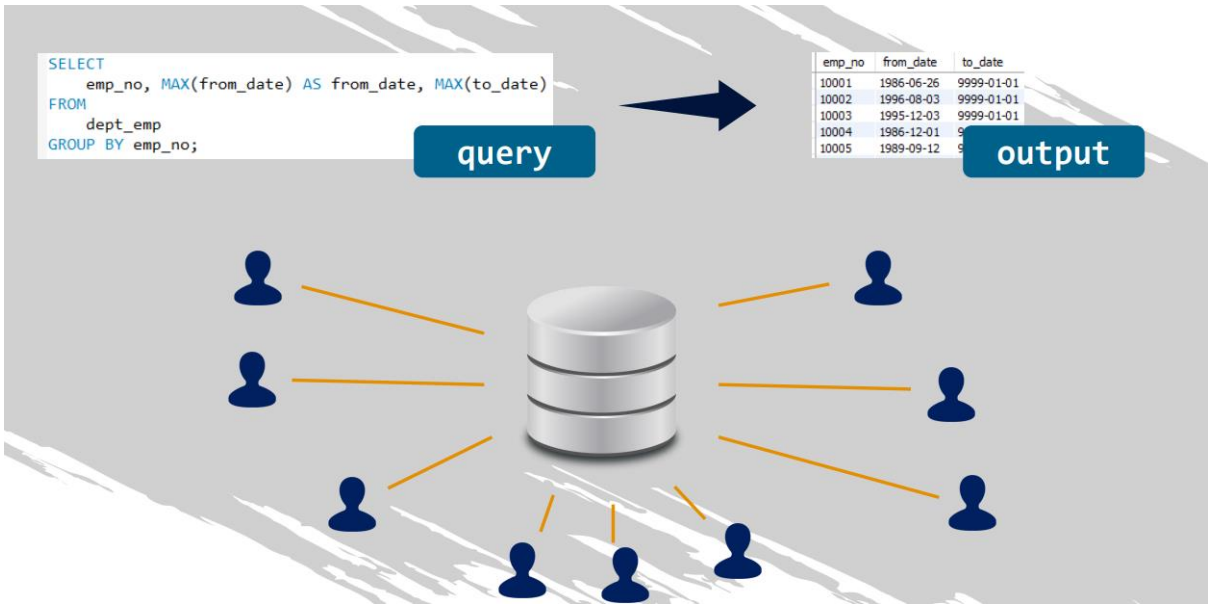
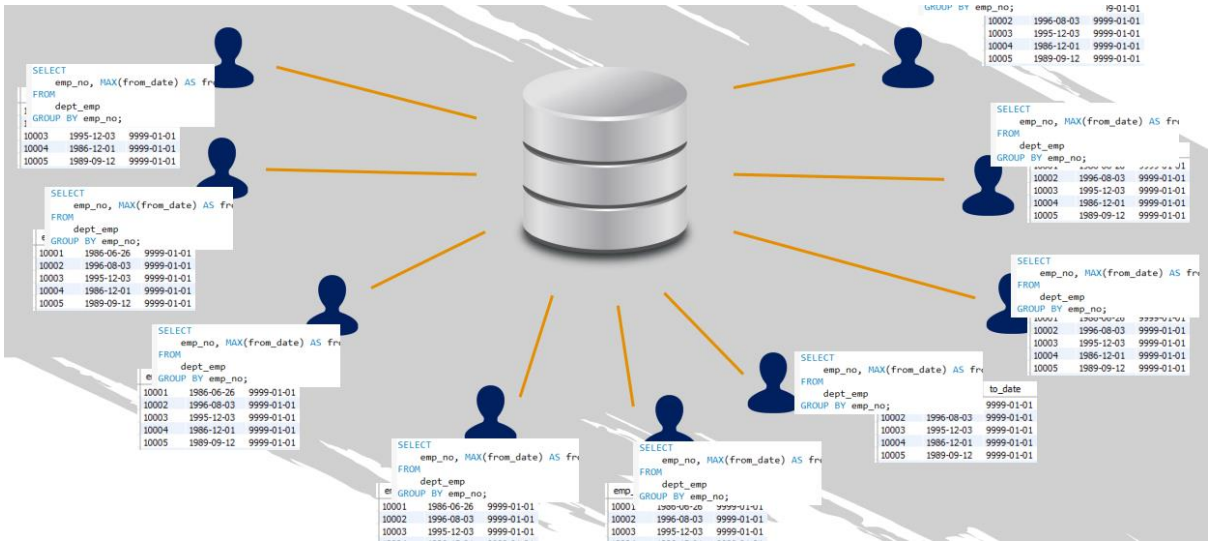
Stored Routines:

