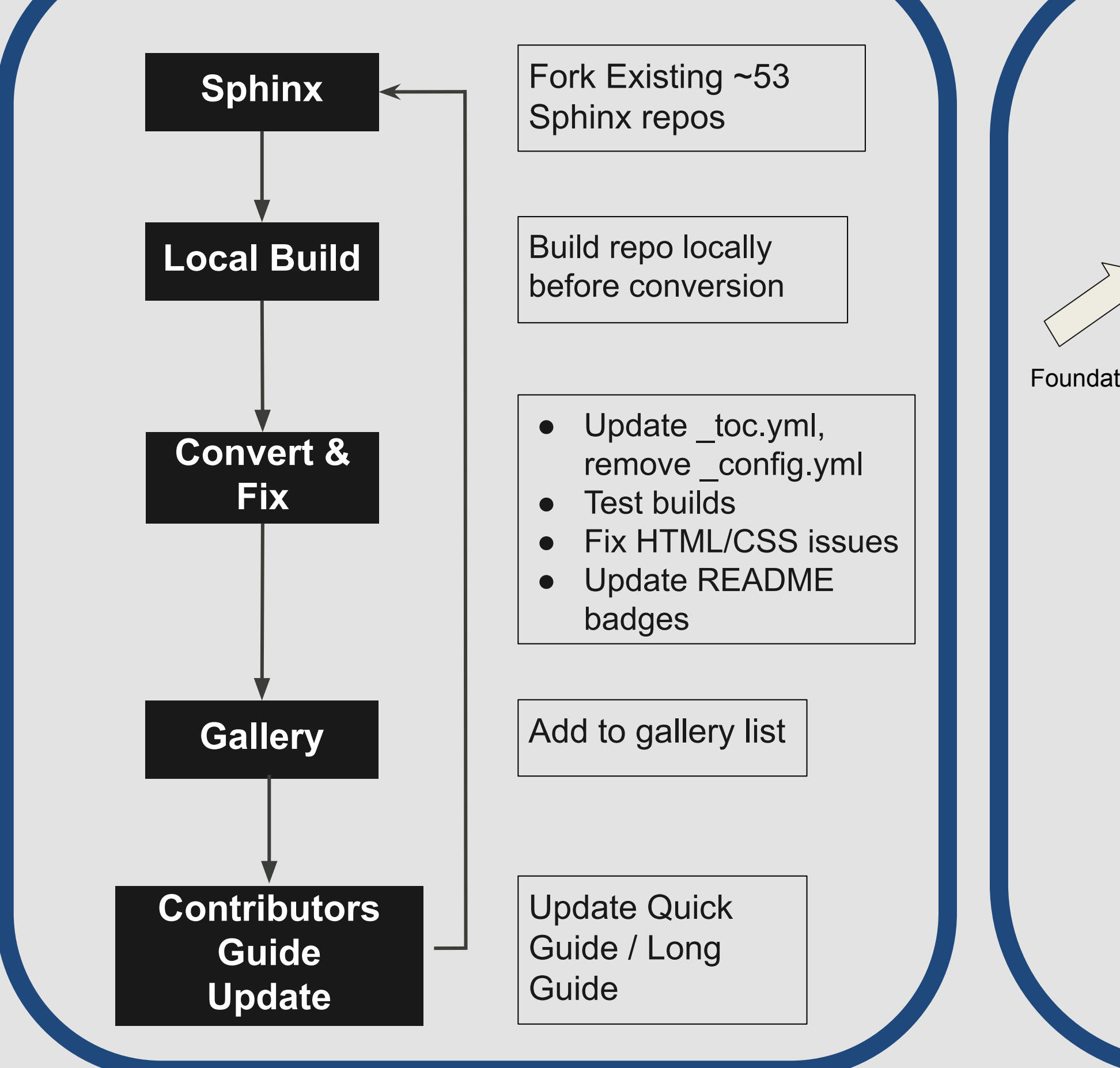
Making A Cookbook



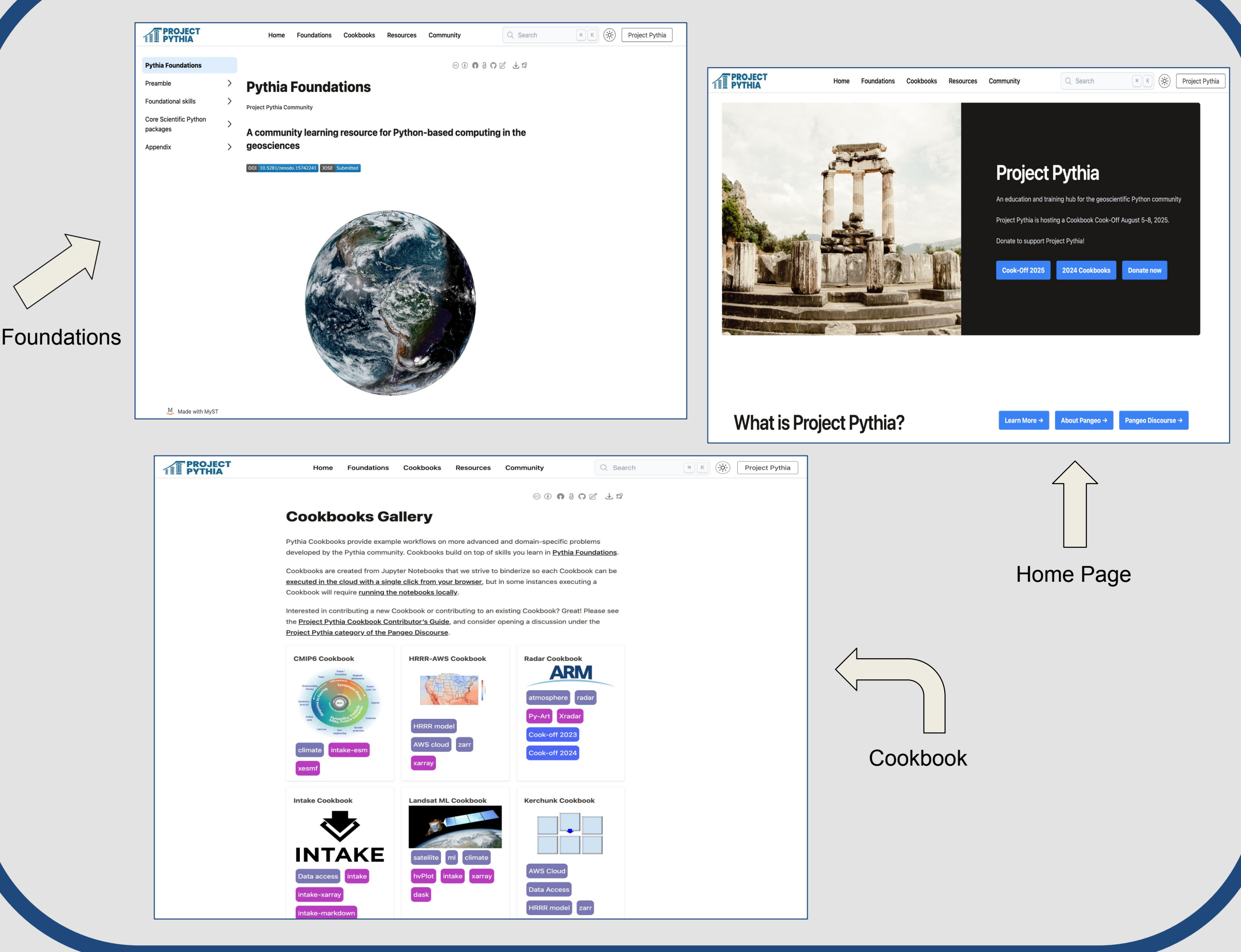
Key Contributions



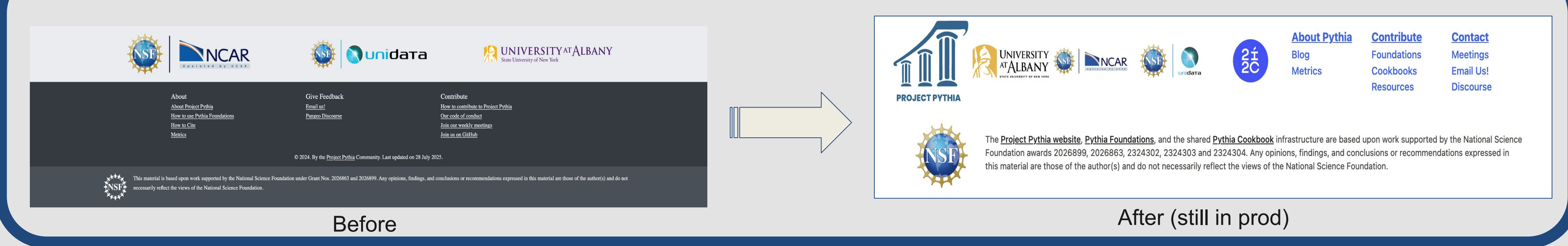
MyST Migration Process



Sample Mystified Cookbooks



Footer Implementation



Why Modernization Was Needed

Project Pythia's original educational resources were built using Sphinx-based Jupyter Book 1.

