Crypto Exchange – Buy, sell, and swap Crypto

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Genesis Convergence offers blockchain consulting services to harness the potential of blockchain and gain valuable insights on DeFi (decentralized finance), NFTs, Web3, and Metaverse.

We provide cryptocurrency, cryptocurrency wallet, cryptocurrency exchange, tokenization of assets, NFTs marketplace development services., desktop wallet & paper wallet. It also

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OBJECTIVE

The popularity of cryptocurrencies as a medium of exchange worldwide has soared to great heights. In fact, Bitcoin's popularity continues to grow every passing month. In such a promising market, entrepreneurs and opportunity-seekers want to leverage the opportunity to enter the market with a crypto product. And in a state of massive hype, what can be better than a cryptocurrency exchange app?

The demand for cryptocurrency exchange apps will continue to rise with the growing trading volumes worldwide. In such a scenario, launching a high-end crypto exchange app is far better choice than thinking of ways to mine bitcoin tokens. This document breaks down everything that you need to know about how to create your own cryptocurrency exchange.

BLOCKCHAIN THE REAL HYPE

In simple terms, blockchain is a peer-to-peer distributed ledger that stores information and keeps track of transactions.

- Each and every member of the blockchain community has its own copy of the information.
- The information is recorded subsequently into units called blocks and protected by strong cryptography, creating a chain of data.
- Changes to blocks are not permitted by the blockchain system architecture, so every action and event could be traced to its origins.
- A blockchain could store data on agreements between the parties, their credentials, transactions, and any other information presented in a digital form.
- Since this information is distributed and highly secured, any attempt at fraudulent activity can be seen by the members of the blockchain community.
- This creates trust and transparency for any type of ecosystem that the blockchain is integrated into.

Blockchain Functioning?

Blockchain is a platform that ensures the integrity of the information stored and maintains interactions between the members of the ecosystem. Here's a high-level overview of the way it works:

- Each member maintains their own blockchain node with the full history of all the events and data appended to the network, including credentials, identities, certificates, etc.

- Every update to the network entails the creation of a new block at the end of the chain. A blockchain protocol dictates how these blocks are recorded, validated, and distributed.
- A consensus mechanism is employed to verify each created block where members of the blockchain network decide if it's valid to be added to the chain.
- Once a block is created and confirmed, it cannot be revoked. All entries on the blockchain are permanent and securely stored. This allows for members of the community to trace the full history of transactions and any other modifications in the7i blockchain.
- Smart contracts are a special type of agreement between the members of the network that have the conditions programmed into them, making sure that they are met before each party receives what was agreed upon. Smart contracts eliminate the need for third parties and middlemen to be involved in agreement resolution.
- Transactions in cryptocurrency play a very important part in the blockchain ecosystem, providing the incentive for all members of the community to make valuable contributions and participate in the development of the system as a whole.

These key pillars of blockchain technology lay the foundation for its uses throughout different industries, including in education. It has the potential to create a global environment where learning materials, publications, student credits, and transcripts are easily accessible. It can also introduce new and innovative ways for accountability, incentivization, and communication between teachers, students, and other participants.

Our blockchain consultants understand project-specific needs and help you identify the right blockchain protocol
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CRYPTOCURRENCY – THE FUTURE OF CURRENCY

It is far more than just a banknote or coins. A currency is a unit of storage and account and a means of exchange. In simple terms, it is a universally accepted way of buying or selling any goods or services.

- In older times, when the barter system was in place anything from rice and grains to wool and even feathers would be considered a currency. Then came in banks to regularize this means of payment. That's when they made coins and printed banknotes.
- Now in the digital time and age, the coins and banknotes seem to become outdated. So came in a new form of currency, the cryptocurrency.

Resourceful Explained Cryptocurrency

It is just like a normal currency but in a digital platform and accepted universally unlike physical currencies that work only in a specific country. A single centralized platform does not bind cryptocurrencies.

Cryptocurrency in a more detail

Cryptocurrencies don't have banknotes, but they do have coins. There is also one more term, Token in cryptocurrencies. People often get confused between a token and a coin.

