

# 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>