Exercise 1

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Aim:

The aim of the program is to develop a Java application that calculates and generates electricity bills for consumers based on their usage and type of connection (domestic or commercial) using specified tariff rates.

Algorithm:

```
If totalReading < 0:
  Return amount


If connectionType is "domestic":
  If totalReading > 500:
    amount += (totalReading - 500) * 6
    totalReading = 500
  If totalReading > 200:
    amount += (totalReading - 200) * 4
    totalReading = 200
  If totalReading > 100:
    amount += (totalReading - 100) * 2.5
    totalReading = 100
  If totalReading > 0:
    amount += totalReading * 1


Else If connectionType is "commercial":
  If totalReading <= 100:
    Return totalReading * 2
  If totalReading <= 200:
    Return (100 * 2) + (totalReading - 100) * 4.5
```

```
    If totalReading <= 500:
      Return (100 * 2) + (100 * 4.5) + (totalReading - 200) * 6
    Return (100 * 2) + (100 * 4.5) + (300 * 6) + (totalReading - 500) * 7

  Return amount
```

Code:

```
import java.util.Scanner;

class eb {

   static int consumerNo, prevMonthReading, currentMonthReading;
   static String consumerName, connectionType;

   static double calculateTotalAmount(){

      connectionType = connectionType.trim();

      int totalReading = currentMonthReading - prevMonthReading;
      double amount = 0;

      if(totalReading < 0){

         return amount;
      }

      if(connectionType.equalsIgnoreCase("domestic")){

         if(totalReading > 500){
```

```
        amount += ((500 - totalReading) * -1) * 6;
        totalReading = 500;
    }

    if(totalReading > 200){

        amount += ((200 - totalReading) * -1) * 4;
        totalReading = 200;
    }

    if(totalReading > 100){

        amount += ((100 - totalReading) * -1) * 2.5;
        totalReading = 100;
    }

    if(totalReading > 0)
        amount += totalReading;
}

else if(connectionType.equalsIgnoreCase("commercial")){

    if(totalReading <= 100)
        return totalReading * 2;

    else if(totalReading <= 200)
        return (100 * 2) + (totalReading - 100) * 4.5;

    else if(totalReading <= 500)
        return (100 * 2) + (100 * 4.5) + (totalReading - 200) * 6;
```

```
        else
            return (100 * 2) + (100 * 4.5) + (300 * 6) + (totalReading - 500) * 7;
    }

    return amount;
}

public static void main(String[] args) {

    Scanner scanner = new Scanner(System.in);

    System.out.print("Enter Consumer No: ");
    consumerNo = scanner.nextInt();
    scanner.nextLine();

    System.out.print("Enter Name: ");
    consumerName = scanner.nextLine();

    System.out.print("Enter Previous Month Reading: ");
    prevMonthReading = scanner.nextInt();
    scanner.nextLine();

    System.out.print("Enter Current Month Reading: ");
    currentMonthReading = scanner.nextInt();
    scanner.nextLine();

    System.out.print("Enter Type of EB Connection: ");
    connectionType = scanner.nextLine();
```

```
        scanner.close();

        double result = calculateTotalAmount();
        System.out.println("Total Amount To Be Paid: " + result);
    }
}
```

Output: