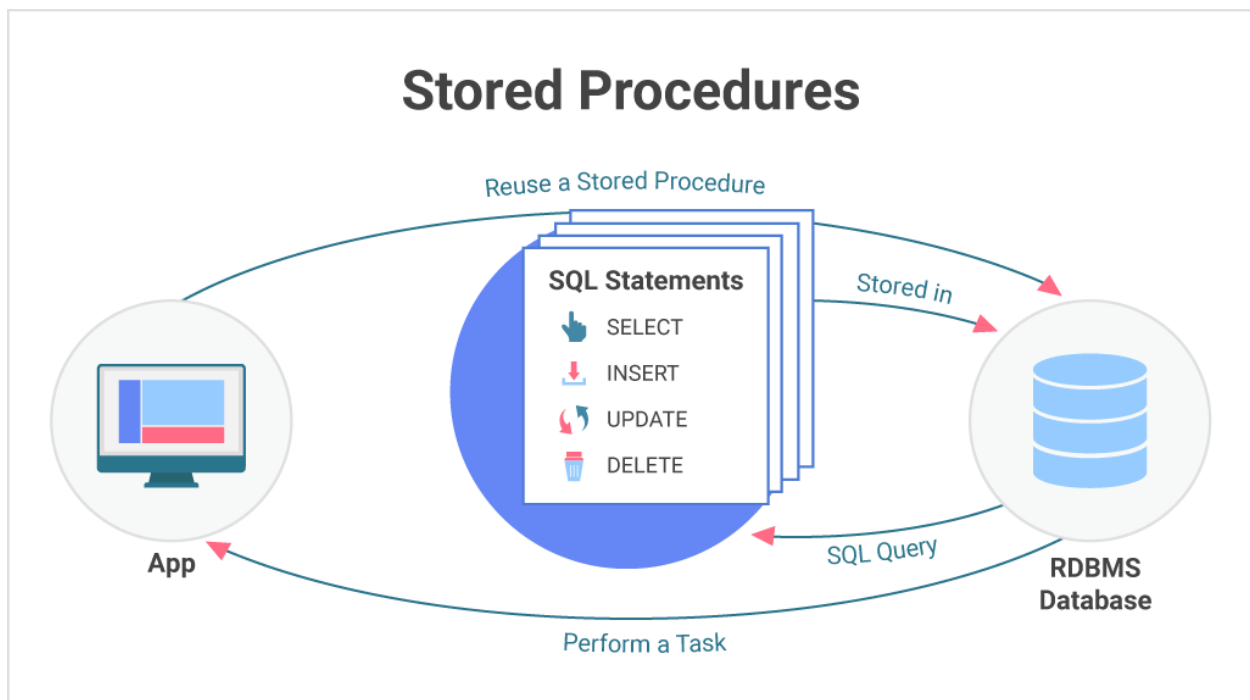


SQL Stored Procedure

A stored procedure is a *collection of pre-compiled SQL statements* stored inside the database. It is a subroutine or a subprogram in the regular computing language. A procedure always contains a name, parameter lists, and SQL statements.



Syntax:

DELIMITER &&

CREATE PROCEDURE procedure_name [[IN | **OUT** | INOUT] parameter_name
datatype [, parameter datatype]]]

BEGIN

Declaration_section

Executable_section

END &&

DELIMITER ;

Parameter Types:

1. IN parameter

It is the default mode. It takes a parameter as input, such as an attribute. When we define it, the calling program has to pass an argument to the stored procedure.

2. OUT parameters

It is used to pass a parameter as output. Its value can be changed inside the stored procedure, and the changed (new) value is passed back to the calling program.

3. INOUT parameters

It is a combination of IN and OUT parameters. It means the calling program can pass the argument, and the procedure can modify the INOUT parameter, and then passes the new value back to the calling program.

How to call a stored procedure?

We can use the CALL statement to call a stored procedure. This statement returns the values to its caller through its parameters (IN, OUT, or INOUT). The following syntax is used to call the stored procedure in MySQL:

CALL procedure_name (parameter(s))

Create the tables given below and insert some records

Patients	
column_name	data_type
patient_id	int
name	varchar
age	int
gender	varchar
address	varchar
disease	varchar
doctor_id	int

Doctor	
column_name	data_type
doctor_id	int
name	varchar
age	int
gender	varchar
address	varchar

Bills	
column_name	data_type
bill_no	int
patient_id	int
doctor_id	int
room_charge	int
no_of_days	int

Laboratory	
column_name	data_type
lab_no	int
patient_id	int
doctor_id	int
date	date
amount	int

Procedure without Parameter

Let's create a stored procedure to extract the patient names that are females.

Output:

name	gender
reema	female
kusum	female
hansha	female

Procedures with IN Parameter

Let's create a stored procedure to extract the top 'n' doctor details in descending order of age and ascending order of doctor name. 'n' is a user input.

Output:

doctor_id	name	age	gender	address
21	asif	55	male	baruch
22	dhawal	40	male	Surat
23	krishna	39	female	Surat

Procedures with multiple IN Parameter

Let's create a stored procedure to insert a record in the patients table.

Output:

patient_id	name	age	gender	address	disease	doctor_id
1	reema	23	female	althan, Surat	fever	21
2	kusum	50	female	vadodara	heart failure	22
3	carlin	43	male	vapi	infection	23
4	rahul	26	male	navsari	cancer	21
6	hansha	55	female	vapi	diabetes	22
8	rekha	56	Female	Surat	Cancer	23

Procedures with OUT Parameter

Let's create a stored procedure to extract and display the maximum room charge taken.

Output:

max(room_charge)
890

Procedures with INOUT Parameter

Let's create a stored procedure to extract the amount of laboratory bill in 'var1' and display the amount given by patient of patient id 'var1'.

@M
300

DROP the stored procedure

