



Cryptocurrency Analysis and Visualization Web App

Sankar Desamsetti¹, Prudhvi Raju Dasari², Jyothi Naga Chandrika Narapareddy³

^{1,2,3}Department of CSE, Aditya Engineering College, Surampalem, A.P., India

ABSTRACT:

The main objective of the Cryptocurrency Analysis and Visualization Web App is to improve user interaction and to gain a better understanding of Cryptocurrencies, including their Current price, Current rank in the market, what is the highest price and lowest price in the last 24 hours, Total volume, Price changes that are either upwards or downwards, etc. We are using various filters to display the data. Additionally, we are allowing users to practice trading in our website. Users will undoubtedly find it useful. If you're new to cryptocurrency trading, it might be terrifying to think of losing a lot of money due large careless actions. This service offers a comforting substitution by allowing you to sharpen your trading abilities without risking your money. To obtain this info through APIs, we will use two APIs to obtain the data. Those are coingecko. React is used for the front end, Firebase for the backend and NoSQL databases like Firestore are used for data.

Keywords: Firebase, Firestore, React, material-ui, api's, chart js.

Introduction

Crypto Currency is a digital currency. It means there is no physical money and there is no fixed value to it. It is going to change the value of the currency. It is the future of Money. Even billionaires are also investing in it. So, in recent times one of the blooming Money doing work.

It has a lot of advantages. It can be helpful for investing also. There is no transaction History in the data. But the data log should be shown to the user. It can create transactions easier. So, we can increase the security of individual users.

The main disadvantage is that it can be used for some wrong works. It works as a transaction to buy illegal items. It is mostly working in illegal works transactions.

A cryptocurrency is a digital or virtual currency that is protected by cryptography, which makes counterfeiting and double-spending nearly impossible. Decentralized networks based on blockchain technology are a common feature of many cryptocurrencies, which are decentralized networks based on distributed ledger technology.

In many cases, cryptocurrency is created to facilitate the work that can be done on the blockchain on which it is based. Ethereum ether, for example, was designed to facilitate payments for blockchain validation work. After the blockchain transitioned to proof-of-stake in September 2022, ether (ETH) assumed an additional role as the staking mechanism for the blockchain. Banks will be able to use Ripple's XRP to facilitate transfers between different geographical areas.

Most of the time when you hear about cryptocurrencies, you'll hear the name of the coin. Still, the names of the coins differ from the types of coins. They are some of the types you'll find in the names of some commemoratives in this order: mileage XRP and ETH are two exemplifications of mileage commemoratives. They perform specific functions on their separate blockchains. sale commemoratives intended to be used as a form of payment. Bitcoin is the most notorious of them. Control These commemoratives represent advancing rights or other rights on a blockchain like Uniswap. These commemoratives support operations erected to use the blockchain, similar to Solana. Security commemoratives that represent power of an asset, similar to a tokenized share (a value that's transferred to the blockchain). MS Token is an illustration of a secured token. However, you may be entitled to partial power of the Millennium Sapphire, If you find one of these for trade.

Cryptocurrencies have attracted volatile investments due to large investor losses caused by fraud, hacking, and errors. While the underlying cryptography is generally secure, the complexity of using and maintaining cryptographic tools can be a significant risk for new drugs. In addition to the difficulties of applying for academic funds, cryptocurrency investors should be concerned about the following stone threats. According to some estimates, about a fifth of all bitcoins are now inaccessible due to lost passwords or incorrect transfer addresses. 11 Regulatory Capabilities The regulatory status of some cryptocurrencies remains unclear, with many governments seeking to regulate them as securities, currencies, or both. An unexpected, uncontrolled crackdown could make cryptocurrency sales vulnerable or cause the entire survey to fall. Counterparty Caps Many investors and traders rely on exchanges or other account managers to hold their cryptocurrency. Theft or loss by a third party may result in the loss of the entire investment. operational pitfalls Due to the lack of uniform regulations, there are many safeguards against fraudulent or unethical practices. Many investors have lost large companies due to operating brigades that did not deliver the product. Programming creates defects. Many investment and lending platforms use automated smart contracts to manage the movement of rock deposits. An investor using one of these platforms assumes the risk that an error or exploitation of these

