

**LOVELY PROFESSIONAL UNIVERSITY**

**PHAGWARA, PUNJAB**



**TOPIC-Electricity Bill System Database**

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## Introduction

### 1.1 Details-

With no doubt Computer experts are in demand across all industries. In addition to comprehensive programming knowledge, Computer Science education provides an overview of IT system architectures, working with databases, and possible uses of artificial intelligence. In this way, students qualify for tasks ranging from the construction of distributed systems to software development and systems such as Electricity Billing System Database Project. In this report, we will talk about Electricity Billing Database System Project.

The objective of our project is to develop an Electricity Bill System database which adds a user, creates his/her account. After the creation of the account the user is put into an electricity board depending on the area which the user resides in. At the time of getting connection depending on the user's usage he/she is given a type i.e., commercial/domestic/industrial and accordingly his/her tariff is also decided. Once the consumption starts the invoice is generated and the billing starts.

The system suffices all types of users ranging from small scale to large scale.

### 1.2 Assumptions-

In my project of Electricity Bill System Database, I have taken the following assumption while the developing process-

- **Entities**-Electricity Board, Admin, Customer, Account, Tariff, Bill and Invoice.

Attributes of these entities are-

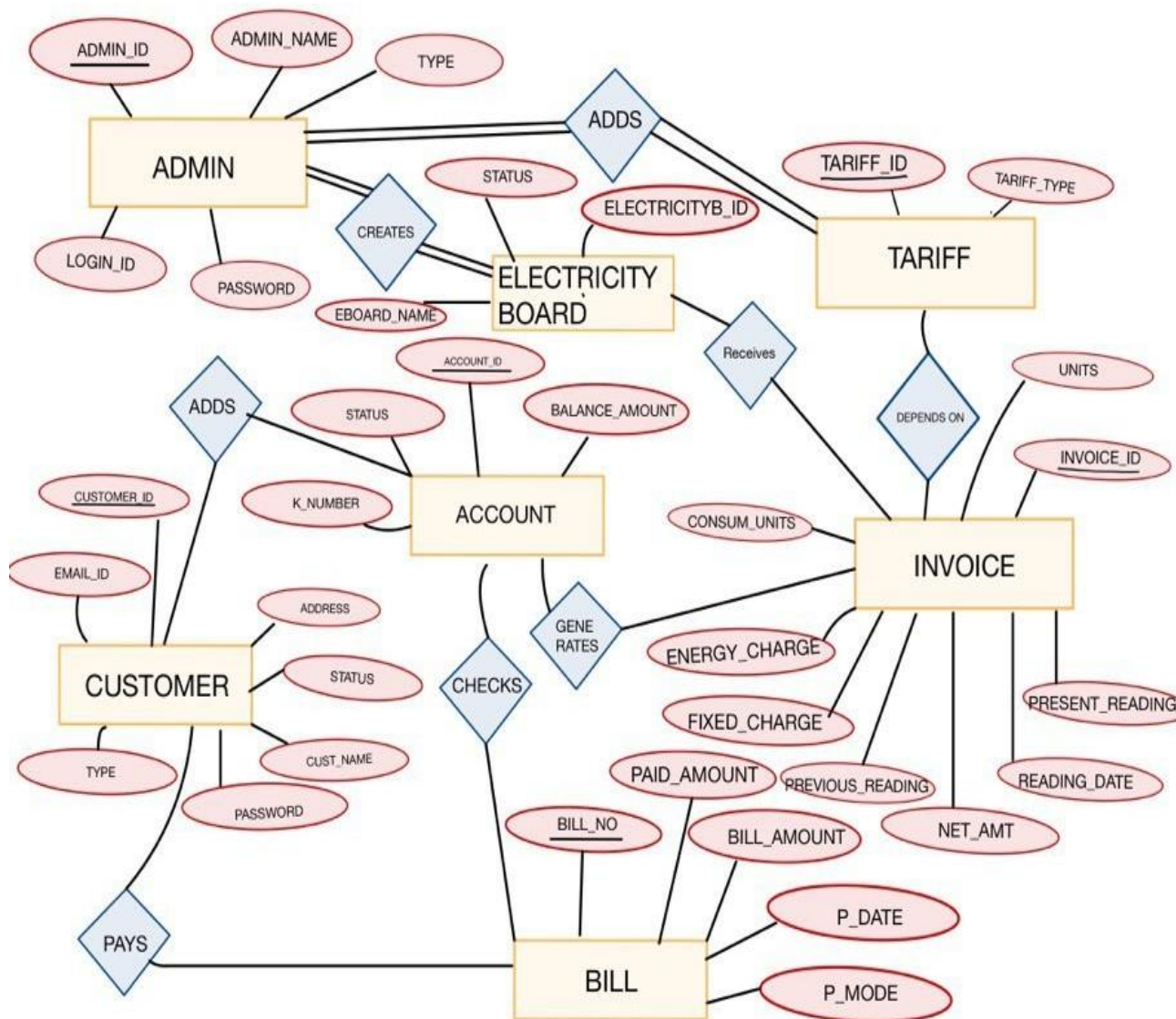
- **CUSTOMER**- CUSTOMER\_ID(PK), CUSTOMER\_NAME, TYPE, STATUS, ADDRESS, EMAIL\_ID, PASSWORD.
- **ADMIN**- ADMIN\_ID(PK), ADMIN\_NAME, TYPE, LOGIN\_ID, PASSWORD.
- **ELECTRICITY\_BOARD**- ELECTRICITYB\_ID(PK), EBOARD\_NAME, STATUS.
- **TARIFF**- TARIFF\_ID(PK), TARIFF\_TYPE.
- **ACCOUNT**- ACCOUNT\_ID(PK), CUST\_IDFK1(FK), STATUS, K\_NUMBER, BALANCE\_AMT.

- **BILL**-BILL\_NO(PK), CUST\_IDF2(FK), ACCOUNT\_IDF1(FK), P\_MODE, P\_DATE, BILL\_AMOUNT, PAID\_AMOUNT.
- **INVOICE**-INVOICE\_ID(PK), ACCOUNT\_IDF2(FK), ELECTRICITYB\_IDF2(FK), TARIFF\_IDF1(FK), READING\_DATE, PRESENT\_READING, PREVIOUS\_READING, UNITS, FIXED\_CHARGE, ENERGY\_CHARGE, NET\_AMT.



## Design of the Project

### 2.1 ER Diagram-





## Screenshots

### 3.1 Screenshots of Actual Tables-

| ELECTRICITYB_ID | EBOARD_NAME | STATUS |
|-----------------|-------------|--------|
| CE123           | CENTRAL     | ACTIVE |
| NI456           | NORTHERN    | ACTIVE |
| SI789           | SOUTHERN    | ACTIVE |

3 rows returned in 0.02 seconds [CSV Export](#)

Figure 1-Table Electricity Board

| ADMIN_ID | ADMIN_NAME | TYPE       | LOGIN_ID | PASSWORD |
|----------|------------|------------|----------|----------|
| AD44     | NANDINI    | TAX        | NAND30   | USER123  |
| AD45     | NARDEEP    | CENTRAL    | NARD31   | PASSWORD |
| AD46     | SAHLINI    | BILING     | SHAL32   | PASSWORD |
| AD47     | RAHUL      | ACCOUNTING | RAHL33   | PASSWORD |

4 rows returned in 0.00 seconds [CSV Export](#)

Figure 2-Table Admin

| CUSTOMER_ID | CUST_NAME          | TYPE       | STATUS  | STATE          | CITY     | PINCODE |
|-------------|--------------------|------------|---------|----------------|----------|---------|
| 12ABC       | SIDDHARTH MEHROTRA | DOMESTIC   | ACTIVE  | RAJASTHAN      | JODHPUR  | 342005  |
| 89FEG       | SHIVAM RAI         | DOMESTIC   | ACTIVE  | UTTAR PRADESH  | LUCKNOW  | 226002  |
| 23STU       | PRASHANT SAINI     | COMMERCIAL | ACTIVE  | UTTAR PRADESH  | BARIELY  | 123890  |
| 65XYZ       | SATYAM RAI         | INDUSTRIAL | PASSIVE | KARNATAKA      | BANGLORE | 342006  |
| 78UVW       | VATSAL BISHNOI     | DOMESTIC   | ACTIVE  | MADHYA PRADESH | BHOPAL   | 998877  |
| 49IJK       | AAYUSH VYAS        | DOMESTIC   | ACTIVE  | TAMIL NADU     | CHENNAI  | 994677  |
| 31DEF       | SHRUTI MEHROTRA    | COMMERCIAL | PASSIVE | MAHARASHTRA    | NAGPUR   | 345670  |