- **So, what exactly is the difference between a Token and a Coin in Cryptocurrency?**
- **The three main differences are:**

1. Coins are part of a single blockchain while tokens operate on the existing blockchains.
2. Tokens are limited to a specific industry or community; coins can be used anywhere.
3. Coins can buy tokens, but tokens can't buy coins.

- Let's simplify using a real-life scenario. If you go to Starbucks regularly, then you may earn loyalty points for your frequent purchases. With these points, you can redeem a drink. These loyalty points are token that an establishment (in this case Starbucks) offers.
- Now you can buy such loyalty points by giving money which in turn gives you free coffee. This money is the coin (in this case a real-life coin or bank note).
- You can buy loyalty points using coins, but you cannot get real money using loyalty points. So, a crypto coin can be used to buy a business's token, but you can't buy a crypto coin using a token.

Starting a New Cryptocurrency: Is It Right for Your Business?

Now you have a fairly good idea what a cryptocurrency is and how it is used. Now comes the question, does your business actually need cryptocurrency? Just answer the questions below, and you will get a clear picture:

- Will your business be on the internet?
- Does your revenue come more from digital payments than hard cash?
- Will an online payment option increase your userbase?
- Do you plan to stay in business for more than a couple of years?

Okay, the last question was a rhetorical one. If the answer to all these questions is "yes" then your business needs a integrate cryptocurrency.

Benefits of building your Own Cryptocurrency:

- Eliminate Fraud Risk
- Transaction Anonymity
- Lower Operational Costs
- Immediate Transactions

- Access To New Customer base
- Security For Funds

CRYPTO EXCHANGE – A PROGRESSIVE APPROACH

- A crypto exchange is a platform on which you can buy and sell cryptocurrency.
- You can use exchanges to trade one crypto for another — converting Bitcoin to Litecoin, for example — or to buy crypto using regular currency, like the U.S. Dollar.
- Exchanges reflect current market prices of the cryptocurrencies they offer. You can also convert cryptocurrencies back into the U.S. Dollar or another currency on an exchange, to leave as cash within your account (if you want to trade back into crypto later) or withdraw to your regular bank account.
- There's no one crypto exchange that's best for every user, says Tyrone Ross, a financial advisor and CEO of Onramp Invest, a crypto investment platform for financial advisors. Instead, he says it helps to evaluate your own interests when it comes to crypto, and find an exchange that aligns with your goals.
- For example, maybe you're looking for a specific coin, or you want to continue learning more as you get into crypto investing.
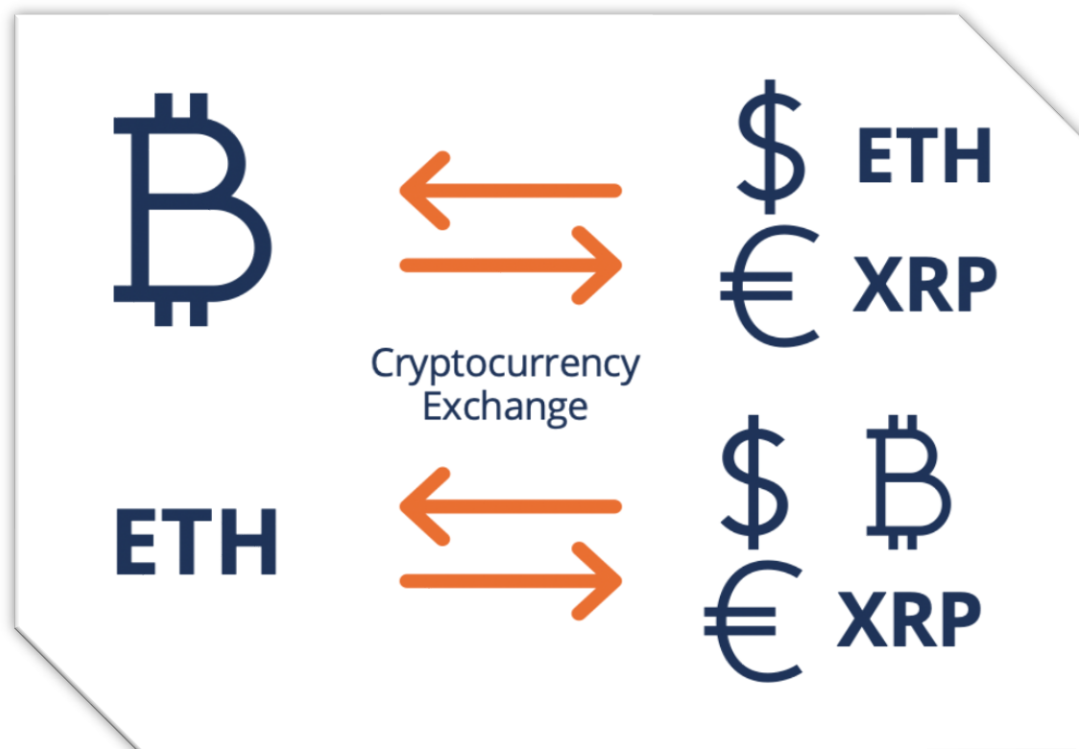
CENTRALIZED VS. DECENTRALIZED CRYPTOCURRENCY EXCHANGES

