



Cryptocurrency Analysis Using Visualization

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Introduction

Currency:

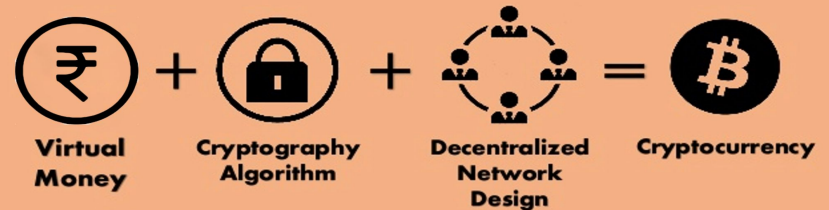
- Tokens used as money
 - Ex: metal coins, paper banknotes, check drawn on bank accounts etc
- Operated by Central banks



Cryptocurrency:

- Digital Currency
- Operated Independently from central bank

What is a Cryptocurrency ?



Cryptocurrency

- Cryptocurrency is a digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority
- Instead of Centralized ledger it uses a decentralized ledger (Block chain) to keep the records of the transaction
- Any entry to the ledger is secured using encryption
- Bitcoin was the first cryptocurrency, other cryptocurrencies are called ALT coins
- There are around thousands of cryptocurrencies in the current market



Cryptocurrency

- There are some interesting application that use cryptocurrencies like distributed file system (ex: sia & filecoin)
- **Pros**
 - Decentralized so fault tolerance
 - Software oriented
 - Private transactions
 - No restrictions on Global Transactions
- **Cons**
 - Very low TPS, but new crypto do better
 - Easily hacked, cannot recover lost crypto, hard to track

Objective of the Project

- Visualize Cryptocurrency data based on market parameters
- Identify Dominant cryptocurrencies in the current and past market
- Trend Analysis of different Cryptocurrencies over the years
- Global Crypto adoption
- Visualization Summary and Conclusion

Data Collection

- **Kaggle Dataset**

- <https://www.kaggle.com/sudalairajkumar/cryptocurrencypricehistory>
- Cryptocurrency Historical Prices (29 Apr 2013 to 21 Jul 2021)

- **Coinmarketcap** (its free)

- <https://coinmarketcap.com/>
- Collected Last 30 days data for top 10 coins

- **Triple-a.io**

- <https://triple-a.io/crypto-ownership/>
- Global ownership data

Data Collection

Contents of Kaggle & Marketcap Data

Date : date of observation

Open : Opening price on the given day

High : Highest price on the given day

Low : Lowest price on the given day

Close : Closing price on the given day

Volume : Volume of transactions on the given day

Market Cap : Market capitalization in USD

Contents of Triple-a.io Data

Country

Number of Crypto owners

Percentage of the population

Visualization

- Using [Tableau](#) Application for Visualization
- **Data Preparation**
 - Union all crypto coin data
 - Change Data type
 - Rename all the fields to maintain Uniformity
 - Create some select parameters and Calculated fields (Select Metric, Metric, close-open, select coin, etc)

Visualization

Tableau Workbook Contains :

- Dashboards
- Stories

Screenshots of Visualizations (Story)

Top 10 Cryptocurrencies

Cryptocurrency prices based on Different metrics like Closing Price, Opening Price, High, and Low prices.

Market Cap & Market dominance

Overall Market Cap Trend for top 10 coins

2021 percentage of increase

Plotting Cryptocurrencies and observing the market parameters like Close, Open, High and Low prices

Coin Name

(All)

