

ELECTRICITY BILLING SYSTEM

Database Design and ER Diagram

The entities of the Electricity Billing System are:-

1. Customer
2. Login
3. Rent
4. Tax
5. Bill
6. Meter_info

1. Customer

Attrubutes:

1. Name
2. Meter_no
3. City
4. Address
5. State
6. Email
7. Phone

Relationship:

Many customer has many login (many to many Relationship).

One customer has many bills (one to many).

One customer can pay many bills (one to many).

Many customer has many meter_info(many to many).

2. Login

Attributes:

1. Meter_no
2. Username
3. Password
4. User
5. Name

Relationship:

One customer has many logins(one to many Relationship).

3. Tax

Attribute:

1. meter_rent
2. cost_per_unit
3. services_charge
4. service_tax
5. swacch_bharat_cess
6. fixed_tax

Relationship:

Many customer pays one tax.(many to one).

One customer has many one meter_rent(one to one).

4. Bill

Attributes:

1. Meter_no
2. Month
3. Units
4. Totalbill
5. Status

Relationship:

Many customer has many bills(Many to many).

One customer has many bills(One to many).

5. Meter_Info

Attributes:

1. Meter_no
2. Meter_location
3. Meter_type
4. Phase_code
5. Bill_type
6. Days

Relationships:

One customer manages many meters(one to many).

Many customer manages many meters(many to many).

Tables:-

```
mysql> show tables;
+-----+
| Tables_in_select |
+-----+
| bill              |
| customer          |
| login             |
| meter_info        |
| rent              |
| tax               |
+-----+
6 rows in set (0.03 sec)
```

Login Table:

```
mysql> desc login;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| meter_no | varchar(30) | YES | | NULL | |
| username | varchar(30) | YES | | NULL | |
| password | varchar(30) | YES | | NULL | |
| user | varchar(30) | YES | | NULL | |
| question | varchar(40) | YES | | NULL | |
| answer | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

Customer Table:

```
mysql> desc customer;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| name | varchar(30) | YES | | NULL | |
| meter_no | varchar(20) | NO | PRI | NULL | |
| address | varchar(50) | YES | | NULL | |
| city | varchar(20) | YES | | NULL | |
| state | varchar(30) | YES | | NULL | |
| email | varchar(30) | YES | | NULL | |
| phone | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

Meter information Table:

```
mysql> desc meter_info;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| meter_no | varchar(20) | YES | | NULL | |
| meter_location | varchar(20) | YES | | NULL | |
| meter_type | varchar(20) | YES | | NULL | |
| phase_code | varchar(20) | YES | | NULL | |
| bill_type | varchar(20) | YES | | NULL | |
| days | varchar(20) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)
```

Tax Table:

```
mysql> desc tax;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| cost_per_unit  | varchar(20)   | YES  |     | NULL    |       |
| meter_rent     | varchar(20)   | YES  |     | NULL    |       |
| services_charge | varchar(20)   | YES  |     | NULL    |       |
| service_tax    | varchar(20)   | YES  |     | NULL    |       |
| swacch_bharat_cess | varchar(20) | YES  |     | NULL    |       |
| fixed_tax      | varchar(20)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

Bill Table:

```
mysql> desc bill;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| meter_no   | varchar(20)   | YES  |     | NULL    |       |
| month      | varchar(30)   | YES  |     | NULL    |       |
| units      | varchar(20)   | YES  |     | NULL    |       |
| totalbill  | varchar(30)   | YES  |     | NULL    |       |
| status     | varchar(20)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

ER Diagram:

