



APPENDIX

(Coding)

```
import java.util.HashMa;
import java.util.Map;
import java.util.Scanner;

public class
CurrencyConverter {

    // Predefined exchange rates (Example rates)
    private static Map<String, Map<String, Double>> exchangeRates = new HashMap<>();

    static {
        Map<String, Double> usdRates = new HashMap<>();
        usdRates.put("EUR", 0.93);
        usdRates.put("GBP", 0.82);
        usdRates.put("INR", 83.0);
        usdRates.put("JPY", 150.0);
        exchangeRates.put("USD", usdRates);

        Map<String, Double> eurRates = new
        HashMap<>();eurRates.put("USD", 1.08);
        eurRates.put("GBP", 0.88);
        eurRates.put("INR", 89.2);
        eurRates.put("JPY", 161.2);
        exchangeRates.put("EUR", eurRates);
        Map<String, Double> gbpRates = new
        HashMap<>();gbpRates.put("USD", 1.22);
        gbpRates.put("EUR", 1.14);
        gbpRates.put("INR", 101.5);
```



```
    gbpRates.put("JPY", 183.4);
    exchangeRates.put("GBP", gbpRates);

    Map<String, Double> inrRates = new
    HashMap<>();inrRates.put("USD", 0.012);
    inrRates.put("EUR", 0.011);
    inrRates.put("GBP", 0.0098);
    inrRates.put("JPY", 1.81);
    exchangeRates.put("INR", inrRates);

    Map<String, Double> jpyRates = new
    HashMap<>();jpyRates.put("USD", 0.0067);
    jpyRates.put("EUR", 0.0062);
    jpyRates.put("GBP", 0.0055);
    jpyRates.put("INR", 0.55);
    exchangeRates.put("JPY", jpyRates);
}

public static double convertCurrency(String source, String target, double amount) {
    if (exchangeRates.containsKey(source) &&
        exchangeRates.get(source).containsKey(target)) { double rate =
        exchangeRates.get(source).get(target);
        return amount * rate;
    }
    return -1; // Return -1 if conversion rate is not found
}

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

    System.out.println("Welcome to the Currency Converter!");
    System.out.println("Available currencies: USD, EUR, GBP, INR, JPY");
}
```



```
// Input source currency
System.out.print("Enter the source currency (e.g., USD):
");String sourceCurrency =
scanner.nextLine().toUpperCase();

if (!exchangeRates.containsKey(sourceCurrency))
    {System.out.println("Invalid source
    currency!"); return;
}

System.out.print("Enter the target currency (e.g., EUR): ");
String targetCurrency = scanner.nextLine().toUpperCase();

if (!exchangeRates.containsKey(targetCurrency))
    {System.out.println("Invalid target currency!");
    return;
}

System.out.print("Enter the amount to
convert: ");double amount;
try {
    amount =
    Double.parseDouble(scanner.nextLine());if
    (amount < 0) {
        throw new NumberFormatException();
    }
} catch (NumberFormatException e) {
    System.out.println("Invalid amount! Please enter a valid positive
    number.");return;
}

double convertedAmount = convertCurrency(sourceCurrency, targetCurrency,
amount);if (convertedAmount == -1) {
```



```
System.out.printf("Converted amount: %.2f %s%n", convertedAmount,  
targetCurrency);  
  
}  
  
scanner.close();  
}  
}
```



CHAPTER 4

RESULTS AND DISCUSSIO

Example Output 1:

```
Welcome to the Currency Converter!  
Available currencies: [USD, EUR, GBP, INR,  
JPY]  
Enter the source currency (e.g., USD): USD  
Enter the target currency (e.g., EUR): EUR  
Enter the amount to convert: 100  
Converted amount: 93.00 EUR
```

Example Output 2 :

```
Welcome to the Currency Converter!  
Available currencies: [USD, EUR, GBP, INR,  
JPY]  
Enter the source currency (e.g., USD): ABC  
Invalid source currency!
```

Example Output 3:

```
Welcome to the Currency Converter!  
Available currencies: [USD, EUR, GBP, INR,  
JPY]  
Enter the source currency (e.g., USD): USD  
Enter the target currency (e.g., EUR): XYZ  
Invalid target currency!
```



Example Output 4:

```
Welcome to the Currency Converter!  
Available currencies: [USD, EUR, GBP, INR,  
JPY]  
Enter the source currency (e.g., USD): USD  
Enter the target currency (e.g., EUR): EUR  
Enter the amount to convert: -50  
Amount must be greater than zero!
```

Example Output 5:

```
Welcome to the Currency Converter!  
Available currencies: [USD, EUR, GBP, INR,  
JPY]  
Enter the source currency (e.g., USD): GBP  
Enter the target currency (e.g., INR): INR  
Enter the amount to convert: 200  
Converted amount: 21435.90 INR
```