

# Tshepo's currency converter

## Project plan

### **Objective:**

Build a simple Java-based currency converter that fetches real-time exchange rates using an API and allows users to convert between multiple currencies, the reason I chose to build this project is because I wanted to learn more about how an API works in real life.

### **Scope:**

1. Convert between 10 major currencies for simplicity purposes
  - The currencies that I have chosen are:
  - **USD** (US dollar), **EUR** (Euro), **ZAR** (Rand), **GBP** (Great British pound/pound sterling), **JPY** (Japanese Yen), **AUD** (Australian dollar), **CAD** (Canadian dollar), **CHF** (Swiss franc), **CHN** (Chinese renminbi), **HKD** (Hong Kong dollar).
2. Fetch live exchange rates using a public API.
3. Provide a GUI Interface
4. Handle errors and invalid inputs gracefully

### **Technology stack:**

#### **Programming language:**

- Java

#### **API for Exchange Rates:**

- ExchangeRate-API/Open Exchange Rates

#### **Libraries:**

- HttpURLConnection(built-in) or OkHttp for API calls
- Org.json or Gson for JSON parsing

#### **Version control:**

- Git (hosted on GitHub)

### **Features and functional requirements:**

#### **Core features:**

- Fetch exchange rates from an API.
- Convert an amount from one currency to another
- Display conversion results in a readable format.

**Additional features:**

- Cache exchange rates to reduce API calls
- Implement a GUI using Java Swing
- Allow the user to select currencies from a dropdown menu

**My post project Enhancements**

- Expand the list of supported currencies
- Add a feature to track historical exchange rates
- Implement a more advanced UI with JavaFX
- Deploy a standalone application or a web-based tool