7 rows returned in 0.00 seconds [CSV Export](#)

Figure 3-Table Customer

| TARIFF_ID | TARIFF_TYPE | TARIFF_AMT |
|-----------|-------------|------------|
| ABC90     | COMMERCIAL  | -          |
| ABC91     | DOMESTIC    | -          |
| ABC92     | INDUSTRIAL  | -          |

3 rows returned in 0.00 seconds [CSV Export](#)

Figure 4-Table Tariff

| CUST_IDF1 | ACCOUNT_ID | STATUS  | K_NUMBER | BALANCE_AMT |
|-----------|------------|---------|----------|-------------|
| 12ABC     | AC1        | ACTIVE  | 123456   | 1000        |
| 89FEG     | AC2        | ACTIVE  | 654321   | 0           |
| 23STU     | AC3        | ACTIVE  | 347891   | 2000        |
| 78UVW     | AC4        | ACTIVE  | 982367   | 700         |
| 49IJK     | AC5        | ACTIVE  | 120060   | 3500        |
| 65XYZ     | AC6        | PASSIVE | 783421   | 10000       |
| 31DEF     | AC7        | PASSIVE | 101135   | 50000       |
| -         | AC8        | -       | -        | -           |

8 rows returned in 0.00 seconds [CSV Export](#)

Figure 5-Table Customer

| BILL_NO | P_MODE      | P_DATE    | BILL_AMOUNT | PAID_AMOUNT | CUST_IDF2 | ACCOUNT_IDF1 |
|---------|-------------|-----------|-------------|-------------|-----------|--------------|
| 123     | DEBIT CARD  | 10-NOV-22 | 7800        | 7800        | 12ABC     | AC1          |
| 124     | CASH        | 20-NOV-22 | 11300       | 11000       | 89FEG     | AC2          |
| 125     | CASH        | 13-OCT-22 | 3400        | 3400        | 23STU     | AC3          |
| 126     | CREDIT CARD | 11-AUG-22 | 6600        | 6600        | 78UVW     | AC4          |
| 127     | CASH        | 24-OCT-22 | 2800        | 2800        | 49IJK     | AC5          |
| 128     | DEBIT CARD  | 31-OCT-22 | 8500        | 8500        | 65XYZ     | AC6          |
| 129     | CHEQUE      | 05-NOV-22 | 4300        | 4300        | 31DEF     | AC7          |

7 rows returned in 0.00 seconds [CSV Export](#)

Figure 6-Table Bill

| INVOICE_ID | READING_DATE | PRESENT_READING | PREVIOUS_READING | FIXED_CHARGE | ENERGY_CHARGE | NET_AMT | UNITS | ACCOUNT_IDF2 | ELECTRICITYB_IDF2 | TARIFF_IDF2 |
|------------|--------------|-----------------|------------------|--------------|---------------|---------|-------|--------------|-------------------|-------------|
| IV1        | 31-OCT-22    | 1100            | 800              | 1500         | 2400          | 3900    | 300   | AC1          | CE123             | ABC90       |
| IV2        | 10-NOV-22    | 2000            | 1300             | 1500         | 5600          | 7100    | 700   | AC2          | NI456             | ABC91       |
| IV3        | 30-SEP-22    | 3700            | 3100             | 1500         | 4800          | 6300    | 600   | AC3          | NI456             | ABC90       |
| IV4        | 30-JUL-22    | 5500            | 4300             | 1500         | 0             | 0       | 1200  | AC4          | SI789             | ABC92       |
| IV5        | 10-OCT-22    | 9800            | 9000             | 1500         | 0             | 0       | 800   | AC5          | SI789             | ABC91       |
| IV66       | 15-OCT-22    | 4300            | 3600             | 1500         | 0             | 1500    | 0     | AC6          | CE123             | ABC92       |
| IV7        | 25-OCT-22    | 8439            | 8362             | 1500         | 0             | 1500    | 0     | AC7          | NI456             | ABC90       |

