Final Report
Close Price for Popular Cryptos
https://github.com/WeirdGoose7/INFSCI-2415

Figure 1: Line Plot
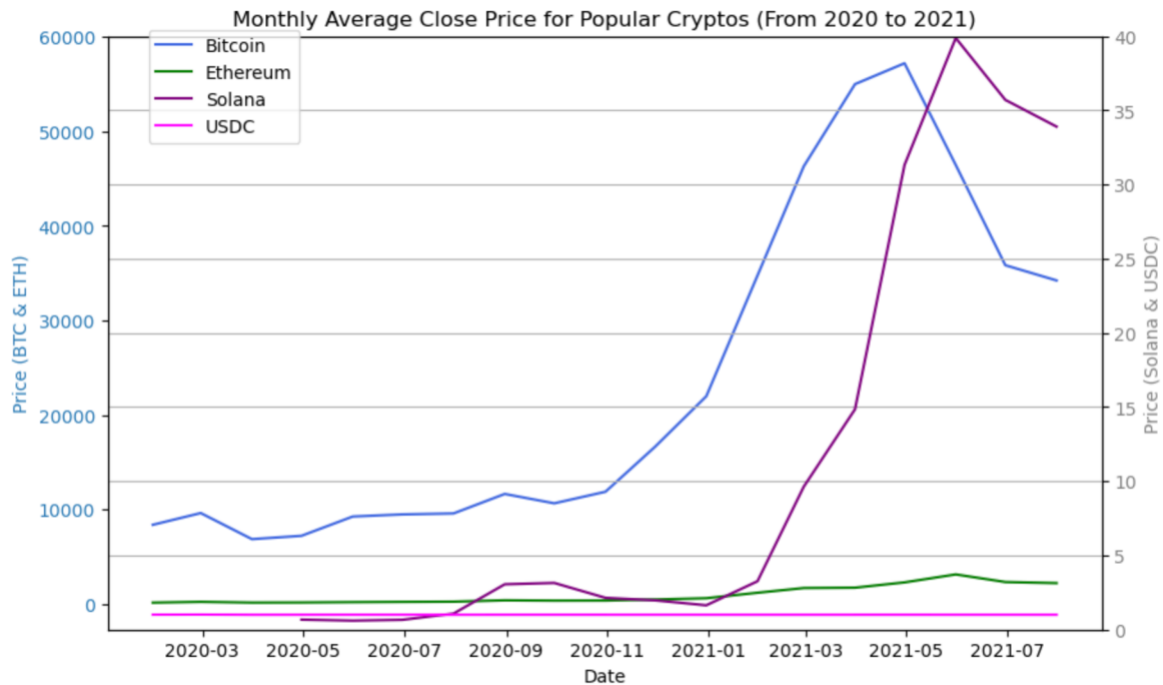
Legend
- royal blue corresponds to Bitcoin
- green corresponds to Ethereum
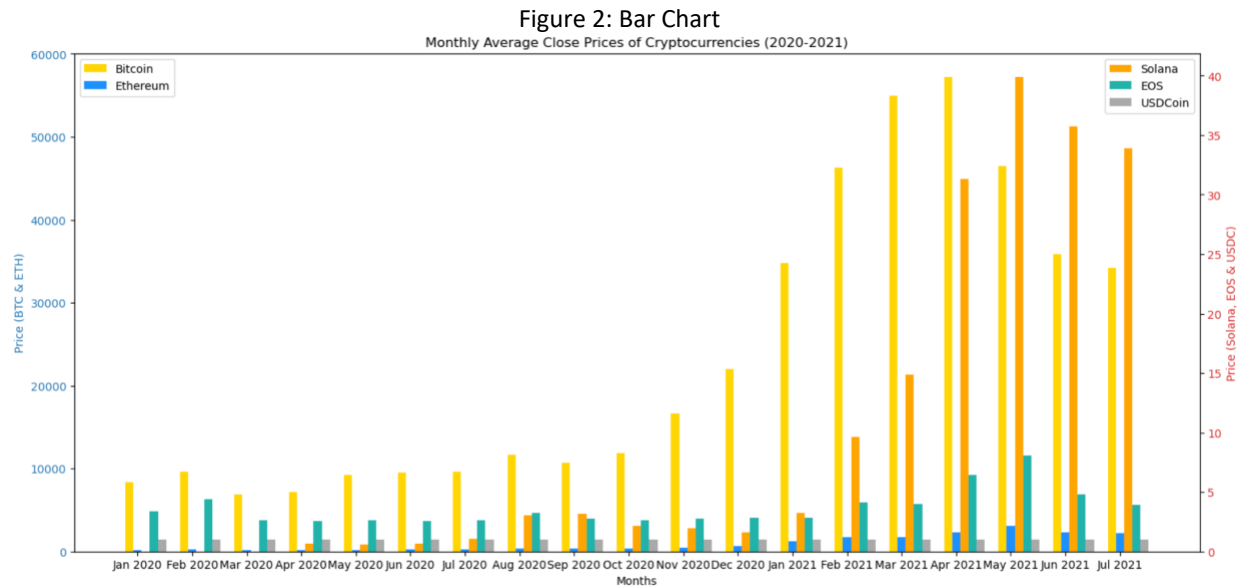- purple corresponds to Solana
- magenta corresponds to USDC

Findings text introducing highlights of the produced figure in bulletin points
- This chart depicts the price movements of some popular digital currencies
- USDC has always had a stable price around 1, which is the bedrock for trading other cryptocurrencies
- Bitcoin remains the most valuable digital currency
- Bitcoin and Solana both come to all-time highs around May 2021

