University of Malta

Master of Science in Blockchain and Distributed Ledger Technologies

DLT5001 - Applied Project

Student Report

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Placement Report: Analysis of Aave Protocol:

1. Introduction:

This report documents the tasks and activities undertaken during my placement, focusing on the analysis of the Aave protocol. The main objective was to gain a comprehensive understanding of Aave's tokenomics, how the protocol works, and the smart contract mapping for both the v1 and v2 contracts. Furthermore, the report outlines the identification of relevant tokenomics functionality within the smart contracts and maps out all data collection functions.

2. Tasks and Activities

Week 1:

During the first week of the placement, I focused on conducting research and gathering foundational knowledge about Aave. The following tasks were completed:

Task 1: Conducted research on Aave's v1 and v2 contracts, specifically studying their tokenomics. This involved examining the economic models, incentives, and mechanisms employed within each version of the protocol.

Task 2: Engaged in extensive reading of Aave's documentation to understand how the protocol functions as a lending and borrowing platform. I explored the mechanisms of deposits, borrowing, interest rates, and collateralization to grasp the underlying concepts.

Task 3: Identified relevant tokenomics functionality present within the Aave smart contracts. This involved studying the smart contract code and identifying the functions and logic that govern the protocol's economic model.

Task 4: Began mapping out the smart contracts for both the v1 and v2 versions of Aave. This mapping aimed to visually represent the structure of the smart contracts and identify the specific functions responsible for implementing the tokenomics functionality.

Week 2:

During the second week, I focused on refining my understanding and completing the necessary analyses. The following tasks were completed:

Task 5: Completed the smart contract mapping for both the v1 and v2 versions of Aave. This involved a meticulous review of the smart contract code, ensuring that all relevant tokenomics functionality was identified and properly mapped.

Task 4: Mapped out all data collection functions and on-chain data required for any calculations needed during the analysis. This step aimed to identify the specific on-chain data that needed to be collected to perform calculations related to Aave's tokenomics.

Task 6: Reviewed and refined the report to ensure that all deliverables were met. This included cross-referencing the smart contract mapping, verifying the accuracy of the identified tokenomics functionality, and ensuring that the data collection requirements were adequately addressed.

Task 7: Finalized the report and prepared it for submission. The report was reviewed to ensure clarity, organization, and the inclusion of all relevant analyses and findings.

3. Performance Measurement:

Throughout the placement, my mentor assessed my performance based on the completion of the assigned tasks and the quality of the final report. Regular calls and discussions were held to review the progress, clarify any doubts, and ensure that my understanding of Aave's tokenomics and smart contract mapping was accurate.

4. Deliverables:

The main deliverable produced as part of the project is a comprehensive report that captures the analysis of Aave's tokenomics and smart contract design. The report includes the following:

- An in-depth understanding of Aave's tokenomics for both the v1 and v2 contracts, highlighting the economic models and incentives employed.
- Clear explanations of how Aave functions as a lending and borrowing protocol, covering the mechanisms of deposits, borrowing, interest rates, and collateralization.
- A comprehensive smart contract mapping for both v1 and v2, identifying all relevant tokenomics functionality and illustrating their implementation within the smart contracts.
- A thorough mapping of data collection functions and on-chain data required for any calculations necessary for the analysis.

The report underwent a rigorous review process to ensure its accuracy, clarity, and adherence to the outlined deliverables.

5. Conclusion:

In conclusion, the placement project involved a detailed analysis of the Aave protocol, focusing on understanding its tokenomics, smart contract mapping, and data collection functions. Over the course of two weeks, I conducted extensive research, studied Aave's v1 and v2 contracts, and gained a comprehensive understanding of how the protocol operates as a lending and borrowing platform. I successfully mapped out the smart contracts, identified relevant tokenomics functionality, and determined the on-chain data required for further analysis.

Throughout the project, regular communication and mentorship sessions with my supervisor ensured the accuracy of my understanding and the completion of the assigned tasks. My mentor evaluated my performance based on the quality and completion of the deliverables, including the final report.

The code and the comprehensive report which presents valuable insights into Aave's tokenomics, functionality, and smart contract design an understanding of the economic models implemented within the protocol, and the corresponding smart contract logic are submitted for grading.