7 rows returned in 0.00 seconds [CSV Export](#)

Figure 7-Table Invoice



### 3.2 Screenshots of Description of Tables-

| Object Type <b>TABLE</b> Object <b>ELECTRICITY_BOARD</b> |                 |           |        |           |       |             |          |         |         |
|--|-----------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table  | Column          | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| ELECTRICITY_BOARD  | ELECTRICITYB_ID | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|  | EBOARD_NAME     | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | STATUS          | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
| 1 - 3  |                 |           |        |           |       |             |          |         |         |

Figure 8-Description of table Electricity Board

| Object Type <b>TABLE</b> Object <b>ADMIN</b> |            |           |        |           |       |             |          |         |         |
|--|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table  | Column     | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| ADMIN  | ADMIN_ID   | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|  | ADMIN_NAME | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | TYPE       | Varchar2  | 30     | -         | -     | -           | ✓        | -       | -       |
|  | LOGIN_ID   | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | PASSWORD   | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
| 1 - 5  |            |           |        |           |       |             |          |         |         |

Figure 9-Description of Table Admin

| Object Type <b>TABLE</b> Object <b>CUSTOMER</b> |             |           |        |           |       |             |          |         |         |
|---|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table   | Column      | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| CUSTOMER  | CUSTOMER_ID | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|   | CUST_NAME   | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | TYPE        | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | STATUS      | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | STATE       | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | CITY        | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | PINCODE     | Number    | -      | -         | -     | -           | ✓        | -       | -       |
| 1 - 7   |             |           |        |           |       |             |          |         |         |

Figure 10-Description of Table Customer

| Object Type <b>TABLE</b> Object <b>TARIFF</b> |             |           |        |           |       |             |          |         |         |
|---|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table   | Column      | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| TARIFF  | TARIFF_ID   | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|   | TARIFF_TYPE | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | TARIFF_AMT  | Number    | -      | -         | -     | -           | ✓        | -       | -       |
| 1 - 3   |             |           |        |           |       |             |          |         |         |

Figure 11-Description of Table Tariff

| Object Type <b>TABLE</b> Object <b>ACCOUNT</b> |             |           |        |           |       |             |          |         |         |
|--|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table  | Column      | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| ACCOUNT  | CUST_ID#1   | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | ACCOUNT_ID  | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|  | STATUS      | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | K_NUMBER    | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | BALANCE_AMT | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  |             |           |        |           |       |             |          |         | 1 - 5   |

Figure 12-Description of Table Account

| Object Type <b>TABLE</b> Object <b>BILL</b> |              |           |        |           |       |             |          |         |         |
|---|--------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table                                       | Column       | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| BILL  | BILL_NO      | Number    | -      | -         | -     | 1           | -        | -       | -       |
|   | P_MODE       | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | P_DATE       | Date      | 7      | -         | -     | -           | ✓        | -       | -       |
|   | BILL_AMOUNT  | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|   | PAID_AMOUNT  | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|   | CUST_ID#2    | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   | ACCOUNT_ID#1 | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|   |              |           |        |           |       |             |          |         | 1 - 7   |

