Smart

Python Test

1.0 Introduction

A common task for the Data Engineering team is to take information from one system and supplement it with information from another. This supplemented information will then be stored in the Data Warehouse for further analysis. Often the supplemental information comes from an API and we use Python (v3.9+) to access and manipulate the data.

2.0 The exercise

In this exercise, you will need to query an api (https://exchangeratesapi.io/). You will need to:

- Query the api for exchange rates for the period 01/01/2021- 01/01/2023 (note - you'll need to request a free API key from the website to achieve this)
- For each day, retrieve the exchange rates for UK Sterling (GBP), US Dollars (USD) and Euros (EUR) and the conversion rates to all currencies provided by the API
- Output the collected data to a CSV file
- Upload the CSV file to a database (any local database will be sufficient, e.g. SQLLite, MySQL, etc.)

2.1 Additional considerations

Please include consideration for the following:

- Automated unit tests
- Error handling if the API returns error codes
- Handling of API rate limiting
- How to handle API keys/secrets if the API were to require such things
- Consideration for how the code would perform with much higher volumes of data (e.g. 100,000 company records)

3.0 Sending the code

Either zip the contents of your project and send it to us or upload it to GitHub and provide a link to it