

MySQL FIRST_VALUE Function

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Summary: in this tutorial, you will learn how to use the MySQL `FIRST_VALUE()` function to get the first row of a frame, partition, or result set.

Introduction to MySQL FIRST_VALUE() function

The `FIRST_VALUE()` is a [window function](#) that allows you to select the first row of a window frame, partition, or result set.

The following illustrates the syntax of the `FIRST_VALUE()` function:

```
FIRST_VALUE (expression) OVER (  
    [partition_clause]  
    [order_clause]  
    [frame_clause]
```

)Code language: SQL (Structured Query Language) (sql)

In this syntax:

expression

The `FIRST_VALUE()` function **returns the value of the expression from the first row of the window frame.**

The `OVER` clause consists of three clauses: `partition_clause`, `order_clause`, and `frame_clause`.

partition_clause

The `partition_clause` clause divides the rows of the result sets into partitions to which the function applies independently.

The `partition_clause` has the following syntax:

```
PARTITION BY expr1, expr2, ...Code language: SQL (Structured Query Language) (sql)
```

order_clause

The `order_clause` clause specifies the logical order of rows in each partition on which the `FIRST_VALUE()` function operates. The following shows the syntax of the `order_clause`:

```
ORDER BY expr1 [ASC|DESC], expr2 [ASC|DESC], ...Code language: SQL (Structured Query Language) (sql)
```

frame_clause

The `frame_clause` defines the subset (or frame) of the current partition. For detailed information on the frame clause syntax, check out the [window functions tutorial](#).

MySQL FIRST_VALUE() function examples

The following statements [create a new table](#) named `overtime` and [insert](#) sample data for the demonstration:

```
CREATE TABLE overtime (  
    employee_name VARCHAR(50) NOT NULL,  
    department VARCHAR(50) NOT NULL,  
    hours INT NOT NULL,  
    PRIMARY KEY (employee_name , department)  
);  
INSERT INTO overtime(employee_name, department, hours)  
VALUES('Diane Murphy','Accounting',37),  
('Mary Patterson','Accounting',74),  
('Jeff Firrelli','Accounting',40),  
('William Patterson','Finance',58),  
('Gerard Bondur','Finance',47),  
('Anthony Bow','Finance',66),  
('Leslie Jennings','IT',90),  
('Leslie Thompson','IT',88),  
('Julie Firrelli','Sales',81),  
('Steve Patterson','Sales',29),  
('Foon Yue Tseng','Sales',65),  
('George Vanauf','Marketing',89),  
('Loui Bondur','Marketing',49),  
('Gerard Hernandez','Marketing',66),  
('Pamela Castillo','SCM',96),  
('Larry Bott','SCM',100),  
('Barry Jones','SCM',65);  
Code language: SQL (Structured Query Language) (sql)
```

1) Using MySQL FIRST_VALUE() function over the whole query result set example

The following statement gets the employee's name, overtime, and the employee who has the least overtime:

Result Grid





Filter Rows:

	employee_name	hours	least_over_time
	Loui Bondur	49	Steve Patterson
	William Patterson	58	Steve Patterson
	Barry Jones	65	Steve Patterson
	Foon Yue Tseng	65	Steve Patterson
	Anthony Bow	66	Steve Patterson
	Gerard Hernandez	66	Steve Patterson
	Mary Patterson	74	Steve Patterson
	Julie Firrelli	81	Steve Patterson
	Leslie Thompson	88	Steve Patterson
	George Vanauf	89	Steve Patterson
	Leslie Jennings	90	Steve Patterson
	Pamela Castillo	96	Steve Patterson
	Larry Bott	100	Steve Patterson

```

SELECT
  employee_name,
  hours,
  FIRST_VALUE(employee_name) OVER (
    ORDER BY hours
  ) least_over_time
FROM
  overtime;

```

Code language: SQL (Structured Query Language) (sql)

Here is the output:

employee_name	hours	least_over_time
Steve Patterson	29	Steve Patterson
Diane Murphy	37	Steve Patterson
Jeff Firrelli	40	Steve Patterson
Gerard Bondur	47	Steve Patterson
Loui Bondur	49	Steve Patterson
William Patterson	58	Steve Patterson
Barry Jones	65	Steve Patterson
Foon Yue Tseng	65	Steve Patterson
Anthony Bow	66	Steve Patterson
Gerard Hernandez	66	Steve Patterson
Mary Patterson	74	Steve Patterson

In this example, the ORDER BY clause ordered the rows in the result set by hours and the FIRST_VALUE() picked the first row indicating the employee who had the least overtime.

2) Using MySQL FIRST_VALUE() function with partitions example

The following statement finds the employee who has the least overtime in every department:

```

37 • select employee_name, department,
38        hours, first_value(employee_name) over (partition by department order by hours) least_over_time from overtime;
39

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
employee_name	department	hours	least_over_time
Diane Murphy	Accounting	37	Diane Murphy
Jeff Firrelli	Accounting	40	Diane Murphy
Mary Patterson	Accounting	74	Diane Murphy
Gerard Bondur	Finance	47	Gerard Bondur
William Patterson	Finance	58	Gerard Bondur
Anthony Bow	Finance	66	Gerard Bondur
Leslie Thompson	IT	88	Leslie Thompson
Leslie Jennings	IT	90	Leslie Thompson
Loui Bondur	Marketing	49	Loui Bondur
Gerard Hernandez	Marketing	66	Loui Bondur
George Vanauf	Marketing	89	Loui Bondur
Steve Patterson	Sales	29	Steve Patterson
Foon Yue Tseng	Sales	65	Steve Patterson
Julie Firrelli	Sales	81	Steve Patterson

```

SELECT
  employee_name,
  department,
  hours,
  FIRST_VALUE(employee_name) OVER (
    PARTITION BY department

```

```
ORDER BY hours
) least_over_time
FROM
overtime;Code language: SQL (Structured Query Language) (sql)
```

The output is:

	employee_name	department	hours	least_over_time
▶	Diane Murphy ✓	Accounting	37	Diane Murphy
	Jeff Firrelli	Accounting	40	Diane Murphy
	Mary Patterson	Accounting	74	Diane Murphy
	Gerard Bondur ✓	Finance	47	Gerard Bondur
	William Patterson	Finance	58	Gerard Bondur
	Anthony Bow	Finance	66	Gerard Bondur
	Leslie Thompson ✓	IT	88	Leslie Thompson
	Leslie Jennings	IT	90	Leslie Thompson
	Loui Bondur ✓	Marketing	49	Loui Bondur
	Gerard Hernandez	Marketing	66	Loui Bondur
	George Vanauf	Marketing	89	Loui Bondur
	Steve Patterson ✓	Sales	29	Steve Patterson
	Foon Yue Tseng	Sales	65	Steve Patterson
	Julie Firrelli	Sales	81	Steve Patterson
	Barry Jones ✓	SCM	65	Barry Jones
	Pamela Castillo	SCM	96	Barry Jones
	Larry Bott	SCM	100	Barry Jones

In this example:

- First, the PARTITION BY clause divides the employees into partitions by departments. In other words, each partition consists of employees who belong to the same department.
- Second, the ORDER BY clause specifies the order of rows in each partition.
- Third, the FIRST_VALUE() operates on each partition sorted by the hours. It returns the first row in each partition which is the employee who has the least overtime within the department.

Summary

- Use the MySQL FIRST_VALUE() function to get the first row of a window frame.

Completed

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