Figure 13-Description of Table Bill

| Object Type <b>TABLE</b> Object <b>INVOICE</b> |                   |           |        |           |       |             |          |         |         |
|--|-------------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| Table  | Column            | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
| INVOICE  | INVOICE_ID        | Varchar2  | 60     | -         | -     | 1           | -        | -       | -       |
|  | READING_DATE      | Date      | 7      | -         | -     | -           | ✓        | -       | -       |
|  | PRESENT_READING   | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | PREVIOUS_READING  | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | FIXED_CHARGE      | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | ENERGY_CHARGE     | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | NET_AMT           | Number    | -      | -         | -     | -           | ✓        | 0       | -       |
|  | UNITS             | Number    | -      | -         | -     | -           | ✓        | -       | -       |
|  | ACCOUNT_ID#2      | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | ELECTRICITYB_ID#2 | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  | TARIFF_ID#1       | Varchar2  | 60     | -         | -     | -           | ✓        | -       | -       |
|  |                   |           |        |           |       |             |          |         | 1 - 11  |

Figure 14-Description of Table Invoice



#### **4.1 Codes of table creation-**

- CREATE TABLE ELECTRICITY\_BOARD  
(ELECTRICITYB\_ID VARCHAR2(60) PRIMARY KEY,  
EBOARD\_NAME VARCHAR2(60),  
STATUS VARCHAR2(60)  
)
  
- CREATE TABLE ADMIN  
(ADMIN\_ID VARCHAR2(60) PRIMARY KEY,  
ADMIN\_NAME VARCHAR2(60),  
TYPE VARCHAR2(30),  
LOGIN\_ID VARCHAR2(60),  
PASSWORD VARCHAR2(60)  
)
  
- CREATE TABLE CUSTOMER  
(CUSTOMER\_ID VARCHAR2(60) PRIMARY KEY,  
CUST\_NAME VARCHAR2(60),  
TYPE VARCHAR2(60),  
STATUS VARCHAR2(60)  
)
  
- CREATE TABLE ACCOUNT  
(CUST\_IDF1 VARCHAR2(60),  
ACCOUNT\_ID VARCHAR2(60) PRIMARY KEY,  
STATUS VARCHAR2(60),  
K\_NUMBER NUMBER,  
BALANCE\_AMT NUMBER,  
FOREIGN KEY(CUST\_IDF1) REFERENCES CUSTOMER(CUSTOMER\_ID)  
)

- CREATE TABLE TARIFF  
(TARIFF\_ID VARCHAR2(60) PRIMARY KEY,  
TARIFF\_TYPE VARCHAR2(60)  
)
  
- CREATE TABLE BILLING  
(BILL\_NO NUMBER PRIMARY KEY,  
P\_MODE VARCHAR2(60),  
P\_DATE DATE,  
BILL\_AMOUNT NUMBER,  
PAID\_AMOUNT NUMBER,  
CUST\_IDF2 VARCHAR2(60),  
ACCOUNT\_IDF1 VARCHAR2(60),  
FOREIGN KEY(CUST\_IDF2) REFERENCES CUSTOMER(CUSTOMER\_ID),  
FOREIGN KEY(ACCOUNT\_IDF1) REFERENCES ACCOUNT(ACCOUNT\_ID)  
)
  
- CREATE TABLE INVOICE  
(INVOICE\_ID VARCHAR2(60) PRIMARY KEY,  
READING\_DATE DATE,  
PRESENT\_READING NUMBER,  
PREVIOUS\_READING NUMBER,  
CONSUMPTION\_UNIT NUMBER,  
FIXED\_CHARGE NUMBER,  
ENERGY\_CHARGE NUMBER,  
NET\_AMT NUMBER DEFAULT 0,  
UNITS NUMBER,  
ACCOUNT\_IDF2 VARCHAR2(60),  
ELECTRICITYB\_IDF2 VARCHAR2(60),  
TARIFF\_IDF1 VARCHAR2(60),  
FOREIGN KEY(ACCOUNT\_IDF2) REFERENCES ACCOUNT(ACCOUNT\_ID),  
FOREIGN KEY(ELECTRICITYB\_IDF2) REFERENCES  
ELECTRICITY\_BOARD(ELECTRICITYB\_ID),

FOREIGN KEY(TARIFF\_ID F1) REFERENCES TARIFF(TARIFF\_ID)  
)