programs may cause them to lose their investment. Request Manipulation Request manipulation remains a major problem in cryptocurrencies due to unethical behavior by influential individuals, associations, and exchanges. Despite these difficulties, cryptocurrency prices have risen significantly, with the total value of requests reaching more than \$1 trillion. 12 Despite the academic nature of the asset, some have agreed to make significant fortunes by taking the risk of investing in early cryptocurrencies.

Proposed System

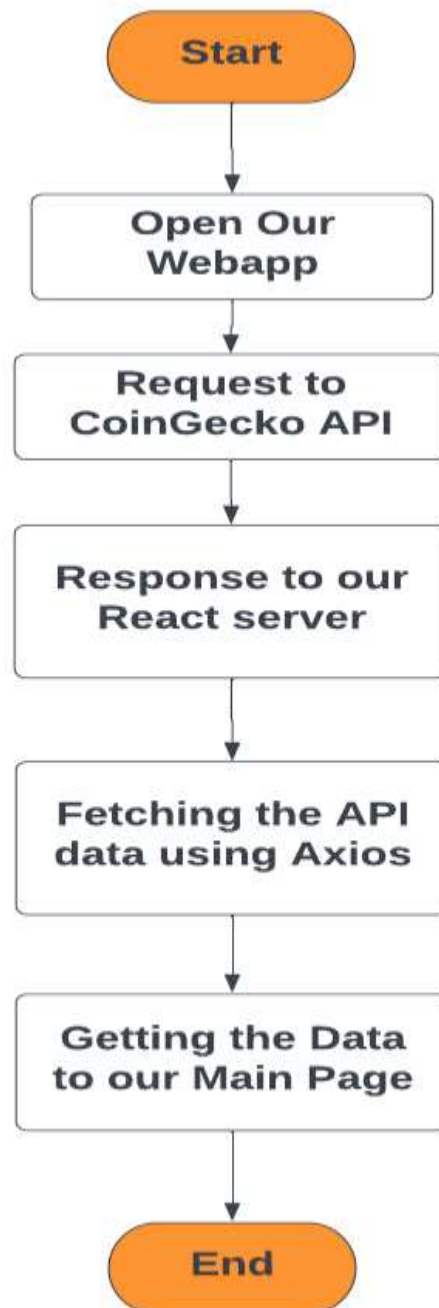
- This approach involves these steps.
- Fetching all cryptocurrency data from CoinGecko API.
- Render all the crypto data only 20 per page using Pagination.
- Here we are providing the individual crypto data.
- We are providing the user Authentication system. So, we can log in and Sign Up on that page.
- After Sign In / Sign Up only we are providing the crypto buying options.
- After buying the crypto we can allow the users to Know the profit or Loss Percents.
- So, users can get real-life crypto trading experience and can get the logic of it.
- And we are providing individual crypto graphs.

