International Research Journal of Education and Technology
Peer Reviewed Journal
ISSN 2581-7795

Application for Spectating Cryptocurrency

Mohamed Nowfal A
Department of Computer Technology
Bannari Amman Institute of Technology,
Erode, Tamil Nadu, India - 638 401
mohamednowfal.ct19@bitsathy.ac.in

Gowtham R
Department of Computer Technology
Bannari Amman Institute of Technology,
Erode, Tamil Nadu, India - 638 401
gowtham.ct19@bitsathy.ac.in

Gokul B
Department of Computer Technology
Bannari Amman Institute of Technology,
Erode, Tamil Nadu, India - 638 401
gokul.ct19@bitsathy.ac.in

***Abstract*— Cryptocurrencies are now a significant part of the financial system. They work on the distributed ledger technology known as blockchain. Due to the rapid nature of their prices, cryptocurrencies are subject to volatility. We therefore considered developing a platform to monitor cryptocurrency performance. The platform will keep tabs on how cryptocurrencies perform and provide data on how the value of cryptocurrencies has changed. The platform was built with some of the most popular programming languages like JavaScript, HTML, and CSS. We also used an API to get the cryptocurrency data. With an appealing UL, the platform we built provides us with insight into the performance of cryptocurrencies. We receive daily updates to the cryptocurrency data, which includes price changes over a week and 24 hours. The valuation of cryptocurrencies is also included in this. The user will have quick and easy access to crypto insights thanks to this platform. We have designed our user interface so that it is simple for the user to navigate through each page without difficulty.**

***Keywords*—** *Cryptocurrency, Bitcoin, Encrypted, Currency, Bitpay, Exchange Rates, Principal Components Analysis, Blockchain.*

I. INTRODUCTION

A particular kind of digital currency is referred to as a "cryptocurrency," and it is meant to function as a medium of exchange through the use of computer networks rather than relying on centralized authorities like governments or financial institutions. A digital ledger is a specific kind of computerized database that uses strong encryption to protect transaction records, control the production of money, and verify the transfer of coin ownership. The fact that they are not taken into consideration does not change the fact that they are referred to as cryptocurrencies. Despite the fact that they are also categorized as commodities, securities, and currencies, which are in every other way distinct from one another, cryptocurrencies are regarded as a type of asset. Cryptographic systems can't function or be safe without validators. Tokens are typically used as collateral in a Proof of Stake transaction to protect the transaction. The number of tokens they receive is proportional to their wager on the game. By spending more on network fees, purchasing newly issued tokens, or taking advantage of other incentives, token holders can gradually increase their interest in the company they support. Cryptocurrencies do not have a central authority issuing them, and neither do they exist in a tangible form like paper currency. Instead of digital money issued by central banks (CBDCs), most cryptocurrencies use decentralized checks. If a cryptocurrency was created or established prior to its release, or if it was issued by a single issuer, it is generally regarded as centralized. Each coin operates independently and without centralized oversight through the use of technology known as distributed ledgers (typically blockchain). It is very important because it serves as a repository for all public financial transactions. In addition to macroeconomic factors, traditional asset classes like currencies, commodities, and stocks contribute to lowering the return risk associated with cryptocurrency investments. The first decentralized cryptocurrency to be made accessible to the general public as open-source software was bitcoin in 2009. There are approximately 9,000 brand-new cryptocurrencies on the market as of March 2022. There are approximately 70

market segments with market caps of more than $1 billion. At fixed rates that are made public at the time the cryptocurrency network is formed, decentralized coins are produced collectively by the entire network. The board or the government is in charge of regulating the amount of money that is available in centralized economic and financial organizations like the Federal Reserve in the United States. to a group, a bank, or any other legal entity that has access to an asset measurement.