Centralized   **Decentralized**
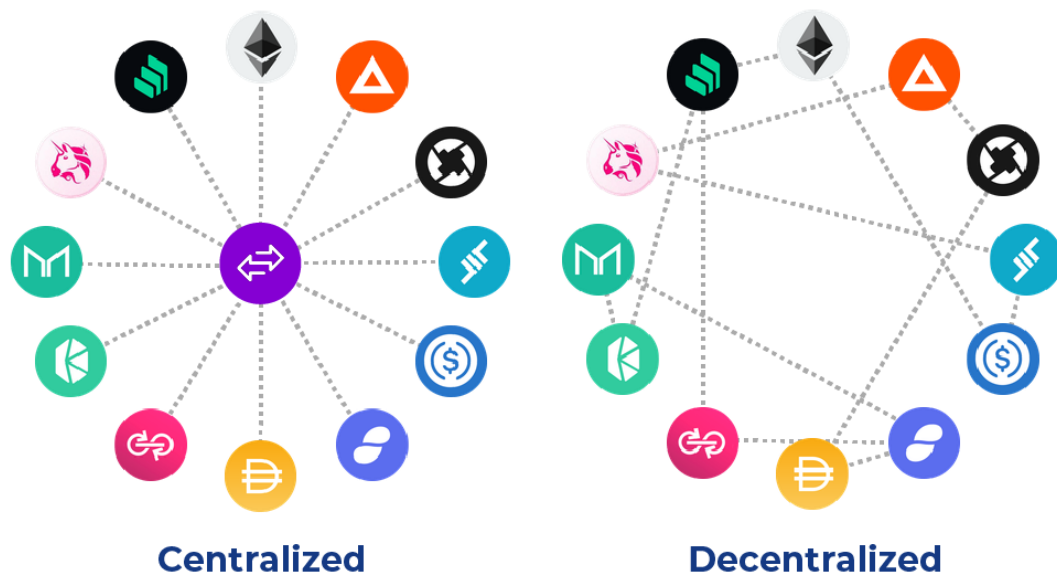
Centralized cryptocurrency exchanges act as a third-party between a buyer and a seller. Since they are operated and controlled by a company, centralized exchanges offer more reliability. Approximately 99% of all crypto transactions go through centralized exchanges. Examples of centralized cryptocurrency exchanges include:

- Coinbase
- GDAX
- Kraken
- Gemini

Decentralized cryptocurrency exchanges (DEX) allow users to execute peer-to-peer transactions without the need for a third party or an intermediary. Due to some of the issues associated with centralized exchanges, decentralized exchanges are preferred by some users.

However, decentralized exchanges do not facilitate the trading of fiat currencies for cryptocurrencies. Examples of decentralized cryptocurrency exchanges include:

- AirSwap
- io
- Barterdex
- Blocknet

Advantages of Centralized Cryptocurrency Exchanges

1. User-friendly
Centralized exchanges offer beginner investors a familiar, friendly way of trading and investing in cryptocurrencies. As opposed to using crypto wallets and peer-to-peer transactions, which can be complex, users of centralized exchanges can log into their accounts, view their account balances, and make transactions through applications and websites.

