



MySQL - RDBMS

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Seeking HELP

- HELP is client command to seek help on commands/functions.
 - HELP SELECT;
 - HELP Functions;
 - HELP SIGN;



SQL functions

- RDBMS provides many built-in functions to process the data.
- These functions can be classified as:
 - Single row functions
 - One row input produce one row output.
 - e.g. ABS(), CONCAT(), IFNULL(), ...
 - Multi-row or Group functions
 - Values from multiple rows are aggregated to single value.
 - e.g. SUM(), MIN(), MAX(), ...
- These functions can also be categorized based on data types or usage.
 - Numeric functions
 - String functions
 - Date and Time functions
 - Control flow functions
 - Information functions
 - Miscellaneous functions



Numeric & String functions

- ABS()
- POWER()
- ROUND(), FLOOR(), CEIL()
- ASCII(), CHAR()
- CONCAT()
- SUBSTRING()
- LOWER(), UPPER()
- TRIM(), LTRIM(), RTRIM()
- LPAD(), RPAD()
- REGEXP_LIKE()



Date-Time and Information functions

- VERSION()
- USER(), DATABASE()
- MySQL supports multiple date time related data types
 - DATE (3), TIME (3), DATETIME (5), TIMESTAMP (4), YEAR (1)
- SYSDATE(), NOW()
- DATE(), TIME()
- DAYOFMONTH(), MONTH(), YEAR(), HOUR(), MINUTE(), SECOND(), ...
- DATEDIFF(), DATE_ADD(), TIMEDIFF()
- MAKEDATE(), MAKETIME()



Control and NULL and List functions

- NULL is special value in RDBMS that represents absence of value in that column.
- NULL values do not work with relational operators and need to use special operators.
- Most of functions return NULL if NULL value is passed as one of its argument.
- ISNULL()
- IFNULL()
- NULLIF()
- COALESCE()
- GREATEST(), LEAST()
- IF(condition, true-value, false-value)



GROUP BY clause

- GROUP BY is used for analysis of data i.e. generating reports & charts.
- When GROUP BY single column, generated output can be used to plot 2-D chart. When GROUP BY two column, generated output can be used to plot 3-D chart and so on.
- GROUP BY queries are also called as Multi-dimensional / Spatial queries.
- Syntactical Characteristics:
 - If a column is used for GROUP BY, then it may or may not be used in SELECT clause.
 - If a column is in SELECT, it must be in GROUP BY.
- When GROUP BY query is fired on database server, it does following:
 - Load data from server disk into server RAM.
 - Sort data on group by columns.
 - Group similar records by group columns.
 - Perform given aggregate ops on each column.
 - Send result to client.





Thank you!

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