II. CRYPTOCURRENCY OVERVIEW

A. Applications of the Crypto currency Regulatory changes

Use cases for cryptocurrencies are what give cryptocurrencies their value. Regulatory changes If Apple decides to use a rare metal in the iPhone 8, a miner of that metal might see a rapid increase in the value of their product; Otherwise, there is no use for the metal. Cryptocurrencies can be said to be the same. Because it can be used as a means of exchange, Bitcoin is valuable; Ether and other cryptocurrencies can build on the Bitcoin model or be used for something else. The value of cryptocurrencies and the demand for them rise as a result of their increasing use. Numerous forecasts regarding the future of cryptocurrencies have a significant impact on their value, which cannot be controlled in any way. In extreme cases, the United States government may prohibit cryptocurrency ownership, just as it did with gold in the 1930s. The value of cryptocurrencies would suffer as a result of ownership being transferred outside of the country in such a scenario.

B. Technology Changes

Bitcoin prices are affected by technological advancements, in contrast to conventional commodities. In July and August of 2017, the price of Bitcoin was impacted by a debate regarding speeding up transactions by upgrading the underlying technology. As a result of the change, the price of Bitcoin increased from $2700 to $4000 in just two weeks. Hacking news generally lowers costs. A crash is possible because of this event's fragility. Retail investors, according to analysts, would suffer the most if the bitcoin market crashed. S&P Global Ratings sector head Mohamed Damak claims that the financial services industry would only be marginally affected by a decline in cryptocurrency market value. The stability or creditworthiness of the institutions under consideration would not be affected in any way by this.

C. Rule and regulations in different countriesUnited States

Virtual currencies are frowned upon by US authorities. The Financial Stability Oversight Council expressed concern in a recent annual report that operational risks associated with distributed ledger systems might not become apparent until they are implemented on a large scale. Cryptocurrencies are under attack from US authorities. Think about ICOs. Many initial coin offerings (ICOs) are for speculative crypto currencies, despite their widespread use. If sold to US residents, ICO coins must be registered, according to the SEC. It is unclear whether issuers would comply or transfer transactions outside the United States because ICOs may be traded internationally. National governments may have difficulty regulating cryptocurrency trading or sales due to the pseudonymous nature of ICO transactions. beyond ICO regulation. Since March 2018, crypto currency trading websites must be registered as legal "exchanges" by the SEC. Concerns that crypto currency investors believe they are safeguarded by a reputable exchange are the impetus for this decision. Except for anti-money laundering regulations, most crypto currency exchanges are unregulated. There are no capital rules. This could shift. Exchanges that are registered with the SEC must be inspected, keep an eye on their markets, and follow fair trading standards. The "large-scale" heist at a cryptocurrency exchange occurred at the same time as the SEC disclosure.

D. China

In China, ICOs have been outlawed, trading on cryptocurrency exchanges has been made impossible, and mining has been restricted. Bitcoin and other cryptocurrencies can still be traded over-the-counter (OTC), but there is more credit risk involved. Outside of China, it is no longer possible to purchase cryptocurrency. China has been firm against cryptocurrencies for a long time because it sees them as a way to move money out of the country and a shadow banking industry. Nevertheless, it does not conflict with the phenomenon. The People's Bank of China (PBOC) will initially issue digital currency in China. The Chinese government sees this plan as having a number of advantages, including lowering transaction costs, expanding rural access to financial services, and improving the effectiveness of monetary

policy. It aims to regulate each and every transaction. Housewives and students trade digital currency in Seoul, South Korea. In the second half of 2017, South Korea's won was the most commonly used currency for Ethereum transactions, accounting for 10% of Bitcoin transactions. Officials in South Korea have talked about closing down local crypto exchanges, limiting transfers to anonymous virtual bank accounts, and even taxing crypto-trade since the country banned ICOs in September 2017. How regulations will change is unclear.

E. South Korea

South Korea has become a hub for cryptocurrency trading thanks to college students and housewives. Up until the end of the year, the won of South Korea was the cryptocurrency of choice for Ethereum transactions, accounting for nearly 10% of all Bitcoin exchanges. Despite the fact that initial coin offerings (ICOs) were made illegal in September 2017, authorities in South Korea have been contemplating the possibility of imposing a capital gains tax on crypto-trading, prohibiting transfers into anonymous virtual bank accounts, and closing down local cryptocurrency exchanges ever since. Nothing is certain at this time because the regulators are still working out the specifics.