2. Reliable

Centralized exchanges offer an extra layer of security and reliability when it comes to transactions and trading. By facilitating the transaction through a developed, centralized platform, centralized exchanges offer higher levels of comfort.

Disadvantages of Centralized Cryptocurrency Exchanges

1. Hacking risk

Centralized exchanges are operated by companies that are responsible for the holdings of their customers. Large exchanges usually hold billions of dollars' worth of bitcoin, making them a target for hackers and theft.

An example of such an incident is Mt.Gox, which was once the world's largest cryptocurrency exchange company before it reported the theft of 850,000 bitcoins, leading to its suspension.

2. Transaction fees

Unlike peer-to-peer transactions, centralized exchanges often charge high transaction fees for their services and convenience, which can be especially high when trading in large amounts.

Advantages of Decentralized Cryptocurrency Exchanges

1. Mitigating hacking risk

Users of decentralized exchanges do not need to transfer their assets to a third party. Therefore, there is no risk of a company or organization being hacked, and users are assured of greater safety from hacking and theft.

2. Preventing market manipulation

Due to their nature of allowing for the peer-to-peer exchange of cryptocurrencies, decentralized exchanges prevent market manipulation, protecting users from fake trading and wash trading.

3. Anonymity

Decentralized exchanges do not require customers to fill out know-your-customer (KYC) forms, offering privacy and anonymity to users.

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Disadvantages of Decentralized Cryptocurrency Exchanges

1. Complexity

Users of decentralized exchanges must remember the keys and passwords to their crypto wallets, or their assets are lost forever and cannot be recovered. They require the user to learn and get familiar with the platform and the process, unlike centralized exchanges, which offer a more convenient and user-friendly process.

2. Lack of fiat payments

Decentralized exchanges do not allow for the trading of fiat currencies for digital ones, making them less convenient for users that do not already hold cryptocurrencies.

3. Liquidity struggles

Some 99% of crypto transactions are facilitated by centralized exchanges, which suggests that they are accountable for the majority of the trading volume. Due to the lack of volume, decentralized exchanges often lack liquidity, and it can be difficult to find buyers and sellers when trading volumes are low.

THE 10 BEST CRYPTOCURRENCY EXCHANGES, RANKED BY VOLUME

Top Centralized Exchanges

The following are the top centralized cryptocurrency exchanges, according to traffic, liquidity, and trading volumes.

- Binance
- Huobi Global
- Coinbase (Pro)
- Kraken
- Bithumb
- Bitfinex
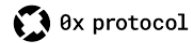- Bitstamp
- KuCoin
- FTX
- bitFlyer
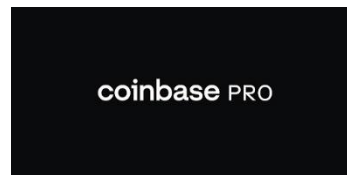
Top Decentralized Exchanges

Below are the highest-ranked decentralized cryptocurrency exchanges, according to traffic, liquidity, and trading volumes:
- Uniswap (V2)
- Tokenlon
- 0x Protocol
- Venus
- Sushiswap

- Compound
- BurgerSwap
- Curve Finance
- 1inch Exchange
- PancakeSwap

WHAT TO LOOK FOR IN A CRYPTO EXCHANGE

Accessibility

- Your location may prevent you from buying and selling crypto on certain exchanges due to state or national regulations. Some countries, like China, have banned citizens from accessing crypto exchanges at all.
- In the United States, there's a lot of regulatory uncertainty around cryptocurrency, and some states have instituted their own regulations. For example, New York requires exchanges to obtain a BitLicense before they can operate within the state and only allows licensed companies to offer certain approved coins.
- Most other states don't have regulations as strict as New York, but many do regulate in some way, or are taking steps to do so. Thirty-one total states have pending legislation regarding digital currencies in their 2021 legislative sessions, according to the National Conference of State Legislators.
- You can often find information about the geographic limitations of an exchange — as well as related accessibility factors, like national currencies accepted — on its website or within the terms of service.

