



Crypto Coin Price Tracker Based on React and Blockchain

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May 17, 2023

CRYPTO COIN PRICE TRACKER BASED ON REACT AND BLOCKCHAIN

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Abstract -WEB 3.0 is a revolutionary technology with decentralized system. It gives us a right to choose what information or data we will be sharing to the companies whose services we will be using. Some of the technologies used in Web 3.0 are Artificial intelligence, Machine Learning, and for security Blockchain is used. Web 1.0 was the first version of the internet which has read only function. Then came Web 2.0, it is the current version of web technology which we are using. This version of web provided us the feature to make response on the internet like on social medias. It provides us the flexibility to not only read but also to write. Now the era of Web 3.0 is coming and we have made our project based on web 3.0 and blockchain.

In this project we have made a trading website of crypto currencies. In this website user can register themselves and then they can buy , sell or exchange the crypto currency. There is graphs to show the change in price in a specific time period. The user can chat there in public and make comments on other people's post. It is highly secure as blockchain is used in transactions of coins. We have used next.js and tailwind for developing the structure of the website. Netlify, metamask, firebase are used to make it dynamic and functional. Solidity is used for making smart contract.

Solidity is a oops language which works on blockchain platforms. Openzeppelin framework is deployed to ensure that our coins are compliant with the ERC-20 standards. Database used is moralis, it will help to create and authenticate the user profiles and also it helps in smart contract interception.

Keyword: WEB 1.0, WEB 2.0, WEB 3.0, blockchain, metamask, solidity, openzeppelin framework, ERC-20 Standard.

I. Introduction

NFT is an abbreviation for non-fungible token. Fungible indicates that one has an asset that is exchanged for another. It is a commodity, similar to a dollar or a gram of gold. If someone was to exchange a dollar bill for another, it makes no difference which dollar bill one has seeing as they have the same monetary value. When something is non-fungible, it is one-of-a-kind. Ethereum is related to a cryptocurrency called ether. One of the reasons it is such a unique system is that it allows for the creation of new currencies

And tokens were on top, but other than that, NFTs were an innovation. This token cannot be exchanged for another token. It is a unique sign, and owning this particular sign is notable because it means something unique. Recently, NFTs have become associated with works of art, but in reality, it can represent anything that NFT proponents are aware of. As a symbol of the potential of decentralized finance. The concept of NFTs emerged in 2012, but didn't get much attention until 2004, 2014 when people started creating and exchanging these tokens. It was with the launch of CryptoKitties that NFTs really caught our attention. These were cartoon cats that could be bought, collected, bred and sold. They were all unique, some ended up selling for hundreds of thousands of dollars, and the concept caught on. Around the same time, there was an early NFT project of his called "Crypto Punks." Pixelated images of these faces were created and people started buying and selling them. Today, these sell for exorbitant prices, but the real sonic craze came when Michael Joseph Winkelman, aka "Beeple," sold a sketchbook titled "Everydays" for \$69 million through Christie's auction house. It happened when I sold at Everyone noticed this, and it's still the most popular NFT artwork today. Many see NFTs as get-rich-quick schemes. He can make millions of dollars, or he can make nothing and lose money due to transaction costs and the cost of buying ether to create NFTs in the first place. non-fungible tokens people can truly own it in a way that they could not have done previously. Artists have developed a following of passionate admirers who follow their work on platforms like Instagram, but as one knows, artists have often not been reimbursed for that labour until now. Now, for the first time, NFTs are providing a means for these digital artists to profit from their labour.

The public will begin to understand what it means to own something digitally and possibly appreciate the potential significance of those items. So the billion-dollar question is whether NFTs are a fad or are here to stay. Many crypto investors hope that NFTs will become a natural part of this decentralised financial world. That NFTs will become a method to express ones fandom and demonstrate ones affiliation with a particular group or community. There are so many different things that can be NFTs, and while some of them will be temporary, it's almost certain some will stick around. The global blockchain market is estimated to reach \$56.7 billion by 2026 from \$6 billion in 2021. The forecasted compound annual growth rate during this period is 56.9%. Learning and developing an application that is connected to such a rapidly growing industry, could be of interest.