#### 4.2 Other Coding Activities-

- INSERT INTO TARIFF VALUES('ABC90','COMMERCIAL')  
INSERT INTO TARIFF VALUES('ABC91','DOMESTIC')  
INSERT INTO TARIFF VALUES('ABC92','INDUSTRIAL')
- INSERT INTO ELECTRICITY\_BOARD VALUES('ABC90','CENTRAL','ACTIVE')  
INSERT INTO ELECTRICITY\_BOARD VALUES('NI456','NORTHERN','ACTIVE')  
INSERT INTO ELECTRICITY\_BOARD VALUES('SI789','SOUTHERN','ACTIVE')
- INSERT INTO ADMIN VALUES('AD44','NANDINI','TAX','NAND30','PASSWORD')  
INSERT INTO ADMIN  
VALUES('AD45','NARDEEP','CENTRAL','NARD31','PASSWORD')  
INSERT INTO ADMIN VALUES('AD46','SAHLINI','BILING','SHAL32','PASSWORD')  
INSERT INTO ADMIN  
VALUES('AD47','RAHUL','ACCOUNTING','RAHL33','PASSWORD')
- INSERT INTO ACCOUNT VALUES('12ABC','AC1','ACTIVE',123456,1000)  
INSERT INTO ACCOUNT VALUES('89FEG','AC2','ACTIVE',654321,0)  
INSERT INTO ACCOUNT VALUES('23STU','AC3','ACTIVE',347891,2000)  
INSERT INTO ACCOUNT VALUES('78UVW','AC4','ACTIVE',982367,700)  
INSERT INTO ACCOUNT VALUES('49IJK','AC5','ACTIVE',120060,3500)  
INSERT INTO ACCOUNT VALUES('65XYZ','AC6','PASSIVE',120181,10000)  
INSERT INTO ACCOUNT VALUES('31DEF','AC7','PASSIVE',101135,50000)
- DESCRIBE ADMIN  
DESCRIBE ELECTRICITY\_BOARD  
DESCRIBE ACCOUNT  
DESCRIBE TARIFF  
DESCRIBE CUSTOMER  
DESCRIBE BILL  
DESCRIBE INVOICE



### 5.1 DDL Queries-

➤ CREATE ROLE SUPER\_ADMIN

GRANT ALL ON INVOICE TO SUPER\_ADMIN

GRANT ALL ON BILLING TO SUPER\_ADMIN

➤ ALTER TABLE BILLING RENAME TO BILL

➤ ALTER TABLE TARIFF ADD(TARIFF\_AMT NUMBER)

➤ CREATE VIEW I1 AS SELECT \* FROM INVOICE

➤ INSERT INTO A1 VALUES('AC8')

➤ CREATE VIEW A1 AS SELECT ACCOUNT\_ID NAME FROM ACCOUNT

➤ CREATE TABLE ALIAS AS SELECT \* FROM CUSTOMER

➤ DROP PROCEDURE INSERTION3

➤ ALTER TABLE INVOICE DROP(CONSUMPTION\_UNIT)

➤ INSERT INTO I1 VALUES('IC8','22-JAN-22',1000,200,1500,6400,7900,800)

➤ ALTER TABLE CUSTOMER ADD(STATE VARCHAR2(60), CITY VARCHAR2(60),  
PINCODE NUMBER)

## 5.2 DML Queries-

- SELECT MAX(NET\_AMT) FROM INVOICE
- SELECT \* FROM CUSTOMER WHERE CUST\_NAME LIKE 'S%'
- SELECT \* FROM CUSTOMER WHERE STATUS='ACTIVE'
- UPDATE ACCOUNT SET K\_NUMBER=783421 WHERE ACCOUNT\_ID='AC6'
- UPDATE ADMIN SET PASSWORD='USER123' WHERE ADMIN\_ID='AD44'
- DELETE FROM A1 WHERE ACCOUNT\_ID='AC7'
- SELECT \* FROM INVOICE WHERE UNITS=0
- SELECT AVG(NET\_AMT) FROM INVOICE
- SELECT \* FROM CUSTOMER WHERE STATE='UTTAR PRADESH'
- UPDATE INVOICE SET UNITS=900 WHERE INVOICE\_ID='IC66'
- UPDATE ELECTRICITY\_BOARD SET ELECTRICITYB\_ID='CE123' WHERE EBOARD\_NAME='CENTRAL'

