Currency Converter – Project Report

Title:

Currency Converter using Python and Exchange Rate API

Objective:

To develop a Python-based command-line currency converter application that fetches real-time exchange rates and converts an entered amount from one currency to another.

Tools & Technologies Used:

- Programming Language: Python

- Library: requests

- API Used: ExchangeRate-API (https://api.exchangerate-api.com/v4/latest/)

Project Description:

This project is a command-line-based currency converter that allows users to convert any amount from one currency to another using real-time exchange rates. The application fetches the latest currency rates using an API and performs the necessary conversions. It is designed to handle errors gracefully, such as invalid currency codes or connection failures.

Code Explanation:

Step 1: Import Libraries

```
import requests
```

Step 2: Get Exchange Rates

```
def get_exchange_rates(base_currency='USD'):
    url = f'https://api.exchangerate-
api.com/v4/latest/{base_currency}'
    response = requests.get(url)

    if response.status_code != 200:
        raise Exception("Error fetching exchange rates.")
```

```
    data = response.json()
    return data['rates']
```

Step 3: Currency Conversion

```
def convert_currency(amount, from_currency, to_currency, rates):
    from_currency = from_currency.upper()
    to_currency = to_currency.upper()

    if from_currency not in rates or to_currency not in rates:
        raise ValueError("Invalid currency code.")

    usd_amount = amount / rates[from_currency]
    converted = usd_amount * rates[to_currency]
    return round(converted, 2)
```

Step 4: User Interaction

```
print("Fetching latest exchange rates...")
rates = get_exchange_rates('USD')

amount = float(input("Enter amount: "))
from_curr = input("From currency (e.g. USD, EUR, INR): ").strip()
to_curr = input("To currency (e.g. USD, EUR, INR): ").strip()

result = convert_currency(amount, from_curr, to_curr, rates)
print(f"\n {amount} {from_curr.upper()} = {result}
{to_curr.upper()}")
```

Sample Output:

```
Fetching latest exchange rates...
Enter amount: 100
From currency (e.g. USD, EUR, INR): USD
To currency (e.g. USD, EUR, INR): INR

 100 USD = 8315.2 INR
```

✅Conclusion:

The currency converter successfully performs real-time conversion between any two supported currencies. It demonstrates effective use of external APIs, exception handling, and basic user input in Python. The project can be expanded with GUI support or integrated into larger financial software systems.