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TIPS

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Creating MySQL Updatable Views

Summary: in this tutorial, we will show you how to create an updatable view and update data in the underlying table through the view.

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Introduction to MySQL updatable views

In MySQL, views are not only query-able but also updatable. It means that you can use the INSERT or UPDATE statement to insert or update rows of the base table through the updatable view. In addition, you can use DELETE statement to remove rows of the underlying table through the view.

However, to create an updatable view, the SELECT statement that defines the view must not contain any of the following elements:

- Aggregate functions such as MIN, MAX, SUM, AVG, and COUNT.
- DISTINCT
- GROUP BY clause.
- HAVING clause
- UNION or UNION ALL clause.
- Left join or outer join.
- Subquery in the SELECT clause or in the WHERE clause that refers to the table appeared in the FROM clause.
- Reference to non-updatable view in the FROM clause.
- Reference only to literal values.
- Multiple references to any column of the base table.

If you create a view with the TEMPTABLE algorithm, you cannot update the view.

Note that it is sometimes possible to create updatable views based on multiple tables using an

MySQL updatable view example

Let's create an updatable view.

First, we create a view named officeInfo based on the offices table in the sample database. The view refers to three columns of the offices table: officeCode phone, and city.

```
CREATE VIEW officeInfo
  SELECT officeCode, phone, city
  FROM offices;
```

Next, we can query data from the officeInfo view using the following statement:

```
SELECT
```

	officeCode	phone	city
Þ	1	+1 650 219 4782	San Francisco
	2	+1 215 837 0825	Boston
	3	+1 212 555 3000	NYC
	4	+33 14 723 4404	Paris
	5	+81 33 224 5000	Tokyo
	6	+61 2 9264 2451	Sydney
	7	+44 20 7877 2041	London

Then, we can change the phone number of the office with officeCode 4 through the officeInfo view using the following UPDATE statement.

```
UPDATE officeInfo
    phone = '+33 14 723 5555'
   officeCode = 4;
```

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Finally, to verify the change, we can query the data from the officeInfo view by executing the following query:

```
SELECT

*
FROM
officeInfo
WHERE
officeCode = 4;
```

	officeCode	phone	city
•	4	+33 14 723 5555 Paris	

Checking updatable view information

You can check if a view in a database in updatable by querying the is_updatable column from the views table in the information_schema database.

The following query gets all views from the classic models database and shows which views are updatable.

```
1 SELECT
2 table_name,
3 is_updatable
FROM
4 information_schema.views
6 WHERE
7 table_schema = 'classicmodels';
```

	table_name	is_updatable
١	aboveavgproducts	YES
	customerorders	NO
	officeinfo	YES
	saleperorder	NO

Removing rows through the view

First, we create a table named items, insert some rows into the items table, and create a view that contains items whose prices are greater than 700.

```
create a new table named items
   CREATE TABLE items (
       id INT AUTO_INCREMENT PRIMARY KEY,
       name VARCHAR(100) NOT NULL,
       price DECIMAL(11 , 2 ) NOT NULL
6);
      insert data into the items table
   INSERT INTO items(name,price)
   VALUES('Laptop',700.56),('Desktop',699.99),('iPad',700.50);
   -- create a view based on items table
CREATE VIEW LuxuryItems AS
14
      SELECT
16
       FROM
17
           items
      WHERE
18
19
20
          price > 700;
    -- query data from the LuxuryItems view
21 SELECT
23
   FROM
    LuxuryItems;
24
```



Second, we use the ${\tt DELETE}$ statement to remove a row with id value 3.

```
DELETE FROM LuxuryItems

WHERE

id = 3;
```

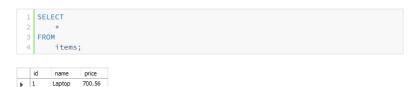
MySQL returns a message saying that 1 row(s) affected.

Third, let's check the data through the view again.

```
1 SELECT
2 *
3 FROM
4 LuxuryItems;
```



Fourth, we can also query the data from the base table items to verify if the DELETE statement actually deleted the row.



As you see, the row with id 3 was removed from the base table.

In this tutorial, we have shown you how to create an updatable view and update data in the underlying table through the view.

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