**Trigger on insertion in customer-**

```
CREATE OR REPLACE TRIGGER TRIG  
AFTER INSERT ON CUSTOMER  
BEGIN  
DBMS_OUTPUT.PUT_LINE('CUSTOMER ADDED IN SLECTRICITY SYSTEM');  
END;
```

**Procedure for inserting in Customer-**

```
CREATE OR REPLACE PROCEDURE INSERTION(CUSTOMER_ID VARCHAR2,  
CUST_NAME VARCHAR2, TYPE VARCHAR2, STATUS VARCHAR2, STATE  
VARCHAR2, CITY VARCHAR2, PINCODE NUMBER) IS  
BEGIN  
INSERT INTO CUSTOMER VALUES(CUSTOMER_ID, CUST_NAME, TYPE, STATUS,  
STATE, CITY, PINCODE);  
END INSERTION;  
/////////////////////  
DECLARE  
CUSTOMER_ID VARCHAR2(60):=:ENTER_CUSTOMER_ID;  
CUST_NAME VARCHAR2(60):=:ENTER_CUSTOMER_NAME;  
TYPE VARCHAR2(60):=:ENTER_CUSTOMER_TYPE;  
STATUS VARCHAR2(60):=:ENTER_CUSTOMER_STATUS;  
STATE VARCHAR2(60):=:ENTER_CUSTOMER_STATE;  
CITY VARCHAR2(60):=:ENTER_CUSTOMER_CITY;
```



```
PINCODE NUMBER:=:ENTER_CUSTOMER_PINCODE;

BEGIN

INSERTION(CUSTOMER_ID,CUST_NAME,TYPE,STATUS,STATE,CITY,PINCODE);

END;
```

#### **Procedure for insertion in Bill-**

```
CREATE OR REPLACE PROCEDURE INSERTION2(BILL_NO NUMBER,P_MODE
VARCHAR2,P_DATE DATE, BILL_AMOUNT NUMBER, PAID_AMOUNT NUMBER,
CUST_IDF2 VARCHAR2, ACCOUNT_IDF1 VARCHAR2) IS
```

```
BEGIN

INSERT INTO BILLING VALUES(BILL_NO,P_MODE,P_DATE, BILL_AMOUNT,
PAID_AMOUNT, CUST_IDF2, ACCOUNT_IDF1);

END INSERTION2;
```

```
////////////////////////////////////
```

```
DECLARE
```

```
BILL_NO NUMBER:=:ENTER_BILL_NO;
```

```
P_MODE VARCHAR2(60):=:ENTER_PAYMENT_MODE;
```

```
P_DATE DATE:=:ENTER_PAYMENT_DATE;
```

```
BILL_AMOUNT NUMBER:=:ENTER_BILL_AMOUNT;
```

```
PAID_AMOUNT NUMBER:=:ENTER_PAID_AMOUNT;
```

```
CUST_IDF2 VARCHAR2(60):=:ENTER_CUSTOMER_ID;
```

```
ACCOUNT_IDF1 VARCHAR2(60):=:ENTER_ACCOUNT_ID;
```

```
BEGIN
```

```
INSERTION2(BILL_NO,P_MODE,P_DATE,BILL_AMOUNT,PAID_AMOUNT,CUST_IDF2,
ACCOUNT_IDF1);
```

```
END;
```

