

Chapter 9: Structured Query Language(SQL)

SOME MySQL SQL ELEMENT

- Literals – It generally, refer to a fixed data value which may be character type or numeric literal.
- Datatypes – Are means to identify the type of data and associated operations for handling it.
- Nulls – If a column in a row has no value, then column is said to be null, or to contain a null.
Any arithmetic expression containing a null, always evaluates to null.
- Comments- A comment is a text that is not executed; it is only for documentation purpose.

SQL Command Syntax

- The SQL provides a predefined set of commands that help us work on relational database.
- In commands different terminology used are **keywords, commands, or statements.**
- **Clauses** – Commands consist of one or more logically distinct parts called **clauses.**
“FROM sales” AND “WHERE value=1500.00” here from and where are clauses.
- Commands in SQL are not case –sensitive.

Making Simple Queries

- To fully use the power of an RDBMS, we need to communicate with it. A powerful way of communicating with it is making queries.
- We can see desired data in desired format with help of **SELECT** command.
- **Other commands are :-**
 - ✓ Distinct command
 - ✓ All keyword
 - ✓ Show tables- Viewing Structure of Table
 - ✓ Simple calculations(eg select 1+6)
 - ✓ Scalar Expressions with Selected Fields
 - ✓ Using Column Aliases

- ✓ Handling nulls
- ✓ Putting Text in the Query Output
- ✓ Selecting Specific Rows-**Where** clause
- ✓ Relational Operators
- ✓ Logical Operators
- ✓ Condition based on a Range (eg BETWEEN)

- ✓ Condition Based on a List
- ✓ Condition Based on Pattern Matches (%, _, LIKE, NOT LIKE)
- ✓ Searching for NULL
- ✓ Operator Precedence
- ✓ Sorting Results—ORDER BY clause
- ✓ Sorting by Column Alias

MySQL functions available in SQL

- **Function-** A function is a special type of predefined command set that performs some operation and returns a single value.
- Functions operate on zero, one, two or more values that are provided to them.
- The values that are provided to functions are called **parameters** or **arguments**.

STRING FUNCTION

- CHAR()
- CONCAT ()
- LOWER/LCASE()
- SUBSTR()
- UPPER/UCASE()
- LTRIM()
- RTRIM()
- TRIM()
- INSTR()
- LENGTH()
- LEFT()
- RIGHT()
- MID()

NUMERIC FUNCTIONS

- MOD()
- POWER/POW
- ROUND()
- SIGN()

DATE/TIME FUNCTIONS

- CURDATE()/CURRENT _DATE()
- DATE()
- MONTH()
- YEAR()
- DAYNAME()
- DAYOFMONTH()
- DAYOFWEEK()
- DAYOFYEAR()
- NOW()
- SYSDATE()

DATABASE IN MySQL

- Creating Database
- Opening Database
- Removing Database

CREATING TABLES

- Syntax
- Data Integrity Through Constraints

Different Constraints

- Unique constraint
- Primary key constraint
- Default constraint
- Check constraint
- Foreign key constraint

Changing Data with DML Commands

- INSERT INTO Command , Inserting Null values, Inserting Dates, Inserting Data from Another Table.
- Modifying Data with UPDATE Command
- Deleting Data with DELETE Command

More DDL Commands

- ALTER TABLE Command
- Modifying Column Definitions
- Order of Column
- Changing a Column Name
- Removing Table Components
- DROP TABLE Command