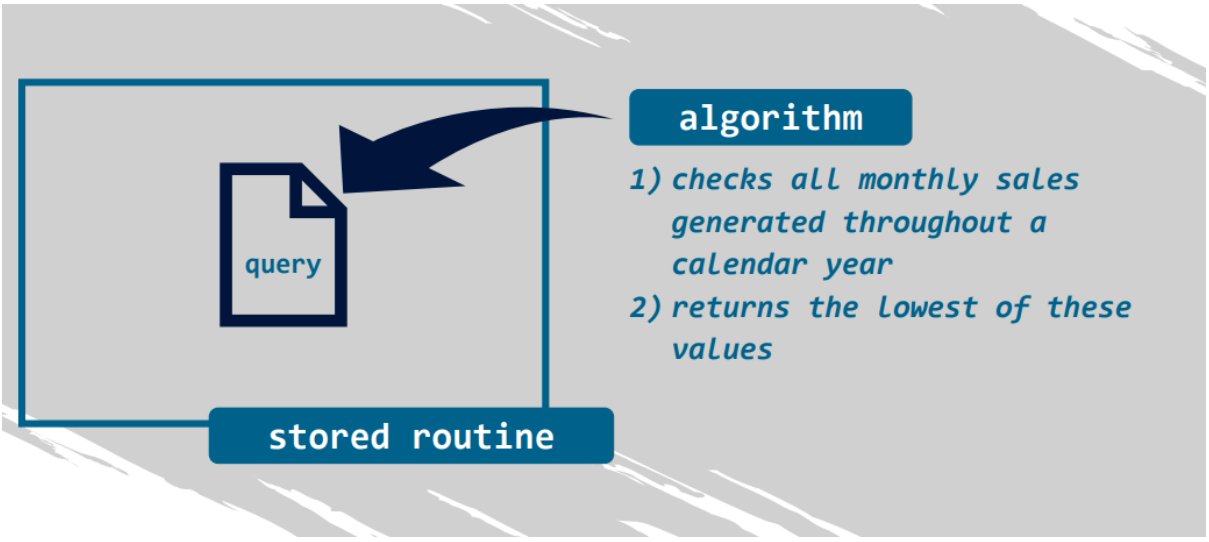
Routine: A Usual, fixed action, or series of actions , repeated periodically.

