CryptoTracker: One stop for all information on Crypto

Github Link :- https://github.com/sjsucmpe272SP22/CryptoTracker
AWS Link :- http://54.147.137.149.nip.io:3000/

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***Abstract*— Cryptocurrencies are the upcoming forms of currencies and payment methods which are generally decentralized and are becoming popular everyday. This project is an attempt to gather most of the cryptocurrencies together at one place and show the users which are the latest growing currencies, and also provide the users various information about them.**

Keywords—Cryptocurrency, gather, knowledge, decentralized.

I. Introduction

Cryptocurrency is the upcoming new age currency and a digital payment system that doesn't rely on centralized systems like banks to verify transactions. For every transaction in any crypto we maintain a ledger where in we add the transaction id for the transaction and everybody on the crypto has the access to the ledger. Unlike physical money cryptocurrencies exist only in the digital space. When you transfer cryptocurrency funds, the transactions are recorded in a public ledger. Cryptocurrency is stored in digital wallets.

As we see above that crypto currencies are of immense potential, however every crypto works in their own way and has their own ways of circulating in the real world. There is a market cap for every crypto and like stock the too can rise or fall in value, which is very common here. Our project aims to collect these cryptocurrencies at one place and then showcase their information and the relevant news and description about them in one place. Even in todays age many people know the term crypto however in crypto mostly know about the famous currencies like Bitcoin, ethereum. As per PEW Research only 16% of people in America are actually invested in crypto currency. That means we have about 84% of population yet to realise the potential of crypto. Also among these 16% the majority age range in between 19 -29 years, which is very early to start with. Hence we aim at helping these young investors to know how to wisely invest in crypto by providing them the information about each coin and bringing them in contact with the crypto community.

II. Architecture

For our project there are 4 main components, data collection from api, formatting them to a format we want to use, store the user details in our backend and then finally show the user the details of each crypto and the news related to it. Also the history and the current price of the selected coin is also formatted and displayed.

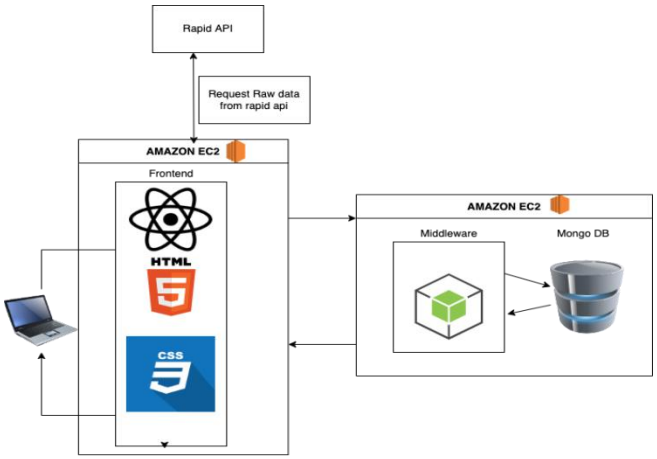

Fig 1. Project Architecture

The use case for this application can be described by the use case diagram below. As we see that there are multiple ways the user can interact with the system. The persona for our project are the new investors who have some idea about crypto but want to learn more. The check crypto details part shows the user the current details about all the crypto currencies. They have the option to search for any currency they want and select it to know more about it. Next we have the news part of our application. This part is a quick look at

the world of crypto currencies. The user can check the current happenings about any crypto they like in the News section. We have a drop down from which the user can select one of the multiple cryptos and learn more about them.

