**Assignment on Loop Statement**

Course Title: Database Management System

Course Code: CSE-2203

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**SQL Loop Statement**

The LOOP statement allows to execute one or more statements repeatedly.

Here is the basic syntax of the LOOP statement:

[begin\_label:] LOOP

statement\_list

END LOOP [end\_label]

The LOOP can have optional labels at the beginning and end of the block.

The LOOP executes the statement\_list repeatedly. The statement\_list may have one or more statements, each terminated by a semicolon (;) statement delimiter.

Typically, we terminate the loop when a condition is satisfied by using the LEAVE statement.

This is the typical syntax of the LOOP statement used with LEAVE statement:

[label]: LOOP

...

-- terminate the loop

IF condition THEN

LEAVE [label];

END IF;

...

END LOOP;

The LEAVE statement immediately exits the loop. It works like the break statement in other programming languages like C/C++, and Java.

In addition to the LEAVE statement, we can use the ITERATE statement to skip the current loop iteration and start a new iteration. The ITERATE is like the continue statement in PHP, C/C++, and Java.

**Example**

The following statement creates a stored procedure that uses a LOOP statement:

DROP PROCEDURE LoopDemo;

DELIMITER $$

CREATE PROCEDURE LoopDemo()

BEGIN

DECLARE x INT;

DECLARE str VARCHAR(255);

SET x = 1;

SET str = '';

loop\_label: LOOP

IF x > 10 THEN

LEAVE loop\_label;

END IF;

SET x = x + 1;

IF (x mod 2) THEN

ITERATE loop\_label;

ELSE

SET str = CONCAT(str,x,',');

END IF;

END LOOP;

SELECT str;

END$$

DELIMITER ;

In this example:

1. The stored procedure constructs a string from the even numbers e.g., 2, 4, and 6.
2. The loop\_label before the LOOP statement for using with the ITERATE and LEAVE statements.
3. If the value of x is greater than 10, the loop is terminated because of the LEAVE statement.
4. If the value of the x is an odd number, the ITERATE ignores everything below it and starts a new loop iteration.
5. If the value of the x is an even number, the block in the ELSE statement will build the result string from even numbers.

The following statement calls the stored procedure:

CALL LoopDemo();

Here is the output:

+-------------+

| str |

+-------------+

| 2,4,6,8,10, |

+-------------+

1 row in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)

So, we have learned how to use the MySQL LOOP statement to execute a block of code repeatedly based on a condition.

Thank you