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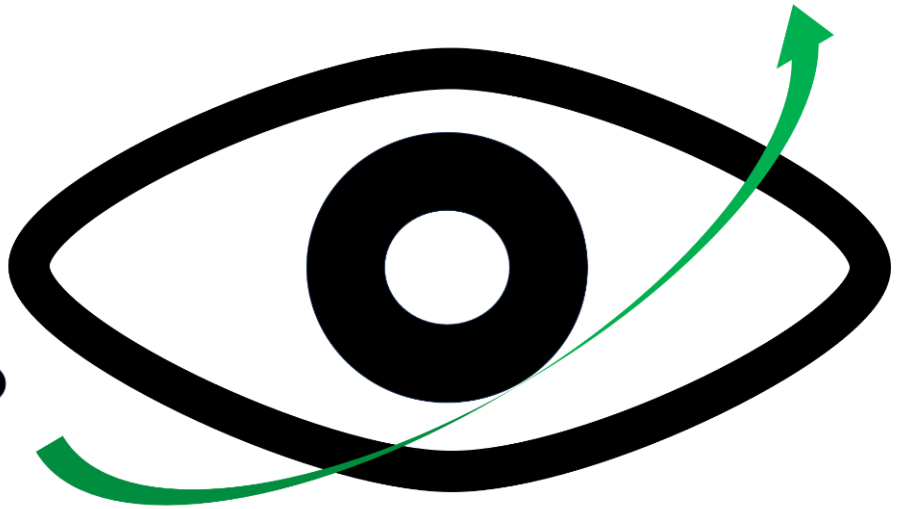
THIS PROJECT IS NOT INVESTMENT ADVICE

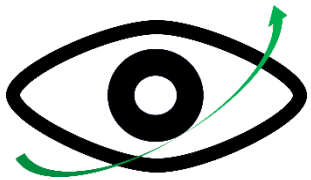
Capstone Project by Anthony Pieri

July 2024

MarketMati



Executive Summary of Capstone Project



- **Description**
  - Keep any eye on your favorite Digital Assets with MarketMati!
  - With a focus on data visualisations through historical chart analysis.
  - This Webb App aims to assist in your learning and understanding of current and historical market prices. The program has been developed with a fully operational ETL data pipeline.
  - Accessible from https://marketmativ1.streamlit.app/ and GitHub https://github.com/acp-dscs/MarketMativ1
- **Extract**
  - Financial Historical and Current Data from the Yfinance API https://pypi.org/project/yfinance/
  - Updated data from Yfinance, is then rooted to and stored in specific database tables. (Digital Futures PostgreSQL database)
  - Data is updated via automated CRON Jobs for Current Prices every 15mins and Day Close Prices once a day.
- **Transform**
  - Using Python and SQL, data tables are then queried to present this updated data to users.
  - Data cleansing and transformation: column renaming, dropping of data, sorting, calculations and new columns for calculated data.
- **Load**
  - Transformed and updated data is now used to create an interactive user experience through chart visualisations.
  - The Web App is hosted with Streamlit, providing users with a simple and seamless experience. https://streamlit.io/
- **Project Learnings and Stretch Goals**
  - Facebook Prophet Forecasting worked in testing environment. However, was not compatible with the live Streamlit hosting platform. https://facebook.github.io/prophet/docs/quick_start.html
  - Unfortunately this had some great features and needs additional work and time to see if it is possible to implement!

