Extracting Cryptocurrency Market Data to Create a Dashboard

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**ABSTRACT**

I will be extracting cryptocurrency market data using Python. Then, I will transform and load this data to create a dashboard. This dashboard will allow users to see visuals and statistical information about cryptocurrency assets they are interested in.

**Categories and Subject Descriptors**

D.3.3 [**Software and its engineering**]: Software creation and management – *designing software, software development techniques, Software configuration management and version control systems*

**General Terms**

Algorithms, Measurement, Documentation, Performance, Reliability, Experimentation

**Keywords**

Cryptocurrency, API, Blockchain, ETL

# INTRODUCTION

The primary aim of this project is to create a dashboard that will serve as a single, centralized location where users can see up-to-date information on crypto assets.

# BACKGROUND

Cryptocurrency is, generally, a digital currency that that can be bought and sold and is maintained by a decentralized system rather than a centralized authority. Proponents of decentralization cite a few main reasons why blockchain technology and decentralization is important. First, cryptocurrency is the most democratic form of currency because the price is not determined by government actions. Instead, the power lies entirely in the hands of investors and people who use the currency to make transactions.

The tool I will be using to build a web dashboard for my data is Metabase. Metabase is an open-source business intelligence tool that lets users visualize data and generate insights about their data. In the context of this project, I will use Metabase as a web dashboard that tracks and visualizes price trends and market cap fluctuations for a few different cryptocurrencies.

# METHODOLOGY, ALGORITHM, ETC.

## Extract Market Data

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First, I will use Python to connect to an API that allows user to extract cryptocurrency market information such as prices, trends, market cap, etc. This data will be extracted as raw data in JSON format. Once the code is working locally, I will deploy the data pipeline to production by running them as containers on an EC2 instance.

## Transform and Load the Raw Data to Cloud Storage

Next, I will transform the raw data into refined data and load it to a cloud storage solution. Namely, I will use Amazon AWS S3 Buckets to house the data. In AWS, the data will be organized in buckets by coin, with the transformed data for each coin belonging to a separate bucket in S3.

## Display Data on Dashboard

Lastly, I will display my data on Metabase as a web dashboard. It will show all the relevant data for user-selected cryptocurrencies in table format, with this data coming from the data pipelines I created in Python. It will also generate interactive charts and graphs to visualize the data and allow users to make insights.

# Expected Outcome

I expect to have an established extract-transform-load (ETL) that primarily uses Python to extract raw data from CoinMarketCap, transform the data, and load it to Amazon AWS. Then, I will connect it to a web dashboard to display the results.

# CONCLUSION

I will consider this project a success if I am able to extract, transform, and load the cryptocurrency market data using Python. I want the dashboard to automatically stay up to date, so I need to use a scheduling system to run my ETL process repeatedly.

# REFERENCES

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