Security

- Cryptocurrency isn't backed by any central institution, and your cryptocurrency holdings aren't protected the same way as money in the bank or traditional investments. Some exchanges, like Coinbase and Gemini, keep any balances in U.S. Dollars you hold with them in FDIC-insured bank accounts.
- To protect your crypto, some exchanges have insurance policies to protect the digital currencies users hold within the exchange from hacking or fraud. Coinbase, for example, has an insurance policy worth $255 million.
- Whether you plan to keep your crypto holdings within an exchange or only have it there for a short time before moving it into your own wallet, the exchange's security should be top priority.
- You can also look for general online security measures you may already be familiar with on other platforms, such as two-factor authentication. That means, in addition to your username and password, you'll have to

verify your identity using an additional method, like entering a code you receive by text message, each time you log in.

- In general, you may feel most secure sticking with more popular exchanges with an already-large customer base. You may be taking more of a risk doing business with smaller or newer exchanges that don't have their security measures and offerings spelled out clearly online.

Fees

- Fees are another thing to consider, but don't necessarily let a high fee structure turn you off an exchange.
- "The easier they make it for you to buy it, the higher the fee that you're going to be paying," says Spencer Montgomery, founder of Uinta Crypto Consulting, a program for new investors to learn about crypto. Higher fees can also be a worthwhile tradeoff for the added protections and insurance that the bigger, more popular exchanges provide.
- Exchange fees may be a fixed price, but are often a percentage of your trade. Some exchanges, like Cash App, charge fluctuating fees based on price volatility.
- Fees are often charged per transaction, and can differ whether you're the seller or the buyer. There may also be different fees depending on which currencies you trade.
- Make sure you understand exactly how and when an exchange plans to charge you for your crypto transactions before handing over your cash.

Liquidity

- If you plan to buy, sell, or trade your crypto, the exchange you choose should have enough trade volume to ensure your holdings are relatively liquid, meaning you can sell them when you want.
- Again, this can be an instance where size matters. Often, the more popular exchanges are also those with the largest trade volumes.
- When a lot of trades are happening within an exchange at any given time, it means you have a higher chance of buying or selling the crypto you hold at the best price, Montgomery says.
- Crypto prices move very quickly, so when you use an exchange that doesn't have a lot of trade volume, you could end up paying a higher price than you would on more popular exchanges. For example, say you decide to buy Bitcoin once its price falls below $32,000. If you're on an exchange with a low trade volume, you may end up actually paying a different price than you think, if your purchase doesn't actually go through until the price has moved back up.
- CoinMarketCap, a price-tracking site for cryptocurrencies, continually tracks the trade volume of hundreds of exchanges in operation. Currently, it lists Binance, Coinbase, and Huobi as the top exchanges by volume worldwide.

Coins offered

- Not every exchange offers each of the thousands of cryptocurrencies that exist.
- If you're interested in a popular coin like Bitcoin or Ethereum, you'll probably find it on any given exchange you're considering. But newer altcoins, coins with a very small market cap, or meme coins may require a bit more shopping around.
- Just remember, these types of coins are often even riskier gambles on top of already highly speculative, more established cryptocurrencies. That's why many experts recommend sticking with the big names like Bitcoin and Ethereum.
- With any crypto coin you're considering buying on an exchange, only trade in a cash value you're prepared to lose.

Educational tools

- A big priority for crypto beginners when it comes to choosing an exchange is the opportunity to learn more about different coins, digital assets, and blockchain technology, Ross says. "What is it that they do to make sure that they continually update you from an education standpoint?" he asks.
- Coinbase, for example, offers rewards for learning about new coins through its Coinbase Earn program. In exchange for watching videos and completing quizzes related to different coins, Coinbase will reward you with a small portion of the crypto, which you can then hold or convert to something else.
- Others offer courses and articles on site to help you learn about crypto markets, history, and innovations, such as Gemini's Cryptopedia or Binance Academy from Binance.

Storage

- Storage can be a divisive topic among cryptocurrency enthusiasts. Many believe in the "not your keys, not your coins," adage, or the belief that you should hold the public and private keys associated with your crypto holdings yourself, rather than keeping them within your account for the exchange to custody.
- However, an exchange that allows you to keep your crypto within your online account can be a good choice, especially as a beginner. Later, once you've learned more about storage options or increased your holdings, you may choose to keep your crypto in your own wallet. But Ross warns against exchanges that *only* allow you to store on their platform, like PayPal. Robinhood recently announced it will be creating a crypto wallet so you can transfer your coins off-platform.
- "Once you become a little bit savvier, you may want to move your coins somewhere else," Ross says. If you decide later on that you want to move your coins off that exchange — maybe after learning more about storage options you want to keep your holdings in your own cold wallet, for example — you may find yourself stuck if you choose an exchange without that option.

