

# Forex Currency Converter: User's Guide

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## 1. Introduction

Welcome to the Forex Currency Converter! This online tool provides real-time currency conversions between a wide range of national currencies and the top ten cryptocurrencies.

The application is designed to give you a "base case" for conversions, meaning the rates provided do not include any bank fees or arbitrage that might be applied by a financial institution. Your results are time-stamped for your records, ensuring you know exactly when the rate was calculated.

## 2. Key Features

- **Real-Time Rates:** Every conversion uses a live call to an AI service to fetch the most current exchange rates available.
- **National & Crypto Support:** Convert between any of the supported national currencies or from a national currency to one of the top ten cryptocurrencies (Bitcoin, Ethereum, etc.).
- **Flexible Input:** Enter currencies by their full country name (e.g., "United States"), common alias ("USA"), or official ISO 4217 code ("USD").
- **Detailed Results:** The output includes your converted amount, the direct exchange rate, the inverse rate, and a comparison table against other major world currencies (USD, GBP, EUR, JPY, CNY).
- **Confirmation Step:** The app will always ask you to confirm your request before contacting the AI service to prevent accidental conversions.
- **Continuous Use:** After a conversion is complete, you have the option to immediately perform another one without restarting the program.

## 3. System Requirements

To run this application, you will need:

- A Python 3 environment.
- The ai.py library provided by your environment (e.g., Stanford's Code In Place).
- The country\_currency\_dictionary.json file located in the same directory as the main.py script.
- A working internet connection to allow the application to contact the AI service for exchange rates.

## 4. Getting Started

To run the application, open a terminal or command prompt, navigate to the directory containing the project files, and run the following command:

```
Bash  
python main.py
```

## 5. How to Use the App (Step-by-Step)

The application will guide you through a series of prompts.

**Step 1: Enter Your "From" Currency** The first prompt will ask for the currency you wish to convert FROM. What is the name of the country/currency to convert FROM?

You can enter a full name like China, an alias like uk, or an ISO code like JPY.

**Step 2: Enter Your "To" Currency** The next prompt will ask for the currency you wish to convert TO. What is the name of the country/currency to convert TO?

Similarly, enter the name, alias, or ISO code for your target currency, such as United States or Bitcoin.

**Step 3: Enter the Amount** The application will then ask for the amount of money you want to convert. How much in Chinese Yuan would you like to convert? Please enter (¥):

Enter a numeric value, such as 2500000.

**Step 4: Confirm Your Request** A summary of your request will be displayed. You must confirm that it is correct before the app proceeds. To confirm: you want to convert ¥ 2500000.00 (CNY) to USD. Is that correct? (yes/no):

Type yes and press Enter to continue. If you type no, the process will restart.

**Step 5: View Your Results** The application will contact the AI service and, upon success, display a detailed results screen.

**Step 6: Perform Another Conversion** After the results are displayed, you will be asked if you want to perform another conversion. Would you like to perform another conversion? (yes/no):

Type yes to return to Step 1, or no to exit the application.

## 6. Understanding the Results

The output screen is broken into three sections for clarity:

- **CONVERSION RESULT:** This is the primary result, showing the equivalent value of your original amount in the target currency.

¥ 2,500,000.00 (Chinese Yuan) is equivalent to: ➡ \$ 344,402.14 (U.S. Dollars)

- **EXCHANGE RATES:** This section provides the direct and inverse rates for your currency pair.

The exchange rate is 1 USD = 7.259000 CNY. The inverse rate is 1 CNY = 0.137760 USD.

- **FOR COMPARISON:** This table shows what your original amount is worth in several other major world currencies, giving you a broader financial context.

## 7. Troubleshooting

**Problem:** The application tries 3 times and fails with an error like ⚠ An error occurred... or 🚫 All attempts failed.

**Cause:** This almost always means the application was unable to get a valid response from the external AI service. This is not an error in the application code itself but rather an issue with the internet connection or the AI service (it may be temporarily offline).

**Solution:**

1. Check your internet connection.
2. Wait a few minutes and try running the application again.
3. If the problem persists, the AI service itself may be down for maintenance. Contact the service provider (e.g., your course instructors) for more information.