

## Cryptocurrency Trading Platform

As per the goals of the project, either of the following options can be implemented for developing a robust cryptocurrency trading platform.

### **Option 1: Creating a middleware to connect exchanges and users.**

In this option, the middleware will be developed that will act as a medium that will connect the users and the exchanges. This middleware will help users to perform trading operations on the exchange of their choice.

The middleware can be implemented with help of the CCXT library which provides very functions and features which can be utilized for cryptocurrency trading.

The CCTX documentation can be accessed from here:

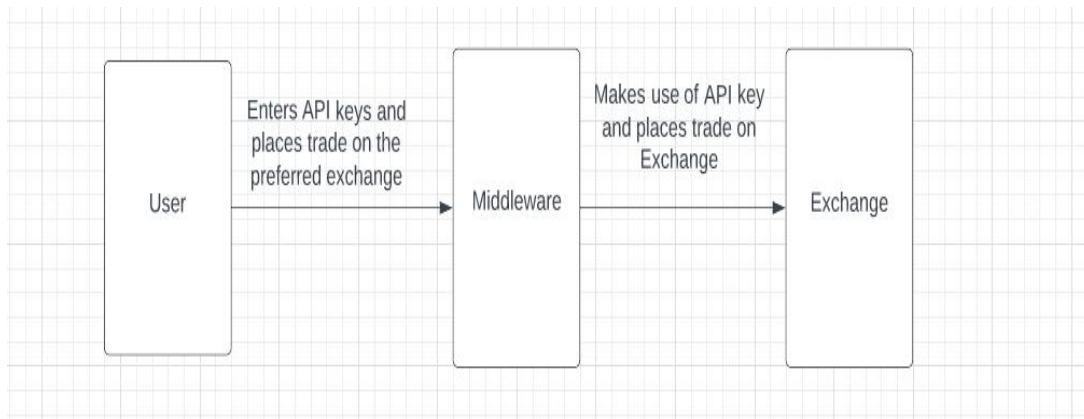
<https://docs.ccxt.com/en/latest/manual.html>

Using the CCXT library, the following methods could be developed for placing trades:

#### ***Method 1:***

The user provides his/her API key to the middleware which provides it access to the user's account.

Middleware will use the API keys to place the trade on the exchange on behalf of a user.

**Pros:**

Easy to set up for a small number of users and exchanges  
CCXT library allows development in multiple languages including Python, .NET, Javascript, etc. which allows for faster and easier development

By accessing the user's API Keys it is easier for middleware to place trades and maintain data for the user.

**Cons:**

Users need to generate APIs and share it with middleware.

Middleware needs to store and maintain the API keys for all users for each exchange that user uses.

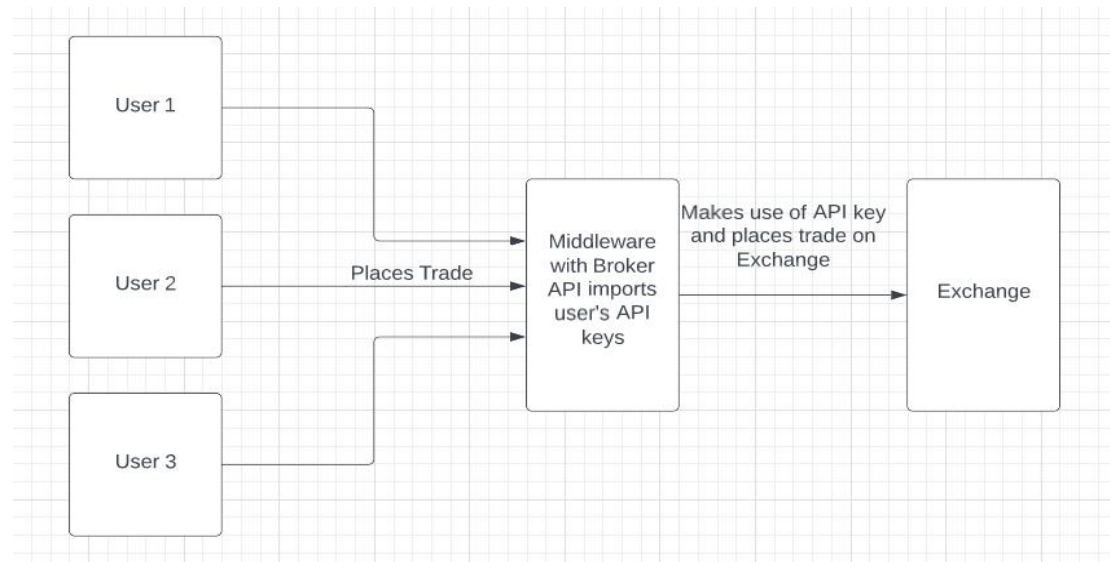
Few exchanges might require extra parameters other than API keys to authenticate the user's trade operations that might increase complexity of database.

