Assignment#1 Part B

Date: 08 Sep, 2022 **Due date: Saturday, 10th Sep 2022**

Instructions:

- All questions must be in .py file.
- You must follow the file naming conventions, submission file should be named as RollNo.py (i.e. i20-xxxx.ipynb where xxxx is your Roll Number)
- Any question with Error is not acceptable.
- Late submissions are not allowed and will be marked zero.

You are required to made only .py files. You can install python in your system in order to test it for different scenarios. You can get help for installation from https://www.digitalocean.com/community/tutorials/install-python-windows-10

You can call API using **requests** Library.

The Brief:

An API (Application Programming Interface) is a software program that provides communication channels following the HTTP protocol between 2 applications. It is usually used for allowing a client to request or update information from a server.

You are tasked to develop a Python program that will perform currency conversion using data fetched from an open-source API: https://www.frankfurter.app/

The goal of your program is to display the current conversion rate between 2 currency codes at a specific date. It will also calculate the inverse conversion rate between these 2 currencies.

To do so, you will need to call 2 different API endpoints from the Frankfurter app:

- Extracting the list of available currency codes (documentation: https://www.frankfurter.app/docs/#currencies)
- Extracting the historical conversion rate for the specified currency codes and a given (documentation: https://www.frankfurterapp/docs/#historical)

Description:

In this individual assignment, you will develop a python program that will take 2 currency codes as input arguments. Here is the command for running your script:

python main.py <date> <currency1> <currency2>

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Your script will return the following outputs:

Scenario	Example	Output
Success	python main.py 2022-01-01 GBP AUD	The conversion rate on 2021-07-16 from GBP to AUD was 1.8649. The inverse rate was 0.5362
Missing argument	python main.py	[ERROR] You need to provide 3 arguments in the following order: <date> <currency1> <currency2>
Missing argument	python main.py 2022-01-01	[ERROR] You need to provide 3 arguments in the following order: <date> <currency1> <currency2>
Missing argument	python main.py 2022-01-01 AUD	[ERROR] You need to provide 3 arguments in the following order: <date> <currency1> <currency2>
Too many argument	python main.py 2022-01-01 AUD EUR GBP	[ERROR] You need to provide 3 arguments in the following order: <date> <currency1> <currency2>
Incorrect currency	python main.py 2022-01-01 usd AAA	AAA is not a valid currency code
Incorrect currency	python main.py 2022-01-01 AAA usd	AAA is not a valid currency code
Incorrect currencies	python main.py 2022-01-01 bbb AAA	AAA and bbb are not a valid currency codes
Incorrect Date	python main.py 2022/01/01 AAA usd	Provided date is invalid
Incorrect Date	python main.py 2022/01/41 aud usd	Provided date is invalid
API Error		This is an error with Frankfuter API

Initial Example code: (Overview of, how to call an API)

```
import requests

from_currency = str(
    input("Enter in the currency you'd like to convert from: ")).upper()

to_currency = str(
    input("Enter in the currency you'd like to convert to: ")).upper()

amount = float(input("Enter in the amount of money: "))

response = requests.get(
    f"https://api.frankfurter.app/latest?amount={amount}&from={from_currency}&to={to_currency}")

print(
    f"{amount} {from_currency} is {response.json()['rates'][to_currency]} {to_currency}")
```

```
Enter in the currency you'd like to convert from: usd
Enter in the currency you'd like to convert to: gbp
Enter in the amount of money: 1000
1000.0 USD is 875.16 GBP
```