

## 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);
```

```

-> 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)
```

```
mysql> SELECT * FROM bill_totals;  
+-----+-----+-----+-----+  
| total_amount | total_surcharge | total_excise | total_net |  
+-----+-----+-----+-----+  
| 1040.00 | 52.00 | 327.60 | 1419.60 |  
+-----+-----+-----+-----+  
1 row in set (0.00 sec)
```