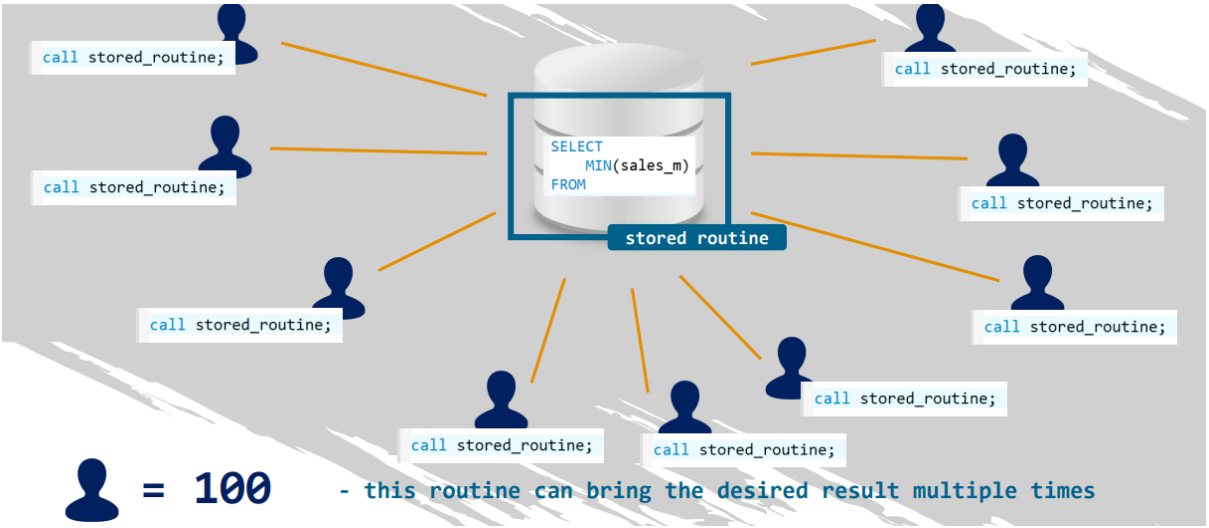


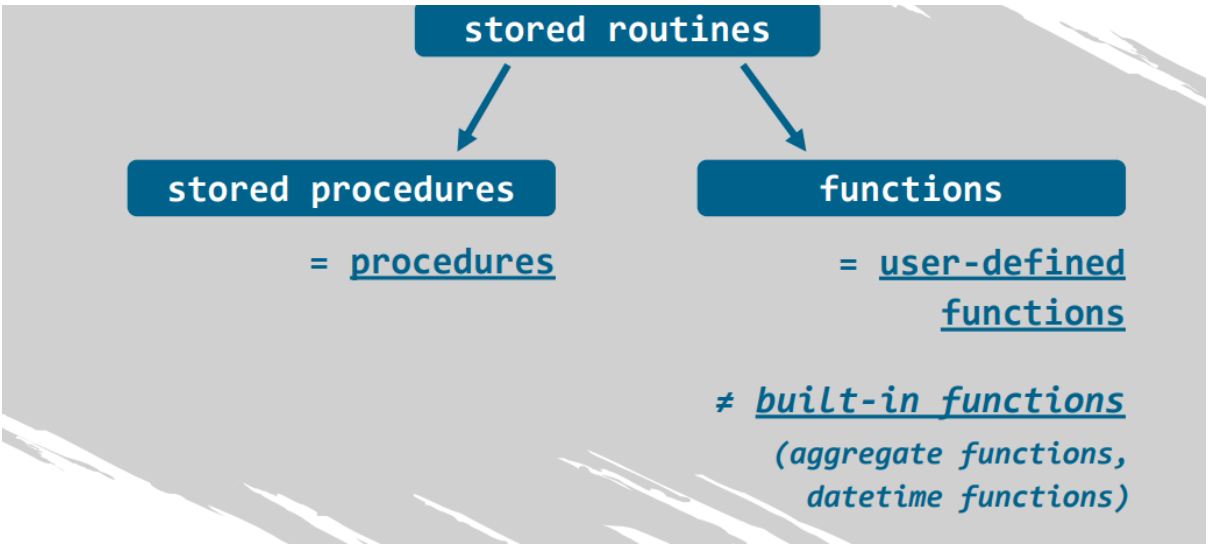


Stored Routine:

- An SQL Statement, or a set of SQL statements, that can be stored on the database server.
- Whenever a user needs to run the query in question, they can call, reference, or invoke the routine.

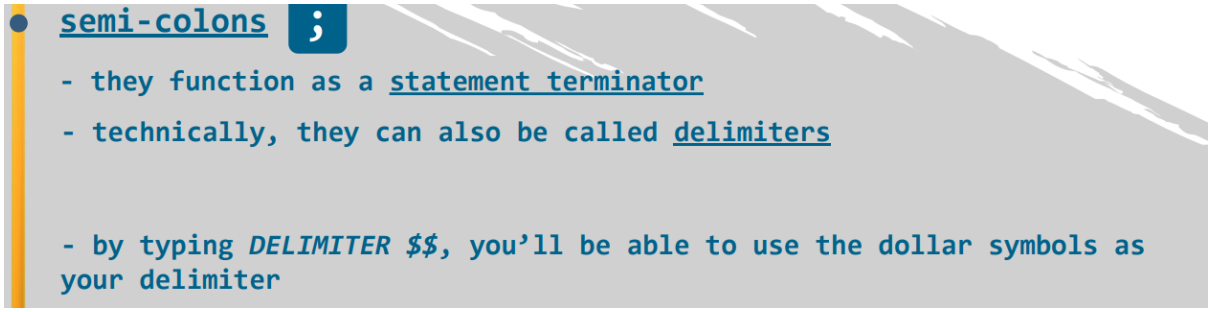

query
stored routine
algorithm
1) checks all monthly sales generated throughout a calendar year
2) returns the lowest of these values