The Objective of this project is to develop a web application that allows users with an Ethereum wallet to mint, buy and sell their NFTs

- User authentication and login with Ethereum wallet
- Restricted file upload
- Mint token to blockchain with smart contracts
- List token for sale with user regulated price
- Cancel listing, returning token to owner
- Buying token that is listed
- Transferring token to new owner
- Rich description with markdown editor

II. METHODOLOGY

II.I React

For this NFT business the thing was to make a responsive and ultramodern web app that would serve with mobile as well. Reply is a JavaScript library used to make

stoner interfaces specifically for gyms. This makes it easier to produce an responsive and ultramodern looking app(1). The library allows the inventor to exercise UI factors which eases the Front- end development. One can develop Reply apps using either Typescript or JavaScript. This design still utilises JavaScript.

Next.js

To make life indeed easier, this design uses Next.js in addition to React.Next.js is used by some of the biggest websites like Twitch.TV, GitHub, Netflix and Ticketmaster.Next.js is a React frame for constructing JavaScript single- runner operations, with multitudinous advantages accrue from this armature, both for druggies and for inventors.

Tailwind CSS

Tailwind CSS comprises a set of mileage classes that perform a specific function. This could relate to the colour of the textbook, the background, the distance between the lines, or the borders. This strategy enables the inventor to produce a runner using infinitesimal CSS. In the infinitesimal approach to CSS programming, the inventor has classes that control a subset of the look.

Solidity

Solidity is a programming language for developing smart contracts that run on blockchains similar as Ethereum. It's an object- acquainted programming language that borrows heavily from JavaScript, Python, and C. It's written in the C programming language and is optimised for use with the Ethereum Virtual Machine(EVM).

OpenZeppeline Contracts

Writing reliability contracts from scrape can introduce a number of serious issues, the most notable of which being long

prosecution times and security pitfalls. This is where OpenZeppeline contracts come into use. OpenZeppeline is a set of reliability smart contracts that implements typical smart contract features. For case, the executions of the ERC20 and ERC721 and other major token specifications. also, there are a many variants of ICOs and other Solidity patterns.

Moralis

Moralis provides backend operation for this blockchain design. The Moralis SDK lets the inventor construct a decentralized operation with stoner authentication using a cryptocurrency portmanteau similar as MetaMask and blockchain data similar as stoner commemorative balances, NFTs, deals, and events.

Web3 API

The Moralis Web3 API allows the inventor to recoup information from the EVM blockchain, including block information, sale information, NFT metadata, token values, stoner balances, and the proprietor list of a particular NFT. This design makes use of the Moralis SDK to pierce and use the Web3 API and its functions. Visual Studio Code Visual Studio Code is a desktop- grounded, featherlight, yet comprehensive source law editor. It includes support for JavaScript and Node.js and has a robust ecosystem of extensions for other languages to make the development more accessible and effective.

GitHub

GitHub is a company that provides a pall-grounded hosting result for Git depositories. Basically, it makes using Git for interpretation control and collaboration vastly simpler. interpretation control enables the inventor to track

and manage modifications to a project's source code

III. LITERATURE SURVEY

The cryptocurrency request seems to be growing in fashionability every day. With the astronomical rise of cryptocurrencies like Bitcoin, Ethereum, there seems to be an affluence of people into the request & go account creation point open all the time. similar is the demand for entry into the request that trading account creation for new guests is periodically impaired. The average diurnal trading volume of the request is generally in trillions of bones . The total request cap of the entire request stands at further than half a trillion bones which is an astonishing feat considering the request is lower than a decade old. This makes choosing a stylish cryptocurrency trading platform rather delicate We feel that there's no overall ‘ stylish ’ exchange, but there are exchanges that are the ‘ stylish ’ for each individual stoner according to their requirements and preferences. While circle is a still trusting peer- topeer sale network for digital means trading directly using edict currency(2). The cryptocurrency request seems to be changing and growing in fashionability every day. To overcome the price manipulation, cybercriminals conditioning, sale detention, and to replace it with proper system with well-conditioned focus on stoner perspective. Cryptocurrency exchange platform is the stylish place to start trading cryptocurrencies and its great source of cryptocurrency dealers. We can trade in colorful cryptocurrencies in one single platform and possible to integrate all crypto coins with cryptocurrency exchange

platform.

