PRD: Virtual Stock Market App

1. Product Purpose

- Goal: To provide a realistic, engaging, and educational platform for users to learn about stock trading, test investment strategies, and understand market dynamics without financial risk.
- Scope: The app includes features for trading simulation, portfolio management, educational content, strategy testing, and social interaction among users.

2. Product Features

- Trading Simulation: Users can buy and sell virtual stocks based on real-time market data.
- Portfolio Management: Tools for users to track and analyze their investments, view portfolio growth over time, and manage assets.
- Educational Content: Articles, tutorials, and interactive lessons catering to various skill levels, from beginners to advanced traders.
- Strategy Testing: Advanced users can test their trading strategies against historical data and receive analytics on performance.
- Social Interaction: Community features such as forums, strategy sharing, and leaderboards to foster a community of learners and traders.

3. User Interface

- Home/Dashboard: Quick overview of market trends, user portfolio, and personalized news/educational content.
- Trading Platform: Realistic and intuitive trading interface with options to buy/sell, set alerts, and view transaction history.
- Educational Portal: Categorized educational content with progress tracking for users.
- Community Forum: Space for users to interact, share strategies, and discuss market trends.

4. Functional Requirements

- Data Handling: Secure and efficient handling of real-time market data and user data.
- User Accounts: Robust user account management with options for personalization and privacy settings.

- Performance: High performance and low latency, especially for the trading platform and data analytics.
- Scalability: Ability to handle a growing number of users and data volume.

5. Non-Functional Requirements

- Security: Strong data encryption, secure authentication mechanisms, and regular security audits.
- Reliability: High uptime, with robust error handling and failover mechanisms.
- Usability: Intuitive UI/UX, ensuring that the app is easy to navigate and accessible to users with various levels of tech-savviness.
- Compliance: Adherence to financial regulations and data protection laws (like GDPR).

6. Integration Requirements

- Market Data: Integration with financial market data providers for real-time stock prices and historical data.
- Payment Gateway: For premium features, integration with payment gateways for secure transactions.
- Social Media: Integration for social features, allowing users to share their achievements or insights on external platforms.

7. System Requirements

- Front-end: Responsive design compatible with various devices and screen sizes.
- Back-end: Robust server infrastructure to handle computations, data storage, and API requests efficiently.
- Database: Scalable database solution for storing user data, transaction histories, and market data.

8. Testing Requirements

- Functional Testing: To ensure all features work as expected.
- Load Testing: To ensure the app can handle peak loads, especially for market data retrieval and trading simulation.
- Security Testing: Regular penetration testing and vulnerability scanning.

9. Launch Plan

- Beta Testing: Closed beta with select users to gather initial feedback and identify issues.
- Marketing: Pre-launch marketing campaign targeting potential users and stakeholders.
- Launch: Phased rollout starting with an MVP, followed by iterative updates based on user feedback.

10. Post-Launch Support

- User Support: Dedicated support for troubleshooting, feedback collection, and user assistance.

- Updates and Maintenance: Regular updates for feature enhancements, performance optimization, and security patches.