F. India

The Indian government's cautious approach to cryptocurrencies can be seen in the proposed tax regime and administration of the same, as evidenced by our nation's nation. The proposed amendments to the Income Tax Act 1961 (the "IT Act") have been included in the Finance Bill, 2022 (the "2022 Bill"), including the imposition of a 30% tax on income derived from the transfer of virtual digital assets (cryptocurrencies and NFTs). For a comprehensive explanation of the tax implications of digital assets in India, see ELP's Union Budget 2022 Analysis.) Through the 2022, in the Budget for 2022. Bill, the regulatory framework for all cryptocurrencies and NFTs was established by adopting the definition of "virtual digital asset." Any cryptocurrency or non-fiat money covered by this description may still be classified or declassified by the government at its discretion. India's Digital Rupee or Central Bank Digital Currency (CBDC), the anticipated digital currency launched by the Reserve Bank of India (RBI), may be exempt from taxation or regulation under this clause in the 2022 Bill.

1. The blockchain: The authenticity of each cryptocurrency's coins is documented by a blockchain. A blockchain is an ever-expanding collection of documents, or blocks, that are connected and protected by cryptography.

A hash reference, timestamp, transaction data, and a link to the block before it are typically included in each block. By design, blockchains are designed to resist data tampering. An "open and distributed ledger" stores a reliable and enduring record of transactions between parties. In order to function as a distributed ledger, a blockchain is typically managed by a peer-to-peer network that adheres to the same protocol for verifying new blocks. It is necessary for network-wide cooperation to edit the data for a particular block after it has been stored because it is impossible to change all blocks after it.

2. Nodes : A computer that is a part of the Bitcoin network and can send and receive transactions is referred to as a "node." The node assists the Bitcoin network in a variety of ways, including confirming transactions, relaying them, and storing a copy of the blockchain on its hard drive. When relaying transactions, nodes—computers in the network—keep their own copy of the blockchain linked to the cryptocurrency they support. The information about a successful transaction is broadcast by a node to other nodes in the node network so that other nodes can be informed of it. Encryption protects this data. Node operators come in two varieties: those who do so voluntarily and those who are required to do so by the organization or institution that developed the blockchain network technology used in cryptocurrencies.

3. The mining industry: Bitcoin transactions are confirmed by mining. A new coin will be awarded to successful miners. The incentive reduces transaction fees by increasing network processing. The rate at which hashes are generated to validate transactions is improved by specialized equipment like FPGAs and ASICs that run SHA-256 and script. There has been a

race for less expensive and more effective equipment ever since Bitcoin debuted in 2009.

As more people enter the virtual currency industry, the creation of hash algorithms for validation becomes more complex, requiring miners to invest more money in order to improve performance. computer. Finding a hash function has a lower return on investment and typically does not justify the cost of equipment, cooling facilities (to reduce device heat), or power. Cheap electricity, cold weather, and clear regulations make mining locations popular. In July 2019, Bitcoin used 7 gigawatts, or 0.2% of the world's total, which is the same as Switzerland's.

Miners can share the reward equally by pooling resources and spreading processing power across a network. A "share" is awarded to members of the mining pool who have legitimate proof of work. In February 2018, China outlawed mining, trading virtual currencies, and ICOs. As a result, thousands of Chinese miners have fled to Texas and Canada. One company is able to operate mining data centers in Canadian oil and gas fields due to the low cost of gas. In June 2018, cryptocurrency mining could consume up to 500 MW of Hydro Quebec's power. A Fortune article published in February 2018 claims that the low cost of electricity in Iceland has attracted bitcoin miners. In order to safeguard the "character and direction" of Plattsburgh, New York, bitcoin mining was outlawed for an entire 18 months in March 2018. With a hash rate of 18.1%, Kazakhstan surpassed Chile as the nation with the second-largest cryptocurrency mining operation in February 2022.

