

# Currency Converter API - Documentation

## ## Overview

The Currency Converter API is a Spring Boot application that integrates with a public exchange rate API to provide real-time currency conversion.

## ### Features:

- Fetch real-time exchange rates
- Convert currency from one type to another
- Proper error handling
- REST API with JSON responses

## ## API Endpoints

### ### 1. Fetch Exchange Rates

**\*\*Endpoint:\*\*** GET /api/rates?base=USD

**\*\*Description:\*\*** Fetches the exchange rates for the given base currency. Default is `USD` if not provided.

**\*\*Request Example:\*\***

```
curl -X GET "http://localhost:8080/api/rates?base=USD"
```

**\*\*Response Example:\*\***

```
{  
  "base": "USD",  
  "rates": {  
    "EUR": 0.94,  
    "GBP": 0.81  
  }  
}
```

```
}
```

### ### 2. Convert Currency

**\*\*Endpoint:\*\*** POST /api/convert

**\*\*Description:\*\*** Converts an amount from one currency to another.

**\*\*Request Example:\*\***

```
{  
  "from": "USD",  
  "to": "EUR",  
  "amount": 100  
}
```

**\*\*Response Example:\*\***

```
{  
  "from": "USD",  
  "to": "EUR",  
  "amount": 100,  
  "convertedAmount": 94.5  
}
```

## ## Error Handling

### ### Invalid Currency Code

**\*\*Response:\*\***

```
{  
  "error": "Invalid currency code: XYZ"  
}
```

### ### External API Failure

**\*\*Response:\*\***

```
{  
  "error": "Error fetching data from external API"  
}
```

## ## Running the Application

### ### Prerequisites

- Java 17+
- Maven

### ### Steps to Run:

```
git clone https://github.com/harisankarms/CurrencyConverter.git  
cd currency-converter  
mvn clean install  
mvn spring-boot:run
```

### ### Testing with Postman

1. Use `GET http://localhost:8080/api/rates?base=USD` to fetch exchange rates.
2. Use `POST http://localhost:8080/api/convert` with JSON body to convert currency.

## ## License

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