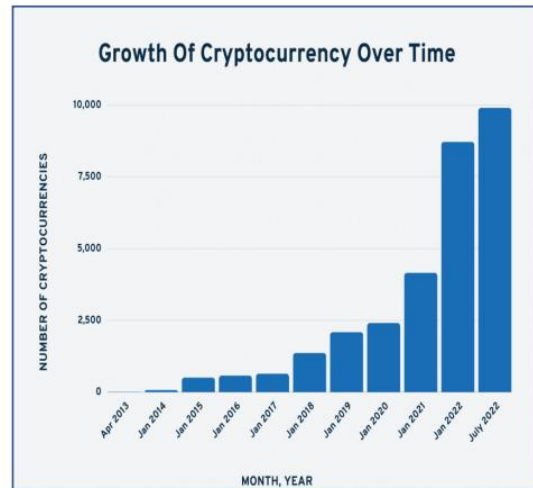
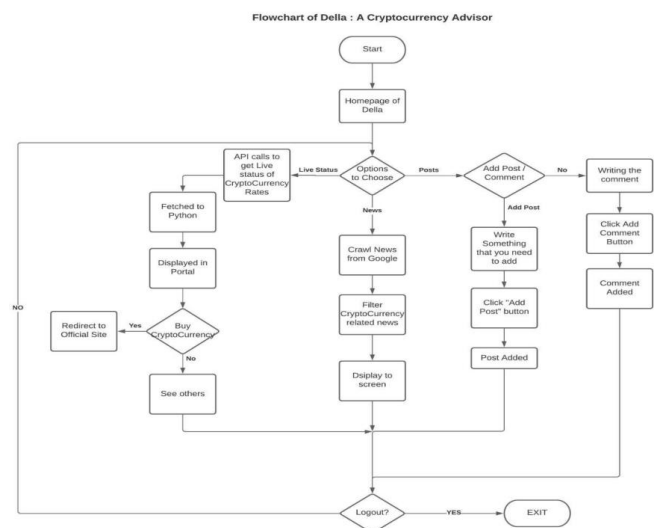


Fig 1: Increase in Crypto market in recent years

IV. WORKING AND ARCHITECTURE

Our disquisition was divided into three stages. In the first phase, news, events, and cryptocurrency live rates are recaptured. The online forum was acclimated during the alternate phase. Dealing with the post part, where druggies may publish anything relating to cryptocurrencies and others can remark or express their ideas on it, is completed in the third phase.(3) We bandied the length of the cryptocurrency's actuality as well as the relationship between its current price and its literal high and minimal. By studying their attributes and history, we delved the causes of chosen cryptocurrencies ’ failure or success .



This project includes following features,

A. Live rate of Cryptocurrency coins.

For Live Crypto Rates: live crypto rates are fetched using API call.

```
coins={
"Bitcoin-USD":"btc-usd",
"Dogecoin-USD":"doge-usd",
"Ethereum-USD":"eth-usd", "Bitcoin-Dogecoin":"btc-doge", "Binance-USD":"bnb-usd"
}
```

```
context = {}
```

API call for fetching live rates

```
request.method="POST"
coin = request.POST.get('coin') coin = coins.get(coin)
url = f"https://api.cryptonator.com/api/ticker/{coin}/"
headers = {'User-Agent': 'Mozilla/5.0 (Platform; Security; OS-or-CPU; Localization; rv:1.4)'}
r = requests.get(url,headers = headers)
data = r.json()data['timestamp'] = datetime.fromtimestamp(data['timestamp'])
temp_data = data.get("ticker")
data.pop("ticker")
data.update(temp_data)
context.update(data)
context.update({"coin":request.POST.get('coin')})
```

B. Latest news related to cryptocurrency.[4]

FOR NEWS FETCHING : - calling news api : live news are fetched from Setting parameters for api call

```
param_headlines = {'q':'cryptocurrency',
'language':'en",
'page_size':100,
'sort_by':"relevancy",
'apiKey':api_key
}
```

```
url = 'https://newsapi.org/v2/everything?'
response_headline = requests.get(url, params = param_headlines)
response_json_headline = response_headline.json()
```

storing news articles fetched from api to variable

```
responses = response_json_headline["articles"]
```

C. Upcoming events- Where a stoner can produce/ join a room for starting/ joining a discussion related to a specific content. It uses the redis garçon for costing & transferring dispatches.

1. originally python creates connection with redis & also performs handshake protocol with redis garçon.
2. still, python fetches and sets a communication for a particular room, If handshaking is successful. Apartments are channels in redis.(5) Event Fetching-live events are brought using web scraping(coinGecko api from coin office website). Online Forum-
1. online forum is using redis garçon
2. originally it creates connection with redis
3. apply handshake protocol
4. store & recoup dispatches from redis garçon.