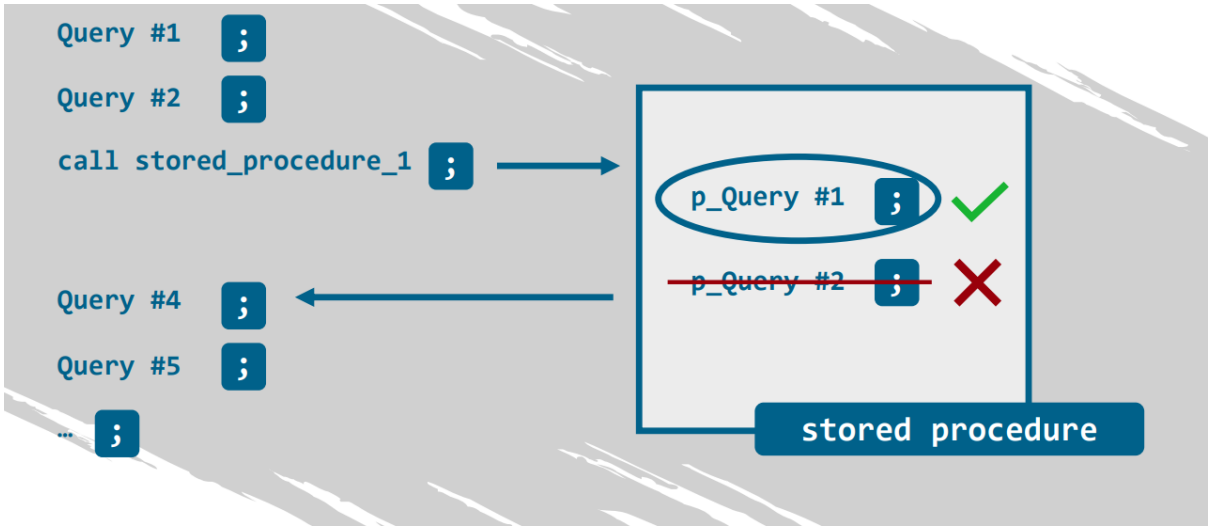

call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
call stored_routine;
SELECT
MIN(sales_m)
FROM
stored routine
= 100
- this routine can bring the desired result multiple times

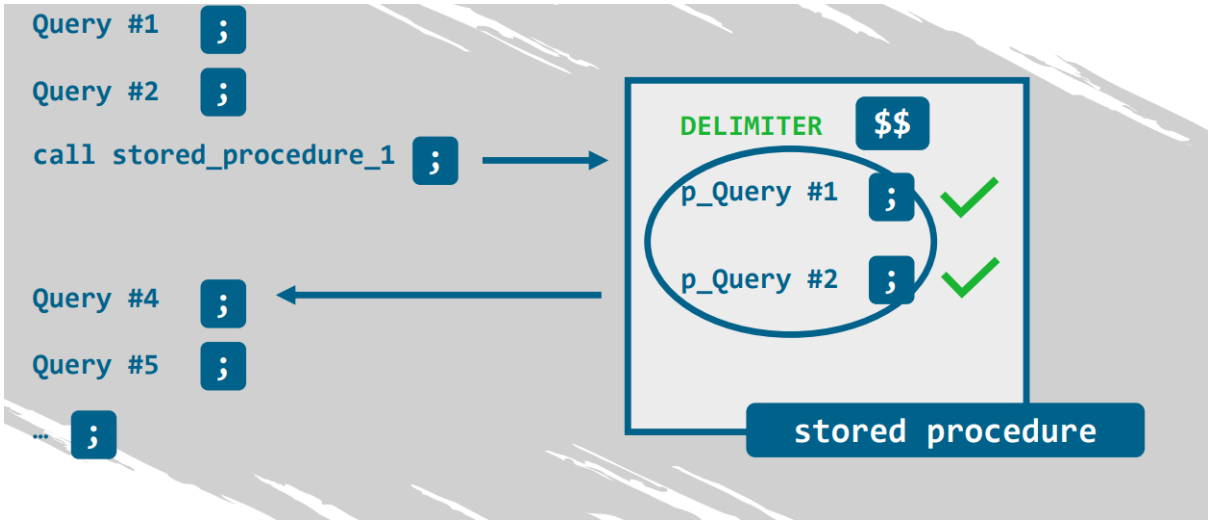

stored routines
stored procedures
= procedures
functions
= user-defined functions
≠ built-in functions
(aggregate functions, datetime functions)

Select the correct answer.

