

-----DBHandler.java-----

```
import java.io.FileInputStream;
```

```
import java.io.FileNotFoundException;
```

```
import java.sql.Connection;
```

```
import java.sql.DriverManager;
```

```
import java.sql.SQLException;
```

```
import java.util.Properties;
```

```
public class DBHandler {
```

```
    public Connection establishConnection() throws  
    ClassNotFoundException,SQLException,FileNotFoundException {
```

```
        try {
```

```
            FileInputStream fileInputStream = new  
            FileInputStream("db.properties");
```

```
            Properties properties = new Properties();
```

```
            properties.load(fileInputStream);
```

```
            Class.forName(properties.getProperty("db.classname"));
```

```
            return  
            DriverManager.getConnection(properties.getProperty("db.url"),properties.get  
            Property("db.username "),
```

```
                properties.getProperty("db.password "));
```

```

        } catch (Exception e) {
            e.printStackTrace();
        }

return null;

    }
}

```

-----ElectricityBill.java-----

```

public class ElectricityBill {
    private String consumerNumber;
    private String consumerName;
    private String consumerAddress;
    private int unitsConsumed;
    private double billAmount;
    public String getConsumerNumber() {
        return consumerNumber;
    }
    public void setConsumerNumber(String consumerNumber) {
        this.consumerNumber = consumerNumber;
    }
    public String getConsumerName() {
        return consumerName;
    }
    public void setConsumerName(String consumerName) {
        this.consumerName = consumerName;
    }
    public String getConsumerAddress() {
        return consumerAddress;
    }
    public void setConsumerAddress(String consumerAddress) {
        this.consumerAddress = consumerAddress;
    }
    public int getUnitsConsumed() {
        return unitsConsumed;
    }
    public void setUnitsConsumed(int unitsConsumed) {
        this.unitsConsumed = unitsConsumed;
    }
}

```

```

    }
    public double getBillAmount() {
        return billAmount;
    }
    public void setBillAmount(double billAmount) {
        this.billAmount = billAmount;
    }

    public void calculateBillAmount() {
        billAmount = 0;
        int tempUnits = unitsConsumed;
        if(tempUnits > 100) {
            tempUnits -= 100;
            if (tempUnits > 200) {
                tempUnits = 200;
                billAmount += 200*1.5;
                if (tempUnits > 300) {
                    tempUnits -= 300;
                    billAmount += 300 * 3.5;
                    if (tempUnits > 400) {
                        tempUnits -= 400;
                        billAmount += 400 * 5.5;
                        billAmount += tempUnits *
7.5;

                                } else {

                                    billAmount += tempUnits*5.5;
                                }
                            } else {

                                billAmount += tempUnits*3.5;
                            }
                        } else {

                            billAmount += tempUnits*1.5;
                        }
                    }
                }
            }
        }
    }
}

```

-----ElectricityBoard.java-----

```

import java.io.BufferedReader;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;
import java.util.regex.Matcher;
import java.util.regex.Pattern;

public class ElectricityBoard {

    public boolean validate(String consumerNumber) throws
InvalidConsumerNumberException {
        Pattern pattern = Pattern.compile("^0\\d{9}$");
        Matcher matcher = pattern.matcher(consumerNumber);

        if (matcher.matches()) {

            return true;

        } else {

            throw new InvalidConsumerNumberException("Invalid Consumer
Number");
        }

    }

    public void addBill(List<ElectricityBill> billList) throws
ClassNotFoundException, FileNotFoundException, SQLException {
        Connection connection = new DBHandler().establishConnection();
        try {
            for (ElectricityBill bill : billList) {
                PreparedStatement preparedStatement =
connection.prepareStatement("insert into ElectricityBill values(?,?,?,?,?);");
                preparedStatement.setString(1,
bill.getConsumerNumber());
                preparedStatement.setString(2,
bill.getConsumerName());
                preparedStatement.setString(3,
bill.getConsumerAddress());
                preparedStatement.setInt(4, bill.getUnitsConsumed());

                preparedStatement.setFloat(5, (float)bill.getBillAmount());
            }
        }
    }
}

