



ANASTASIA LABS

CLOSE-OUT REPORT

Project Nr 1000012

Streamlining Development: A User-Friendly Smart Contract Library
for Plutarch and Aiken Design Patterns & Efficiency

Date Started Oct 8, 2023

Date Completed

Project manager

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List of KPIs

Challenge KPIs

Performance Optimization

- Streamlined optimized mapping functions to reduce complexity and cost in smart contracts
- Efficiently managed script size and execution budgets to reduce transaction fees
- Reduced ExUnits cost compared to traditional checks

Security Enhancement

- Implemented measures against known exploits like double satisfaction
- Ensured comprehensive validation by incorporating UTxO indices within the redeemer

Consistency

- Predictable and optimized compilation outcomes
- Provided a normalized representation of validity ranges

Project KPIs

Library Completeness

- Inclusion of key design patterns for Plutarch and Aiken

Documentation Quality

- High-quality, detailed documentation for each smart contract library with detailed flow charts/images displaying solution architectures

Engagement

- Active participation in social networks, GitHub, and community events can be observed through various means like

Key achievements

Development of Comprehensive Libraries

User-friendly libraries for Plutarch and Aiken, simplifying complex design patterns without sacrificing readability and circumventing repetitive boilerplate

Exemplary use of these libraries are found for 7 different validator scenarios in:

- **For Aiken**
- **For Plutarch**

Engagement

Communication with the developer community (A presentation on design patterns was given in Buidlfest), which potentially will lead to adoption rates and valuable feedback

Key learnings

User Feedback

Actively incorporated feedback from developers/users to improve the libraries

Process Improvements

Improved the development process based on insights gained during the project

Best Practices

Further identified and documented best practices for smart contract development

Next steps

Feature Enhancements

Further optimize and maintain existing libraries created for the developers.

Additional design pattern libraries that streamline the implementation process for other existing smart contract languages. (Such as Scalus)

Expansion

Targeting a wider developer audience through increased outreach

Resources

Project

[GitHub Repository](#)
[Catalyst Proposal](#)

Aiken

[Aiken - Design Patterns](#)
[Test Results](#) / [GIF](#)

Plutarch

[Plutarch - Design Patterns](#)
[Test Results](#) / [GIF](#)

Close-out Video

[linkhere](#)