- ○ there are two types of stored procedures – stored routines and functions
- ○ not just any user can invoke a stored routine. This can be done only by the database administrator
- ◉ **a stored routine is nothing but an SQL statement, or a set of SQL statements, that can be stored on the database server**







SQL

```
DELIMITER $$
CREATE PROCEDURE procedure_name(param_1, param_2)
```

Parameters represent certain values that the procedure will use to complete the calculation it is supposed to execute

```
DELIMITER $$
CREATE PROCEDURE procedure_name()
BEGIN
    SELECT * FROM employees
    LIMIT 1000;
END$$
```

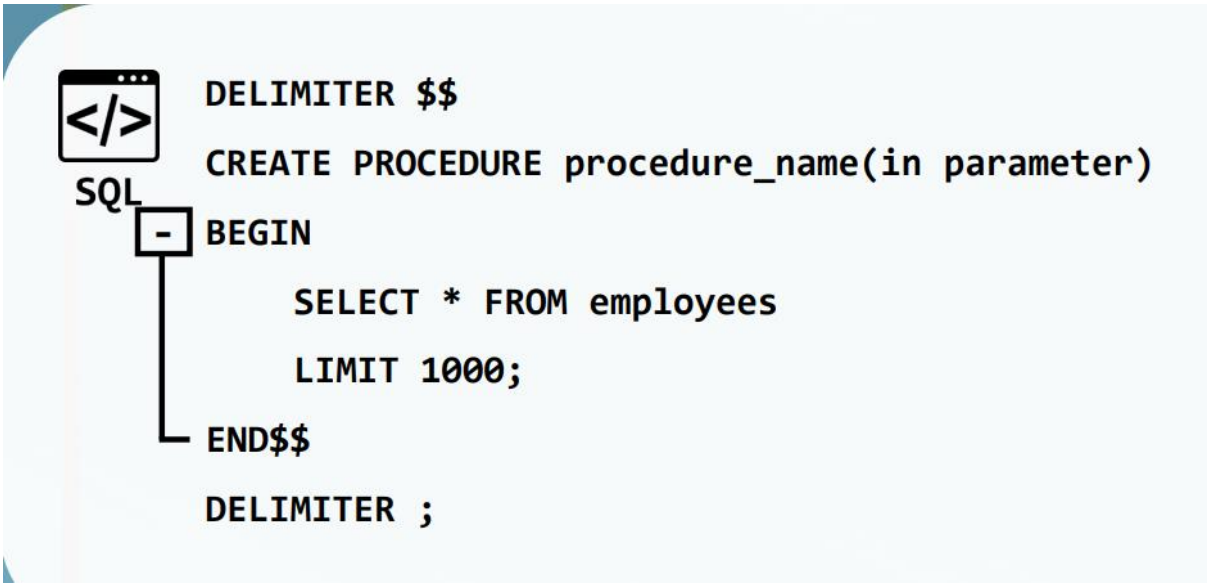
```
DELIMITER $$
CREATE PROCEDURE procedure_name()
BEGIN
    SELECT * FROM employees
    LIMIT 1000;
END$$
DELIMITER ;
```

From this moment on, $$ will not act as a delimiter

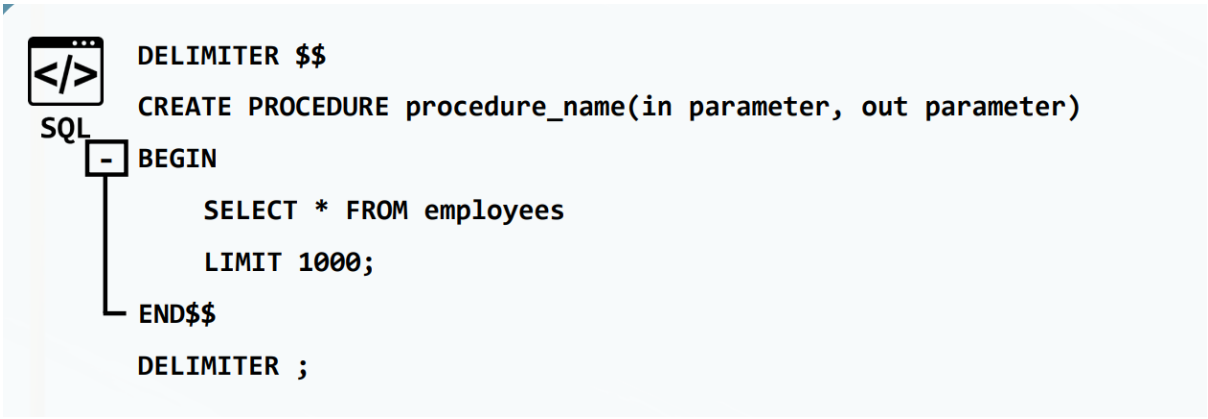
Stored Procedures with an Input Parameter

