

Web Application for Monitoring Real-time Cryptocurrency Statistics and News

A person's hand is shown writing in a notebook with a silver pen. In the background, there is a white coffee mug with the word 'COFFEE' and a book. The scene is dimly lit, suggesting a quiet workspace.

Abstract

Our project aims to create a web application to monitor real-time cryptocurrency stats and news. It also shows the line graph of different time-stamp to analyse whether we have to invest in a cryptocurrency or not.



PROJECT WORK





GLOBAL CRYPTOCURRENCY STATS

- There are in total 12,357 cryptocurrencies all over the world.
- It covers the total markets of 81.1k and market capitalisation of 2.7 Trillions which is calculated by multiplying the total number of cryptocurrency in circulation by the cryptocurrency price.
- Currently there are 373 number of total exchanges which covers the total 24h Volume of 120.8 Billions.
- Exchanges refers to business that allows customers to trade cryptocurrencies for other assets and Volume simply means that the total amount of coin traded in the last hours.



Technology behind Cryptocurrency ?





Blockchain gives a back support to cryptocurrencies

- Blockchain is just a collection of blocks that are linked together using cryptographic algorithm named as SHA-256(Secure Hash Algorithm).
- Each Block contains a hash value of the previous block, a timestamp and transaction data. Blockchain are resistant to modification of their data because once recorded, the data in any given block cannot be altered retroactively without altering all subsequent blocks.
- It is decentralized and typically managed by a peer-to-peer network for use as a publicly distributed ledger.

How we list out cryptocurrencies ?





Listing of cryptocurrencies -

- We listed out cryptocurrencies in terms of their ranking in the world.
- We showed live data of Total 100 cryptocurrencies.
- Each cryptocurrency have their own value statistics comparing with generic statistics of all cryptocurrencies, brief introduction about the selected cryptocurrency , links for checking out and a line graph to visualize.

Bitcoin - btc live stats

Bitcoin Value Statistics

An overview showing the stats of Bitcoin

💰 Price to USD	\$ 63.6K
# Rank	1
⚡ 24h Volume	\$ 38.3B
💵 Market Cap	\$ 1.2T
📈 All-time-high(daily avg.)	\$ 66K

What is Bitcoin?

Bitcoin is the first digital currency that allows users to send and receive money, without the interference of a central bank or government. Instead, a network of thousands of peers is controlling the transactions; a decentralized system.

Why does bitcoin have value?

Bitcoin's useful qualities (decentralized, borderless, secure) aren't the only reason the coin is worth so much. Due to its

Other Statistics

An overview showing the stats of all cryptocurrencies

📊 Number Of Markets	21705
🏪 Number Of Exchanges	346
① Approved Supply	✓
① Total Supply	\$ 18.9M
① Circulating Supply	\$ 18.9M

Bitcoin Links

Website bitcoin.org

Website [Bitcoin Whitepaper](#)

Website bitcoinmagazine.com

Ethereum - eth live stats

Ethereum Value Statistics

An overview showing the stats of Ethereum

💰 Price to USD **\$ 4.1K**

Rank **2**

⚡ 24h Volume **\$ 19B**

💰 Market Cap **\$ 486.8B**

📈 All-time-high(daily avg.) **\$ 4.2K**

Other Statistics

An overview showing the stats of all cryptocurrencies

☑ Number Of Markets **17072**

🏪 Number Of Exchanges **341**

⌚ Approved Supply **✓**

⌚ Total Supply **\$ 118M**

⌚ Circulating Supply **\$ 117.6M**

What is Ethereum?

Ethereum (ETH) is a global, public decentralized blockchain designed to run peer-to-peer smart contracts. It allows developers to deploy all sorts of decentralized applications (Dapps), without the interference of third parties. Ethereum is also used for its own cryptocurrency ether. Ethereum is now the world's second-most valued cryptocurrency platform.

The goal of Ethereum

Ethereum is created as a blockchain platform on which other

Ethereum Links

Website www.ethereum.org

Twitter [ethereum](https://twitter.com/ethereum)

Reddit [ethereum](https://www.reddit.com/r/ethereum)



Exchanges

What are exchanges ?

- Cryptocurrency exchanges are platforms that facilitate the trading of cryptocurrencies for other assets, including digital and fiat currencies.
- In effect, cryptocurrency exchanges act as an intermediary between a buyer and a seller and make money through commissions and transaction fees.
- On common cryptocurrency exchanges, \$100 can be exchanged for bitcoin of equivalent value, and vice-versa. Similarly, bitcoin worth \$100 can be exchanged for Ethereum of equivalent value. The same concept can be applied to different assets based on what is offered by the exchange.





News API



News API

- We linked a live news API to get updated through latest cryptocurrency related news of your preferred cryptocurrency.
- Implemented a search option for choosing cryptocurrency you like the most.
- Microsoft bing news search API is used.



How we compare live prices ?



Comparing prices

- In this project, we compare prices using line graph.
- Graph dataset is retrieved from API which is linked with line chart component.
- Each point in a graph shows rises and downs in prices with the date.
- You can monitor prices of previous hours, months and years to the current prices and decide to invest or not.

Bitcoin line graph



Bitcoin (bitcoin-btc) Price

Bitcoin live price in US dollars. View value statistics, market cap and supply.

7d

Bitcoin Price Chart

2.15% Current Bitcoin Price: \$ 61.3K



Ethereum line graph



Ethereum (ethereum-eth) Price

Ethereum live price in US dollars. View value statistics, market cap and supply.

7d

Ethereum Price Chart

8.34% **Current Ethereum Price: \$ 4.1K**



Challenges Faced



- Selecting a framework for the UI part, there are many leading options like react, angular, vue and more.
- We go with the **React.js**. React is a JavaScript library though not a framework.
- Next for the API integration, first we think about **axios** for API integration but later on we go with **redux-toolkit** for better state management.



Software and Module Requirements

- Node.js 14.18.1
- React 17.0.2
- react-router-dom 5.3.0
- Chart.js 3.5.1
- Redux-toolkit 1.6.1
- Ant Design 4.16.13
- Rapid API



Limitations of our project

- The cryptocurrency market varies by seconds. Sometimes it is difficult to recognize the change in the line graph.
- The UI looks better on big screen devices, you have to use landscape mode if you are seeing in the small devices.




Conclusion

- Cryptocurrency is now getting popular day-by-day , because of the Blockchain technology it is safe and trustable for transaction. Where Ethereum is also capable to centralised not only coins but the internet also.
- In this report, we successfully created a web-based application to monitor cryptocurrency varying rates, Although it gives 91% accuracy results to get proper understanding of the increasing and decreasing prices of cryptocurrency.



Future Scope

- We are planning to achieve higher accuracy by the implementation through **Machine Learning** algorithms.
- Also, we can train machine learning models to predict future prices of cryptocurrencies in this project.

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Project Under
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Thank You !