It could be risky to store large number of API keys. Database administrator will need to ensure that keys are stored securely.

The middleware might not be able to generate revenue as no referral is used.

### ***Method 2:***

The middleware creates a Broker's API with the exchange and the users make account on the exchange using Broker's referral. This will enable Broker to place trades on behalf of the users.



### **Pros:**

Broker's API will enable middleware to import APIs of users and user will not need to manually enter the API keys in the system (Binance Broker API works on this line).

CCXT library allows development in multiple languages including Python, .NET, Javascript etc. which allows for faster and easier development

Broker (middleware) can earn rewards or commission as trades will be placed using its referral.

### **Cons:**

Broker (middleware) will need to setup broker's account and generate API keys for all exchanges that users could use.

Users will need to setup account on exchange using referral of broker (middleware).

If the user places trade using account not created with broker's referral, it will not be placed on the exchange.

Custom methods might need to be written for each exchange listed which will significantly increase development time.

Following is an example of the code written for Binance exchange by CCXT team:

[https://github.com/ccxt/ccxt/blob/master/python/ccxt/async\\_support/binance.py](https://github.com/ccxt/ccxt/blob/master/python/ccxt/async_support/binance.py)

CCXT provides a free library as well as a paid library called **CCXT Pro** which has better performance and features than regular CCXT library.

**CCXT Pro** provides following features:

Access to more than 100+ exchanges

Premium features such as Unified public and private WebSockets APIs

Efficiency, higher speeds, and lower latencies etc.

The cost of using CCXT Pro is:

## Pricing

<div><div>ETH</div><div>BTC</div><div>USD</div></div>			
Beginner	Professional	Corporate	Enterprise
29 USD per month or 290 USD per year	49 USD per month or 490 USD per year	199 USD per month or 1990 USD per year	499 USD per month or 4990 USD per year
1 seat 3 exchanges Help in 96h	2 seats 5 exchanges Help in 72h	5 seats 10 exchanges Help in 48h	10 seats Unlimited Help in 24h
Sign up	Sign up	Sign up	Sign up

## **Option 2: Creating a crypto exchange from scratch.**

Keeping profitability and growing user base in mind, a cryptocurrency exchange could be developed and setup. The cryptocurrency exchange will enable users to place their trades on the live native exchange instead of using a middleware to place trades on other exchanges.

For development of crypto exchanges there are several frameworks and developments kits available.

Some open source resources include Opendax and [HollaEx](#).

[Hollaex](#) is an open source cryptocurrency toolkit for development of cryptocurrency exchanges. It provides all the features and components such as User Interface, database support etc. for developing a scalable cryptocurrency exchange.