Data gathered from
https://www.kaggle.com/datasets/sudalairajkumar/cryptocurrencypricehistory/?select=coin_Solana.csv
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Figure 2: Bar Chart

Monthly Average Close Prices of Cryptocurrencies (2020-2021)

Legend
- **Bitcoin (Gold)**: Represents the average monthly closing price of Bitcoin.
- **Ethereum (Deep Blue)**: Reflects the average monthly closing price of Ethereum.
- **Solana (Vibrant Orange)**: Indicates the average monthly closing price of Solana.
- **EOS (Cool Teal)**: Shows the average monthly closing price of EOS.
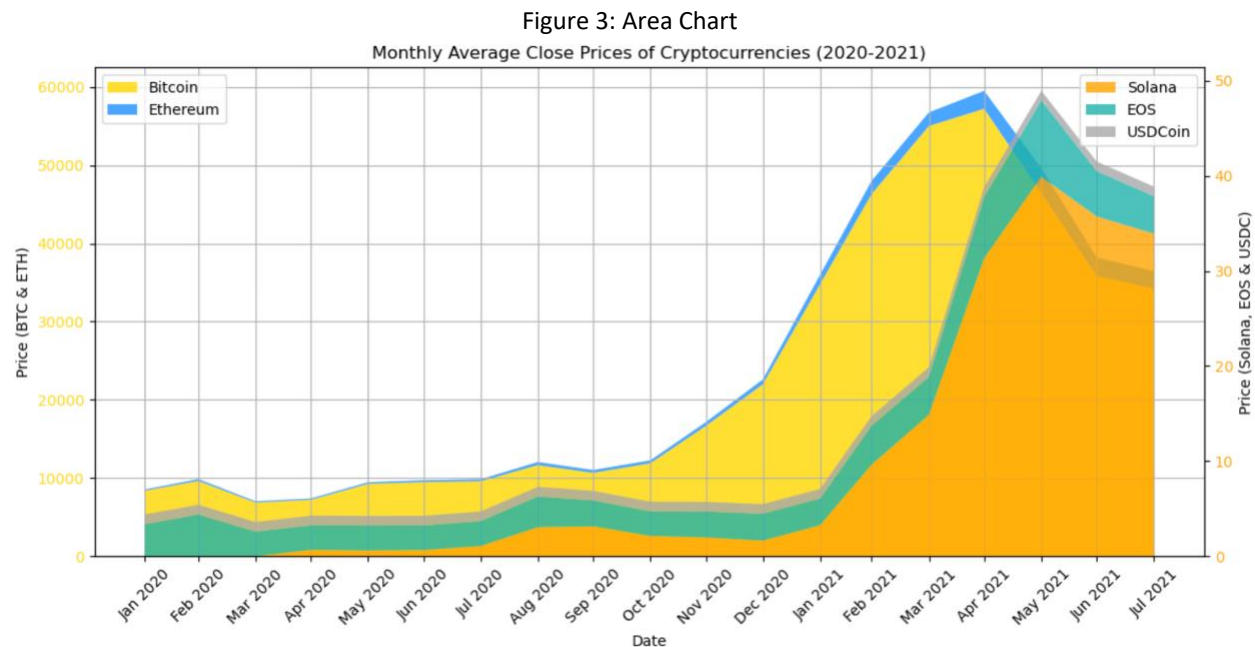- **USDCoin (Soft Grey)**: Depicts the average monthly closing price of USDCoin.

Findings text introducing highlights of the produced figure in bulletin points
- The bar chart demonstrates the comparative monthly closing prices of various cryptocurrencies, providing a clear visual of each currency's performance relative to the others.
- The visualization highlights the significant disparities in value between major cryptocurrencies like Bitcoin and Ethereum and smaller ones like Solana, EOS, and USDCoin.
- It allows for the observation of price volatility month-to-month, indicating periods of market turbulence or stability.
- The use of a dual y-axis bar chart reveals the differences in scale while maintaining a cohesive comparison across cryptocurrencies with vastly different market caps.

Figure 3: Area Chart

Legend
- **Bitcoin (Gold Area)**: Represents the cumulative monthly closing value of Bitcoin.
- **Ethereum (Deep Blue Area)**: Reflects the cumulative monthly closing value of Ethereum.
- **Solana, EOS, USDCoin (Shades of Orange, Teal, and Grey)**: These areas indicate the collective value contributions of Solana, EOS, and USDCoin, each shaded according to the bar chart legend.

Findings text introducing highlights of the produced figure in bulletin points
- The area chart showcases the cumulative growth and proportional representation of each cryptocurrency's value over time, illustrating the dynamic nature of the market.
- This visualization emphasizes the dominance of Bitcoin and Ethereum in the market by showing the substantial portion of the market they occupy.
- It also provides insights into the overall market trends, revealing how the collective value of cryptocurrencies evolves over the observed period.
- The dual y-axis design on the area chart allows for a more nuanced understanding of market dynamics, accommodating the visualization of currencies with smaller values alongside the market leaders without distortion.

Data and method text describing the data and method used
- I gathered data from Kaggle which has lots of open data sets
- I used Matplotlib, NumPy, Pandas and so on to create all the visualizations in JupyterLab
- A dual y-axis bar chart was employed to represent the monthly average closing prices
- A stacked area chart with a dual y-axis was created to depict the cumulative market value trends over time

Significance statement on why the presented figure is an important topic
- By examining the fluctuations and growth patterns of a diverse set of cryptocurrencies, the figure sheds light on the comparative stability, volatility, and growth potential of these digital assets
- They not only inform investors and policy-makers but also contribute to the broader understanding of the financial and economic implications of the crypto market
- Understanding these trends is vital for various stakeholders

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