Tax information

- As if taxes weren't already complicated enough, reporting cryptocurrency can add another layer of complexity to your tax return. "As the tax situation evolves around crypto assets, it's going to be really important for people to make sure that their personal tax situation is up to speed as well," Ross says.
- You need to report any crypto trades you make as capital gains on your tax return. That means you'll need to know the value of your crypto when you buy it in U.S. dollars, as well as the value of it when you sell.
- Because Robinhood only allows you to transact on its platform, it provides a Form 1099-B tracking your cost basis and gains and losses, but that's not the case on more traditional exchanges.
- "When you use cryptocurrency exchanges like Binance, Kraken, CoinBase, etc., they don't give you that form," says Shehan Chandrasekera, CPA, head of tax strategy at CoinTracker.io, a crypto tax software company. That's because exchanges that allow you to move your holdings off their platform can't track everything in your personal wallet or trades you make on other exchanges. "That's when it becomes tricky and when those users have to use a tool to reconcile their entire picture, get the data, and then file their taxes."

BUILDING A CRYPTOCURRENCY EXCHANGE

Cryptocurrency exchange market has proven itself to be highly profitable if approached correctly. The number of exchange platforms increased but the quality of some resources' services can still be a question. Given that cryptocurrency exchange rates are not governed, they have boosted to unthinkably high levels with, however, no guarantees of them staying there.

On one side this huge hype around the question "how to build a cryptocurrency exchange" makes this market pretty competitive.

But the more the market develops, the more trust it gains from users, and the more benefits it brings to those who know how to work with it. That is why creating a high-quality cryptocurrency trading app is an amazing idea. So, let's see what do you need to pay attention to and how to start a cryptocurrency exchange service via the app.

Sign in/Sign up

The signup or login page is the first thing a user will see, but the main point of it is not just to let people in after registration but to also protect the system from any unauthorized logins, hack attacks, or any other kind of manipulations. For this reason, this functionality should be very well developed and correspond to the highest standards. Besides the general login/password combination, there is also a 2FA to provide additional security for users.

User Verification

One of the reasons the crypto exchange market is so trusted among the users is that every user is thoroughly verified. Depending on the type of verification, the verified users generally have more possibilities. For example, the limits for withdrawal for the verified users are higher than for the non-verified. The verification is important to ensure the transparency of trades and to minimize the possibility of a scam.

Deposit/Withdrawal

This feature allows traders to deposit money into the internal wallet featured by the cryptocurrency exchange software, as well as to withdraw money to the wallets outside of the software according to the limits set by the company.

Transaction's creation

Every user should have the possibility to buy or sell currency to other users in the system. It's very important that all the trades are happening fast and without any system errors. The system should have several possibilities for orders creation in order to allow the user to choose the one which is convenient for them at the moment.

Analytics

A very useful feature which allows creating various graphs and stats for better visibility.

Internal API

The exchange's own API is required to allow users to create their own automated trading systems or the data exchange among the verified devices using the cryptocurrency exchange script.

Admin Panel

With the help of the admin panel, the employees of the exchange company will be able to monitor trades and to manage the actions made on the exchange based on their access level.

These are only the main features required by any application of such type. There is much more to be implemented in the app to make it not only usable but also secure and user-friendly.

STEPS TO BUILD A CRYPTOCURRENCY EXCHANGE

It's no secret that, lately, most of the applications' development process is divided into the aspects which are handled separately. Various aspects are generally developed by different teams in collaboration with each other. Such moments can include an API, web interface, etc. The number and variations of them depend on the complexity of the application.

An exchange trading system like Binance would require the following app-building aspects to be taken care of:

Design

This is the first thing for the client to see before starting to use the application. In order to develop a harmonic design combining both beauty and usability, we advise you to follow the trending best practices and take into account the product equireents. The design creation includes the following stages.