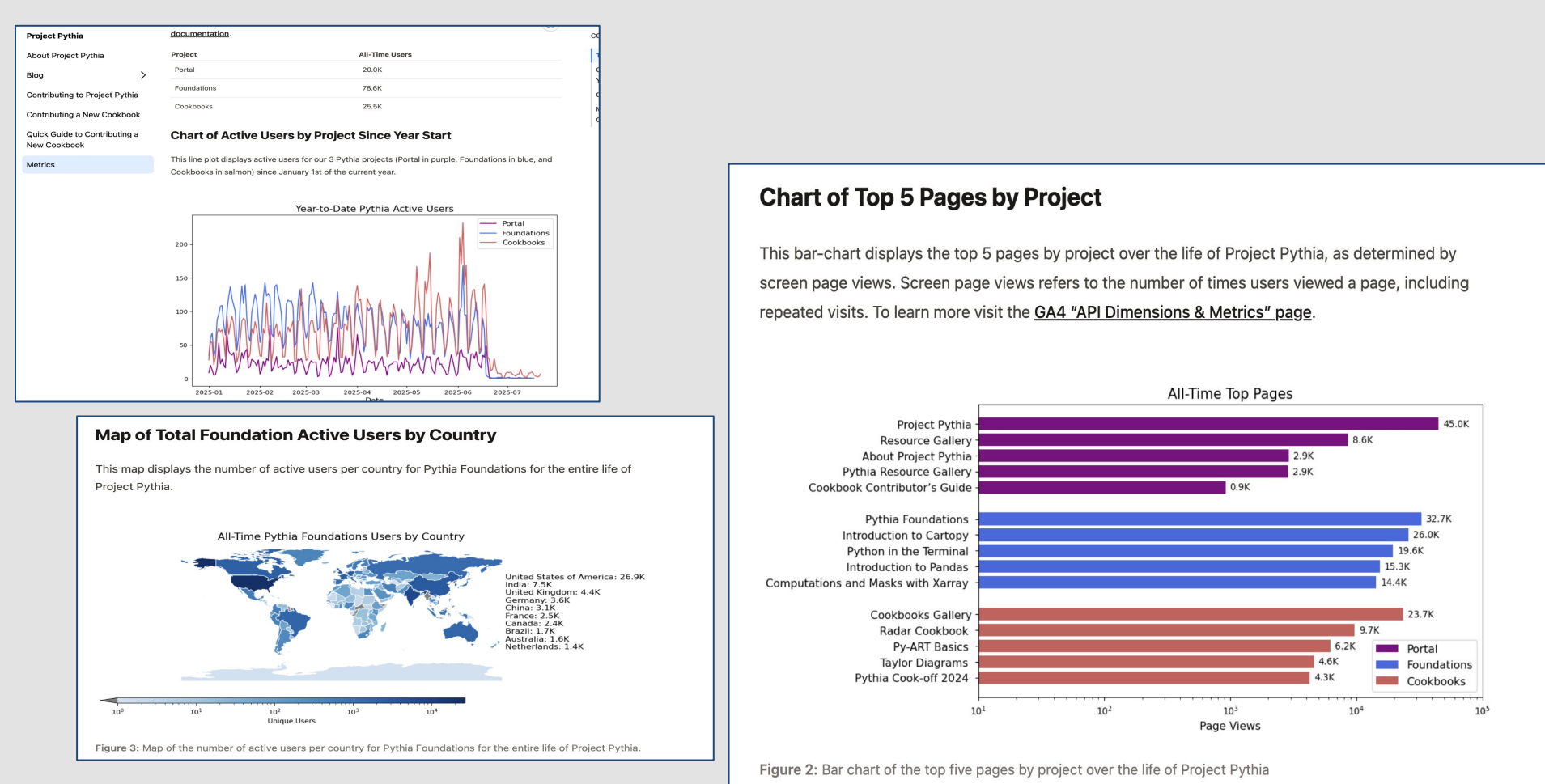
Jupyter Book 2 officially transitioned to MyST Markdown, dropping support for Sphinx.

Maintaining Sphinx-based content led to:

- Broken builds and failed tests
 - Hard-to-edit syntax for contributors
 - Inconsistent page rendering
- Compatibility with latest tools
- Easier contributions via standard Markdown
- Improved cross-referencing and publishing
- Maintainability: 75 repos (site configs and appearance propagation)
- Sustainability: writing, testing, and maintaining content

Impact

Supports 78K+ scientists and students around the world



Acknowledgements

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Additional thanks to all the **Pythia Team** for all the resourceful collaborations, and **MySTMD Team** for launching timely releases to support the project.

References

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2. Executable Books. Jupyter Book Documentation (MyST Markdown). Retrieved from: <https://jupyterbook.org>
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