Coin Name

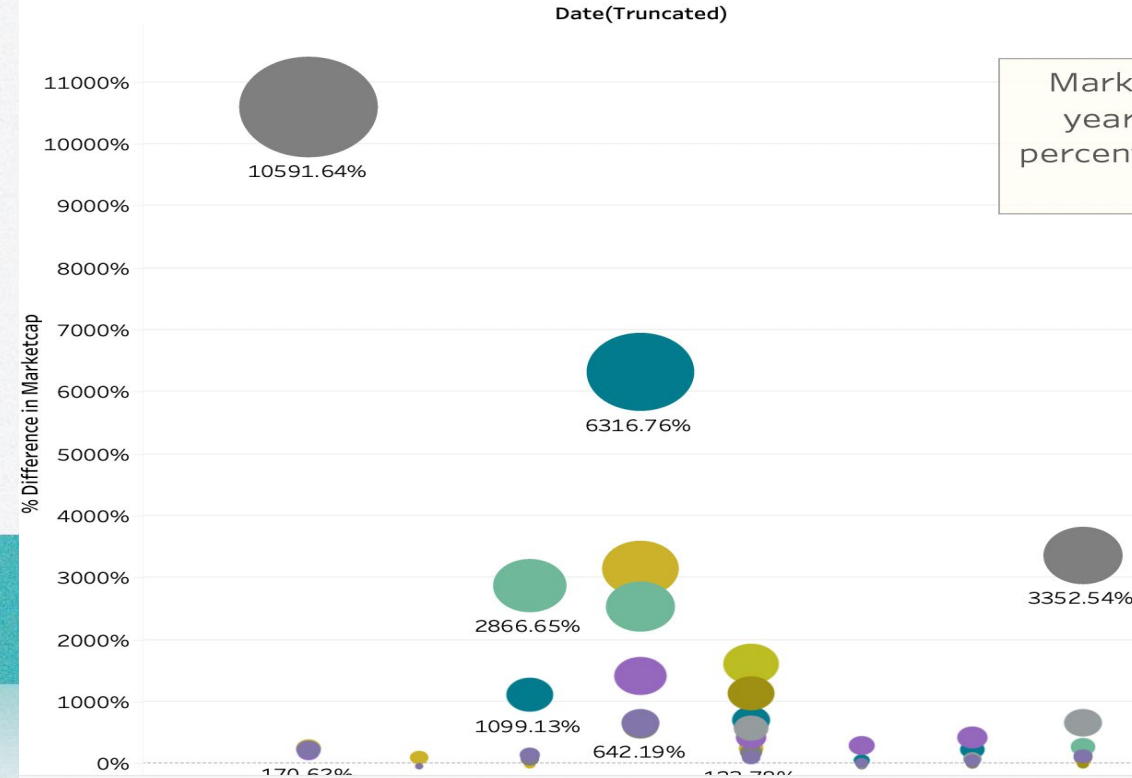
Bitcoin
Wrapped Bitcoin
Ethereum
Monero
Litecoin
Binance Coin
Aave
Chainlink
EOS
Polkadot
Cosmos
Uniswap
Solana
Tether
IOTA
USD Coin
XRP
Cardano
NEM
Stellar
Crypto.com Coin
TRON
Dogecoin

Select Price Metric

Open



Story Board



Market Cap trend of the top 10 coins over the years. In this Graph each bubble represents percentage change in market cap with respect to previous year

<

Market Cap & Market dominance

Overall Market Cap Trend for top 10 coins

2021 percentage of ir

Market Cap = Total Number of coins * Price of each coin

Coin Name	Bar 1	Bar 2	Bar 3	Bar 4
Bitcoin	100B	130B	100B	850B
Ethereum	0B	80B	0B	240B
Polkadot	0B	0B	0B	30B
XRP	0B	0B	0B	30B
Uniswap	0B	0B	0B	10B
Binance Coin	0B	0B	0B	50B
Cardano	0B	0B	0B	80B
Tether	0B	0B	0B	0B
EOS	0B	0B	0B	0B
Aave	0B	0B	200B	0B
Total	100B	210B	180B	1300B

