**Functions:**

A stored function is a specialized type of stored program designed to return a single value. Typically, you use stored functions to encapsulate common formulas or business rules, making them reusable across SQL statements or other stored programs.

**Syntax:**

```
DELIMITER $$


CREATE FUNCTION function_name(
   param1,
   param2,…
)
RETURNS datatype
[NOT] DETERMINISTIC
BEGIN
 -- statements
END $$


DELIMITER ;
```

**Parameters:**

By default, stored functions consider all parameters as IN parameters. You cannot specify IN , OUT or INOUT modifiers to parameters

**Deterministic Keyword:**

A **deterministic** function always returns the same result for the same input parameters, while a **non-deterministic** function produces different results for the same input parameters.

MySQL defaults to the NOT DETERMINISTIC option.

**Calling a stored function in an SQL statement:**

```
SELECT
   customerName,
```

```
    CustomerLevel(creditLimit)
FROM
    customers
ORDER BY
    customerName;
```

**Calling a Stored Function inside Stored Procedure:**

```
DELIMITER $$

CREATE PROCEDURE GetCustomerLevel(
    IN  customerNo INT,
    OUT customerLevel VARCHAR(20)
)
BEGIN

        DECLARE credit DEC(10,2) DEFAULT 0;

    -- get credit limit of a customer
    SELECT
                creditLimit
        INTO credit
    FROM customers
    WHERE
                customerNumber = customerNo;

    -- call the function
    SET customerLevel = CustomerLevel(credit);
END$$
```

```
DELIMITER ;


CALL GetCustomerLevel(131,@customerLevel);

SELECT @customerLevel;
```

**Summary:**

- A stored function is a reusable and encapsulated piece of code in a database that performs a specific task and returns a single value.
- Use the CREATE FUNCTION statement to create a stored function.
- Use stored functions to enhance the modularity and efficiency of SQL statements.