

Introduction to the API:

A REST API (Representational State Transfer Application Programming Interface) is a standardized approach for building web services that allows different software applications to communicate with each other over the internet. REST APIs are widely used to enable interactions between client applications (such as web browsers or mobile apps) and server-side systems.

The core principles of a REST API include using the HTTP protocol as the foundation for communication, employing standard HTTP methods (GET, POST, PUT, DELETE) to perform operations on resources, and representing data in a structured format, typically JSON or XML. REST APIs are stateless, meaning that each request from a client contains all the necessary information to be processed independently.

One of the key benefits of REST APIs is their simplicity and scalability. By leveraging the existing HTTP infrastructure, developers can easily design, implement, and consume APIs without requiring specialized protocols or tools. REST APIs are also highly versatile, allowing integration with different programming languages and platforms.

One of the free REST APIs that can provide exchange rates of every currency against the US dollar is the Exchange Rates API. I found this API through a search on the internet for free currency exchange rate APIs. The Exchange Rates API is a reliable and widely used service that offers real-time and historical exchange rate data.

Endpoint:

The base URL for executing the API is <https://api.exchangerate-api.com/v4/latest/USD>. This endpoint provides the latest exchange rates against the US dollar for all available currencies.

Request Information:

To make a request to the Exchange Rates API, you need to send an HTTP GET request to the endpoint mentioned above. No request parameters are required since the base currency is already set to USD. However, you can include an optional query parameter `symbols` to specify a comma-separated list of currency codes for which you want to retrieve exchange rates.

Headers:

No specific headers need to be sent with the request to access the Exchange Rates API.

Response Information:

The API responds with a JSON object containing the requested exchange rate data. The response includes the base currency (USD), the date and time of the exchange rates, and a nested object with currency codes as keys and their respective exchange rates against USD as values.

Sample Requests and Responses:

Request: GET <https://api.exchangerate-api.com/v4/latest/USD>

Response(in Json): {

```
"base": "USD",  
"date": "2023-05-15",  
"time_last_updated": 1657920000,  
"rates": {  
  "AED": 3.6725,  
  "AFN": 111.75,  
  "ALL": 102.97,  
  ...  
  "ZAR": 15.297,  
  "ZMW": 23.042  
}
```

In the sample request, we are requesting the latest exchange rates against the US dollar for all available currencies. The response includes the base currency (USD), the date and time when the rates were last updated, and a list of currency codes along with their respective exchange rates against USD.

Overall, the Exchange Rates API is a reliable and free solution for retrieving exchange rates of every currency against the US dollar. It provides real-time and historical exchange rate data in a simple and straightforward manner. By utilizing this API, developers can easily incorporate accurate and up-to-date currency conversion functionality into their applications.