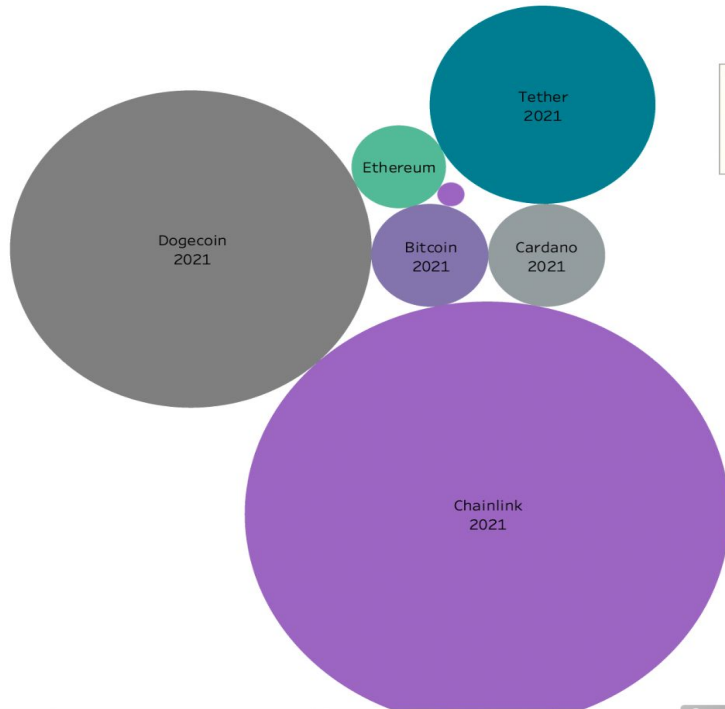
Coin Name

- Bitcoin
- Ethereum
- Polkadot
- XRP
- Uniswap
- Binance Coin
- Cardano
- Tether
- EOS
- Aave

Story Board

Cryptocurrencies Analysis Based on prices

< Different metrics High, and Low Market Cap & Market dominance Overall Market Cap Trend for top 10 coins 2021 percentage of increased in Market cap Overview >



Year of Date(Truncated)

- ☐ (All)
- ☐ 2013
- ☐ 2014
- ☐ 2015
- ☐ 2016
- ☐ 2017
- ☒ 2018
- ☐ 2019
- ☐ 2020
- ☐ 2021

Coin Name

- ☒ (All)
- ☒ Aave
- ☒ Binance Coin
- ☒ Bitcoin
- ☒ Cardano
- ☒ Chainlink
- ☒ Cosmos

Limit

Top 10 by SUM([Volume])

Coin Name

- Bitcoin
- Cardano
- Chainlink
- Dogecoin
- EOS
- Ethereum
- Litecoin
- Tether
- TRON

