❖EXERCISE 4:

1) The CUSTOMER table of a state electricity board
   consists of the following fields:-
   Meter Number Varchar 4
   Meter Type Char 1
   Previous Reading Int 5
   Current Reading Int 5
   Customer Type Char 1
   Last Bill payment Char 1 (values could be 'Y' or 'N')

   There are two types of meters viz. 3- phase or 1-phase
   coded as 'T' or 'S' respectively. There are 4 types of
   customers viz. Agricultural Industrial, Commercial and
   Residential with codes 'A' , 'I', 'C' and 'R' respectively.

   Formulae:-
   Units used = Current Reading – Previous Reading Rate
   =Rs.1/ 1.25/ 1.50/ 1.30 for A/I/C/R respectively.
   Amount = rate*units used
   Surcharge = 5% for single phase
   10% for 3 phase
   Excise = 30% of (amount +Surcharge)
   Net = Amount +Surcharge + Excise

   Write a block to calculate the bill for each customer. The
   program should insert the Meter no., Units used, Rate,
   Amount, Surcharge, Excise duty and Net for each
   customer into some other suitable table. Also, at the end, it
   should insert the total Amount, Surcharge, Excise and Net
   into some other table.

⇒ CREATE TABLE CUSTOMER (meter_number
   VARCHAR(4) PRIMARY KEY,meter_type

CHAR(1),previous_reading INT(5),current_reading INT(5),customer_type CHAR(1)

);

⇒ CREATE TABLE BILL (Meter_Number VARCHAR(4) NOT NULL PRIMARY KEY,units INT,rate DECIMAL(10,2),amount DECIMAL(10,2),surcharge DECIMAL(10,2),Excise DECIMAL(10,2),Net DECIMAL(10,2));

⇒ DELIMITER //

CREATE PROCEDURE calculatebill()

BEGIN

DECLARE done INT DEFAULT FALSE;

DECLARE v_meter_number VARCHAR(4);

DECLARE v_meter_type CHAR(1);

DECLARE v_previous_reading INT;

DECLARE v_current_reading INT;

DECLARE v_customer_type CHAR(1);

DECLARE rate DECIMAL(10,2);

DECLARE units INT;

DECLARE amount DECIMAL(10,2);

DECLARE surcharge DECIMAL(10,2);

DECLARE excise DECIMAL(10,2);

DECLARE net DECIMAL(10,2);

DECLARE cur CURSOR FOR

```sql
    SELECT meter_number, meter_type, previous_reading,
current_reading, customer_type FROM CUSTOMER;


    DECLARE CONTINUE HANDLER FOR NOT FOUND SET
done = TRUE;


    DELETE FROM BILL;  -- Clear existing entries


    OPEN cur;


    read_loop: LOOP
       FETCH cur INTO v_meter_number, v_meter_type,
v_previous_reading, v_current_reading, v_customer_type;


       IF done THEN
          LEAVE read_loop;
       END IF;


       SET units = v_current_reading - v_previous_reading;


       IF v_customer_type = 'A' THEN
          SET rate = 1.00;
       ELSEIF v_customer_type = 'I' THEN
          SET rate = 1.25;
       ELSEIF v_customer_type = 'C' THEN
          SET rate = 1.50;
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    ELSEIF v_customer_type = 'R' THEN
        SET rate = 1.30;
    ELSE
        SET rate = 0;
    END IF;


    SET amount = rate * units;


    IF v_meter_type = 'T' THEN
        SET surcharge = amount * 0.10;
    ELSEIF v_meter_type = 'S' THEN
        SET surcharge = amount * 0.05;
    ELSE
        SET surcharge = 0;
    END IF;


    SET excise = (amount + surcharge) * 0.30;
    SET net = amount + surcharge + excise;


    INSERT INTO BILL (Meter_Number, units, rate, amount,
surcharge, Excise, Net)
    VALUES (v_meter_number, units, rate, amount, surcharge,
excise, net);
  END LOOP;
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    CLOSE cur;
END //


DELIMITER ;
CALL calculatebill();
SELECT * FROM BILL;
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