

Crypto Exchange

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Description

Crypto exchange is a simple cryptocurrency trading platform. Its key features are:

1. Login and registration
2. Real-time prices of cryptocurrencies
3. Buy and sell cryptocurrencies
4. Portfolio with assets display
5. Transaction history
6. Order placements

Architecture design

Architecture of such a system requires:

1. Database for storage of user and crypto info
2. Backend layer for fetching real-time crypto data and registration and order implementation
3. Frontend layer for presentation

Database

The database features five key tables:

1. Users for user profiles
2. Cryptocurrencies for market data
3. Holdings for user assets
4. Transactions for historical trades
5. Orders for active buy/sell requests

Backend

For implementation of backend logic, a Flask REST API was chosen because it handles user authentication, trading logic, and portfolio management. SQLAlchemy was chosen for relating objects between PostgreSQL and Python

Frontend

Frontend was written on React. It uses JWT-token authentication, fetches data from backend when it is needed and provides simple but accurate UI via CSS

Future improvements

- Switch from sandbox mode to real money mode
- Change backend stack choice for efficiency reasons (e.g. rewrite it to Go)
- Add security layers in registration for user safety
- Add settings

Links

Demo is available at <http://84.201.180.47:3000/>

Github: <https://github.com/IAndermanI/crypto-exchange>