III. RELATED WORKS

Investors devote a significant amount of time to the search for the most recent coins in order to locate the cryptocurrencies that are either the most fascinating or the most affordable. Investors who want to get the most out of their investments can find a wide range of cryptocurrency exchanges, apps, and other services to meet their needs.

Using a digital currency price tracker could make or break your experience trading cryptocurrencies, but only a small number of cryptocurrency traders are aware of its significance. The following is a list of the price monitoring services and websites that are used the most frequently. The worth of bitcoins is assessed by a price tracker. Due to the historical data provided by many of these websites, customers are able to compare prices. A function that lets users compare the value of various cryptocurrencies is available on some of these platforms.

An investor's judgments, the timing of their investments, and the degree of success they have with those transactions will all be affected by the accuracy of the price tracker they use. It is essential to have trackers whose data are trustworthy and frequently updated. While choosing a cryptographic money cost tracker, it means a lot to think about the fact that it is so natural to utilize, the range of computerized monetary forms and tokens that are upheld, as well as the extra instruments and data that are given.

Bitcoin.com has referred to CoinMarketCap as the "go-to price monitor" for cryptocurrencies. For a variety of reasons, this website is the undisputed leader among services that track prices. Based on their total market capitalization, the top 100 cryptocurrencies are selected on this 2013 webpage. Each digital currency's price, market capitalization, 24-hour trading volume, circulating supply, 24-hour value change, and seven-day price graph are displayed. The market value of Binance Coin was approximately $83.3 billion on September 4, 2021.

It had a $497 billion market value at the time. 168,137,036 coins are currently in circulation. The total supply, historical performance data, and other pertinent statistics for each cryptocurrency are readily available. The current price across exchanges, trading pairs, and the volume traded in a 24-hour period are all useful information. Investors have access to a variety of exchanges where they can investigate currency prices in order to determine which option will result in the greatest amount of profit. Digital currencies that aren't as well-known (those outside of the top 100 digital currencies) are included in CoinMarketCap.

In addition to CoinMarketCap, there are other cryptocurrency price monitors. Coinlib is a price tracking service that isn't as well-known, but it does have some useful features for its customers. Coinlib's website has a "Bitcoin Dominance" indicator at the top because Bitcoin is now the digital currency with the most users and the highest market capitalization. In the same way, this statistic, market capitalization, and cryptocurrency data are updated every minute. Coinlib comes with a tool that can compare up to four different currencies or tokens. It

has a price explorer that makes it easier for investors to find exchanges that offer the best buy and sell prices and arbitrage opportunities.

Due to the sheer volume of transactions that are being carried out there, Binance is currently the most well-known cryptocurrency exchange. This company with its headquarters in the Cayman Islands started doing business in 2017. The first cryptocurrency exchange was founded by Changpeng Zhao, and he called it Binance. Binance, a cryptocurrency exchange, decided to relocate its operations outside of China to Hong Kong when the Chinese government began to regulate cryptocurrencies. The alleged tax violations and money laundering at Binance, a cryptocurrency exchange, were the subject of an investigation that was launched in 2021 by the Department of Justice and the Internal Revenue Service. The cryptocurrency exchange Binance was directed by the Financial Conduct Authority in the United Kingdom to cease all regulated commercial activity in June 2021.

Accuracy and dependability may be the most important qualities to look for in a cryptocurrency price tracker; But there are a lot of other things to think about, as the list above shows. When conducting a transaction, it is likely that it will not be possible to compare the costs of numerous websites because of the erratic nature of digital currency rates. A great strategy is to pick and choose from the aforementioned criteria in order to gather as much information as possible prior to either buying or selling.

IV. METHODOLOGY

This section describes the methodology that this Crypto Currencies Performance Tracking and Data Visualization program employs as well as the planning that went into its creation.

The app's increased functionality and productivity are as a result of the project's chosen technologies, which are the most recent in the industry.

