```
import java.io.FileOutputStream;
import java.io.PrintStream;
import java.util.Scanner;
import currency.CurrencyConverter;
import distance.DistanceConverter;
import time.TimeConverter;

public class Convertor {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int inputs;
        int option;
        double result;

        // Setup for log file
        try (FileOutputStream fileOutputStream = new FileOutputStream("log.txt", true);
             PrintStream logWriter = new PrintStream(fileOutputStream)) {

            while (true) {
                System.out.println("Enter 1 for Currency Conversion");
                System.out.println("Enter 2 for Distance Conversion");
                System.out.println("Enter 3 for Time Conversion");
                System.out.println("Enter 4 to Exit");
                System.out.print("Enter Your Option: ");

                inputs = sc.nextInt();  // User input for conversion choice
                logWriter.println("User chose option: " + inputs);  // Log the option
selected
                System.out.println("User chose option: " + inputs);  // Immediate console
output

                switch (inputs) {
                    case 1:
                        System.out.println("Currency Conversion Options:");
                        System.out.println("1. Dollar to INR");
                        System.out.println("2. INR to Dollar");
                        System.out.println("3. Euro to INR");
                        System.out.println("4. INR to Euro");
                        System.out.println("5. Yen to INR");
                        System.out.println("6. INR to Yen");

                        System.out.print("Enter your option: ");
                        option = sc.nextInt();
                        logWriter.println("Currency conversion option selected: " +
option);

                        System.out.print("Enter the amount: ");
                        double amount = sc.nextDouble();
                        logWriter.println("Amount entered for conversion: " + amount);

                        result = CurrencyConverter.convert(option, amount);
                        if (option == 1) {
                            System.out.println(amount + " Dollar = " + result + " INR");
                            logWriter.println(amount + " Dollar = " + result + " INR");
                        } else if (option == 2) {
                            System.out.println(amount + " INR = " + result + " Dollars");
                            logWriter.println(amount + " INR = " + result + " Dollars");
                        } else if (option == 3) {
                            System.out.println(amount + " Euro = " + result + " INR");
                            logWriter.println(amount + " Euro = " + result + " INR");
                        } else if (option == 4) {
                            System.out.println(amount + " INR = " + result + " Euros");
                            logWriter.println(amount + " INR = " + result + " Euros");
                        } else if (option == 5) {
                            System.out.println(amount + " Yen = " + result + " INR");
                            logWriter.println(amount + " Yen = " + result + " INR");
```

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                        } else if (option == 6) {
                            System.out.println(amount + " INR = " + result + " Yen");
                            logWriter.println(amount + " INR = " + result + " Yen");
                        } else {
                            System.out.println("INVALID CHOICE");
                            logWriter.println("INVALID CHOICE for currency conversion.");
                        }
                        break;

                    case 2:
                        System.out.println("Distance Conversion Options:");
                        System.out.println("1. Meter to Kilometer");
                        System.out.println("2. Kilometer to Meter");
                        System.out.println("3. Miles to Kilometer");
                        System.out.println("4. Kilometer to Miles");

                        System.out.print("Enter your option: ");
                        option = sc.nextInt();
                        logWriter.println("Distance conversion option selected: " +
option);

                        System.out.print("Enter the Distance: ");
                        double distance_value = sc.nextDouble();
                        logWriter.println("Distance entered for conversion: " +
distance_value);

                        result = DistanceConverter.convert(option, distance_value);

                        if (option == 1) {
                            System.out.println(distance_value + " Meters = " + result + "
Kilometer");
                            logWriter.println(distance_value + " Meters = " + result + "
Kilometer");
                        } else if (option == 2) {
                            System.out.println(distance_value + " Kilometer = " + result +
" Meter");
                            logWriter.println(distance_value + " Kilometer = " + result +
" Meter");
                        } else if (option == 3) {
                            System.out.println(distance_value + " Miles = " + result + "
Kilometer");
                            logWriter.println(distance_value + " Miles = " + result + "
Kilometer");
                        } else if (option == 4) {
                            System.out.println(distance_value + " Kilometer = " + result +
" Miles");
                            logWriter.println(distance_value + " Kilometer = " + result +
" Miles");
                        } else {
                            System.out.println("INVALID CHOICE");
                            logWriter.println("INVALID CHOICE for distance conversion.");
                        }
                        break;

                    case 3:
                        System.out.println("Time Conversion Options:");
                        System.out.println("1. Hours to Minutes");
                        System.out.println("2. Minutes to Hours");
                        System.out.println("3. Hours to Seconds");
                        System.out.println("4. Seconds to Hours");

