Currency Converter Project Report

-Utkarsh Jaiswal

utkarshj19@gmail.com

JAVA project
sem-4

1. Introduction:

The Currency Converter project is a Java-based application designed to facilitate the conversion of currency amounts between Indian Rupee (INR), US Dollar (USD), British Pound (GBP), and Euro (EUR). The tool aims to provide users with a reliable and easy-to-use interface for performing quick currency conversions.

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2. Objectives:

- To develop a user-friendly tool for converting currency amounts between INR, USD, GBP, and EUR.
- To provide accurate conversion results using real-time exchange rates.
- To implement a flexible system that allows users to convert specific currency pairs or view all conversions at once.

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3. Features:

- **Multiple Currency Support:** The application supports conversion between INR, USD, GBP, and EUR.
- **User-Friendly Interface:** Simple text-based interface for entering amounts and selecting currencies.

- **Flexible Functionality:** Allows users to convert between specific currencies or print all converted amounts.
- **Accurate Conversion Rates:** Utilizes current exchange rates for accurate conversions.

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4. Implementation:

- **Programming Language:** The project is implemented in Java, leveraging its platform independence and robust features.
- **Core Logic:** The currency conversion logic is implemented using switch-case statements to handle different currency pairs.
- **Exchange Rates:** Hardcoded exchange rates are used for simplicity, but can be updated to integrate with real-time data from external APIs.*

6. Usage Instructions:

- **Step-by-Step Guide:**
  - Launch the application.
  - Enter the amount to be converted.
  - Specify the currency you currently have (INR, USD, GBP, EUR).
  - Specify the target currency (INR, USD, GBP, EUR, or ALL to convert to all supported currencies).
  - View the converted amount(s) displayed by the system.

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7. Future Enhancements:

- **API Integration:** Plan to integrate with external APIs for fetching real-time exchange rates to enhance accuracy.
- **Graphical User Interface (GUI):** Develop a GUI for better user interaction and experience.
- **Additional Currency Support:** Extend the application to support more currencies based on user needs and demands.

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8. Conclusion:

The Currency Converter project provides a practical and efficient solution for currency conversion needs. Its simplicity, accuracy, and potential for future

enhancements make it a valuable tool for anyone needing to perform quick and reliable currency conversions.

```java
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Get user input
        System.out.print("Enter the amount: ");
        double amount = scanner.nextDouble();
        System.out.print("Enter the currency you have (INR, USD, GBP, EUR): ");
        String fromCurrency = scanner.next().toUpperCase();
        System.out.print("Enter the currency you want to convert to (INR, USD, GBP, EUR, or ALL): ");
        String toCurrency = scanner.next().toUpperCase();

        // Convert amount
        if (toCurrency.equals("ALL")) {
            printAllConversions(amount, fromCurrency);
        } else {
            double convertedAmount = convertCurrency(amount, fromCurrency, toCurrency);
            // Display result
            System.out.println(amount + " " + fromCurrency + " = " + convertedAmount + " " + toCurrency);
        }

        scanner.close();
    }

```

```java
    private static double convertCurrency(double amount, String fromCurrency, String toCurrency) {
        double convertedAmount = 0.0;

        switch (fromCurrency) {
            case "INR":
                convertedAmount = convertFromINR(amount, toCurrency);
                break;
            case "USD":
                convertedAmount = convertFromUSD(amount, toCurrency);
                break;
            case "GBP":
                convertedAmount = convertFromGBP(amount, toCurrency);
                break;
            case "EUR":
                convertedAmount = convertFromEUR(amount, toCurrency);
                break;
            default:
                System.out.println("Invalid currency!");
        }

        return convertedAmount;
    }

```

```
    private static void printAllConversions(double amount, String fromCurrency) {
        System.out.println(amount + " " + fromCurrency + " in other currencies:");
        if (!fromCurrency.equals("USD")) {
            System.out.println("USD: " + convertCurrency(amount, fromCurrency, "USD"));
        }
        if (!fromCurrency.equals("GBP")) {
            System.out.println("GBP: " + convertCurrency(amount, fromCurrency, "GBP"));
        }
        if (!fromCurrency.equals("EUR")) {
            System.out.println("EUR: " + convertCurrency(amount, fromCurrency, "EUR"));
        }
        if (!fromCurrency.equals("INR")) {
            System.out.println("INR: " + convertCurrency(amount, fromCurrency, "INR"));
        }
    }

```

```
    private static double convertFromINR(double amount, String toCurrency) {
        switch (toCurrency) {
            case "INR":
                return amount;
            case "USD":
                return amount * 0.012024; // 1 INR = 0.012024 USD
            case "GBP":
                return amount * 0.009412; // 1 INR = 0.009412 GBP
            case "EUR":
                return amount * 0.011053; // 1 INR = 0.011053 EUR
            default:
                System.out.println("Invalid currency!");
                return 0.0;
        }
    }

    // Convert from USD
    private static double convertFromUSD(double amount, String toCurrency) {
        switch (toCurrency) {
            case "INR":
                return amount / 0.012024; // 1 USD = 83.164962 INR
            case "GBP":
                return amount * 0.782474; // 1 USD = 0.782474 GBP
            case "EUR":
                return amount * 0.919406; // 1 USD = 0.919406 EUR
            default:
                System.out.println("Invalid currency!");
                return 0.0;
        }
    }
```

```
    // Convert from GBP
    private static double convertFromGBP(double amount, String toCurrency) {
        switch (toCurrency) {
            case "INR":
                return amount / 0.009412; // 1 GBP = 106.245779 INR
            case "USD":
                return amount / 0.782474; // 1 GBP = 1.27870 USD
            case "EUR":
                return amount * 1.17474; // 1 GBP = 1.17474 EUR
            default:
                System.out.println("Invalid currency!");
                return 0.0;
        }
    }

    // Convert from EUR
    private static double convertFromEUR(double amount, String toCurrency) {
        switch (toCurrency) {
            case "INR":
                return amount / 0.011053; // 1 EUR = 90.471668 INR
            case "USD":
                return amount / 0.919406; // 1 EUR = 1.08756 USD
            case "GBP":
                return amount / 1.17474; // 1 EUR = 0.85124 GBP
            default:
                System.out.println("Invalid currency!");
                return 0.0;
        }
    }
}

```

OUTPUT-

```
Enter the amount: 10
Enter the currency you have (INR, USD, GBP, EUR): inr
Enter the currency you want to convert to (INR, USD, GBP, EUR, or ALL): all
10.0 INR in other currencies:
USD: 0.12024
GBP: 0.09412000000000001
EUR: 0.11053


...Program finished with exit code 0
Press ENTER to exit console.
```

This code includes the current exchange rates as specified:

- 1 INR = 0.012024 USD
- 1 INR = 0.009412 GBP
- 1 INR = 0.011053 EUR
- 1 USD = 83.164962 INR
- 1 GBP = 106.245779 INR
- 1 EUR = 90.471668 INR
- 1 USD = 0.782474 GBP
- 1 USD = 0.919406 EUR
- 1 GBP = 1.27870 USD
- 1 GBP = 1.17474 EUR
- 1 EUR = 1.08756 USD
- 1 EUR = 0.85124 GBP