

Group by and built-in functions

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GROUP BY clause

The GROUP BY clause groups a set of rows into a set of summary rows by values of columns or expressions. The GROUP BY clause returns one row for each group. In other words, it reduces the number of rows in the result set

Keyword: GROUP BY **Syntax:** `SELECT column1, column2, ... FROM table_name GROUP BY column1, column2, ...`

In this syntax, you place the GROUP BY clause after the FROM and WHERE clauses. After the GROUP BY keywords, you place is a list of comma-separated columns or expressions to group rows.

MySQL evaluates the GROUP BY clause after the FROM and WHERE clauses and before the HAVING, SELECT, DISTINCT, ORDER BY and LIMIT clauses



Fields that are not encapsulated within an aggregate function and must be included in the GROUP BY Clause at the end of the SQL statement.

For example, the following query will return the number of students in each batch:

```
SELECT
  batch_id, AVG(iq)
FROM
  students
GROUP BY batch_id;
```

You can also use the HAVING clause to filter the result set. For example, the following query will return the number of students in each batch where each batches average IQ is greater than or equal to 100:

```
SELECT
  batch_id, AVG(iq)
FROM
```

```

students
GROUP BY batch_id
HAVING AVG(iq) >= 100;

```

Problems

1. [Aggregation - I](#)
2. [Aggregation - II](#)
3. [Aggregation - III](#)

MySQL functions

MySQL has a number of built-in functions that can be used to perform common tasks. They are divided in the following categories:

1. Numeric
2. String
3. Date and time
4. Miscellaneous

Numeric functions

Function	Description	Example
ABS	Absolute value	SELECT ABS(-1)
CEIL	Round up to the nearest integer	SELECT CEIL(1.5)
FLOOR	Round down to the nearest integer	SELECT FLOOR(1.5)
ROUND	Round to the given precision	SELECT ROUND(1.54, 1)
TRUNCATE	Truncate to the given precision	SELECT TRUNCATE(1.54, 1)
RAND	Generate a random number	SELECT RAND()

See more function [here](#).

String functions

Function	Description	Example
LENGTH	Length of the string	SELECT LENGTH('Kattapa')
LOWER	Convert to lowercase	SELECT LOWER('Kattapa')
UPPER	Convert to uppercase	SELECT UPPER('Kattapa')
LTRIM	Trim leading spaces	SELECT LTRIM(' Kattapa')
RTRIM	Trim trailing spaces	SELECT RTRIM('Kattapa ')

Function	Description	Example
TRIM	Trim leading and trailing spaces	SELECT TRIM(' Kattapa ')
SUBSTR	Extract a substring	SELECT SUBSTR('Namma Bengaluru', 1, 3)
LEFT	Extract left substring	SELECT LEFT('Namma Bengaluru', 3)
RIGHT	Extract right substring	SELECT RIGHT('Namma Bengaluru', 3)
LOCATE	Find the position of a substring	SELECT LOCATE('Bengaluru', 'Namma Bengaluru')

See more function [here](#).

Date and time functions

Function	Description	Example
NOW	Current date and time	SELECT NOW()
CURDATE	Current date	SELECT CURDATE()
CURTIME	Current time	SELECT CURTIME()
YEAR	Year of the date	SELECT YEAR('2020-01-01')
MONTH	Month of the date	SELECT MONTH('2020-01-01')
DAY	Day of the date	SELECT DAY('2020-01-01')
DAYNAME	Day of the week	SELECT DAYNAME('2020-01-01')
DAYOFWEEK	Day of the week	SELECT DAYOFWEEK('2020-01-01')
DATE_ADD	Add a date	SELECT DATE_ADD('2020-01-01', INTERVAL 1 DAY)
DATE_SUB	Subtract a date	SELECT DATE_SUB('2020-01-01', INTERVAL 1 DAY)
DATEDIFF	Difference between two dates	SELECT DATEDIFF('2020-01-01', '2020-01-02')

Miscellaneous functions

Function	Description	Example
IFNULL	Replace NULL values	SELECT IFNULL(batch_id, 'NO BATCH')
COALESCE	Replace NULL values recursively	SELECT COALESCE(batch_id, phone, email, first_name)
IF	Conditional expression	SELECT IF(batch_id = 1, 'YES', 'NO')
CASE	Conditional expression	SELECT CASE WHEN batch_id = 1 THEN 'YES' ELSE 'NO' END