Electricity Bill Calculation in Java

Problem Statement:

Write a Java program to calculate the electricity bill based on the type of connection (domestic or commercial) and the number of units consumed. The tariff rates vary as per the units and connection type.

Algorithm:

1. Accept consumer number, name, previous reading, current reading, and connection type.
2. Calculate units consumed as: currentReading - previousReading.
3. Use slab-based rate calculations based on the type of connection:
   a. Domestic:
      - 0-100 units: Rs.1/unit
      - 101-200 units: Rs.2.50/unit
      - 201-500 units: Rs.4/unit
      - Above 500 units: Rs.6/unit
   b. Commercial:
      - 0-100 units: Rs.2/unit
      - 101-200 units: Rs.4.50/unit
      - 201-500 units: Rs.6/unit
      - Above 500 units: Rs.7/unit
4. Display the bill including all entered and calculated details.

Java Code:

```
import java.util.Scanner;

class EBBill {
    int consumerNumber;
    String consumerName;
    int prevReading;
    int currReading;
```

```
String connectionType;
double billAmount;

void inputDetails() {
    Scanner sc = new Scanner(System.in);

    System.out.print("Enter consumer number: ");
    consumerNumber = sc.nextInt();

    System.out.print("Enter consumer name: ");
    consumerName = sc.next();

    System.out.print("Enter previous month reading: ");
    prevReading = sc.nextInt();

    System.out.print("Enter current month reading: ");
    currReading = sc.nextInt();

    System.out.print("Enter type of EB connection (domestic/commercial): ");
    connectionType = sc.next().toLowerCase();
}

void calculateBill() {
    int units = currReading - prevReading;

    if (connectionType.equals("domestic")) {
        if (units <= 100)
            billAmount = units * 1;
        else if (units <= 200)
            billAmount = 100 * 1 + (units - 100) * 2.50;
        else if (units <= 500)
            billAmount = 100 * 1 + 100 * 2.50 + (units - 200) * 4;
        else
            billAmount = 100 * 1 + 100 * 2.50 + 300 * 4 + (units - 500) * 6;

    } else if (connectionType.equals("commercial")) {
        if (units <= 100)
            billAmount = units * 2;
        else if (units <= 200)
            billAmount = 100 * 2 + (units - 100) * 4.50;
        else if (units <= 500)
            billAmount = 100 * 2 + 100 * 4.50 + (units - 200) * 6;
        else
            billAmount = 100 * 2 + 100 * 4.50 + 300 * 6 + (units - 500) * 7;
    } else {
        System.out.println("Invalid connection type!");
    }
}

void displayBill() {
    System.out.println("\n--- Electricity Bill ---");
    System.out.println("Consumer number : " + consumerNumber);
    System.out.println("Consumer name : " + consumerName);
    System.out.println("Type of connection : " + connectionType);
```

```
        System.out.println("Units consumed : " + (currReading - prevReading));
        System.out.printf("Total bill amount : Rs. %.2f\n", billAmount);
    }
}

class Main {
    public static void main(String[] args) {
        EBBill bill = new EBBill();
        bill.inputDetails();
        bill.calculateBill();
        bill.displayBill();
    }
}
```