

STOCK MARKET DATA PIPELINE

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NEED

Establish a data pipeline which retrieves, cleans, and stores stock market data to be deployed in a web application.



DATA AND SCOPE

DATA

- Daily price at market close
- General company information (e.g. products, sector)
- Financial metrics (e.g. market cap, P/E)

SCOPE

- Companies traded on US stock market exchanges - NASDAQ, NYSE, AMEX
- Largest 2,000 companies by market cap
- 15 years of market data

5,512,745

total records

(...and counting...)

TOOLS

DATA ACQUISITION

- Yahoo Finance API (yfinance library)

DATA CLEANING

- Pandas
- NumPy

DATA STORAGE

- SQLAlchemy for SQL database connection

WEB APP DEPLOYMENT

- App developed with Streamlit
- Deployed via Heroku

PIPELINE OVERVIEW

Yahoo
Finance

yfinance library

Request initial
historical data



Request new data
nightly and add to
pipeline via cronjob

Pandas
Dataframe

Manipulate structure to
long form, minor
cleaning



SQLAlchemy

SQL Database

Store in database



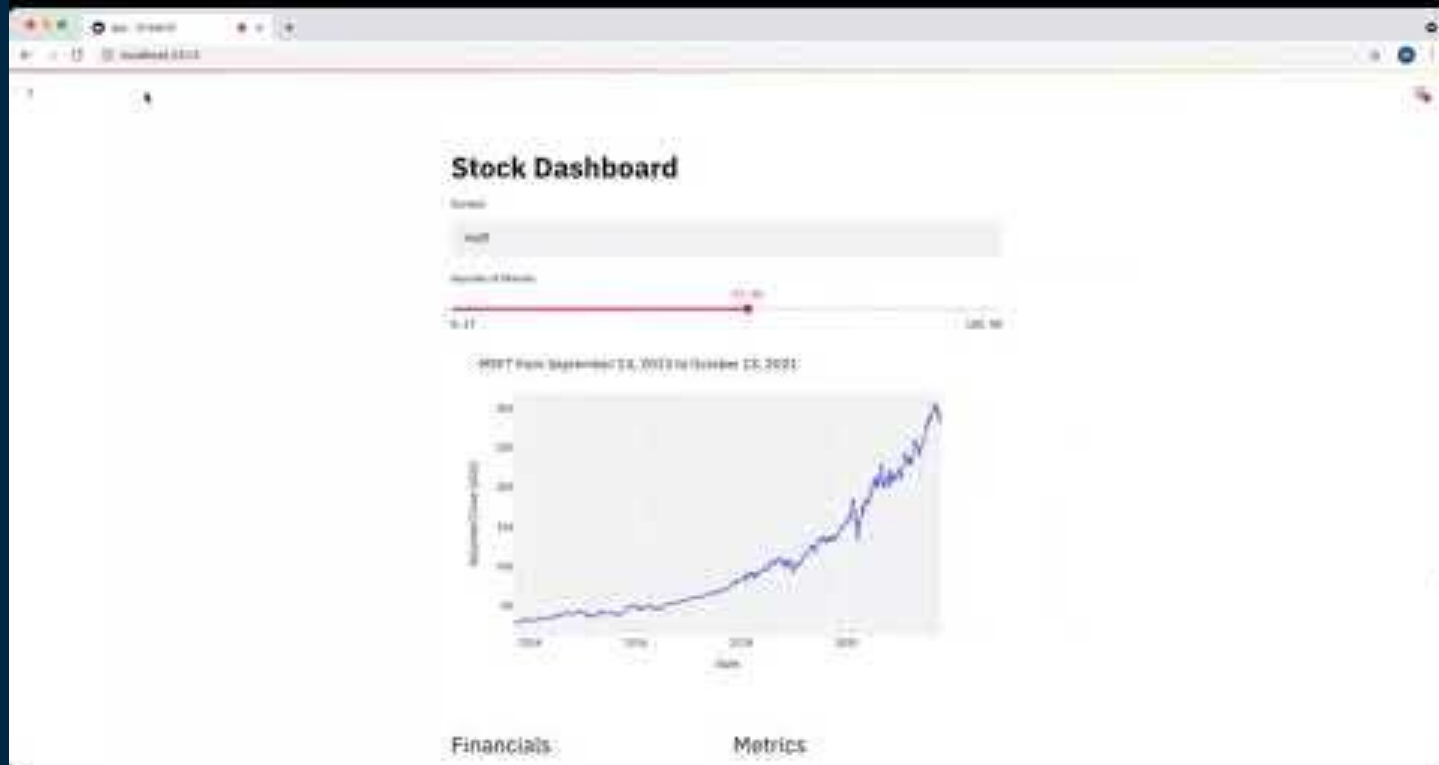
Streamlit
& Heroku

Web App

Development and
deployment

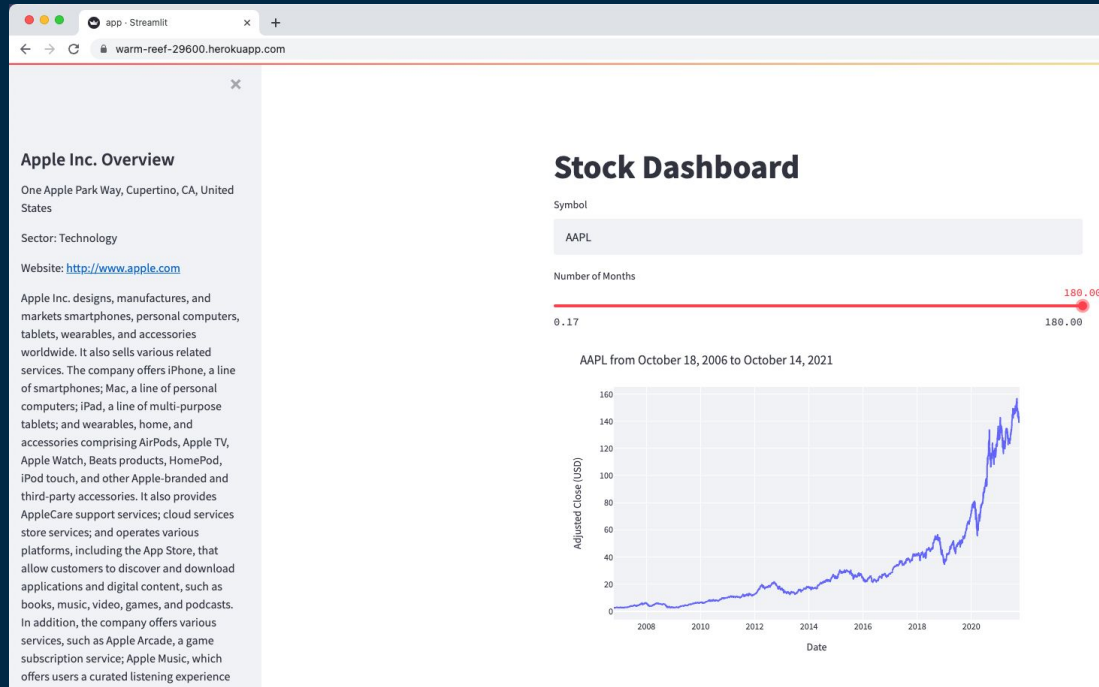


DEMO



HEROKU DEPLOYMENT

<https://warm-reef-29600.herokuapp.com/>



FURTHER WORK

- Additional data - market indices, cryptocurrency
- Functionality to allow user to build and track portfolio performance
- Data storage on a cloud platform
- Algorithmic analysis/modeling

APPENDIX

The background is a dark navy blue. It is decorated with various geometric elements: small squares in teal, orange, and pink, some of which are solid and others are hollow outlines. Thin, light-colored vertical lines of varying lengths are scattered across the page, some extending from the top or bottom edges.

Crontab Example

A terminal window with a title bar that reads "final — crontab -e — crontab — vi • crontab — 146x33". The window contains a crontab entry: "0 23 * * 1-6 /path/to/python3 /path/to/update_db.py". The entry is on a single line, and the cursor is at the end of the line. There are two small blue icons on the left side of the terminal window.

```
0 23 * * 1-6 /path/to/python3 /path/to/update_db.py
```

Run update_db.py M-Sa at 11:00PM

Load new historical data, update metrics

Do you have any questions?

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THANKS



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