**#3 Plan B assignment Explain**

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**Introduction**

This assignment focuses on Liquid Network, designing a backend Flask application and a frontend dashboard. The application integrates Blockstream Esplora API to fetch the latest blocks, transactions, and asset analysis, while providing visualized data. This report outlines the implementation and explains the principles briefly.

**Backend Implementation**

1. Fetching Blocks and Transactions

Blocks and transactions are fetched using the Esplora API. A retry mechanism is implemented to prevent API overload, ensuring responsible usage of public explorers.

1. Asset Analysis

Asset analysis identifies whether an asset is L-BTC and extracts information like its name, issued amount, and burned amount. User-friendly explanations are generated.

1. Logic and Tooling

Tooling enables data fetching for other time periods and supports multiple transaction patterns, such as multisig, explicit outputs, and single-asset transactions.

**Frontend Implementation**

Data is rendered using Flask templates, showing blocks, transactions, and asset analysis. Transaction counts are visualized using Chart.js.

* Responsive Design and Auto-Refresh

Responsive design ensures compatibility across devices, with an auto-refresh every two minutes to maintain data freshness.

**Principles and Improvements**

The Liquid Network, a Bitcoin sidechain, ensures high transaction privacy with assets like L-BTC and custom tokens. The application uses APIs to fetch transactions, analyze output scripts, and extract patterns like multisig usage.Deploying a local node reduces dependency on public APIs. Identifying specific patterns like Boltz swaps can enhance analysis.

**What I do and What I want to do about future**

This assignment demonstrates fundamental transaction analysis on Liquid Network, combining backend data processing with frontend visualization. Future improvements could include local node support and more complex pattern recognition.