**Sql mode in mysql means**

In MySQL, the SQL mode is a setting that determines how the MySQL server behaves when it encounters certain conditions or performs certain operations. It affects the SQL syntax and the handling of various aspects of SQL queries. The SQL mode can be set globally for the entire server, for a specific session, or even for a specific query.

Here are some common aspects affected by the SQL mode:

1. **Strict Mode**:

Enforces strict adherence to SQL standards. For example, in strict mode, inserting an invalid value into a column that has no default value results in an error.

1. **ANSI\_QUOTES:**

Causes the use of double quotation marks (") as identifier delimiters, rather than the backtick (`) which is the default in MySQL.

1. **ONLY\_FULL\_GROUP\_BY**:

Instructs MySQL to reject queries where the GROUP BY clause is not sufficiently restrictive. It requires that all columns in the SELECT clause that are not part of an aggregate function be included in the GROUP BY clause.

1. **IGNORE\_SPACE:**

Ignores spaces before the function name in the GROUP BY clause. This can affect how queries are parsed.

1. **NO\_ZERO\_DATE:**

Does not allow '0000-00-00' as a valid date. In strict mode, this results in an error.

1. **NO\_ENGINE\_SUBSTITUTION:**

Prevents the substitution of the default storage engine if the specified storage engine is not available.

You can set the SQL mode globally in the MySQL configuration file (my.cnf or my.ini), for a specific session using the SET GLOBAL sql\_mode command, or for a specific connection using the SET SESSION sql\_mode command.

For example, to set the SQL mode globally in the configuration file:

**Query:**

sql\_mode = "STRICT\_TRANS\_TABLES,NO\_ZERO\_DATE"

**Or to set it for a specific session:**

SET SESSION sql\_mode = "STRICT\_TRANS\_TABLES,NO\_ZERO\_DATE"; sql\_mode = "STRICT\_TRANS\_TABLES,NO\_ZERO\_DATE";

Understanding and configuring the SQL mode can be important to ensure that your MySQL server behaves as expected and follows specific SQL standards or conventions.

**Example:**

STRICT\_TRANS\_TABLES,STRICT\_ALL\_TABLES,NO\_ZERO\_IN\_DATE,NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,TRADITIONAL,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION define this sql mode

Sure, let's break down the different components of the SQL mode you've provided:

1. **STRICT\_TRANS\_TABLES:**

• In this mode, strict mode is applied to transactional storage engines (like InnoDB). It means that if a value is invalid for a column data type, an error occurs, and the statement is not executed.

2. **STRICT\_ALL\_TABLES:**

• Extends the strict mode to apply to all storage engines, not just transactional ones.

3. **NO\_ZERO\_IN\_DATE:**

• In strict mode, the date '0000-00-00' is considered invalid. This mode prevents inserting or updating values with zero components in date columns.

4. **NO\_ZERO\_DATE:**

• Similar to NO\_ZERO\_IN\_DATE, it disallows '0000-00-00' as a valid date.

5. **ERROR\_FOR\_DIVISION\_BY\_ZERO:**

• Causes an error to be generated when a division by zero is encountered rather than returning NULL.

6. **TRADITIONAL:**

• A combination of several modes, including STRICT\_TRANS\_TABLES, STRICT\_ALL\_TABLES, NO\_ZERO\_IN\_DATE, NO\_ZERO\_DATE, and others. It aims to enforce the traditional SQL mode.

7. **NO\_AUTO\_CREATE\_USER:**

• Disallows the automatic creation of new users when attempting to connect with a username that does not exist.

8. **NO\_ENGINE\_SUBSTITUTION:**

• If the specified storage engine is not available, an error occurs instead of substituting the default storage engine.

So, in summary, the SQL mode you provided

(STRICT\_TRANS\_TABLES,STRICT\_ALL\_TABLES,NO\_ZERO\_IN\_DATE,NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,TRADITIONAL,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION) enforces strict validation for data types, disallows zero values in date columns, generates errors for division by zero, and follows traditional SQL behaviors. It also prevents the automatic creation of users and avoids substituting the storage engine if the specified one is not available.