DELLA - CRYPTOCURRENCY PRICE TRACKER

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ABSTRACT—-Cryptocurrency is a sort of digital money in which transactions are protected by encryption. People are frequently unaware of cryptocurrencies, or are unaware of them at all, and many regard bitcoin as a criminal activity. As information and communication technology advances at a breakneck pace, many aspects of our everyday lives have been digitized, making them more expandable and productive. Cryptocurrency is a safe, popular, and standardized means to transact from anywhere on the planet, with relatively minimal fees. This article outlines what cryptocurrency is all about and begins to answer some of the most common questions that newcomers have. To understand why Bitcoin has the attributes it does, it's necessary to first understand the basic issue with cryptocurrencies.

Key Words: Cryptocurrency, trading, transparent, Cryptography, Dockets, Encrypted

1. INTRODUCTION-

Cryptocurrency is a peer-to-peer network that facilitates digital barter through encryption. There are about 4,500 different types of cryptocurrencies. Cryptocurrencies have no fundamental backing, meaning they can't be backed by a central bank or a government. It makes use of encryption to provide the secure transfer and trade of digital dockets across a distributed and decentralized network. These dockets can be traded for cash at market prices. The primary goal of this study is to provide information to persons who are unfamiliar with cryptocurrency. It's for those who wish to invest online while simultaneously dealing with economic operations like purchasing,
selling, and trading. Dellais shown as a cryptocurrency consultant in this study. It implies that it will happen.

This is a web-based project designed & developed using python programming language. The features that are being used up in this project that will help the users to know more about cryptocurrencies are

- Live rate of Cryptocurrency coins.
- Latest news related to cryptocurrency.
- Upcoming events.
- Online forum feature, where users can create/join room for starting/joining conversations related to specific topics.
- Users can post images on the post section of the website. Where in users can gather information about the cryptocurrency also people can comment in the post.

2. LITERATURE REVIEW-

[1]"The Growth of Cryptocurrency in India: Its Challenges & Potential Impacts on Legislation'' by Shailak Jani, Parul University. The user's expectations for the future of cryptocurrencies are investigated in this article. It also investigates consumers' trust in interacting with bitcoin at a time when the usage of such virtual money is not entirely regulated. The majority of the results come from individuals or groups of people who use bitcoin often or have previously invested in bitcoin, according to cryptocurrency users.

[2]"An Analysis of Cryptocurrency, Bitcoin, and the Future" by Peter D. DeVries, University of Houston - Downtown. The author has examined cryptocurrencies and its applications in this work. Cryptocurrency, he concluded, is an eight-year-old technology that facilitates digital barter over an encrypted peer-to-peer network. Using a SWOT analysis of Bitcoin, a number of recent events and trends are highlighted that could potentially contribute to a paradigm shift in economics.

[3]"Cryptocurrencies: market analysis and perspectives" by Giancarlo Giudici, Alistair Milne & Dmitri Vinogradov. The author of this study examined the cryptocurrency market and came to the conclusion that "cryptocurrencies are digital financial assets for which ownership and transfers of ownership are ensured by a cryptographic decentralised system." The increasing market value of cryptocurrencies poses a variety of issues and concerns for business and industrial economics. Cryptocurrencies, we believe, may serve certain important purposes and provide economic value.

