Stored Procedures and Views

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Stored Procedures

- 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**.

Why we use Procedures

- Increases performance
- Stored procedure reduces the traffic
- A procedure is always secure.

Syntax

```
DELIMITER &&

CREATE PROCEDURE procedure_name [[IN | OUT | INOUT] parameter_name datatype, [paramet
er datatype]) ]

BEGIN

   Declaration_section

   Executable_section

END

&&  DELIMITER ;
```

MySQL procedure parameter has one of three modes:

IN parameter

It is the default mode. It takes a parameter as input, such as an attribute.

OUT parameters

It is used to pass a parameter as output.

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.

Invoking/calling a procedure

CALL procedure_name (parameter(s))

Using in parameter

```
DELIMITER &&
CREATE PROCEDURE GetCustomerByCountry ( in ctry varchar(100)  )
BEGIN
    SELECT CustomerName, ContactName    FROM Customers
    WHERE Country = ctry limit 1;
END
&&  DELIMITER ;


call GetCustomerByCountry('Australia');
```

Using out parameter

```
Delimiter &&
create procedure getHighestmark(out highmarks int)
BEGIN
    select max(score) into highmarks from marks limit 1;
END
&&Delimiter ;


call getHighestmark(@m);
select @m;
```

MySQL View

- A view is a database object that has no values.
- The view is a **virtual table** created by a query by joining one or more tables.
- The view and table have one main difference that the views are definitions built on top of other tables (or views).

Syntax

Creation of new view

```
CREATE  VIEW view_name AS
SELECT columns
FROM tables
[WHERE conditions];
```

- **Alter View**

```
ALTER VIEW view_name AS
SELECT columns
FROM table
WHERE conditions;
```

- **Drop View**
- **DROP VIEW** [IF EXISTS] view_name;

String functions in MySQL

Function Name	Description	Example
Ascii ()	Returns ascii value	select ascii('a');
Char_length()	Returns length of string/text	select char_length('ETLHIVE');
Concat()	Combine two strings	select concat(firstname,' ',lastname) as fullname from student;
Concat_ws()	This function is used to add two words or strings with a symbol as concatenating symbol.	concat_ws("_",firstname,"",lastname)
Format()	The FORMAT() function formats a number to a format rounded to a specified number of decimal places	SELECT FORMAT(250500.5634, 2);
Lcase()	converts a string to lower case	select lcase("ETLHIVE") as lower_case;
Upper()	converts a string to upper case	select upper("etlhive") as upper_case;
Ltrim()	Trims leading spaces from a string	select ltrim(" MYSQL");
Rtrim()	Trims trailing spaces from a string	select rtrim("MYSQL ");

Ranking in MYSQL

MySQL uses a ranking function that allows us to **rank each row** of a partition in the databases.

- These functions are always used with **OVER()** clause.
- The ranking functions always assign rank on basis of **ORDER BY** clause.