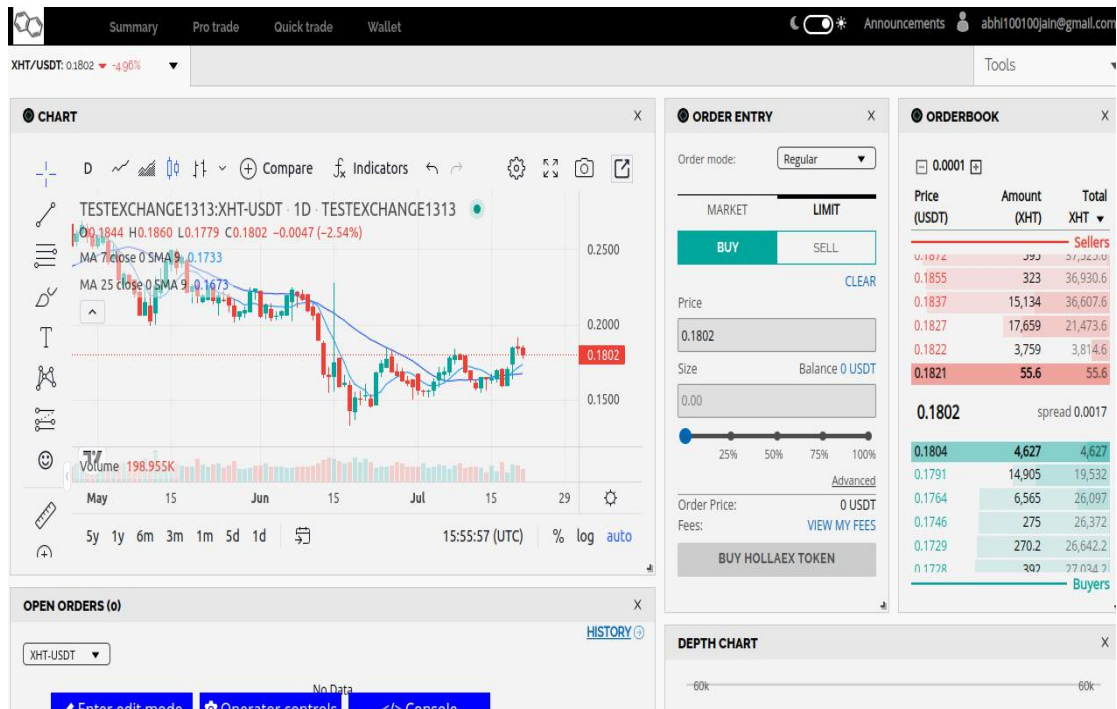
[Hollaex](#) has following features:

- It is open source

- It is easy to setup

- It provides all functionalities that a typical cryptocurrency exchange has.

- It provides support to implement KYC, authentication and trade history.



**Figure:** *DIY Exchange setup using Hollaex*

Hollaex provides a variety of plans for users to choose from following are some of the plans that it provides.

DIY - Basic	Cloud - Basic
Free	\$700.00 Per Month
<p>Great for developers &amp; advanced users that want to self-assemble everything for free! Start free at <a href="https://dash.hollaex.com">dash.hollaex.com</a> or download the software directly from GitHub at <a href="https://github.com/bitholla/hollaex-kit">https://github.com/bitholla/hollaex-kit</a></p> <ul style="list-style-type: none"> <li>Self-setup and host your own exchange</li> <li>Connect custom domain manually</li> <li>Add HollaEx plugins</li> <li>Add custom plugins</li> <li>Custom code</li> <li>Localization</li> <li>Content management</li> <li>Inbuilt customization tools</li> <li>0.3% maker and taker minimum trading fee setting</li> <li>50% revenue sharing</li> </ul> <p><a href="#">Show Less</a></p>	<p>Suitable for those just getting started</p> <ul style="list-style-type: none"> <li>Hosted on Holla cloud</li> <li>Includes logs and system backup</li> <li>Free inbuilt HollaEx domain</li> <li>Connect your own custom domain</li> <li>Add HollaEx plugins</li> <li>Content management</li> <li>Inbuilt customization tools</li> <li>0.3% maker &amp; taker minimum fee</li> <li>50% revenue sharing</li> <li>For more details visit <a href="https://www.hollaex.com/pricing">https://www.hollaex.com/pricing</a></li> </ul> <p><a href="#">Show Less</a></p>

**OpenDax:** OpenDax provides tools for the development of cryptocurrency and blockchain-based infrastructure. It provides libraries that can help in the development of scalable and robust infrastructure for blockchain and cryptocurrency related activities.

**OpenDax** has following features:

Hybrid Open-Source with combined public and private repositories.

Easily customizable User Interface (UI)

Role-Based Access Control (RBAC)

API connectors for payment systems and fiat gateways.

Pricing of **OpenDax** is:

Pricing and Licensing		
SERVICE	OpenDAX Community	OpenDAX Enterprise
OpenDAX Frontend SDK	<a href="#">Free for Startups</a> Partially Open source	Including sources
Finex Matching engine	<a href="#">Free for Startups</a> Compiled only	Including sources
Cloud Hosting	VM Builds for AWS, GCP and Digital ocean	Kubernetes Infrastructure as code
Yellow Liquidity Network	250,000 YELLOW locked per 4 state channels*	250,000 YELLOW locked per 4 state channels*
Software License	Free to use	\$250,000 one time
Openware Support	Only through partners	\$240,000 annually

\* Public sale price \$0.05

Currently the option of using OpenDAX for development of cryptocurrency exchange is being actively explored.

.