PROJECT PROPOSAL: CRYPTOCURRENCY TRADING PLATFORM (SDA PERSPECTIVE)

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OVERVIEW

The Cryptocurrency Trading Platform project, initially conceived as a cryptocurrency trading system, presents an opportunity to delve into the intricate world of Software Design and Architecture (SDA). This proposal outlines our intention to shift the project's focus toward SDA, emphasizing the critical role of software architecture, design patterns, and system optimization in creating a robust and scalable platform.

PROJECT SCOPE

Key SDA Objectives:

- Design a scalable and modular software architecture for the Cryptocurrency Trading Platform.
- Implement architectural patterns that promote maintainability and extensibility.
- Define clear interfaces and dependencies between system components.
- Ensure data integrity and reliability through effective database management.
- Establish a secure and robust foundation for the platform.

FUNCTIONAL REQUIREMENTS

Software Design and Architecture:

- **User Registration and Authentication:**

- Allow users to create accounts securely.
- Implement multi-factor authentication for added security.
- Store user data and credentials using SDA techniques to protect against data breaches.

- **Secure Data Aggregation:**

- Utilize SDA algorithms to securely aggregate and analyze market data, including cryptocurrency prices, trading volume, and historical data.
- Ensure that data aggregation is resistant to various types of attacks, such as data manipulation and eavesdropping.

- **Cryptocurrency Wallet Integration:**

- Enable users to connect their cryptocurrency wallets to the platform.
- Implement secure data transfer protocols to retrieve wallet balances and transaction history.

- **Trading Dashboard:**

- Provide an intuitive and user-friendly interface for users to monitor cryptocurrency markets.
- Display real-time price charts, order books, and trade history.

- **Order Placement and Execution:**

- Allow users to place various types of orders, such as market orders, limit orders, and stop-loss orders.
- Ensure secure execution of orders through encrypted communication channels.

- **Portfolio Management:**

- Enable users to track their cryptocurrency holdings and portfolio performance.
- Implement SDA techniques to protect portfolio data from unauthorized access.

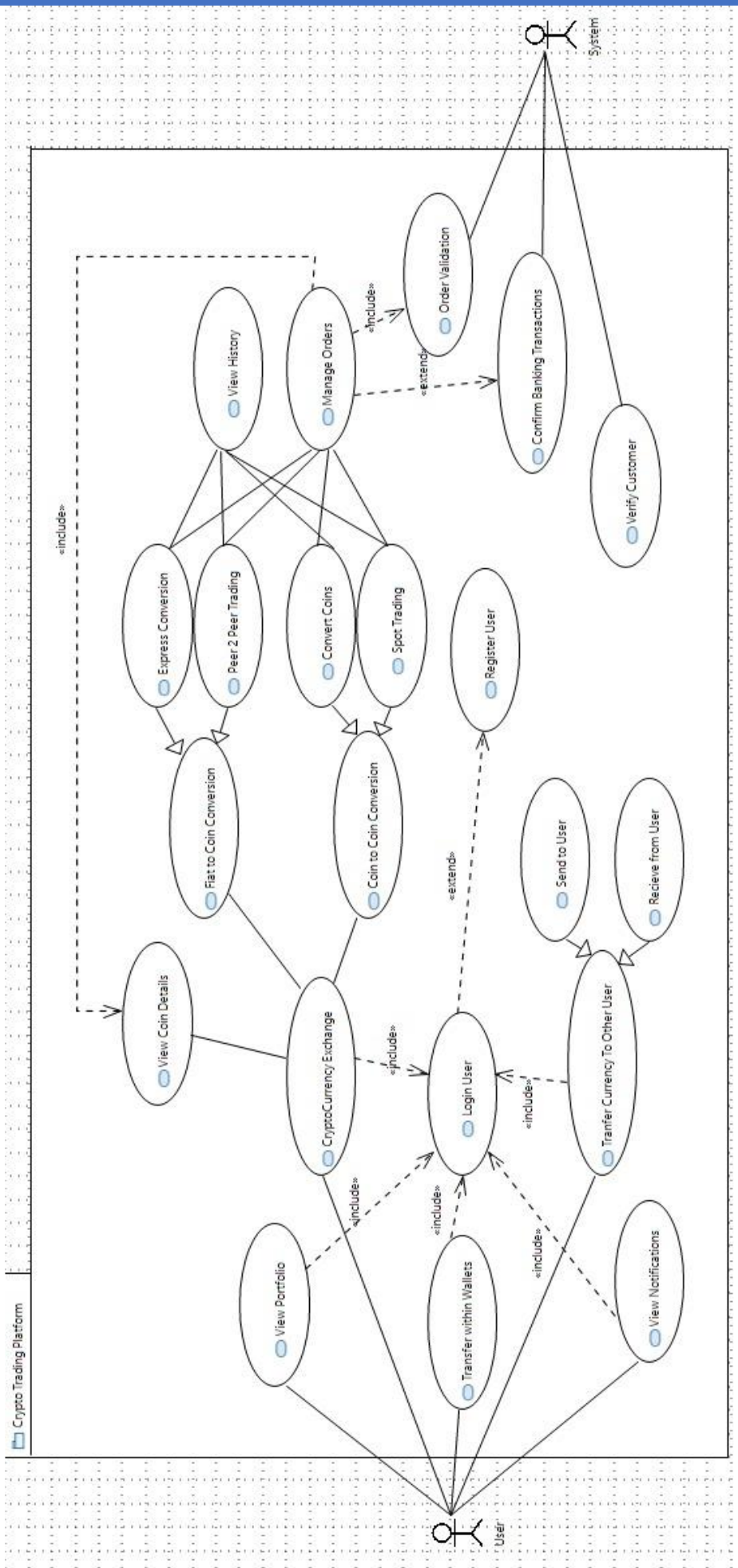
- **Notifications and Alerts:**

- Send real-time notifications to users about price changes, order executions, and other relevant events.
- Ensure that notifications are delivered securely without exposing sensitive information.

- **Transaction History and Reporting:**

- Maintain a secure and auditable transaction history for users.
- Generate detailed reports for tax and accounting purposes.

USE CASE DIAGRAM (UCD)



DOMAIN MODEL DIAGRAM