

# Socket Programming - Currency Converter Application

## Functionality

- **Currency List**

- The app provides a list of available currencies for peso conversion to choose from. The options are as follows, Philippine Peso to:

- US Dollar
    - Japan Yen
    - British Pound
    - UAE Dirham

- **Currency Conversion**

- The primary function of the app is to convert Philippine currency to another. The user inputs the peso amount they want to convert and selects the currency they want to convert to. The app will then display the amount in the original currency with the converted amount in the selected currency.

- **Error Handling**

- The app will display an error message if the user provides invalid inputs such as the following:

- Invalid Philippine Peso (PHP) Amounts:
      - Users receive an error message regarding invalid inputs, such as zero, negative values, and non-digit characters.
    - Incorrect Currency Selection:
      - The app promptly alerts users to any attempts to select conversion currencies using characters other than 'a', 'b', 'c', or 'd'.

## How to Run the Server and Client

### Step 1: Prepare and Compile Java files.

- a. Download and extract the zip folder.
- b. Transfer the folder containing the Java files to your desired directory. (Optional)
- c. Open Command Prompt and run as Administrator.
- d. Change the current directory to your Java file directory.
- e. Run **javac \*.java** to compile your Java files.

### Step 2: Run the Server

- a. In the same Command Prompt, type the command **java Server** to run the server.
- b. Do not close the server window.

### Step 3: Run the Client

- a. Open a new Command Prompt, run as Administrator.
- b. Enter command **java Client** to run the client.

## Assumptions

- **User Input**
  - The system assumes that the user will input a valid numerical value for the amount they wish to convert.
- **Currency Availability**
  - The system assumes that the currencies listed are the only ones available for conversion.
- **Exchange Rates**
  - The system assumes that it has access to up-to-date exchange rates for the listed currencies.

## Limitations

- **Manual Restart**
  - When running the application, the process automatically stops after a single conversion. Therefore, users have to manually rerun the command for both the server and client in the command prompt, which can be time-consuming.
- **Currency Data Inaccuracy**
  - The currency values used in the currency converter may not always reflect real-time exchange rates. As a result, the accuracy of conversions may decrease over time due to fluctuations in the currency market.
- **Limited Currency Options**
  - The system currently only supports conversion from Philippine Peso to a few selected currencies (US Dollars, Japanese Yen, British Pound, UAE Dirham). Thus, it operates on a one-way conversion approach.