### **Procedure for insertion in Invoice-**

```
CREATE OR REPLACE PROCEDURE INSERTION3(INVOICE_ID VARCHAR2,  
READING_DATE DATE, PRESENT_READING NUMBER, PREVIOUS_READING  
NUMBER, FIXED_CHARGE NUMBER, ENERGY_CHARGE NUMBER, NET_AMT  
NUMBER, UNITS NUMBER, ACCOUNT_IDF2 VARCHAR2, ELECTRICITYB_IDF2  
VARCHAR2, TARIFF_IDF1 VARCHAR2) IS
```

```
BEGIN
```

```
INSERT INTO INVOICE VALUES(INVOICE_ID,READING_DATE, PRESENT_READING,  
PREVIOUS_READING, FIXED_CHARGE, ENERGY_CHARGE, NET_AMT, UNITS,  
ACCOUNT_IDF2, ELECTRICITYB_IDF2,TARIFF_IDF1);
```

```
END INSERTION3;
```

```
//////////
```

```
DECLARE
```

```
INVOICE_ID VARCHAR2(60):=:ENTER_INVOICE_ID;
```

```
READING_DATE DATE:=:ENTER_READING_DATE;
```

```
PRESENT_READING NUMBER:=:ENTER_PRESENT_READING;
```

```
PREVIOUS_READING NUMBER:=:ENTER_PREVIOUS_READING;
```

```
FIXED_CHARGE NUMBER:=:ENTER_FIXED_CHARGE;
```

```
ENERGY_CHARGE NUMBER:=:ENTER_ENERGY_CHARGE;
```

```
NET_AMOUNT NUMBER:=:ENTER_NET_AMOUNT;
```

```
UNITS NUMBER:=:ENTER_UNITS_CONSUMED;
```

```
ACCOUNT_IDF2 VARCHAR2(60):=:ENTER_ACCOUNT_ID;
```

```
ELECTRICITYB_IDF2 VARCHAR2(60):=:ENTER_ELECTRICITY_BOARD_ID;
```

```
TARIFF_IDF1 VARCHAR2(60):=:ENTER_TARIFF_ID;
```

```
BEGIN
```

```
INSERTION3(INVOICE_ID, READING_DATE, PRESENT_READING,  
PREVIOUS_READING, FIXED_CHARGE, ENERGY_CHARGE, NET_AMOUNT, UNITS,  
ACCOUNT_IDF2, ELECTRICITYB_IDF2, TARIFF_IDF1);
```

```
END;
```

#### **Calculation of Units consumed to be updated in Bill Table-**

```
DECLARE
```

```
UNITS_CAL INVOICE.UNITS%TYPE;
```

```
PRE_READING INVOICE.PREVIOUS_READING%TYPE;
```

```
CURRENT_READING INVOICE.PRESENT_READING%TYPE;
```

```
INVOICE_NUMBER INVOICE.INVOICE_ID%TYPE;
```

```
BEGIN
```

```
    INVOICE_NUMBER:=:ENTER_INVOICE_ID;
```

```
    SELECT PREVIOUS_READING, PRESENT_READING INTO PRE_READING,  
CURRENT_READING FROM    INVOICE WHERE INVOICE_ID=INVOICE_NUMBER;
```

```
    UNITS_CAL:=CURRENT_READING-PRE_READING;
```

```
    UPDATE INVOICE SET UNITS=UNITS_CAL WHERE  
INVOICE_ID=INVOICE_NUMBER;
```

```
END;
```

#### **Calculation of Net Amount, Energy charge to be updated in Invoice table-**

```
DECLARE
```

```
UNIT INVOICE.UNITS%TYPE;
```

```
UNIT_CHARGE INVOICE.ENERGY_CHARGE%TYPE;
```

```
FIX_CHARGE INVOICE.FIXED_CHARGE%TYPE;
```

```
NET_AMOUNT INVOICE.NET_AMT%TYPE;
```

```
INVOICE_NUM INVOICE.INVOICE_ID%TYPE;
```

```
BEGIN

INVOICE_NUM:=:ENTER_INVOICE_ID;

SELECT UNITS, ENERGY_CHARGE, FIXED_CHARGE, NET_AMT INTO UNIT,
UNIT_CHARGE, FIX_CHARGE, NET_AMOUNT FROM INVOICE WHERE
INVOICE_ID=INVOICE_NUM;

UNIT_CHARGE:=UNIT*8;

UPDATE INVOICE SET ENERGY_CHARGE=UNIT_CHARGE WHERE
INVOICE_ID=INVOICE_NUM;

NET_AMOUNT:=FIX_CHARGE+UNIT_CHARGE;

UPDATE INVOICE SET NET_AMT=NET_AMOUNT WHERE
INVOICE_ID=INVOICE_NUM;

END;
```