Ex.No: 18

Date:

**HIGH LEVEL LANGUAGE EXTENSION WITH CURSORS**

**Aim:**

To implement Cursors using program in MySQL.

**Description:**

**Cursor** is a **Temporary Memory** or **Temporary Work Station**. It is allocated by Database Server at the Time of Performing DML (Data Manipulation Language) operations on Table by User. Cursors are used to store Database Tables.

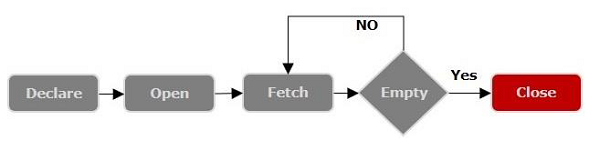
1. **Implicit Cursors:**  
   Implicit Cursors are also known as Default Cursors of SQL SERVER. These Cursors are allocated by SQL SERVER when the user performs DML operations.
2. **Explicit Cursors:**  
   Explicit Cursors are Created by Users whenever the user requires them. Explicit Cursors are used for **Fetching data from Table in Row-By-Row Manner**.

**How to create Explicit Cursor:**

1. **Declare Cursor Object.**  
   **Syntax :** DECLARE cursor\_name CURSOR FOR SELECT \* FROM table\_name
2. **Open Cursor Connection.**  
   **Syntax :** OPEN cursor\_connection
3. **Fetch Data from cursor.**  
   There are total 6 methods to access data from cursor. They are as follows :  
   **FIRST** is used to fetch only the first row from cursor table.  
   **LAST** is used to fetch only last row from cursor table.  
   **NEXT** is used to fetch data in forward direction from cursor table.  
   **PRIOR** is used to fetch data in backward direction from cursor table.  
   **ABSOLUTE n** is used to fetch the exact nth row from cursor table.  
   **RELATIVE n** is used to fetch the data in incremental way as well as decremental way.

**Syntax :** FETCH NEXT/FIRST/LAST/PRIOR/ABSOLUTE n/RELATIVE n FROM cursor\_name

1. **Close cursor connection.**  
   **Syntax :** CLOSE cursor\_name
2. **Deallocate cursor memory.**  
   **Syntax :** DEALLOCATE cursor\_name



**Problem- 1**

Write a Cursor program using MySQL to retrieve the email-ids (build an email list) of employees from employees table.

**SOLUTION :**

create table employees(id integer, Name varchar(100), email varchar(100));

insert into employees(id, Name, email) values(1, "Harry Potter", "pharry@warnerbros.com");

insert into employees(id, Name, email) values(2, "Clark Kent", "kclark@dccomics.com");

insert into employees(id, Name, email) values(3, "Tony Stark", "stony@marvel.com");

DELIMITER $$

CREATE PROCEDURE build\_email\_list (INOUT email\_list varchar(4000))

BEGIN

DECLARE v\_finished INTEGER DEFAULT 0;

DECLARE v\_email varchar(100) DEFAULT "";

-- declare cursor for employee email

DECLARE **email\_cursor** CURSOR FOR

**SELECT email FROM employees;**

-- declare NOT FOUND handler

DECLARE CONTINUE HANDLER FOR

**NOT FOUND** SET v\_finished = 1;

OPEN email\_cursor;

get\_email: LOOP

FETCH email\_cursor INTO v\_email;

IF v\_finished = 1 THEN

LEAVE get\_email;

END IF;

-- build email list

SET email\_list = CONCAT(v\_email,";",email\_list);

END LOOP get\_email;

CLOSE email\_cursor;

END $$

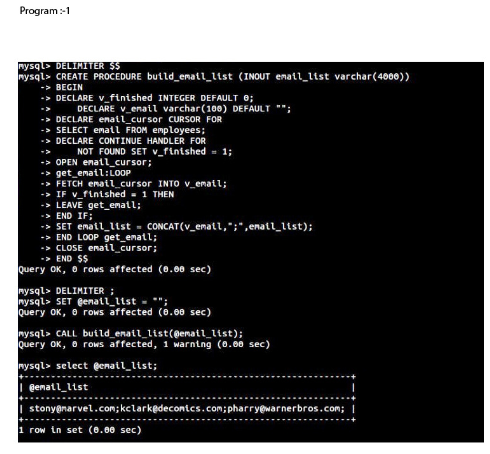
DELIMITER ;

-- Calling the procedure and getting the email list

SET @email\_list = "";

CALL build\_email\_list(@email\_list);

SELECT @email\_list;



**RESULT:**

Thus the Cursor program using MySQL is executed successfully.