**Requirements**

**Informal Requirements Gathering**

* From our experience with other crypto exchanges apps, such as Coinbase or Binance, we appreciated a clean, easy-to-navigate UI with a minimal number of clicks to access critical account information, such as balance, transactions and account security. As a result, one requirement must be a simplified dashboard that displays key financial and security information.
* Looking at similar projects, we found that users prefer apps that provide visual graphs, where they can choose the type of graph (candle sticks or line chart). Therefore, a requirement is to include those types of charts, where the users can choose from.
* Based on informal business insights, we know that users expect a responsive experience. An informal requirement here would be to ensure that CryptoPred is fully responsive and performs well across devices, from desktops to mobile phones.

**Formal Requirements Gathering**

* We conducted a survey among potential users and found out that 80% of them want a simple, yet secure authentication method for their account. A requirement could be a secure sign-up and log-in method, with a verification token sent to the user’s email.
* Through detailed market research, we found that most cryptocurrency platforms only provide basic price charts, without the possibility of customization of the graphs. So, a requirement can be the implementation of advanced, customizable charting tools.
* Through a detailed business analysis, we identified that our target customers value the integration of AI-powered predictions. A requirement here would be to integrate ChatGPT’s API into our product.

**FEATURES**

Input Activation

**REAL TIME PRICE TRACKER**

The system retrieves real-time price data from Binance exchange, via API

User selects a specific cryptocurrency

User taps on the search button

Input Activation

Live current price in USDT

User selects a cryptocurrency and specifies the time range

**Historical Data**

The user chooses the dates and clicks to generate

The system gathers historical price data from the selected time frame

A graph (candle stick or line chart) with historical price movements

Input Activation

User selects a cryptocurrency and specifies the financial indicator values and the time frame

The user submits the request after selecting the parameters

ChatGPT’s analyzes historical data and market trends, applying ML models to forecast the price(s)

A prediction graph displaying price movements with the corresponding time frame

**AI-Driven Price**

**Prediction**

**USER STORY**

**Backend**

1. As a registered user, I want to securely sign up and log in to the platform using my email and password, so that I can access my account and log out when finished.
2. As an active user, I want to view my personalized dashboard, so that I can monitor my cryptocurrency holdings and recent transactions.
3. As a data-driven user, I want the platform to fetch real-time market data from cryptocurrency exchanges, so that I can see current prices and trading volumes for selected cryptocurrencies.
4. As a user managing finances, I want the ability to deposit and withdraw money from my account balance, so that I can easily manage my funds on the platform.
5. As an AI-savvy user, I want to request information from the ChatGPT API regarding predictions for my chosen currency, so that I can make informed investment decisions.
6. As a user making transactions, I want to understand the commission fees applied when depositing and withdrawing money, so that I can factor these costs into my financial planning.

**Frontend**

1. As a mobile user, I want the web application to be responsive and adapt to different screen sizes, so that I can access the platform seamlessly from any device.
2. As a user focused on usability, I want the frontend to feature an appealing design and intuitive user interface, so that I can navigate the application easily and enjoy a pleasant user experience.
3. As a performance-oriented user, I want the application to respond quickly to my data retrieval, analysis, and transaction requests, so that I can make timely decisions without delays.
4. As an informed investor, I want to see detailed information about cryptocurrencies of interest, including graphs of price fluctuations, so that I can analyze market trends effectively.

**BACKLOG**

Backend

User Authentication

Tasks:

* Implement sign-up and login functionality.
* Add verification token for security.
* Implement a sign-out function to end sessions securely.

User Profile and Portfolio

Tasks:

* Design and set up user profile.
* Design and set up the user dashboard view.
* Fetch and display cryptocurrency holdings.
* Update dashboard to show real-time data changes.
* Add the functionality to view other users.
* Add transaction history.

Real-time market data fetch

Tasks:

* Integrate ChatGPT’s API for real-time market data from crypto exchanges.
* Display live prices and hisotrical prices for selected cryptocurrencies.

Fund Management

Tasks:

* Implement deposit and withdrawal functionalities.
* Ensure transactions update the user's account balance accurately.
* Validate input data (e.g., amount cannot be negative).

AI-Powered Currency Predictions

Tasks:

* Integrate ChatGPT API for currency predictions.
* Develop a UI for selecting currency and viewing predictions.
* Implement data caching to avoid repetitive API calls.
* Handle potential API errors and provide feedback to users.

Frontend

Responsive Design for Mobile and Desktop

Tasks:

* Implement a responsive layout.
* Test design on various devices and screen sizes.
* Optimize touch interactions and adjust font sizes for readability.

User Interface & UX Design

Tasks:

* Design the UI/UX focusing on ease of use and appeal.
* Include icons and tooltips for intuitive navigation.
* Conduct usability tests to refine the interface based on feedback.

Performance Optimization

Tasks:

* Optimize API calls to reduce load times.
* Implement lazy loading for data-heavy components.
* Test performance with different network speeds.

Cryptocurrency Data Visualization

Tasks:

* Integrate charting libraries to display price trends.
* Create graphs to show historical price fluctuations.
* Allow users to switch between time intervals.
* Add tooltips on charts for precise data points.