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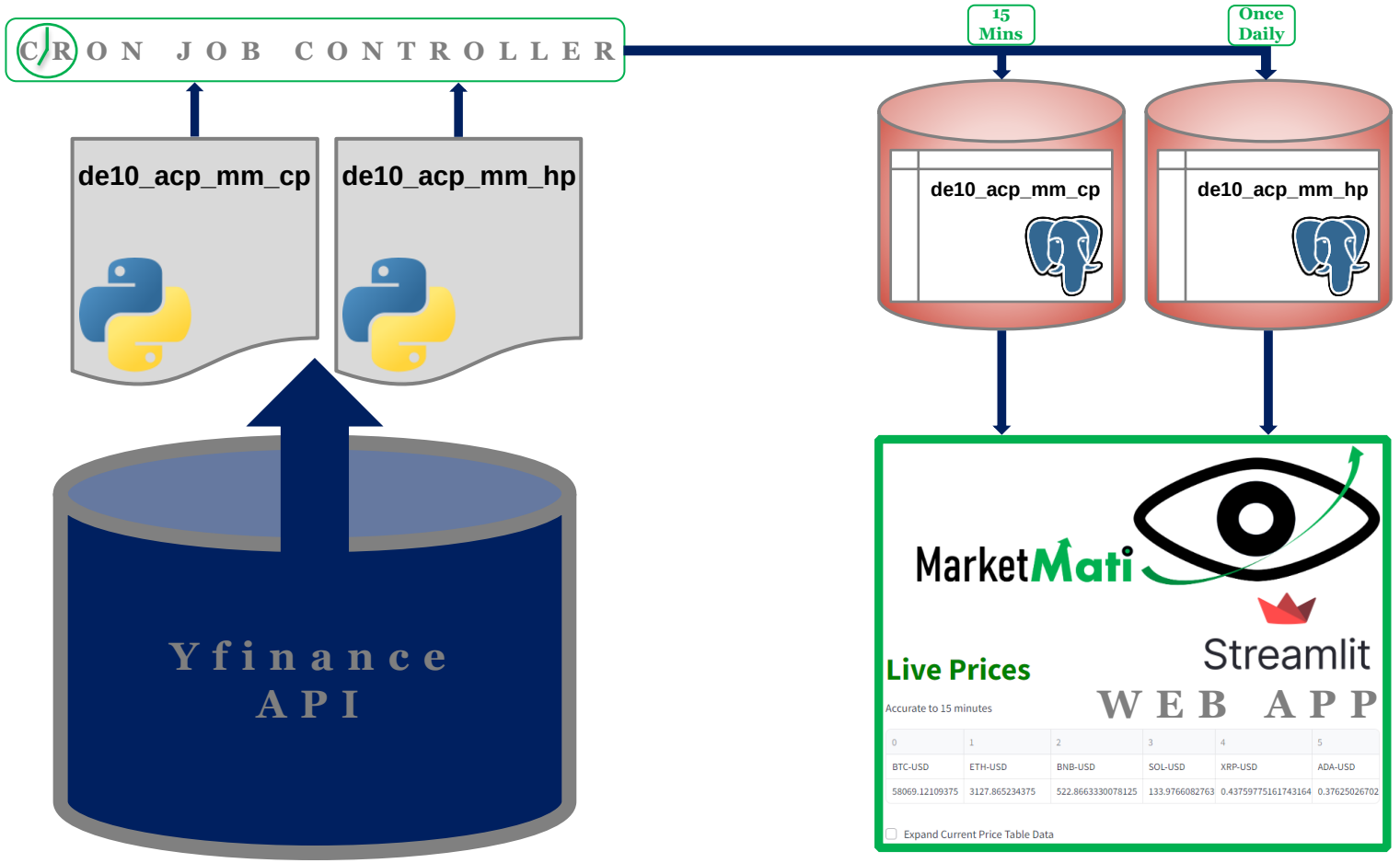
Data Flow Diagram



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Current Prices and Ticker Dropdown to drive the Web App

Live Prices

Accurate to 15 minutes

0	1	2	3	4	5
BTC-USD	ETH-USD	BNB-USD	SOL-USD	XRP-USD	ADA-USD
58455.61328125	3158.26904296875	527.6180419921875	134.57972717285156	0.4447668790817261	0.378261

☐ Expand Current Price Table Data

Previous Day Market Prices USD

Updated daily, end of day prices for 2024-07-03

Digital Asset	Open	Close	High	Low
ADA-USD	0.4178	0.4077	0.4217	0.4013
MATIC-USD	0.5706	0.5313	0.5725	0.5269
BNB-USD	579.0104	556.6202	579.8839	550.597
XRP-USD	0.4845	0.4667	0.4859	0.4626
DOT-USD	6.5149	6.0573	6.5299	6.0028
LINK-USD	14.4033	13.7127	14.5519	13.5797
BTC-USD	62,034.332	60,265.8906	62,179.3516	59,454.625
ETH-USD	3,416.2549	3,299.3442	3,425.5769	3,254.5212
SOL-USD	153.7111	141.1581	154.198	139.7207
ZEC-USD	20.7608	20.5255	20.9443	19.9208