```

```

        int result = preparedStatement.executeUpdate();
    }
} catch (SQLException e) {
    System.out.println(e.getMessage());
}

}

public List<ElectricityBill> generateBill(String filePath){
    List<ElectricityBill> electricityBills=new ArrayList<>();
    try {
        Scanner sc = new Scanner(new BufferedReader(new
FileReader(filePath)));
        while(sc.hasNext()) {
            String[] inputs =sc.nextLine().split(",");
            try {
                String consumerNumber = inputs[0];
                boolean validConsumerNumber =
validate(consumerNumber);

                if(validConsumerNumber) {
                    String consumerName = inputs[1];
                    String consumerAddress = inputs[2];
                    int unitsConsumed =
Integer.parseInt(inputs[3]);

                    ElectricityBill electricityBill = new
ElectricityBill();

                    electricityBill.setConsumerNumber(consumerNumber);

                    electricityBill.setConsumerName(consumerName);

                    electricityBill.setConsumerAddress(consumerAddress);

                    electricityBill.setUnitsConsumed(unitsConsumed);
                    electricityBill.calculateBillAmount();
                    electricityBills.add(electricityBill);
                }
            } catch (InvalidConsumerNumberException e) {
                System.out.println(e.getMessage());
            }
        }
    } catch (IOException e) {
        System.out.println(e.getMessage());
    }
    return electricityBills;
}
}

```

-----Main.java-----

```
import java.sql.Statement;
import java.io.FileNotFoundException;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.List;

public class Main {

    public static void main(String[] args) throws SQLException,
ClassNotFoundException, FileNotFoundException{
        // TODO Auto-generated method stub
        ElectricityBoard electricityBoard = new ElectricityBoard();
        List<ElectricityBill> billList =
electricityBoard.generateBill("ElectricityBill.txt");
        System.out.println("Bills parsed from file.....");
        for(ElectricityBill bill: billList) {
            System.out.println(String.format("id:%s,
name:%s,address:%s,units:%d,bill:
%f",bill.getConsumerNumber(),bill.getConsumerName()
,
bill.getConsumerAddress(),bill.getUnitsConsumed(),bill.getBillAmount()));
        }
        electricityBoard.addBill(billList);
        Connection connection = new DBHandler().establishConnection();
        Statement statement = connection.createStatement();
        ResultSet resultSet = statement.executeQuery("select * from
ElectricityBill");

        System.out.println("Bill retrived.....");

        while(resultSet.next()) {
            String consumerNumber = resultSet.getString(1);
            String consumerName = resultSet.getString(2);
            String consumerAddress = resultSet.getString(3);
            int unitsConsumed = resultSet.getInt(4);
            float billAmount = resultSet.getFloat(5);

            System.out.println(String.format("id:%s,
name:%s,address:%s,units:%d,bill:
%f",consumerNumber,consumerName,consumerAddress,unitsConsumed,billAmount));
        }
    }
}
```

```
}  
  
}
```

-----InvalidConsumerNumberException.java-----

```
@SuppressWarnings("serial")  
public class InvalidConsumerNumberException extends Exception {  
    public InvalidConsumerNumberException(String message) {  
        // TODO Auto-generated constructor stub  
        super(message);  
    }  
}
```

-----ElectricityBill.txt-----

0191919191,John,Chennai,650

0191919192,Peter,Mumbai,1100

1919191919,Rose,Mumbai,453

0191919193,Tom,Hyderabad,750

01919191945,Raj,Chennai,120

0191919194,Sam,Chennai,250

0191919195,Any,Chennai,34

-----db.properties-----

#ENSURE YOU ARE NOT CHANGING THE NAME OF THE PROPERTY

#YOU CAN CHANGE THE VALUE OF THE PROPERTY

#LOAD THE DETAILS OF DRIVER CLASS, URL, USERNAME AND PASSWORD IN
DB.java using this properties file only.

#Do not hard code the values in DB.java.

db.classname=com.mysql.cj.jdbc.Driver

db.url=jdbc:mysql://localhost:3306/testbase

db.username=

db.passwoed=

-----Script.txt-----

drop database if exists EBBill;

create database EBBill;

use EBBill;

create table ElectricityBill

(

consumer_number varchar(15) primary key,

name varchar(25),

address varchar(30),

units_consumed int(5),

bill_amount float(6,2)

);


```
desc ElectricityBill;
```

```
drop table ElectricityBill;
```

```
COMMIT;
```

```
select * from persons;
```