Software Engineering Case Study: Returns API

Objective: Develop a REST API that fetches, processes, and serves data relevant to an investment shop.

Overall Task: Construct a REST API providing the following endpoints:

1. **GET /tickers**
    - Returns a list of all tickers that the API supports.
2. **GET /returns/<ticker>/<start_date>/<end_date>**
    - Returns a time series of the daily returns for the specified ticker and time horizon.
3. **GET /correlation/<ticker1>/<ticker2>/<start_date>/<end_date>**
    - Returns the Pearson correlation coefficient between the daily return time series for the two provided tickers.
4. **POST /correlation_matrix/**
    - Returns the Pearson correlation coefficient matrix between the daily return time series for all of the tickers included in the POST body.

Technical Expectations:

- All code should be written in Python.
- You have the freedom to choose the libraries to use, but include a rationale for your choices.

Data Source:

- Utilize the yfinance Python package.
- Initially focus on 5 tickers of your choice.

Deliverables:

1. Complete source code of the developed API.
2. A concise write-up explaining:
    - Your approach and methodology.
    - Challenges faced and how they were addressed.
    - Any assumptions made during the development process.
    - A self-assessment of your submission. Be as quantitative as you can.
3. Put all material on github and permission joshtennefoss

Time Constraint:

- Aim to complete the task within 3 hours.
- Do not spend more than 5 hours.