Cryptocurrency Deep Dive

Top Picks and Analysis

Cryptocurrency tickers:

BTC-USD

Bitcoin

Max Supply: 21,000,000

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Often referrd to as Digital Gold. A pioneer crypto using blockchain for decentralise
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Cryptocurrency tickers:

BTC-USD

- BTC-USD
- ADA-USD
- LINK-USD
- DOT-USD
- XRP-USD
- MATIC-USD
- SOL-USD
- BNB-USD

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Pi Cycle Indicator – Simple Moving Averages

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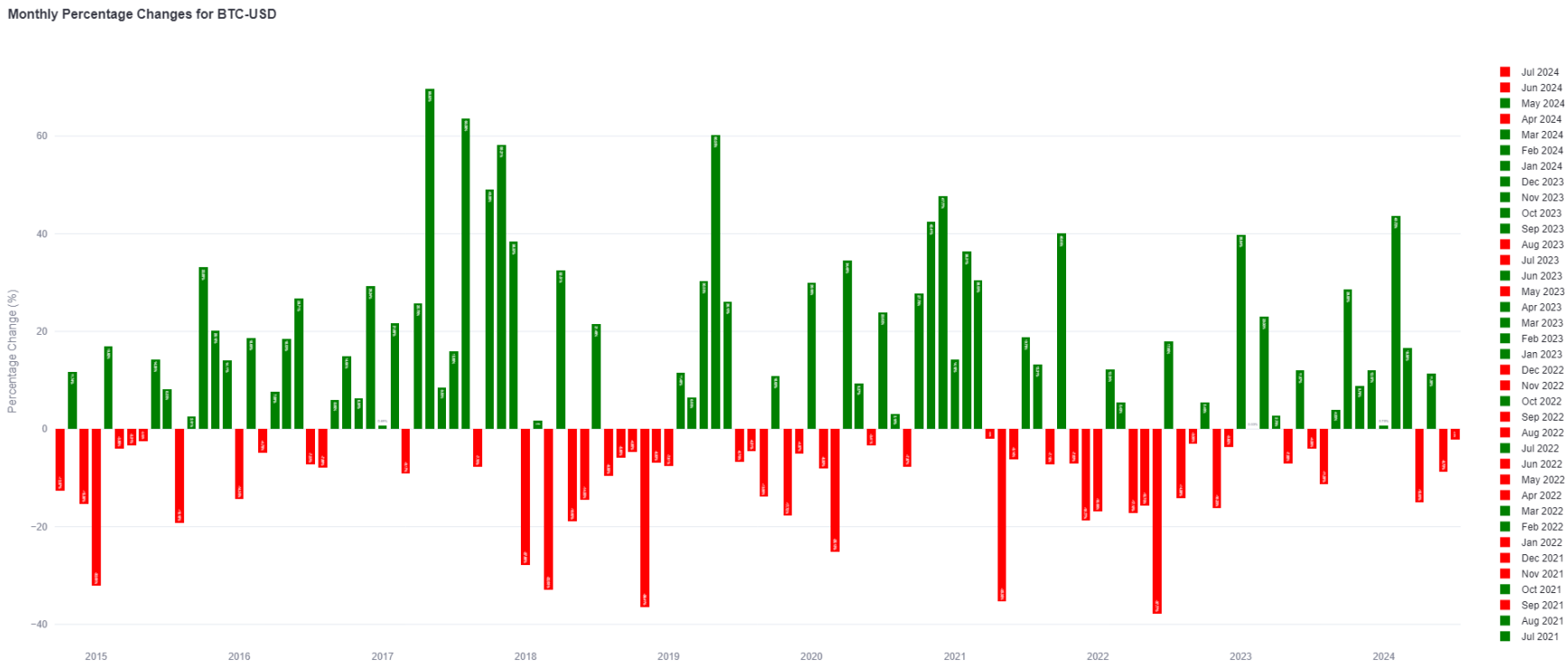
Monthly Percentage Change Chart (Historical Prices)