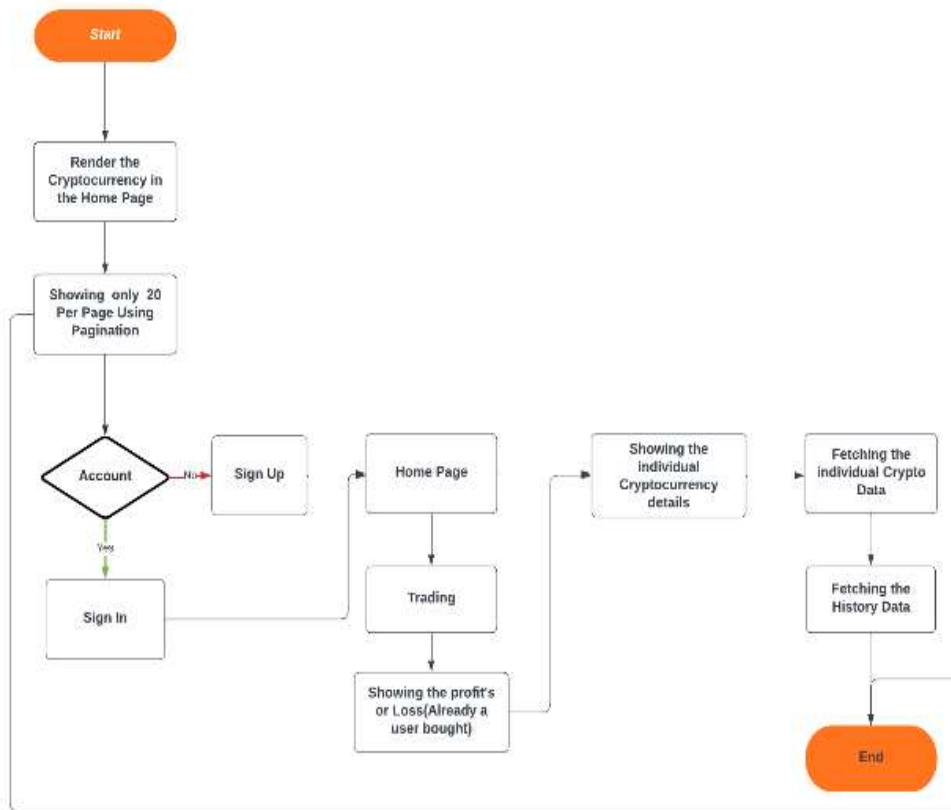
Advantages

- Users can't get into trouble with customer care services.
- Users don't get manipulated.
- Users can get knowledge by buying the crypto at our site and analyzing the pattern of crypto price drops.
- Privacy matters a lot at our site.

Architecture

Here two servers are involved. One is CoinGecko Rest API and Remaining Our React Server.

Fetching the data from CoinGecko API to Our Main Page

After Fetching the data from CoinGecko.
**Hardware Requirements**

Computer

Software Requirements

Frontend : React, Material-UI

Backend : Firebase Authentication, CoinGecko API's

Database : Firebase Firestore

Idle : VS Code

Libraries : react, react-router-dom, material-ui, firebase.

Modules : Sign In / Sign Up, Coin Page, Chart, Firestore, Fetching the data

Fetching the data

Fetching the data can be done by using Axios. These APIs are from coin gecko api's. Here we are fetching the entire data, and that can be done rendered in a tabular form and it shows by using tabulations.

CRYPTOMANIA [Trade Here](#) [Sign In](#) [Sign Up](#)

Name	Rank	Current Price	Low 24h	High 24h	Market Capitalization	Volume	24h Change
Bitcoin	1	\$37,120	\$36,800	\$37,440	\$675,120M	\$12,345M	+0.87%
Ethereum	2	\$2,100	\$2,080	\$2,120	\$201,230M	\$4,567M	+0.95%
XRP	3	\$0.62	\$0.61	\$0.63	\$78,900M	\$1,234M	+1.63%
ADA	4	\$0.45	\$0.44	\$0.46	\$45,670M	\$890M	+2.22%
DOGE	5	\$0.08	\$0.078	\$0.082	\$12,340M	\$234M	+2.56%
SHIB	6	\$0.000008	\$0.0000078	\$0.0000082	\$8,900M	\$123M	+5.13%
Cardano	7	\$0.35	\$0.34	\$0.36	\$34,560M	\$678M	+2.86%
Polkadot	8	\$0.25	\$0.24	\$0.26	\$23,450M	\$456M	+4.00%
Solana	9	\$120	\$118	\$122	\$11,230M	\$234M	+1.69%

Sign In / Sign Up

Sign In/Sign Up is a module we are providing two types of authentication facilities. Those are Authentication with Google and Another one is like email and password.



Email and Password Authentication:

We are just providing an interface for the User to enter an email and a password, then after a submit button we are storing the email and password, then after we are allowing for the next process.

