

Exercise PL 2

- 1) Select from any table a number and determine whether it is within a given range (for example, between 1 and 10).

```
mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE check_range(IN n INT)
-> BEGIN
-> IF n BETWEEN 1 AND 10 THEN
-> SELECT CONCAT(n, ' is within range 1 to 10') AS status;
-> ELSE
-> SELECT CONCAT(n, ' is outside range 1 to 10') AS status;
-> END IF;
-> END //
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> DELIMITER ;
mysql> call (7);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual t
that corresponds to your MySQL server version for the right syntax to use nea
e '(7)' at line 1
mysql> call (3);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual t
that corresponds to your MySQL server version for the right syntax to use nea
e '(3)' at line 1
mysql> call check_range(3);
+-----+
| status |
+-----+
| 3 is within range 1 to 10 |
+-----+
1 row in set (0.02 sec)

Query OK, 0 rows affected (0.02 sec)
```

- 2) Select from any table three positive integers representing the sides of a triangle, and determine whether they form a valid triangle. Hint: In a triangle, the sum of any two sides must always be greater than the third side.

```
mysql> delimiter //
mysql> create procedure tri (a int,b int,c int)
-> begin
-> if a+b > c AND a+c > b AND c+b > a then
-> select 'Valid Triangle' as status;
-> else
-> select 'Not valid Triangle' as status;
-> end if;
-> end //

Query OK, 0 rows affected (0.01 sec)

mysql> delimiter ;
mysql> call tri(3,5,3);
+-----+
| status |
+-----+
| Valid Triangle |
+-----+
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)

mysql> call tri(3,5,9);
+-----+
| status |
+-----+
| Not valid Triangle |
+-----+
1 row in set (0.05 sec)

Query OK, 0 rows affected (0.05 sec)
```

```
mysql> SELECT * FROM Triangles
-> WHERE side1 + side2 > side3
-> AND side1 + side3 > side2
-> AND side2 + side3 > side1;
```

id	side1	side2	side3
1	3	4	5
3	6	8	10

2 rows in set (0.01 sec)

- 3) Check if a given a year is a leap year. The condition is:- year should be (divisible by 4 and not divisible by 100) or (divisible by 4 and divisible by 400.). The year should be Selected from some table.

```
mysql> delimiter //
mysql> create procedure leap(y int)
-> begin
-> if (y % 4 = 0 and y % 100 != 0) or (y % 4 = 0 and y % 400 = 0)
-> select 'Leap Year' as status;
-> else
-> select 'Not a Leap Year' as status;
-> end if;
-> end //
Query OK, 0 rows affected (0.02 sec)

mysql> delimiter ;
mysql> call leap(2024);
+-----+
| status |
+-----+
| Leap Year |
+-----+
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)

mysql> call leap(2023);
+-----+
| status |
+-----+
| Not a Leap Year |
+-----+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)
```

```
mysql> SELECT * FROM Years
-> WHERE (year % 4 = 0 AND year % 100 != 0)
-> OR (year % 400 = 0);
+----+-----+
| id | year |
+----+-----+
| 1 | 2000 |
| 3 | 2024 |
| 5 | 2400 |
+----+-----+
3 rows in set (0.01 sec)
```

- 4) Write a program that Selects from any table two character strings. Your program should then determine if one character string exists inside another character string.

```
mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE pre()
-> BEGIN
-> DECLARE done INT DEFAULT 0;
-> DECLARE text VARCHAR(100);
-> DECLARE t VARCHAR(100);
->
-> DECLARE c CURSOR FOR SELECT text1, text2 FROM texts;
-> DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
->
-> -- Temporary table to collect results
-> DROP TEMPORARY TABLE IF EXISTS temp_result;
-> CREATE TEMPORARY TABLE temp_result (status VARCHAR(255));
->
-> OPEN c;
->
-> rloop: LOOP
-> FETCH c INTO text, t;
-> IF done THEN
-> LEAVE rloop;
-> END IF;
->
-> IF INSTR(text, t) > 0 THEN
-> INSERT INTO temp_result VALUES (CONCAT('"' , t, '" found in "' , text, '"'));
-> ELSE
-> INSERT INTO temp_result VALUES (CONCAT('"' , t, '" NOT found in "' , text, '"'));
-> END IF;
-> END LOOP rloop;
-> CLOSE c;
->
-> -- Final result
-> SELECT * FROM temp_result;
-> END //
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> DELIMITER ;
```

```
mysql> call pre();
+-----+
| status |
+-----+
| "World" found in "Hello World" |
| "GPT" found in "ChatGPT is great" |
| "SQL" found in "MySQL Rocks" |
| "Java" NOT found in "Hello" |
+-----+
4 rows in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)
```