Ex. 1 **ELECTRICITY BILL GENERATION**

Date: 19-07-2024

AIM:

To develop a Java application that generates an electricity bill based on the type of EB connection and the amount of electricity consumed in the previous and current cycle.

ALGORITHM:

1. Create a class and define the members of the class.
2. Receive the inputs from the user during the runtime.
3. Initialise the values of the members of the class using the constructor method.
4. Compute the total bill based on the connection type.
5. Display the bill generated.

PROGRAM:

```
// Program to Implement an EB Bill Generator using Java.
import java.util.*;

public class lab1
{
   // Objects in Class
   int consumerNumber;
   String consumerName;
   double previousMonthReading;
   double currentMonthReading;
   boolean type;

   // Constructor Method to Initialise
   public lab1(int consumerNumber, String consumerName, double previousMonthReading, double currentMonthReading, boolean type)
   {
      this.consumerNumber = consumerNumber;
      this.consumerName = consumerName;
      this.previousMonthReading = previousMonthReading;
      this.currentMonthReading = currentMonthReading;
      this.type = type;
   }

   // Method to Calculate Bill when it is Domestic Type
```

```
double domestic(double previousMonthReading, double currentMonthReading)
{
    double ans = 0;

    /* First 100 - 1
    101-200 units - Rs. 2.50 per unit
    201 -500 units - Rs. 4 per unit
    501 units - Rs. 6 per unit */

    double arr[] = {previousMonthReading, currentMonthReading};
    for(int i=0;i<2;i++)
    {
        // First 100
        if(arr[i] > 100)
        {
            ans += 100;
        }
        else
        {
            ans += arr[i];
        }
        // 100 - 200
        if(arr[i] > 200)
        {
```

```
            ans += (2.5*100);
        }
        else
        {
            ans += ((arr[i]-100)*2.5);
        }
        // 200 - 500
        if (arr[i]>500)
        {
            ans += (4*300);
        }
        else
        {
            ans += ((arr[i]-200)*4);
        }

        // > 500
        if (arr[i] > 500)
        {
          ans += ((arr[i]-500) * 6);
        }
    }
    return ans;
}
```

```
    // Method to Calculate Bill when it is Commercial Type
    double commercial(double previousMonthReading, double currentMonthReading)
    {
        double ans = 0;

        /* First 100 - 2
        101-200 units - Rs. 4.50 per unit
        201 -500 units - Rs. 6 per unit
        501 units - Rs. 7 per unit */

        double arr[] = {previousMonthReading, currentMonthReading};
        for(int i=0;i<2;i++)
        {
            // First 100
            if(arr[i] > 100)
            {
                ans += 200;
            }
            else
            {
                ans += (arr[i]*2);
            }
            // 100 - 200
            if(arr[i] > 200)
```

```
        {
            ans += (4.5*100);
        }
        else
        {
            ans += ((arr[i]-100)*4.5);
        }
        // 200 - 500
        if (arr[i]>500)
        {
            ans += (6*300);
        }
        else
        {
            ans += ((arr[i]-200)*6);
        }
        // > 500
        if (arr[i] > 500)
        {
          ans += ((arr[i]-500) * 7);
        }
    }
    return ans;
}
// Main Method
```

```
    public static void main(String args[])
    {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter the Consumer Number : ");
        int num = input.nextInt();
        System.out.println("Enter the Consumer Name : ");
        String name = input.next();
        System.out.println("Enter the Previous Month Reading : ");
        double prev = input.nextDouble();
        System.out.println("Enter the Current Month Reading : ");
        double curr = input.nextDouble();
        System.out.println("Enter True, if the Type of Connection is
Domestic. Else, Enter False: ");
        boolean type = input.nextBoolean();
        lab1 billGenerated = new lab1(num, name, prev, curr, type);
        if (billGenerated.type == true)
        {
            System.out.println(billGenerated.domestic(prev, curr));
        }
        else
        {
            System.out.println(billGenerated.commercial(prev, curr));
        }
    }
}
```

OUTPUT:

```
$ javac lab1.java
$ java lab1
Enter the Consumer Number :
1
Enter the Consumer Name :
Ashwin
Enter the Previous Month Reading :
540
Enter the Current Month Reading :
460
Enter True, if the Type of Connection is Domestic. Else, Enter False:
true
3180.0
$ java lab1
Enter the Consumer Number :
2
Enter the Consumer Name :
Prasad
Enter the Previous Month Reading :
540
Enter the Current Month Reading :
450
Enter True, if the Type of Connection is Domestic. Else, Enter False:
false
4880.0
$
```

RESULT:

Thus, a Java application to calculate and display the electricity bill for a consumer based on the type of EB connection (domestic or commercial) and the number of units consumed is successfully created.