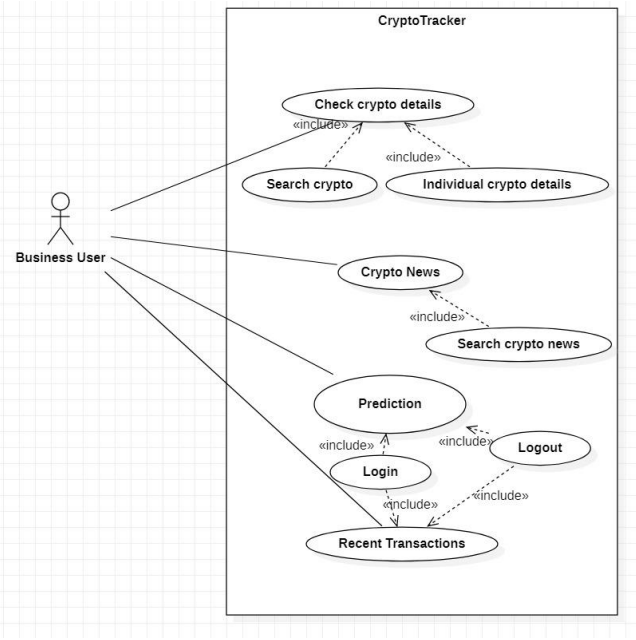

Fig 2. Use case Diagram

Next we proceed to the predictions page where we aim to help the user understand the necessities to be more aware about crypto. As we know that this is a very volatile world and we need to be more aware about out investments. Through this gamification technique we can help them understand that their predictions may not always be true. This gives them a sense of how to be a cautious investor in the world of crypto currency.

III. Database Architecture

MongoDB was chosen as for Database. Mongo is a document centric database which can accept large amounts of unstructured data much faster thanks to slave replication and master replication. We used two collections for storing user details and transaction records.

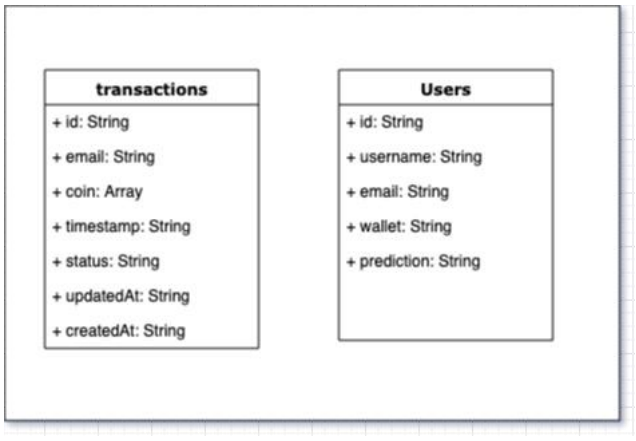

Fig 3. Mongo Database Schema

In this project we are using gamification technique (refer Section IV) and for this functionality we are utilizing transaction collection to store predicted coin, time frame for prediction and also status of the prediction. Our future scope would be to store the transaction on blockchain making it centralized.

IV. App Services

API's are very relevant in today's world where we need data continuously and it needs to be refreshed instantly, even more so in the case of cryptocurrency. Hence we use services from Rapid API and coin gecko API who very reliable providers of API and give very relevant data. The price of coin we get is in USD and however the numbers are very precise hence we use millify library from react to convert it into a short format which can be easily read by the user.

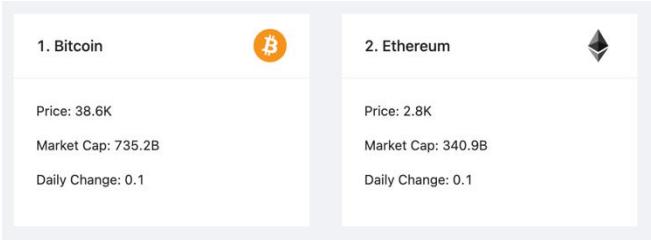

Fig 4. Coin dashboard after fetching data

One of the most important aspects of cryptocurrencies is staying up to date with the news, since crypto is a very volatile currency, hence if any government makes any amends to their law regarding any cryptocurrency, then it affects all the crypto in some way or another. Hence, we decided to add a news feature for our application.

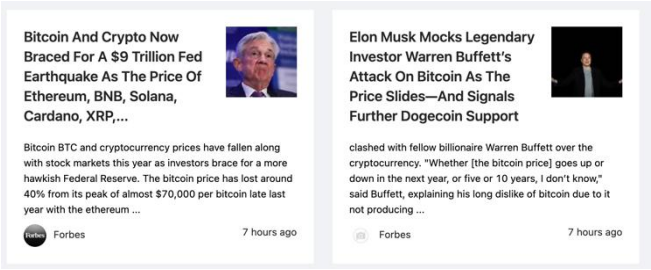

Fig 5. News Page

Our aim from this project is to provide the people the knowledge about crypto, for example what is the current coin ranking, what is the current price in USD what are the number of markets, number of exahanges it is available in, hence we provided a dedicated crypto page for each currency.

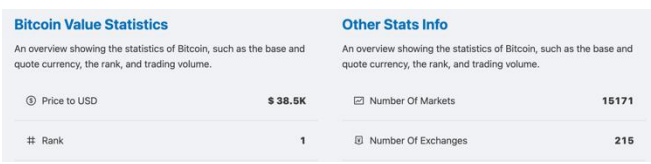

Fig 6. CoinHistory and Detail Page

In this world of uncertainty, it is definitely to stay connected to the people of different groups. Hence, we decided to add the various sites where we can find communities with similar interests.

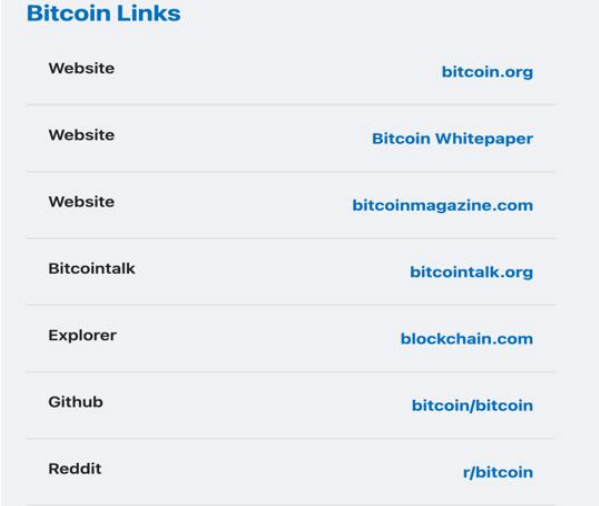

Fig 7. Group Links

Our goal through this project is to educate our users so we introduced Prediction tab in our website. The prediction tab makes use of Gamification technique in which user selects a coin he's interested in, then proceed to select the time frame for the prediction. After the selected period status of the prediction changes based on the Coin price.

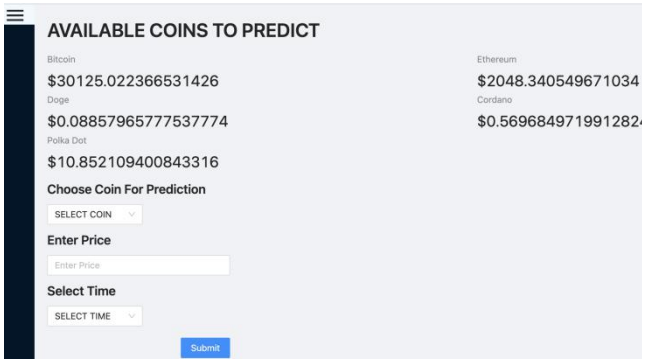

Fig 8. Prediction Page

Let's say user selects Bitcoin and selects time frame as one minute. After one minute if the price matches the predicted value the status changes to 'Correct' and some points are credited to the user for correct prediction which is updated to the user's Wallet.

Wallet stores the history of predictions made by the user and the points awarded to the user. Our future scope would be to convert the wallet amount for accommodating user to buy cryptocurrencies in the market.

Fig 9. Wallet Page

V. CONCLUSION

Though this application we tried to bring most of the relvant information about Crypto at one place. We were successfully able to give the information some idea about different cryptocurrencies like what is their current market value, where could you find more information about the particular crypto, news about each crypto. Besides this we also provided the concept of gamification through prediction. In our method the user had to guess the next prediction for a coin and as per his prediction we provided the user the status as correct or Incorrect, this way we gave the user an idea regarding how well the user predicted. This also helps the user understand how volatile the crypto market is and how quickly the market can change.

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