[4]"A STUDY ON CRYPTOCURRENCY IN INDIA" by Mohammed Mubarak, Vijayanagara Sri Krishnadevaraya University, Bellary. In recent years, virtual currency has become widely used in a variety of systems. This study looks into the current legality of cryptocurrencies as well as potential government actions that might affect them in the future. The paper also looks at the risks of investing in Bitcoin and gold, as well as how countries have handled cryptocurrency legislation.
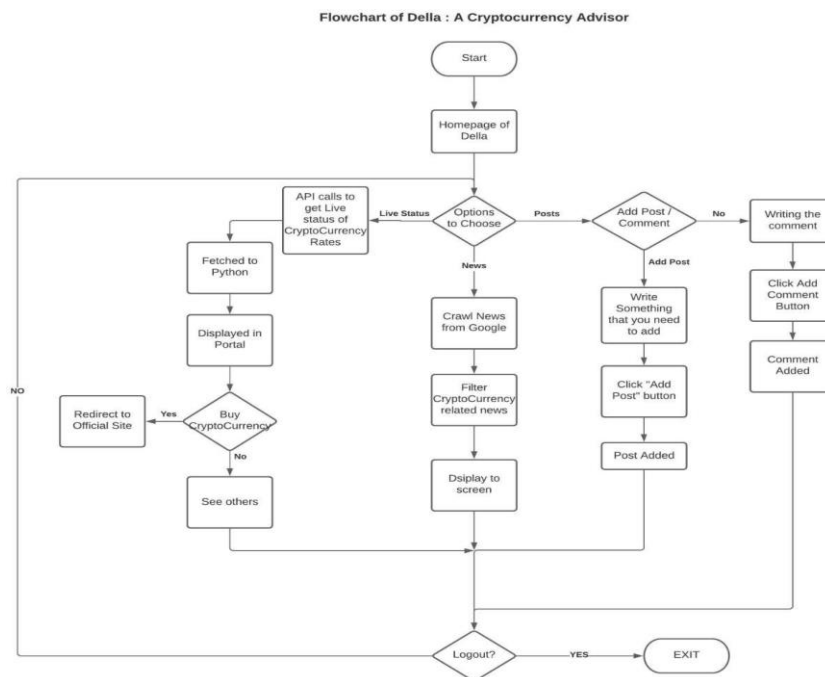
[5]"CRYPTOCURRENCY: AN OVERVIEW ON ITS IMPACT ON INDIAN ECONOMY", by Prof. Blesson James, Prof. Manjari Parashar, Assistant Professor, Assistant Professor Department of Commerce Christ College Pune, India. Cryptocurrency is a revolutionary decentralised virtual money idea. Similar to gold, it has proven to be a new route for investment instruments in India. Despite the fact that India's government has yet to establish any regulatory agency or law governing cryptocurrency trading and transactions, the government bans the purchase and sale of cryptocurrencies such as bitcoin, bitcoin, and others. Cryptocurrencies impose a number of restrictions on their use in Indian marketplaces. The goal of this research is to figure out what cryptocurrency is and how it affects the Indian economy. The analysis also considers the current condition as well as the future. In India, cryptocurrencies have a bright future.

3. METHODOLOGY-

Our investigation was divided into three stages. In the first phase, news, events, and cryptocurrency live rates are retrieved. The online forum was adjusted during the second phase. Dealing with the post part, where users may publish anything relating to cryptocurrencies and others can remark or express their ideas on it, is completed in the third phase. We discussed the length of the cryptocurrency's existence as well as the relationship between its current price and its historical high and minimum. By studying their attributes and history, we investigated the causes of chosen cryptocurrencies' failure or success.

This paper shows a web-based project designed & developed using python programming language. More specifically, the Django framework. The algorithm used in this are REST API,DBMS,REDIS(handshaking).The tools and technologies used are

- Django framework
- Python- for backend
- HTML,JS,CSS- for frontend
- Redis- for handshaking
- REST API for live rate of Cryptocurrency coins.

Flowchart of Della : A Cryptocurrency Advisor

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.

FOR NEWS FETCHING : - calling news api : live news are fetched from

news.org api call

Setting parameters for api call

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

1.

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

2.   storing news articles fetched from api to variable

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

C.Upcoming events-Where a user can create/join a room for starting/joining a conversation related to a specific topic. It uses the redis server for fetching & sending messages.

1. Firstly python creates connection with redis & then performs handshake protocol with redis server.
2. If handshaking is successful, python fetches and sets a message for a particular room. Rooms are channels in redis.
Event Fetching:- live events are fetched using web scraping (coinGecko api from coin desk website).

D. Online Forum:-

1.   online forum is using redis server
2.   firstly it creates connection with redis
3.   apply handshake protocol
4.   store & retrieve messages from redis server.