Google Authentication:

We are just providing Another button that is going to provide Google Authentication. It is completely provided by the firebase authentication module. It allows us to login with Gmail.

CoinPage:

After Clicking the Individual coin page details, we are providing coin details. Like its current price, trust score, official site, Description of that coin, Capability, Capacity, and Original Trading practice.

And its image, Market cap, sentiment votes up percentage, etc.



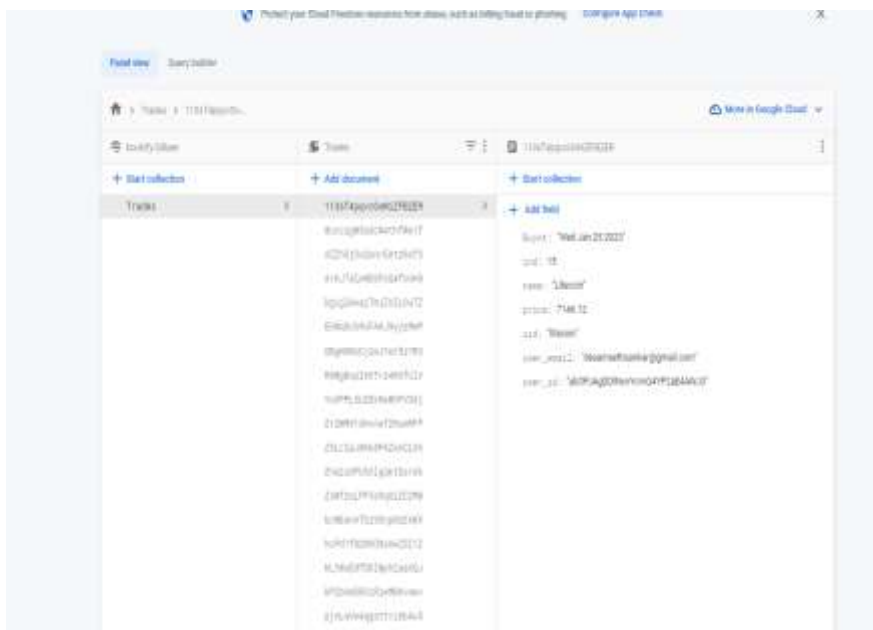
Chart

We are providing the Graphical Visualisation of data for a day, 7 days, 15 days, 30 days, 1 year, and 2 years. Based on that we can get a detailed view of individual cryptocurrency details. Like is that coin is particularly Most fluctuation or lately increasing one.



Fire Store

Firestore is a database, that can store collections and individual documents. We can include nested documents in it. It stores the data in the cloud. It can hold data on particular documents.



Conclusion

Here we are providing the Crypto trading and analysis app. In this, we are allowing the user to analyse the pattern of crypto trading. Like that particular cryptocurrency is getting fast fluctuating and long-time fluctuating thing. Based on these analyses users can buy that cryptocurrency. After buying the crypto we can get to know whether are we getting a profit or not. And these are just practice sessions. That means we don't need to invest money in it. Whatever profit we are getting it's just practice money. And we are just taking emails only. So, the market risks are very low.

References

- [1] Ningbo Zhu, Fei Yang, Mingzhi Zhu, Xinyao Sun and Irene Cheng., (2021) DATA-ENABLED CRYPTOCURRENCY MARKET ANALYSIS AND VISUALIZATION PLATFORM, International Conferences Computer Graphics, Visualization, Computer Vision and Image Processing, 133-137.
- [2] Hye-yeong Shin , DaeYong Kim, SooHoon Maeng., (2019) WEB SERVER FOR ANALYSIS AND VISUALIZATION OF BITCOIN DATA, the 20th Asia-pacific Network Operations and Management Symposium(APNOMS).
- [3] Ms.Jasmine, Sunny Singh, CRYPTOCURRENCY PORTFOLIO TRACKER.,(2022) EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.
- [4] Bitcoin: A New Global Economy. (2021, November 10). Retrieved July 2016, from BitPay, Inc.