                        System.out.print("Enter your option: ");
                        option = sc.nextInt();
                        logWriter.println("Time conversion option selected: " + option);

                        System.out.print("Enter the Time: ");
```

```
                        double time = sc.nextDouble();
                        logWriter.println("Time entered for conversion: " + time);

                        result = TimeConverter.convert(option, time);

                        if (option == 1) {
                            System.out.println(time + " Hours = " + result + " Minutes");
                            logWriter.println(time + " Hours = " + result + " Minutes");
                        } else if (option == 2) {
                            System.out.println(time + " Minutes = " + result + " Hours");
                            logWriter.println(time + " Minutes = " + result + " Hours");
                        } else if (option == 3) {
                            System.out.println(time + " Hours = " + result + " Seconds");
                            logWriter.println(time + " Hours = " + result + " Seconds");
                        } else if (option == 4) {
                            System.out.println(time + " Seconds = " + result + " Hours");
                            logWriter.println(time + " Seconds = " + result + " Hours");
                        } else {
                            System.out.println("INVALID CHOICE");
                            logWriter.println("INVALID CHOICE for time conversion.");
                        }
                        break;

                    case 4:
                        System.out.println("Exiting...");
                        logWriter.println("Exiting the program.");
                        sc.close();
                        return;

                    default:
                        System.out.println("Invalid option.");
                        logWriter.println("Invalid option selected.");
                }
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

```java
package currency;

public class CurrencyConverter {
    public static double convert(int option,double val){
        switch(option){
            case 1:
                return val*86.5;
            case 2:
                return val/86.5;
            case 3:
                return  val *100.17;
            case 4:
                return val/100.17;
            case 5:
                return val * 0.59;
            case 6:
                return val/0.59;
            default:
                return -1;
        }
    }


}
```

```java
package distance;

public class DistanceConverter {
    public static double convert(int option,double val){
        switch(option){
            case 1:
                return val/1000;
            case 2:
                return val*1000;
            case 3:
                return  val *1.609;
            case 4:
                return val/1.609;

            default:
                return -1;
        }
    }


}
```

```java
package time;

public class TimeConverter {
    public static double convert(int option,double val){
        switch(option){
            case 1:
                return val*60;
            case 2:
                return val/60;
            case 3:
                return  val *3600;
            case 4:
                return val/3600;

            default:
                return -1;
        }
    }
}
```

```
User chose option: 1
Currency conversion option selected: 1
Amount entered for conversion: 1.0
1.0 Dollar = 86.5 INR
User chose option: 1
Currency conversion option selected: 2
Amount entered for conversion: 100.0
100.0 INR = 1.1560693641618498 Dollars
User chose option: 1
Currency conversion option selected: 3
Amount entered for conversion: 10.0
10.0 Euro = 1001.7 INR
User chose option: 1
Currency conversion option selected: 4
Amount entered for conversion: 200.0
200.0 INR = 1.9966057701906759 Euros
User chose option: 1
Currency conversion option selected: 5
Amount entered for conversion: 100.0
100.0 Yen = 59.0 INR
User chose option: 1
Currency conversion option selected: 6
Amount entered for conversion: 59.0
59.0 INR = 100.0 Yen
User chose option: 2
Distance conversion option selected: 1
Distance entered for conversion: 1000.0
1000.0 Meters = 1.0 Kilometer
User chose option: 2
Distance conversion option selected: 2
Distance entered for conversion: 1.0
1.0 Kilometer = 1000.0 Meter
User chose option: 2
Distance conversion option selected: 3
Distance entered for conversion: 1.5
1.5 Miles = 2.4135 Kilometer
User chose option: 2
Distance conversion option selected: 4
Distance entered for conversion: 100.0
100.0 Kilometer = 62.15040397762586 Miles
User chose option: 3
Time conversion option selected: 1
Time entered for conversion: 1.0
1.0 Hours = 60.0 Minutes
User chose option: 3
Time conversion option selected: 2
Time entered for conversion: 60.0
60.0 Minutes = 1.0 Hours
User chose option: 3
Time conversion option selected: 3
Time entered for conversion: 1.0
1.0 Hours = 3600.0 Seconds
User chose option: 3
Time conversion option selected: 4
Time entered for conversion: 3600.0
3600.0 Seconds = 1.0 Hours
User chose option: 4
Exiting the program.
```