This project contains a number of files, each of which serves a specific purpose within the application. The project makes use of the folder structure that react provides because it is the primary technology that is being utilized in this project. This folder structure contains a variety of files. The public API that is made available by Rapid API is used for the purpose of retrieving data. This makes it possible for us to get the raw data, and the javascript functions that are necessary for the information extraction and visualization process 1 are then used. API for Rapid API: We are able to obtain cryptocurrency data from Rapid API, such as price, volume, market capitalization, and exchange data, thanks to the API provided by Rapid API. Rapid API is a data source and website that tracks the performance of various cryptocurrencies. Live pricing, tickers, historical data, events, trading volumes, international markets, coin information, and a lot more can be found on this website. Files like "coin.css," which is primarily for interface styles, and "app.js," which contains all of the application's logic, are included in the project.

This file contains the results of every operation performed on the raw data. There is also a file called "package.json" that contains information about all of the project's installed dependencies.

For this project to be deployed, your hosting service will need to have a node environment installed. Javascript is executed outside of the browser using Node, which is essentially a runtime environment.

This app will go through a testing phase following deployment, during which we will look for bugs and other errors that could disrupt the application's flow.

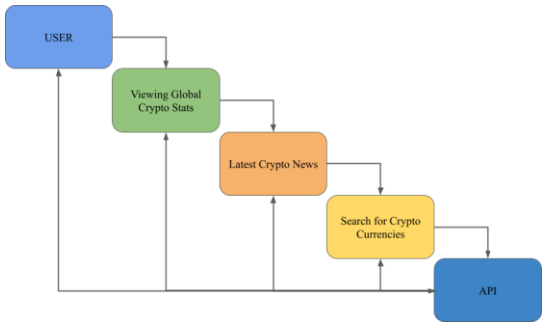

Figure 1. Workflow

IV. RESULT

We obtained a number of results and outcomes after deploying our application to the hosting, which will be discussed in this section. Our application is working as expected after extensive testing and the discovery of any bugs.

The data retrieval is taking place precisely in accordance with the plans that were made at this point. We are able to obtain the data with success by utilizing

International Research Journal of Education and Technology
Peer Reviewed Journal
ISSN 2581-7795

the Rapid API API. We are able to obtain useful data and currency statistics that are always up to date thanks to our JavaScript methods that apply filters to the raw data.

The page is also structured using HTML, and CSS is used to style the structure that has been created. The user is at the center of these two technologies' experiences. All of the relevant data and actual statistics on the various currencies are presented in tables. V. OBJECTIVES OF THE FUTURE In the not-too-distant future, we intend to incorporate a variety of AI and machine learning algorithms in order to provide currency statistics that are more precise.

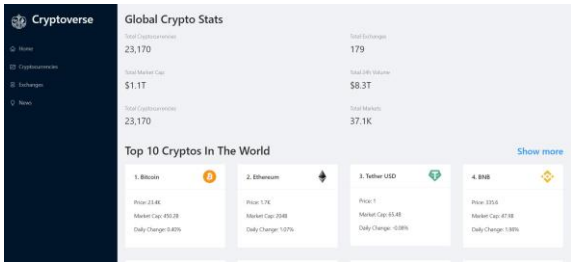

Figure 2. Home Page

In addition, we might test a wide range of other technologies and compare their results to those of the technologies that are currently available. Because our project ultimately relies on cryptography, the growth of the field in the future may also have an impact on our program's future.

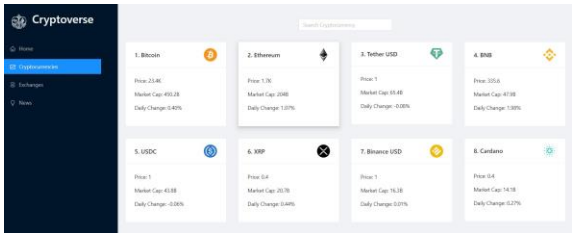

Figure 3. Viewing Crypto Currency

In the future, technological advancements may alleviate some of the limitations of cryptocurrencies, such as the possibility of a computer malfunction erasing digital riches or a hacker stealing from a virtual vault. It is anticipated that increased government regulation and scrutiny will result from the widespread use of cryptocurrencies, ultimately undermining the fundamental idea behind these currencies. Even though a growing number of merchants now accept cryptocurrencies, only a small number do so. For the cryptocurrency market to continue expanding, it is essential to gain customer acceptance. The majority of consumers, with the exception of techies, will likely be dissuaded by their complexity in comparison to traditional currencies.