1. Wireframes – the base of the future design where its key features are implemented.

2. Prototype – the detailed visualization of the user's interaction with the application that allows preventing the possible UX-related issues.

Client-side development

The web part of the application contains the client-side logics of all the pages of the website and is based on the previously created design. Front-end developers usually make the design work by HTML, CSS markups, and Javascript programming language including Angular.js, React.js, Vue.js frameworks.

API

API is the back-end part of the application that is not visible to the end-user. The server part of the application is responsible for performing the application's internal logic and handling the basic functions:

1. User authentication and authorization

2. Server-side function of admin panel
3. Newsletter
4. Cryptocurrency bets and deals of the users
5. API that can be used by third-party organizations

Blockchain

The part which is responsible for the actual processing and storing of data concerning trades between users in a secure environment (any alteration by any party is impossible thanks to the blockchain).

Testing

An obligatory part of modern application development. It is extremely important as it allows distinguishing and eliminating most of the bugs within the logic, as well as within the UI before actually launching the application.

Security

Since the application is storing the sensitive information of its users, it has to be properly secured in order to prevent possible data leaks and hacking attacks. We advise securing the user information in the following way:

Secure architecture – while developing the back-end part of the application, pay attention to creating a secure way of storing and exchanging confidential information.

1. The key components of the exchange are located at the different servers and interact through dedicated channels
2. The encryption keys are also located at the dedicated secured servers

User's authentication – in order to prevent the possibility of unauthorized login to the user account, it is best to implement two-factor authentication by generating a one-time token. Additionally, the users receive notifications about logins to their account specifying the location and the IP-address.

The exchanging of the encrypted data is performed with the help of the newest algorithm SHA-256 that is currently impossible to hack. It generates a hash – a unique signature of the text that is changed each time the initial message is edited. It allows checking if the sent hash matches the received one, and to find out if the data was edited. Since a hash is not an encryption, the original message cannot be decoded.

We will help you Blockchain-backed development and consulting strategies

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TOP CRYPTOCURRENCY SPOT EXCHANGES CHART

# ▲	Name	Exchange Score ⓘ	Volume(24h)	Avg. Liquidity	Weekly Visits ⓘ	# Markets	# Coins	Fiat Supported	Volume Graph (7d)
1	Binance	9.9	$13,986,109,693 ▲ 23.69%	844	29,335,246	1644	403	AED, ARS, AUD and +43 more ⓘ	
2	Coinbase Exchange	8.6	$3,050,858,679 ▲ 25.81%	736	3,668,231	474	159	USD, EUR, GBP	
3	FTX	8.3	$1,790,342,489 ▲ 30.42%	744	5,142,472	446	312	USD, EUR, GBP and +7 more ⓘ	
4	Kraken	8.0	$877,766,993 ▲ 49.33%	749	2,046,438	426	117	USD, EUR, GBP and +4 more ⓘ	
5	Huobi Global	7.7	$1,450,803,808 ▲ 11.32%	645	2,352,863	1076	428	ALL, AUD, BRL and +47 more ⓘ	
6	KuCoin	7.7	$2,285,567,017 ▲ 34.37%	593	3,280,351	1184	607	USD, AED, ARS and +45 more ⓘ	
7	Gate.io	7.4	$1,233,754,054 ▲ 24.02%	541	5,367,322	2253	1284	KRW, EUR	
8	Bitfinex	7.3	$571,448,963 ▲ 10.97%	632	888,183	388	173	USD, EUR, GBP and +1 more ⓘ	
9	Bybit	7.2	$345,932,763 ▲ 19.44%	633	3,603,021	271	171	USD, EUR, GBP and +3 more ⓘ	
10	Crypto.com Exchange	7.1	$2,669,538,328 ▲ 10.11%	644	3,107,503	353	172	--	

CONCLUSION

Considering the popularity of the crypto exchange all over the world right now, it is understandable why more and more people are involving themselves in these systems.

Digital currency exchange provides great opportunities for both those who are just getting familiar with the market and those who already have quite a good experience in it. But the market still has quite a few limitations depending on the country or the currency provided and this always means growth potential.

Creating a high-quality application for your own cryptocurrency exchange company can bring you a great profit in very short terms.

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