

USER GUIDE

Description :

This program aims for the user to quickly get real-time information about the stock market and forex market by making various *json* queries.

It uses an API of "*Alpha Vantage*" to provide up-to-date market information. Alpha Vantage is a platform that offers free stock APIs in JSON and CSV formats for real-time and historical equity, forex, cryptocurrency data and over 50 technical indicators.

API Usage Examples:

TIME_SERIES_DAILY

This API returns *raw* (as-traded) daily time series (date, daily open, daily high, daily low, daily close, daily volume) of the global equity specified, covering 20+ years of historical data. If you are also interested in split/dividend-adjusted historical data, please use the *Daily Adjusted API*, which covers adjusted close values and historical split and dividend events.

API Parameters

■ Required: *function*

The time series of your choice. In this case, *function=TIME_SERIES_DAILY*

■ Required: *symbol*

The name of the equity of your choice. For example: *symbol=IBM*

■ Optional: *outputsize*

By default, *outputsize=compact*. Strings *compact* and *full* are accepted with the following specifications: *compact* returns only the latest 100 data points; *full* returns the full-length time series of 20+ years of historical data. The "compact" option is recommended if you would like to reduce the data size of each API call.

■ Optional: *datatype*

By default, *datatype=json*. Strings *json* and *csv* are accepted with the following specifications: *json* returns the daily time series in JSON format; *csv* returns the time series as a CSV (comma separated value) file.

■ Required: *apikey*

Foreign Exchange (FX)

APIs under this section provide a wide range of data feed for realtime and historical forex (FX) rates.

CURRENCY_EXCHANGE_RATE High Usage

This API returns the realtime exchange rate for a pair of digital currency (e.g., Bitcoin) and physical currency (e.g., USD).

API Parameters

■ Required: *function*

The function of your choice. In this case, *function=CURRENCY_EXCHANGE_RATE*

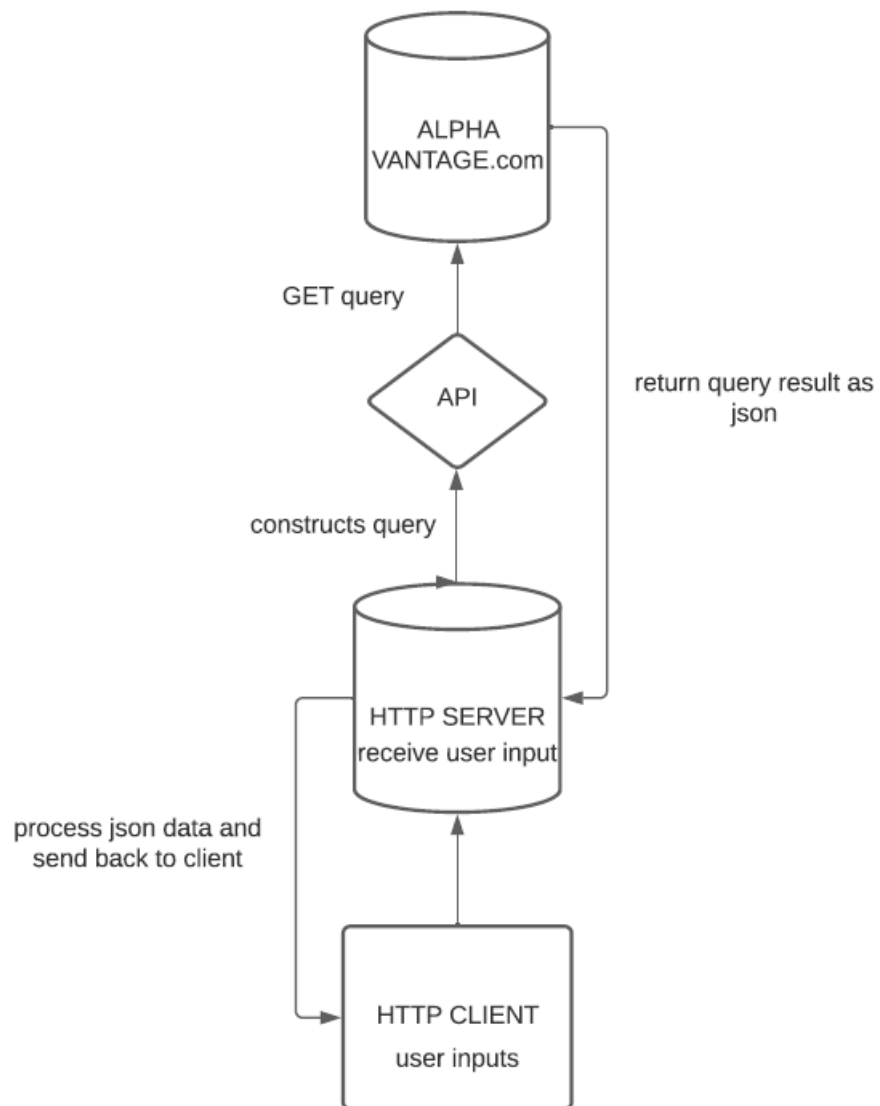
■ Required: *from_currency*

The currency you would like to get the exchange rate for. It can either be a *physical currency* or *digital/crypto currency*. For example: *from_currency=USD* or *from_currency=BTC*.