Dashboards

Cryptocurrency analysis of last 30 days

Bitcoin BTC

Daily Trading Prices



Daily Trading Volumes



Daily Trading Marketcap

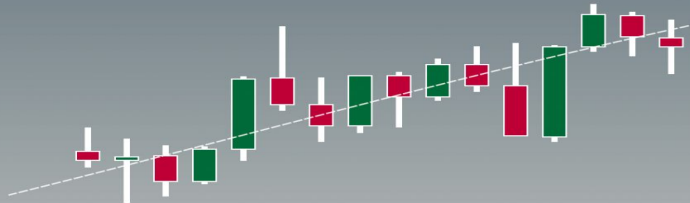


Dashboards

Cryptocurrency and

★ **Etherium** ETH

Daily Trading Prices



Daily Trading Volumes



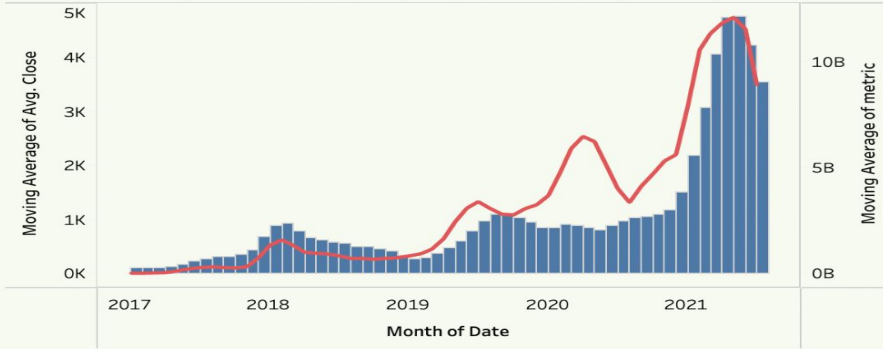
Choose Coin

Bitcoin-BTC	■	Latest Price \$60,161.25	Latest Volumes 46.84B	Latest Market Cap 1,135.56B
Etherium-ETH	★	Latest Price \$4,216.37	Latest Volumes 27.42B	Latest Market Cap 499.09B
Binance-BNB	●	Latest Price \$589.82	Latest Volumes 3.77B	Latest Market Cap 98.38B
Tether-USDT	▼	Latest Price \$1.00	Latest Volumes 98.95B	Latest Market Cap 73.81B
Solana-SOL	▲	Latest Price \$219.24	Latest Volumes 3.56B	Latest Market Cap 66.53B
Cardano-ADA	+	Latest Price \$1.88	Latest Volumes 3.40B	Latest Market Cap 62.54B
XRP-XRP	▶	Latest Price \$1.09	Latest Volumes 4.83B	Latest Market Cap 51.45B
Polkadot-DOT	◆	Latest Price \$40.90	Latest Volumes 2.99B	Latest Market Cap 40.39B
USD-USD	◀	Latest Price \$1.00	Latest Volumes 6.49B	Latest Market Cap 34.44B
Dogecoin-DOGE	✕	Latest Price \$0.24	Latest Volumes 2.25B	Latest Market Cap 31.35B

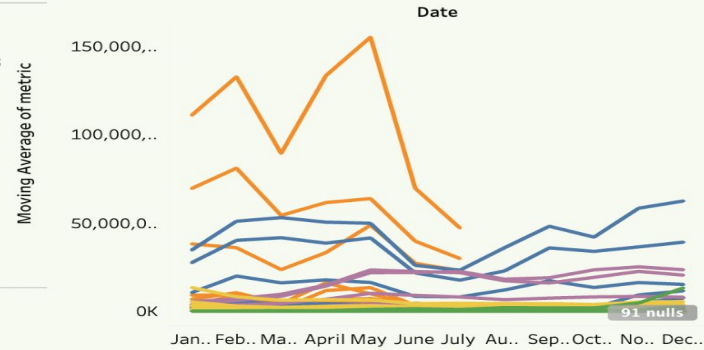
Dashboards

Cryptocurrency Analysis

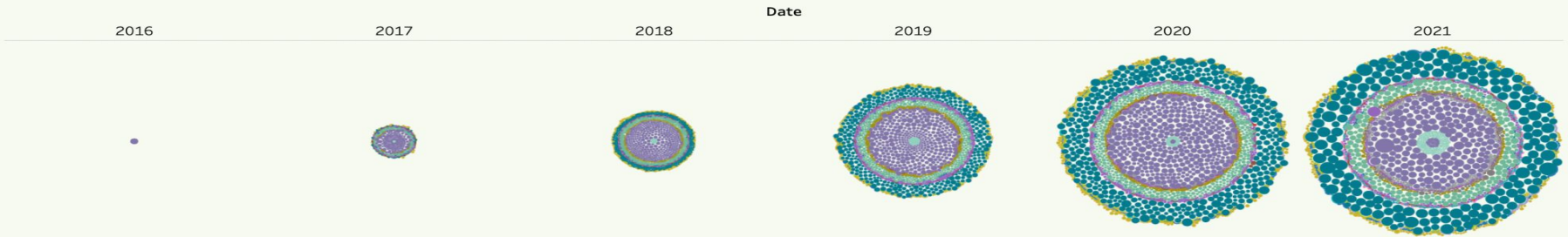
Volume metric price trends over the years for **All** coin



