

Third Year B. Tech (EL & CE)

Semester: V

Subject: Data Base Management System

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Class: TY

Roll No: 52

Batch: A3

Experiment No: 08

Name of the Experiment: SQL Procedures and Functions

Performed on: 30/11/2023

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Problem Statement:

SQL Procedures and Functions

Code:

```
MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.34 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> DROP DATABASE company;
Query OK, 3 rows affected (0.02 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
6 rows in set (0.00 sec)

mysql> CREATE DATABASE IF NOT EXISTS LibraryDB;
Query OK, 1 row affected (0.00 sec)

mysql> USE LibraryDB;
Database changed
mysql> CREATE TABLE IF NOT EXISTS Books (
  ->   BookID INT PRIMARY KEY,
  ->   Title VARCHAR(255),
  ->   Author VARCHAR(255),
  ->   PublicationYear INT
  -> );
Query OK, 0 rows affected (0.01 sec)

mysql> INSERT INTO Books (BookID, Title, Author, PublicationYear)
  -> VALUES
  -> (1, 'The Catcher in the Rye', 'J.D. Salinger', 1951),
  -> (2, 'To Kill a Mockingbird', 'Harper Lee', 1960),
  -> (3, '1984', 'George Orwell', 1949);
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
MySQL 8.0 Command Line Client
mysql> INSERT INTO Books (BookID, Title, Author, PublicationYear)
-> VALUES
-> (1, 'The Catcher in the Rye', 'J.D. Salinger', 1951),
-> (2, 'To Kill a Mockingbird', 'Harper Lee', 1960),
-> (3, '1984', 'George Orwell', 1949);
Query OK, 3 rows affected (0.01 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> SHOW TABLES;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '' at line 1
mysql> SHOW TABLES;
+-----+
| Tables_in_librarydb |
+-----+
| books                |
+-----+
1 row in set (0.00 sec)

mysql> DESCRIBE books;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| BookID     | int       | NO   | PRI | NULL    |       |
| Title      | varchar(255) | YES  |     | NULL    |       |
| Author     | varchar(255) | YES  |     | NULL    |       |
| PublicationYear | int       | YES  |     | NULL    |       |
+-----+
4 rows in set (0.00 sec)

mysql> DESC books;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| BookID     | int       | NO   | PRI | NULL    |       |
| Title      | varchar(255) | YES  |     | NULL    |       |
| Author     | varchar(255) | YES  |     | NULL    |       |
| PublicationYear | int       | YES  |     | NULL    |       |
+-----+
4 rows in set (0.00 sec)

mysql> SELECT * FROM books;
+-----+
| BookID | Title                | Author      | PublicationYear |
+-----+
| 1      | The Catcher in the Rye | J.D. Salinger | 1951            |
| 2      | To Kill a Mockingbird | Harper Lee  | 1960            |
| 3      | 1984                 | George Orwell | 1949            |
+-----+
3 rows in set (0.00 sec)
```

```
MySQL 8.0 Command Line Client
mysql> SELECT * FROM books;
+-----+
| BookID | Title                | Author      | PublicationYear |
+-----+
| 2      | To Kill a Mockingbird | Harper Lee  | 1960            |
| 3      | 1984                 | George Orwell | 1949            |
+-----+
3 rows in set (0.00 sec)

mysql> DELIMITER //
mysql> CREATE PROCEDURE GetBookDetails(IN book_id INT)
-> BEGIN
-> SELECT * FROM Books WHERE BookID = book_id;
-> END //
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> CALL GetBookDetails(2);
+-----+
| BookID | Title                | Author      | PublicationYear |
+-----+
| 2      | To Kill a Mockingbird | Harper Lee  | 1960            |
+-----+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER //
mysql> CREATE FUNCTION GetAuthorByBookID(book_id INT) RETURNS VARCHAR(255)
-> BEGIN
-> DECLARE author_name VARCHAR(255);
-> SELECT Author INTO author_name
-> FROM Books
-> WHERE BookID = book_id;
-> RETURN author_name;
-> END //
ERROR 1418 (HY000): This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA in its declaration and binary logging is enabled (you *might* want to use the less safe log_bin_trust_function_creators variable)
mysql> DELIMITER ;
mysql> SELECT BookID, Title, GetAuthorByBookID(BookID) AS Author
-> FROM Books;
ERROR 1305 (42000): FUNCTION librarydb.GetAuthorByBookID does not exist
mysql> DELIMITER //
mysql> CREATE FUNCTION GetAuthorByBookID(book_id INT) RETURNS VARCHAR(255) DETERMINISTIC
-> BEGIN
-> DECLARE author_name VARCHAR(255);
```

```
MySQL 8.0 Command Line Client
mysql> DELIMITER //
mysql>
mysql> CREATE FUNCTION GetAuthorByBookID(book_id INT) RETURNS VARCHAR(255)
-> BEGIN
-> DECLARE author_name VARCHAR(255);
->
-> SELECT Author INTO author_name
-> FROM Books
-> WHERE BookID = book_id;
->
-> RETURN author_name;
-> END //
ERROR 1418 (HY000): This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA in its declaration and binary logging is enabled (you *might* want to use the less safe log_bin_trust_function_creators variable)
mysql>
mysql> DELIMITER ;
mysql> SELECT BookID, Title, GetAuthorByBookID(BookID) AS Author
-> FROM Books;
ERROR 1305 (42000): FUNCTION librarydb.GetAuthorByBookID does not exist
mysql> DELIMITER //
mysql>
mysql> CREATE FUNCTION GetAuthorByBookID(book_id INT) RETURNS VARCHAR(255) DETERMINISTIC
-> BEGIN
-> DECLARE author_name VARCHAR(255);
->
-> SELECT Author INTO author_name
-> FROM Books
-> WHERE BookID = book_id;
->
-> RETURN author_name;
-> END //
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql> SELECT BookID, Title, GetAuthorByBookID(BookID) AS Author
-> FROM Books;
+----+-----+-----+
| BookID | Title | Author |
+----+-----+-----+
| 1 | The Catcher in the Rye | J.D. Salinger |
| 2 | To Kill a Mockingbird | Harper Lee |
| 3 | 1984 | George Orwell |
+----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

Exp 8

SQL Procedures & Functions

* SQL stored Procedures: -

① CREATE PROCEDURE:

→ CREATE PROCEDURE procedure_name
AS
-- SQL statements

② ALTER PROCEDURE:

→ ALTER PROCEDURE procedure_name
AS
-- SQL statements

③ DROP PROCEDURE:

→ DROP PROCEDURE procedure_name;

④ EXECUTE or EXEC:

→ EXEC procedure_name;
-- or
EXECUTE procedure_name;

* SQL stored Functions:

① CREATE FUNCTION:

→ CREATE FUNCTION function_name
RETURNS data_type
AS
-- SQL statements

② ALTER FUNCTION:

→ ALTER FUNCTION function_name
RETURNS data_type
AS
-- updated SQL statements

③ DROP FUNCTION;

→ DROP FUNCTION function_name;

④ EXECUTE FUNCTION:

→ SELECT function_name (arguments);