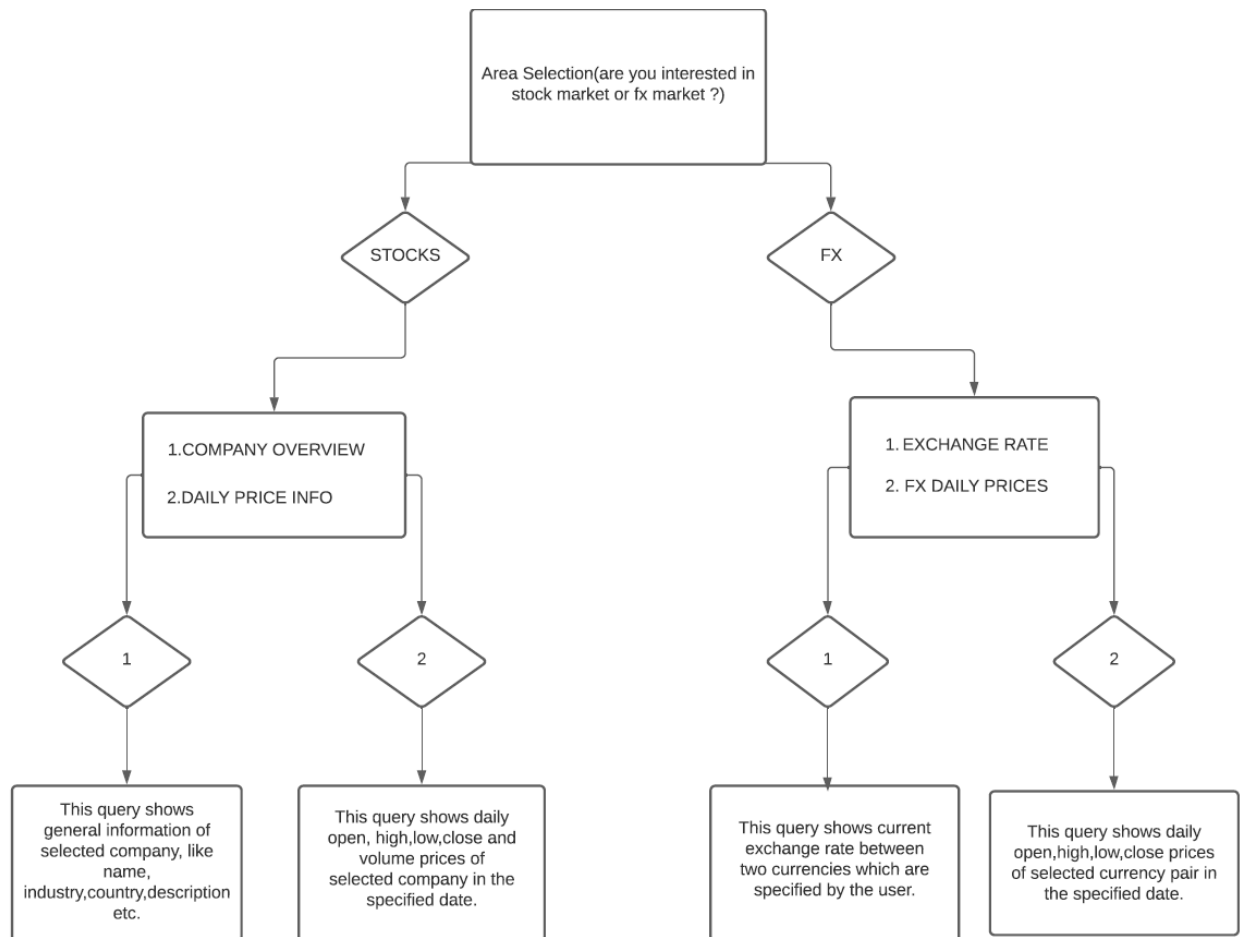
■ Required: *to_currency*

The destination currency for the exchange rate. It can either be a *physical currency* or *digital/crypto currency*. For example: *to_currency=USD* or *to_currency=BTC*.

Architecture



User Flow



Example User Flow 1 :

```
PS D:\BIL452\hw1\source code> python .\client.py
----- WELCOME TO STOCK & FX MARKETS QUICK QUERY SYSTEM -----
SELECT YOUR AREA (PRESS 1 FOR STOCKS, PRESS 2 FOR FX): 1
Input company symbol that you are interested in the market(MSFT,IBM,AAPL etc.): AAPL
SELECT FROM MENU
1.COMPANY OVERVIEW
2.DAILY PRICE INFO
1
Industry:ELECTRONIC COMPUTERS
-----
Name:Apple Inc
-----
Country:USA
-----
Description:Apple Inc. is an American multinational technology company that specializes in consumer electronics, computer software, and online services. Apple is the world's largest technology company by revenue (totalling $274.5 billion in 2020) and, since January 2021, the world's most valuable company. As of 2021, Apple is the world's fourth-largest PC vendor by unit sales, and fourth-largest smartphone manufacturer. It is one of the Big Five American information technology companies, along with Amazon, Google, Microsoft, and Facebook.
-----
Currency:USD
```

Example User Flow 2:

```
PS D:\BIL452\hw1\source code> python .\client.py
----- WELCOME TO STOCK & FX MARKETS QUICK QUERY SYSTEM -----
SELECT YOUR AREA (PRESS 1 FOR STOCKS, PRESS 2 FOR FX): 2
SELECT FROM MENU
1.EXCHANGE RATE INFO
2.FOREX DAILY PRICES INFO
2
From Symbol:(USD, EUR, TRY etc.): USD
To Symbol:(USD, EUR, TRY etc.):TRY
Input date:2021-07-08
1. open: 8.68060
2. high: 8.73087
3. low: 8.65700
4. close: 8.68010
PS D:\BIL452\hw1\source code> █
```