

PL EXERCISE 4

```
mysql> CREATE TABLE customer (  
-> 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)  
-> );  
Query OK, 0 rows affected, 2 warnings (0.04 sec)
```

```
mysql>  
mysql> CREATE TABLE bill_details (  
-> meter_number VARCHAR(4),  
-> units_used INT,  
-> rate DECIMAL(5,2),  
-> amount DECIMAL(10,2),  
-> surcharge DECIMAL(10,2),  
-> excise DECIMAL(10,2),  
-> net DECIMAL(10,2)  
-> );  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql>  
mysql> CREATE TABLE bill_totals (  
-> total_amount DECIMAL(10,2),  
-> total_surcharge DECIMAL(10,2),  
-> total_excise DECIMAL(10,2),  
-> total_net DECIMAL(10,2)  
-> );  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> INSERT INTO customer VALUES  
-> ('M001', 'T', 1000, 1200, 'A', 'Y'),  
-> ('M002', 'S', 1500, 1800, 'I', 'N'),  
-> ('M003', 'T', 2000, 2200, 'C', 'Y'),  
-> ('M004', 'S', 1200, 1400, 'R', 'N');  
Query OK, 4 rows affected (0.01 sec)  
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> DELIMITER //  
mysql>  
mysql> CREATE PROCEDURE Calculate_Bill()  
-> BEGIN  
-> DECLARE done INT DEFAULT 0;  
-> DECLARE m_number VARCHAR(4);  
-> DECLARE m_type CHAR(1);  
-> DECLARE prev_reading INT(5);  
-> DECLARE curr_reading INT(5);  
-> DECLARE cust_type CHAR(1);  
-> DECLARE last_payment CHAR(1);  
-> DECLARE units_used INT;  
-> DECLARE rate DECIMAL(5,2);  
-> DECLARE amount DECIMAL(10,2);  
-> DECLARE surcharge DECIMAL(10,2);  
-> DECLARE excise DECIMAL(10,2);
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-> DECLARE net DECIMAL(10,2);
->
-> -- Declare cursor to loop through the customer data
-> DECLARE cur CURSOR FOR SELECT meter_number, meter_type, previous_reading,
current_reading, customer_type, last_bill_payment
->         FROM customer;
-> DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
->
-> OPEN cur;
->
-> read_loop: LOOP
->     FETCH cur INTO m_number, m_type, prev_reading, curr_reading, cust_type, last_payment;
->
->     IF done THEN
->         LEAVE read_loop;
->     END IF;
->
->     -- Calculate units used
->     SET units_used = curr_reading - prev_reading;
->
->     -- Determine the rate based on customer type
->     IF cust_type = 'A' THEN
->         SET rate = 1.00;
->     ELSEIF cust_type = 'I' THEN
->         SET rate = 1.25;
->     ELSEIF cust_type = 'C' THEN
->         SET rate = 1.50;
->     ELSEIF cust_type = 'R' THEN
->         SET rate = 1.30;
->     END IF;
->
->     -- Calculate amount
->     SET amount = rate * units_used;
->
->     -- Calculate surcharge based on meter type
->     IF m_type = 'S' THEN
->         SET surcharge = amount * 0.05; -- 5% surcharge for single phase
->     ELSEIF m_type = 'T' THEN
->         SET surcharge = amount * 0.10; -- 10% surcharge for 3-phase
->     END IF;
->
->     -- Calculate excise duty
->     SET excise = (amount + surcharge) * 0.30;
->
->     -- Calculate net amount
->     SET net = amount + surcharge + excise;
->
->     -- Insert the values into the bill_details table
->     INSERT INTO bill_details VALUES (m_number, units_used, rate, amount, surcharge, excise,
net);
-> END LOOP;
->
-> CLOSE cur;
->
-> -- Step 4: Insert the total values into the bill_totals table
-> INSERT INTO bill_totals (total_amount, total_surcharge, total_excise, total_net)
-> SELECT SUM(amount), SUM(surcharge), SUM(excise), SUM(net) FROM bill_details;

```

```
->  
-> END;  
-> //
```

Query OK, 0 rows affected, 2 warnings (0.11 sec)

```
mysql>  
mysql> DELIMITER ;  
mysql> CALL Calculate_Bill();  
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT * FROM bill_details;
```

meter_number	units_used	rate	amount	surcharge	excise	net
M001	200	1.00	200.00	20.00	66.00	286.00
M002	300	1.25	375.00	18.75	118.13	511.88
M003	200	1.50	300.00	30.00	99.00	429.00
M004	200	1.30	260.00	13.00	81.90	354.90

4 rows in set (0.00 sec)