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Prophet Chart, a forecasting algorithm, for future price predictions

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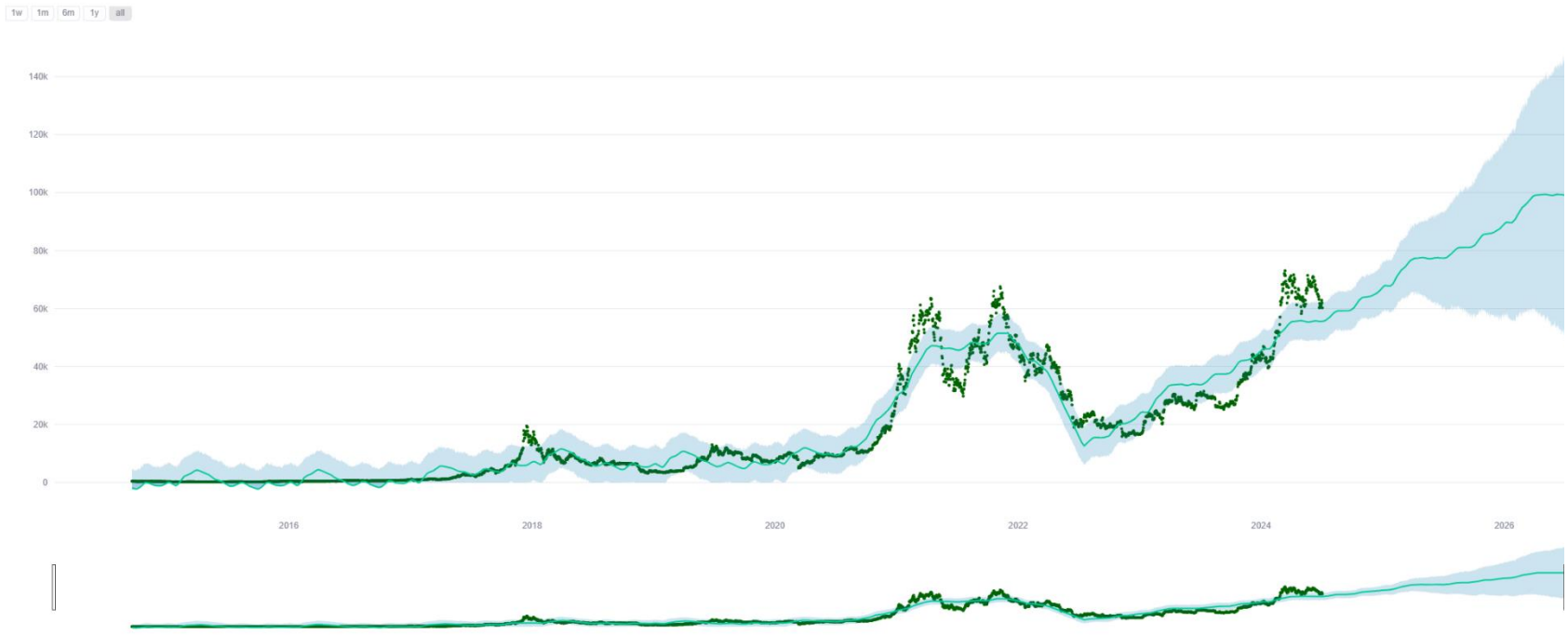
Forecasting Chart Using Prophet – 2 Years of forecasting



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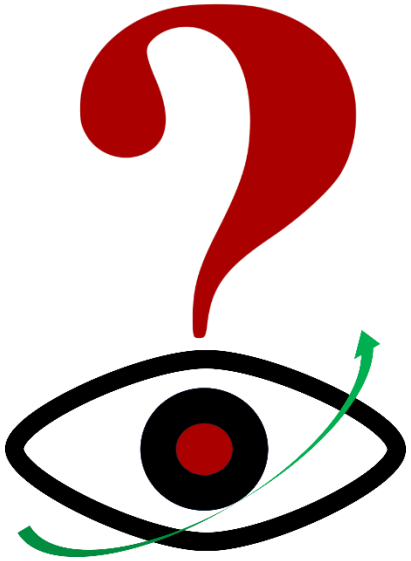
Any Questions?