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TASK 4

currency converter

## 📄 **Java Program Report: Currency Converter**

### 🔷 ****1. Title****

**Currency Converter Using Java**

### 🔷 ****2. Introduction****

This Java program is a **simple currency converter** that allows users to convert amounts between the following currencies:

* **USD (US Dollar) ↔ Indian Rupee**
* **Euro ↔ Indian Rupee**

It operates via a command-line interface where the user selects a conversion type, enters an amount, and receives the converted result based on predefined exchange rates.

### 🔷 ****3. Objective****

The objective of this program is:

* To build a console-based currency converter.
* To demonstrate the use of **conditional statements**, **methods**, and **user input** in Java.
* To understand real-world use cases of Java programs such as financial applications.

### 🔷 ****4. Tools Used****

* **Programming Language**: Java
* **JDK Version**: 8 or above
* **Development Environment**: Any IDE (IntelliJ, Eclipse, BlueJ) or command-line compiler

### 🔷 ****5. Exchange Rates Used****

The program uses **static conversion rates** as of **30/07/2025**:

| **Currency Pair** | **Conversion Rate** |
| --- | --- |
| USD to INR | 1 USD = ₹87.70 |
| INR to USD | ₹1 = 0.0114 USD |
| Euro to INR | 1 Euro = ₹100.59 |
| INR to Euro | ₹1 = 0.0099 Euro |

### 🔷 ****6. Program Features****

* User-friendly menu to choose conversion type.
* Input validation using conditional statements.
* Conversion logic using **separate methods** for reusability.
* Displays the converted amount clearly with currency labels.

### 🔷 ****7. Program Flow / Logic Description****

1. Display a welcome message and a list of four currency conversion options.
2. Ask the user to choose an option (1 to 4).
3. Based on the choice:
   * Accept amount input from the user.
   * Perform conversion using the corresponding method.
   * Print the converted result.
4. If an invalid choice is made, print an error message

🔷 **8. Java Code**

import java.util.Scanner;

public class currency\_converter{

    public static void main(String[] *args*) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("Welcome to Currency Converter!");

        System.out.println("1. USD to Rupee");

        System.out.println("2. Rupee to USD");

        System.out.println("3. Euro to Rupee");

        System.out.println("4. Rupee to Euro");

        System.out.println("Enter ypur choice (1 or 2 or 3 or 4): ");

        int choice = scanner.nextInt();

        if (choice == 1) {

            System.out.println("Enter the amount in USD: ");

            double USD = scanner.nextDouble();

            double Rupee = usdToRupee(USD);

            System.out.println("Converted amount in Rupee: " + Rupee);

        } else if (choice == 2) {

            System.out.println("Enter the amount in Rupee: ");

            double Rupee = scanner.nextDouble();

            double USD = RupeeToUsd(Rupee);

            System.out.println("Converted amount in USD: " + USD);

        } else if (choice == 3) {

            System.out.println("Enter the amount in Euro: ");

            double EURO = scanner.nextDouble();

            double Rupee = euroToRupee(EURO);

            System.out.println("Converted amount in USD: " + Rupee);

        } else if (choice == 4 ) {

            System.out.println("Enter the amount in Rupee: ");

            double Rupee = scanner.nextDouble();

            double EURO = RupeeToEuro(Rupee);

            System.out.println("Converted amount in USD: " +EURO);

        }

        else {

            System.out.println("Invalid choice. Please select 1 or 2 or 3 or 4.");

        }

        scanner.close();

    }

    public static double usdToRupee(double *USD*) {

        return *USD* \*87.70;  *// date 30/07/2025*

    }

    public static double RupeeToUsd(double *Rupee*){

        return *Rupee* \*0.0114;

    }

    public static double euroToRupee(double *EURO*) {

        return *EURO* \*100.59;

    }

    public static double RupeeToEuro(double *Rupee*) {

        return *Rupee* \*0.0099;

    }

}

🔷 **9. Sample Output**

PS C:\Users\Asus Tuf\OneDrive\Desktop\codsoft\TASK 4> & 'C:\Program Files\Java\jdk-24\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Asus Tuf\AppData\Roaming\Code\User\workspaceStorage\15a02ffa98f2d1a6624c9c5125dfbde1\redhat.java\jdt\_ws\TASK 4\_5344289\bin' 'currency\_converter'

Welcome to Currency Converter!

1. USD to Rupee

2. Rupee to USD

3. Euro to Rupee

4. Rupee to Euro

Enter ypur choice (1 or 2 or 3 or 4):

2

Enter the amount in Rupee:

500

Converted amount in USD: 5.7

**🔷 10. Key Concepts Used**

* **Methods**: Used to modularize conversion logic.
* **Scanner Class**: Used for input.
* **Conditional Statements**: Used for menu-based option selection.
* **Arithmetic Operations**: Used for currency calculations.

**🔷 11. Benefits of the Program**

* Encourages basic financial calculations using Java.
* Demonstrates good programming practices like method reuse.
* Provides a foundation for creating more advanced financial tools.

**🔷 12. Suggestions for Improvement**

* Allow the user to perform multiple conversions in one run using a loop.
* Add support for more currencies (e.g., Pound, Yen).
* Integrate with live exchange rate APIs for real-time values.
* Format the output to 2 decimal places using String.format().

**🔷 13. Conclusion**

This project demonstrates a **practical application of Java** in building financial utilities. The program is clean, interactive, and performs well-defined tasks using modular and understandable logic. With slight enhancements, it can be extended into a robust real-world currency converter.