Volume metric vs moving avg for **All** coin



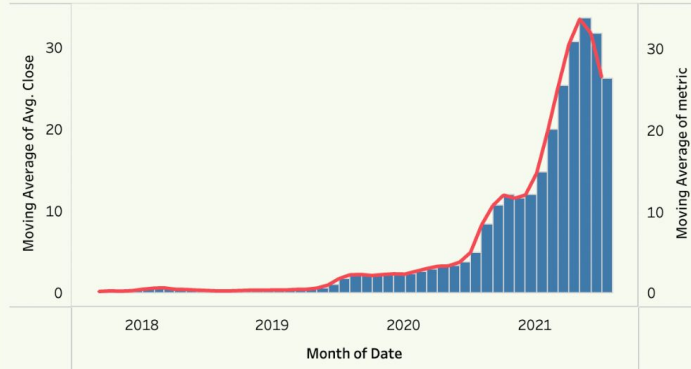
Trade Volume by year for **All** coin



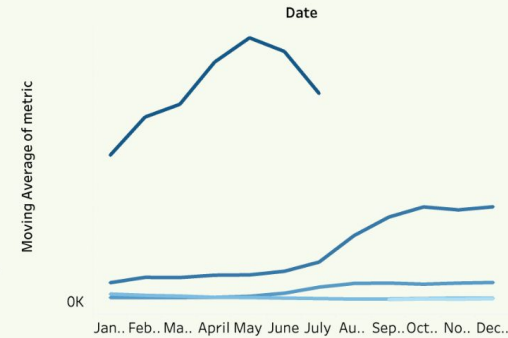
Dashboard

Historical Cryptocurrency Analysis

Open metric price trends over the years for Chainlink coin



Open metric vs moving avg for Chainlink coin within the year



Coin Name

Chainlink

Measure Names

Moving Average of A..

Moving Average of ..

Select Metric

Open

Year of Date

2017

2018

2019

2020

2021

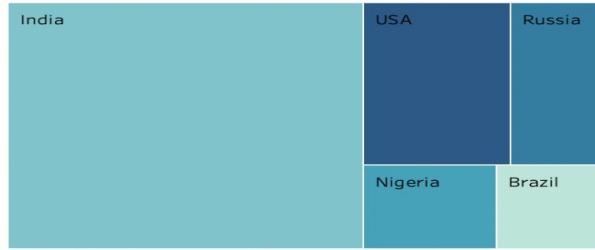
Trade Volume by year for Chainlink coin



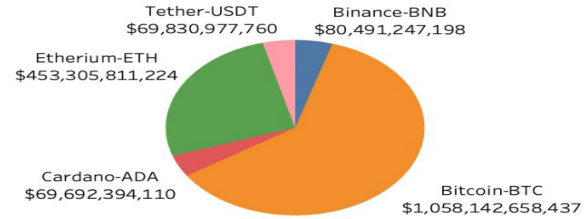
Dashboard

CRYPTOCURRENCY ANALYSIS

Top 5 countries owning Crypto assets based on **Number of crypto owners**



Top 5 coins based on **Marketcap** price from last 30 days



Select Dimension
Number of crypto ow...