Building Connection :

```
def connect(self):
self.room_name = self.scope['url_route']['kwargs']['room_name']
self.room_group_name = 'chat_%s' % self.room_name
# Join room group
async_to_sync(self.channel_layer.group_add)( self.room_group_name,self.channel_name)
self.accept()
```

Receiving Acknowledgement :

```
def receive(self, text_data):
text_data_json = json.loads(text_data)
message = text_data_json['message']
username = text_data_json['username']
roomname = text_data_json['roomname']
if(not onlySpace(message) and not isSpam(message)):
messages = Messages(User=username,Message=message,RoomName=roomname) messages.save()
# Send message to room
group async_to_sync(self.channel_layer.group_send)
(self.room_group_name,{'type': 'chat_message', 'message': message, 'username':username,})
```

Messaging :

```
def chat_message(self, event):
message = event['message'] username = event['username']
# Send message to WebSocket
self.send(text_data=json.dumps({'message': message, 'username':username,}))

def chat(request,pk):
room_name = ChatRooms.objects.get(id=pk)
room_name = room_name.RoomName print(request.user)
y=[]
messages = Messages.objects.all().filter(RoomName=room_name)
for i in messages:
x=[]
x.append({"message":i.Message})
x.append(i.User)
x.append(i.Time.strftime("%Y-%m-%d %H:%M:%S"))
y.append(x)
return render(request, 'chat/room.html', {'room_name': room_name, 'user': request.user,'messages':y})
```

E. Post section- druggies can post images on the post section of the website. Where druggies can gather information about the cryptocurrency also people can note in the post.(6) It uses simple dbms generalities.

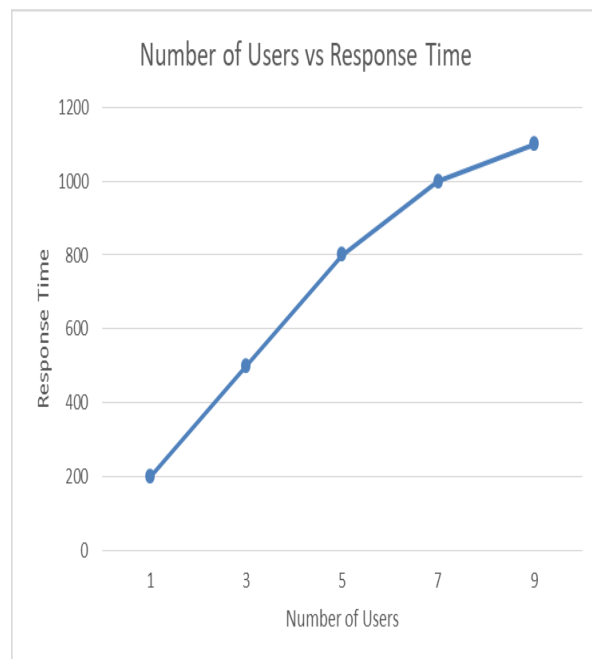
1. Adding image in database
2. Adding commentary with the affiliated post in db

3. Creating post:

```
def create_post(request):
    context={}
    if request.method=="POST":
        title = request.POST.get("title",None)
        description = request.POST.get("description",None)
        print("request.FILES",request.FILES)
        file = request.FILES.popitem() # get first element of the uploaded files
        file = file[0] # get the file fr image = file
        Posts(title=title,description=description,image=image).save()
    messages.info(request,"Post created.")
```

V. RESULT

We tested the time required to get response from the API with increasing the number of users on our project and got the following results:



Number of Users	Response Time
1	200
3	500
5	800
7	1000
9	1100

The website is successfully launched and it is working perfectly even with the large numbers of user at a time. The users can buy or sell the crypto currencies easily.

VI. CONCLUSION

This paper has lately come into use which deals with the cryptocurrency's prices and further new features that are being added up in this design id the buying and selling of the crypto currencies. In former exploration there's the information regarding cryptocurrency and their origin and prices, this paper shares the information for those druggies who want guidance regarding the cryptocurrency. This is for the bones who do not know where to invest & which is the stylish to buy. piecemeal from this it also shows how the design is salutary for druggies and gives them the stylish recommendations for buying. The stoner can also use this website for buying and dealing the currencies. However, he can visit design's website news section where he can get all the current news related to Cryptocurrency, If a stoner needs some rearmost news but does not want to suds multiple websites for the same. Along with that, if a stoner is having any query or needs to partake anything intriguing he can simply post in a Della where other druggies can interact with him & it's like an open gate to partake ideas. We've used next.js, headwind, metamask, firebase, reliability for making smart contract.

VII. REFERENCES

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[2]https://www.researchgate.net/publication/324770908_The_Growth_of_Cryptocurrency_in_India_Its_Challenges_Potential_Impacts_on_Legislation shows the growth of cryptocurrencies, their details and information about their challenges, Shailak Jani.

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