Crypto Dashboard with Virtual Investment -

Core Features:

🔐 User Authentication System

Secure User Registration and Login

- Users can **sign up** with email and password.

- Login returns a security-pin used for accessing protected endpoints.

- Session management and logout supported on frontend.

🏛 Live Crypto Data Integration
- Real-time cryptocurrency data from Coinpaprika API
- Homepage shows a list of top coins with: Coin name and Current price (USD)
- Users can click on any coin to view a dedicated details page, which includes:
- Market cap, 24h price change, circulating supply, symbol, rank, volume, and more
- 🔁 Currency Converter: Convert coin price between USD and INR

💰 Demo Wallet System
- Every user starts with a virtual wallet (e.g., $10,0000 USD)
- Balance updates as users buy or sell coins
- Mimics real wallet behavior without using real money

🔲 Buy & Sell Simulation
- Users can simulate buying and selling coins using current market price
- Validated against demo balance and actual holdings
- Instant updates to portfolio and transaction history

❌ Prevent Over-Spending or Selling Unavailable Assets
The system includes strict validation rules to enforce realistic trading behavior:

- ❌ Cannot buy if demo balance is insufficient
- ❌ Cannot sell more than what the user holds in their portfolio
- ✅ Ensures trades behave like on real exchanges

Example:

- Balance: $1,000 → Cannot buy 1 BTC @ $50,000
- Holdings: 0.5 ETH → Cannot sell 1 ETH

📊 Portfolio Management
- Shows all current holdings with coin name, quantity, avg buy price
- Displays live price, current value, and profit/loss for each asset
- Continuously updated based on live market prices

📋 Transaction History
- Complete log of all buy/sell transactions
- Includes coin name, amount, price, action type, and timestamp
- Helps users analyze trading patterns and strategies

📇 Wishlist Functionality
- Users can bookmark coins without investing
- Stored persistently in Supabase as a watchlist
- Helpful for monitoring price movements over time

📒 User Management
- Secure login/signup
- Each user has a separate wallet, portfolio, wishlist, and transaction log

🏁 Analytics & Insights
- Portfolio performance
- Gain/loss breakdown by individual asset

FastAPI Endpoint Structure:

- 🧩 **Authentication**
- Method • Endpoint • Description
- POST • /register • Register a new user and wallet
- POST • /login • Authenticate and return security-pin

🪙 Coin Data (via Coinpaprika API)

Method	Endpoint	Description
GET	/coins	Get list of all coins with basic info (name, price)
GET	/coin/{coin_id}	Get full details of a specific coin
GET	/convert	Convert coin price (e.g., USD ↔ INR)

💰 Demo Wallet & User

Method	Endpoint	Description
POST	/users	Create a new user with demo wallet
GET	/users/{user_id}	Get user profile and wallet balance

📈 Portfolio Operations

Method	Endpoint	Description
GET	/portfolio/{user_id}	Get full portfolio of a user
POST	/portfolio/buy	Buy a coin (validated, update balance & holdings)
POST	/portfolio/sell	Sell a coin (validated, update balance & holdings)

📄 Transactions

Method	Endpoint	Description
GET	/transactions/{user_id}	Get all transactions for the user
GET	/transactions/{user_id}/{coin_id}	Filter transactions by coin

📒 Wishlist

Method	Endpoint	Description
GET	/wishlist/{user_id}	Get wishlist coins for a user

Method	Endpoint	Description
POST	/wishlist	Add a coin to wishlist
DELETE	/wishlist/{wishlist_id}	Remove coin from wishlist

📉 Analytics & Insights

Method	Endpoint	Description
GET	/analytics/portfolio/{user_id}	Portfolio performance overview
GET	/analytics/gainloss/{user_id}	Gain/loss breakdown per coin

---

Streamlit tabs:

- 📁 streamlit_app/
- |
- ├──── app.py ← Main app file
- |
- ├──── Sidebar (Displayed in all pages)
- | ├──── 📊 Dashboard   → dashboard_view()
- | ├──── 💼 Portfolio   → portfolio_view()
- | ├──── ❤️ Wishlist   → wishlist_view()
- | ├──── 💸 Transactions → transactions_view()
- └──── 👤 User Profile → profile_view()