Figure 4. Chart representation of currency value

A number of prerequisites may need to be met for a cryptocurrency to be accepted by mainstream investors. In order to reduce fraud and hacker attacks, it must be mathematically complicated but easy for customers to understand; decentralized, but with enough protections for customers; Additionally, it must not facilitate tax evasion, money laundering, or any other illegal actions while maintaining user anonymity.

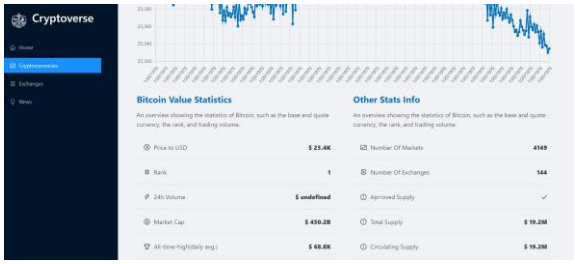

Figure 5. Market value and statistics

Could it be that, in a few years, the most popular cryptocurrency will be one that falls somewhere between the cryptocurrencies that are currently in use and highly controlled fiat currencies given the difficulty of meeting these requirements? Even though it is highly unlikely, the success or failure of Bitcoin in overcoming its issues may have an impact on the development of other cryptocurrencies in the future.

The advantages of cryptocurrencies, on the other hand, have recently piqued the interest of institutions, and the conventional banking industry is rushing to meet the demand. Hedge funds are now able to invest in digital currency thanks to U.S. Bank's recent launch of a bitcoin custody service.

IV. CONCLUSION

We are now in a position to conclude that, utilizing React and other cutting-edge technologies, we were able to successfully develop a crypto tracker app throughout the course of this project. We are now in a position to state this with complete assurance.

Due to its ability to precisely monitor the operation of bitcoin exchanges in a matter of milliseconds and the intuitive nature of its graphical user interface, this project stands out from others in its field. In addition, we are thinking about adding a few more complex functionalities to the project to provide more in-depth information about the various cryptocurrencies.

REFERENCES

[1] International Journal for Research in Applied Science & Engineering Technology (IJRASET)Volume 6 Issue IV, April 2018

[2] Hofman, A. (2014, March 6). The Dawn of the National Currency – An Exploration of Country Based Cryptocurrencies. Retrieved from Bitcoin Magazine.

[3] Seys, Jen. Deceastecker, Kjartan. (2015-2016). The Evolution of Bitcoin Price Drivers: Moving Towards Stability? University of Ghent, Master Thesis

[4] Modgil, S. (2017, June 26). Indian Government Mulling Legalising Bitcoin Cryptocurrency In India. Retrieved from Inc 42:https://inc42.com/buzz/bitcoin-cryptocurrency-india-government/ [5] Jani, S. (2017, December). Scope for Bitcoins in India.

[6] Retrieved from Research Gate:

www.researchgate.net/publication/321780780_Scope_for_Bitcoins_in_India

[7] Balaji, S. (2017, June 21). On Bitcoin, India's Government And Tech Companies Find Common Ground. Retrieved from Forbes:

https://www.forbes.com/sites/sindhujabalaji/2017/06/21/bitcoin-india-regulation/#353844e87e4a [8] Christian Beer, B. W. (2015, January 28). Bitcoin – The Promise and Limits of Private Innovation in Monetary and Payment Systems. Retrieved from Research Gate:

https://www.researchgate.net/publication/271473884

[9] Luther, W. (2016). Bitcoin and the Future of Digital Payments. The Independent Review,20(3), 397-404.

[10] Retrieved from http://www.jstor.org/stable/24562161

[11] Harwick, C. (2016). Cryptocurrency and the Problem of Intermediation. The Independent Review, 20(4), 569-588. Retrieved from http://www.jstor.org/stable/44000162