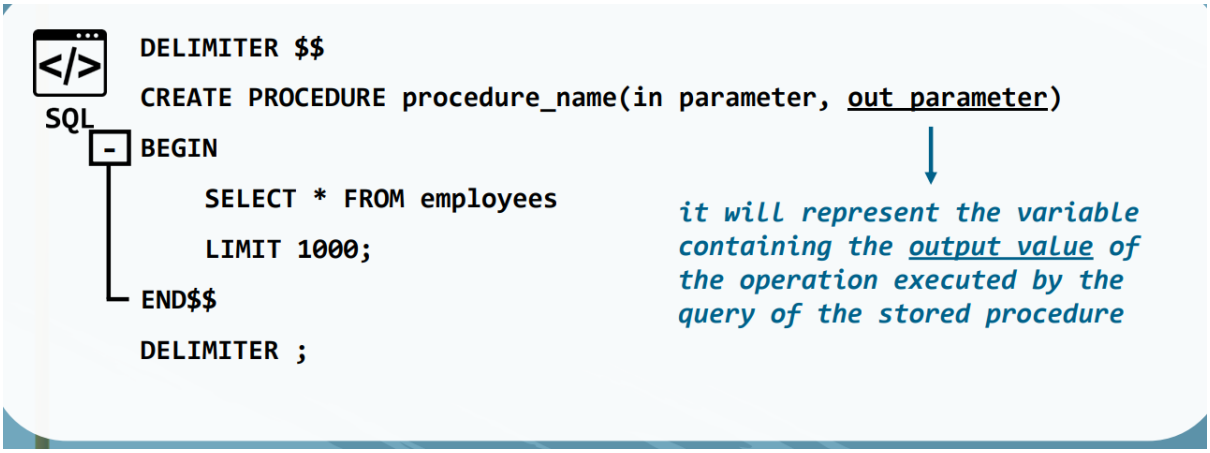
- a stored routine can perform a calculation that transforms an *input* value in an *output* value
- stored procedures can take an *input value* and then use it in the query, or queries, written in the body of the procedure

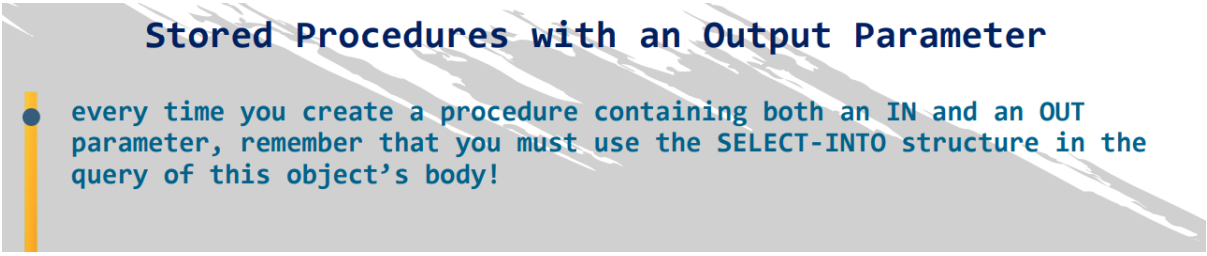
  - this value is represented by the IN parameter



- after that calculation is ready, a result will be returned







Stored procedures (SPs) are the most significant innovation in MySQL 5.0.

These are custom SQL procedures or functions that are stored and executed directly by the MySQL server.

With SPs you have an SQL-based programming language at your service. SPs make it possible to store part of the logic of a client-server database application.

Stored procedures are a collection of SQL commands that are stored and executed in the MySQL

server.

Locks:

Exclusive lock mode prevents the associated resource from being shared. This lock mode is obtained to modify data. The first transaction to lock a resource exclusively is the only transaction that can alter the resource until the exclusive lock is released.

Share lock mode allows the associated resource to be shared, depending on the operations involved. Multiple users reading data can share the data, holding share locks to prevent concurrent access by a writer (who needs an exclusive lock). Several transactions can acquire share locks on the same resource.

An exclusive or write lock gives a process exclusive access for writing to the specified part of the file. While a write lock is in place, no other process can lock that part of the file.

A shared or read lock prohibits any other process from requesting a write lock on the specified part of the file. However, other processes can request read locks.