Select Metric recent
Marketcap

Country
Brazil
India
Nigeria
Russia
USA

Coin Name
Binance-BNB
Bitcoin-BTC
Cardano-ADA
Ethereum-ETH
Tether-USDT

Metric recent
\$1,731,463,088,730

Cal Dimension
32,032
20,000,000
40,000,000
60,000,000
80,000,000
100,740,320

Crypto adoption By Country



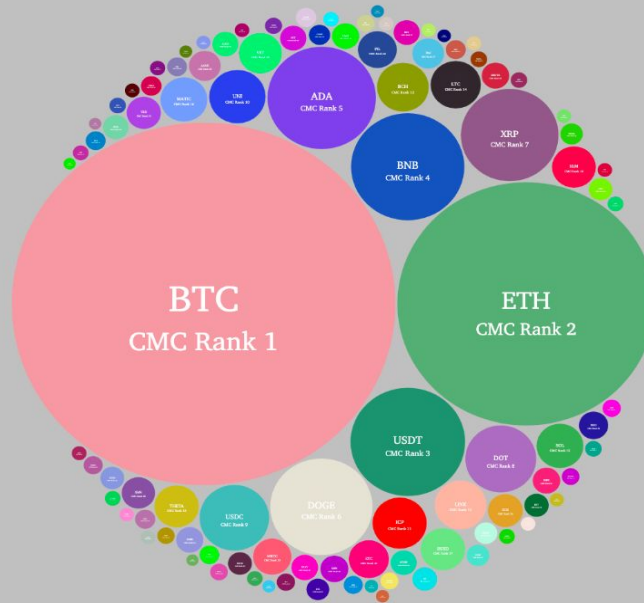
D3.js Interactive Visualization

Cryptocurrencies Analysis Based on Metrics

June 4 2021

Category

● Market Capitalization ● Volume ● Price ● Circulating Supply



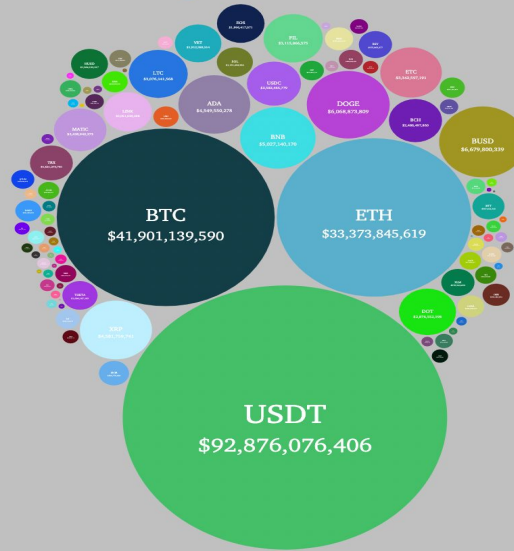
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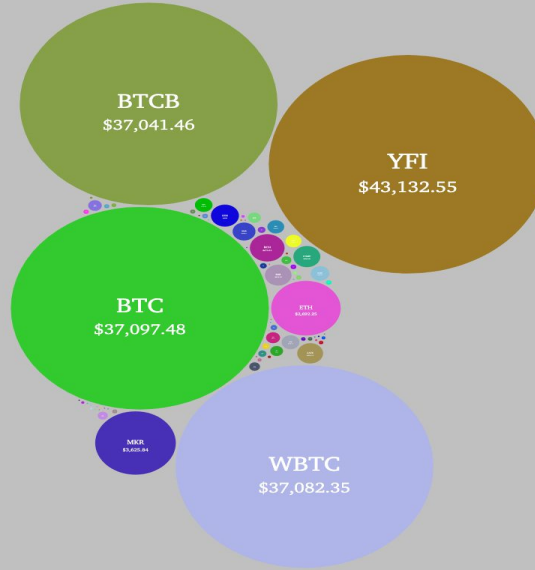


D3.js Interactive Visualization

Cryptocurrencies Analysis Based on Metrics

June 4 2021

Category
● Market Capitalization ● Volume ● Price ● Circulating Supply



Conclusion

Summary And Conclusion

- 1) Price of the coin alone will not give any information about how well the coin is doing
- 2) Market Cap is a better metric to understand the value of a coin
- 3) The Volume Indicates how trending the coin is

Things to Consider before investing in Crypto:

- 1) Check Market cap rather than the price of the coin
- 2) Follow the Trading Volume, Popular coins usually have higher Volumes
- 3) Check for Volatility, Good coins usually has steady increase in market cap but volatile coins have random extreme highs and lows.
- 4) Be cautious on new coins because they come with higher risk there is not much market data available.



Let's Visualize Cryptocurrency Data through Tableau workbook