



NORTHERN
TRUST

Hackathon

ForexDashboard



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Problem Statement:

Create a dashboard which will allow users to analyze the exchange rates between two currencies over a period of time. Users should have the option to select weekly, monthly, quarterly, and yearly charts. The dashboard should also display the date on which the rate was at its peak (highest) and the date on which it was at its lowest. Users should be able to print the data in a chart. Input will be currency exchange rate dataset between a currency pair and will be provided in a file format

Use USD as Base Currency where first currency will always be USD and second currency will be variable. For instance, currency pairs could be USD/INR, USD/GBP, USD/EUR, USD/CAD etc

Objective:

- Read the data from file and store in csv.
- Create a use interface which allows users to select currency and desired duration. Users should have the ability to switch between weekly, monthly, quarterly, and annual charts.
- Fetch data for given currency and time duration. Show the trend over a given period. Also display the date on which the rate was highest with the actual rate and date on which the rate was lowest along with the rate

UI Requirements:

- UI should have the option to select 2 currencies (Currency 1 and Currency 2). Currency 1 auto populate with USD. Users should have the search capability to search for a currency in currency 2 field. Display currency name next to currency field
- Users should have an option to select duration for which they would prefer to see the data and graphs

Functions:

Year Range Selector

- Users can select the desired time range for analysis (weekly,monthly, quarterly,yearly)

Currency Pair Selection

- Users can choose the currency pair for analysis with base having default value of USD (e.g.,USD/INR, USD/GBP).

Chart Options

- Chart which we use to display trend of currency is Line Graph

Technical Details:

Technology Stacks:

- Frontend: HTML, CSS,
- Backend: Flask is used for connecting frontend and backend, matplotlib library is used for plotting graphs
- Data Storage: CSV file

Dependencies:

- Matplotlib
- CSV parsing library

How to Run Code:

- Go to backend.py home path
- In the terminal write- python backend.py
- Click on the local host link
- Further to run the test cases- pytest backend_test.py

Working

Dashboard



CREATE GRAPH

Currency1:

Currency1

Currency2:

Currency2

Duration:

Yearly or Weekly

Start Year:-

Enter Starting year

End Year:-

Enter Ending year

''

Currency1: From

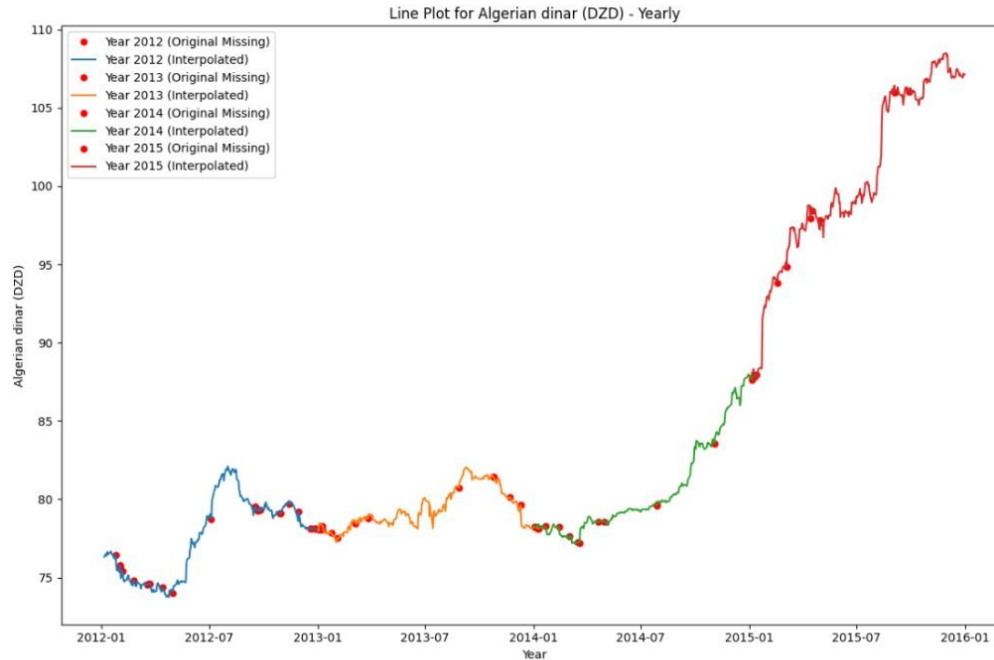
Currency2: To

Amount:

Get Amount

Hence the total amount you will receive is ""

Results



Results



CREATE GRAPH

Currency1:

Currency1

Currency2:

Currency2

Duration:

Yearly or Weekly

Start Year:-

Enter Starting year

End Year:-

Enter Ending year

Highest value- 108.4958 , Lowest value- 73.7457 , FX value- 84.74305472901169

Currency Exchange Rate

Currency1:

Currency2:

Amount:

Get Amount

Hence the total amount you will receive is "The predicted price is 37500.0"

Test Cases

```
C:\Users\De11\Desktop\MITWPU-team21-ForexDashboard>pytest backend_test.py
===== test session starts =====
platform win32 -- Python 3.9.12, pytest-7.1.1, pluggy-1.0.0
rootdir: C:\Users\De11\Desktop\MITWPU-team21-ForexDashboard
plugins: anyio-3.5.0
collected 2 items

backend_test.py .. [100%]

===== 2 passed in 1.69s =====

C:\Users\De11\Desktop\MITWPU-team21-ForexDashboard>
```

**Thank
You**