●   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 :

```python
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:-Users can post images on the post section of the website. Where users can gather information about the cryptocurrency also people can comment in the post. It uses simple dbms concepts.

1.   Adding image in database
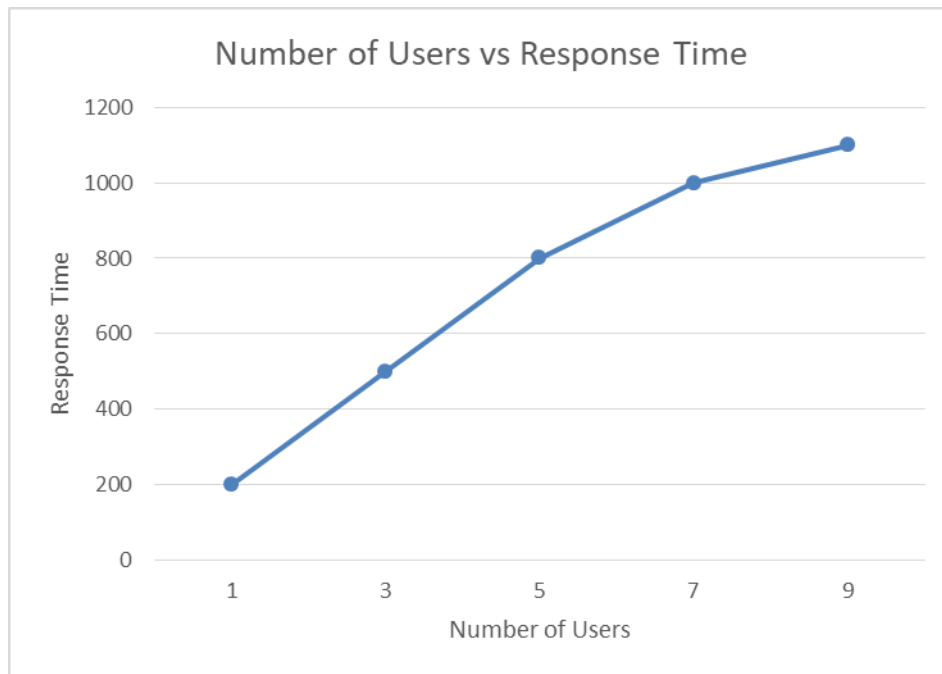2.   Adding comments with the related post in db   3.Creating post :

```python
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.")
```

●   adding comment to post

```python
def post(request,pk):
    context={}
    post = Posts.objects.get(id=pk)
    if request.method=="POST":
        comment_msg = request.POST.get("comment_msg",None)
        user = request.user
        name=user.username
        Comments(post=post,comment_msg=comment_msg,name=name).save()
        comments = Comments.objects.filter(post=post)
        context['comments'] = comments
        print(request.user) context['post']=post
    return render(request,"main_app/post.html",context)
```

4. 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

5. CONCLUSION-

This paper has recently come into use which deals with the cryptocurrency's prices and more new features that are being added up in this project. In previous research there is the information regarding cryptocurrency and their origin and prices , this paper shares the information for those users who want guidance regarding the cryptocurrency . This is for the ones who don't know where to invest & which is the best to purchase. Apart from this it also shows how the project is beneficial for users and gives them the best recommendations for buying. If a user needs some latest news but doesn't want to surf multiple websites for the same, he can visit project's(Della) news section where he can get all the current news related to Cryptocurrency. Along with that, if a user is having any query or needs to share anything interesting he can simply post in a Della where other users can interact with him & it's like an open portal to share ideas. Here the usage of Python's Django framework is there for building the website.HTML,CSS, JS & Bootstrap are being used for designing purposes. Python is used as a backend tool. Different feature uses different tool / technology:-

—-Live Status is displayed by using APIs which bring data from multiple websites and then Python processes the data for displaying the live status as well. This uses some algorithms for recommendation purposes too , so that users can get the best recommendations to invest in

—News is displayed by WEB SCRAPING technology. It is implemented by beautifulsoup4, urllib & request libraries of python. Libraries like Regex are being used to crawl data from multiple news websites and to check if data is related to cryptocurrency . Python is used to scrap the data and display it to the user via HTML.

—The Post section is implemented by using DBMS, more specifically, SQL.

—Upcoming events is a feature used in this project where a user can create/join a room for starting/joining a conversation related to a specific topic. It uses the Redis server for fetching & sending messages. Event Fetching:- live events are fetched using web scraping (coin Gecko api from coin desk website).

—Online Forum is using Redis server. Firstly, it creates a connection with Redis, then it applies the handshake protocol. Then it stores & retrieves messages from the Redis server.

This paper shows the features that are new in the project and are beneficial for the users who have interest in online trading and investing. More research will continue regarding this project.

6. REFERENCES-

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