## HiveQL

## What is Hive Query Language (HiveQL)?

Hive Query Language (HiveQL) is a query language in Apache Hive for processing and analyzing structured data. It separates users from the complexity of Map Reduce programming. It reuses common concepts from relational databases, such as tables, rows, columns, and schema, to ease learning. Hive provides a CLI for Hive query writing using Hive Query Language (HiveQL).

Most interactions tend to take place over a command line interface (CLI). Generally, HiveQL syntax is similar to the SQL syntax that most data analysts are familiar with. Hive supports four file formats which are: TEXTFILE, SEQUENCEFILE, ORC and RCFILE (Record Columnar File).

Hive uses derby database for single user metadata storage, and for multiple user Metadata or shared Metadata case, Hive uses MYSQL.

# HiveQL Built-in Operators

Hive provides Built-in operators for Data operations to be implemented on the tables present inside Hive warehouse.

These operators are used for mathematical operations on operands, and it will return specific value as per the logic applied.

Below are the main types of Built-in Operators in HiveQL:

1. Relational Operators
2. Arithmetic Operators
3. Logical Operators
4. Operators on Complex types
5. Complex type Constructors

Differences between SQL and HiveQL is as follows:

| **On the basis of** | **SQL** | **HiveQL** |
| --- | --- | --- |
| Update-commands in table structure | UPDATE, DELETE  INSERT, | UPDATE, DELETE  INSERT, |
| Manages | Relational data | Data Structures |
| Transaction | Supported | Limited Support Supported |
| Indexes | Supported | Supported |
| Data Types | It contain a total of five data types i.e., Integral, floating-point, fixed-point, text and binary strings, temporal | It contains  Boolean, integral, floating-point, fixed-point, timestamp(nanosecond precision) , Date, text and binary strings, temporal, array, map, struct, Union |
| Functions | Hundreds of built-in functions | Hundreds of built-in functions |
| Mapreduce | Not Supported | Supported |
| Multitable inserts in table | Not supported | Supported |
| Create table…as Select | Not supported | Supported |
| Select command | Supported | Supported with SORT BY clause for partial ordering and LIMIT to restrict number of rows returned |
| Joins | Supported | Inner joins, outer joins, semi join, map joins, cross joins |
| Subqueries | Supported | Only Used in FROM, WHERE, or HAVING clauses |
| Views | Can be Updated | Read-only i.e. cannot be updated |