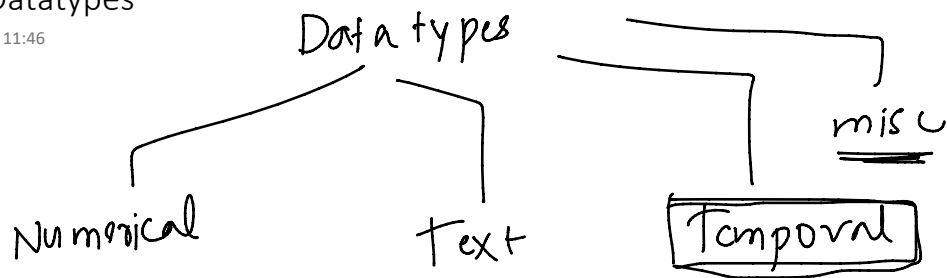


Temporal Datatypes

24 February 2023 11:46



In MySQL, there are several temporal data types that can be used to store and manipulate time and date values. These include:

1. **DATE** - used for storing date values in the format YYYY-MM-DD.
2. **TIME** - used for storing time values in the format HH:MM:SS.
3. **DATETIME** - used for storing date and time values in the format YYYY-MM-DD HH:MM:SS.
4. **TIMESTAMP** - used for storing date and time values in the format YYYY-MM-DD HH:MM:SS. It has a range of 1970-01-01 00:00:01 UTC to 2038-01-19 03:14:07 UTC.
5. **YEAR** - used for storing year values in 2-digit or 4-digit format (YYYY or YY). If the year is specified with 2 digits, it is assumed to be in the range 1970-2069 (inclusive).

2023-03-11

08:00:00 24hrs

20:00:00

college

Year of graduation

61 → 2061
81 → 1981

→ 2061
1981

11 mar, 2023

Creating and Populating Temporal Tables

24 February 2023 11:47

1. Uber -> user_id, cab_id, start_time, end_time

DATETIME Functions

24 February 2023 11:50

1. `CURR_DATE()`
2. `CURR_TIME()`
3. `NOW()`

Extraction Function

1. `DATE()` and `TIME()`
2. `YEAR()`
3. `DAY()` or `DAYOFMONTH()`
4. `DAYOFWEEK()`
5. `DAYOFYEAR()`
6. `MONTH()` and `MONTHNAME()`
7. `QUARTER()`
8. `WEEK()` or `WEEKOFYEAR()`
9. `HOUR()` -> `MINUTE()` -> `SECOND()`
10. `LAST_DAY()`

Datetime Formatting

24 February 2023 11:48

DATE_FORMAT()

TIME_FORMAT()

Type conversion

24 February 2023 11:48

1. Implicit Type Conversion
2. Explicit Type Conversion -> STR_TO_DATE()

23:30:00 → 11:30 pm

11:45:56 → 11:45 am

DATETIME Arithmetic

24 February 2023 11:50

1. DATEDIFF()
2. TIMEDIFF()
3. DATE_ADD() and DATE_SUB() INTERVAL
4. ADDTIME() and SUBTIME()

TIMESTAMP VS DATETIME

11 March 2023 11:10

In MySQL, both DATETIME and TIMESTAMP are used to store date and time values, but they differ in their range, storage format, and behaviour.

Here are the main differences between DATETIME and TIMESTAMP:

1. **Range:** DATETIME supports a range of '1000-01-01 00:00:00' to '9999-12-31 23:59:59', while TIMESTAMP supports a range of '1970-01-01 00:00:01' UTC to '2038-01-19 03:14:07' UTC.
2. **Storage format:** DATETIME uses 8 bytes to store the date and time values, while TIMESTAMP uses 4 bytes.
3. **Behaviour on insertion/update:** DATETIME values are stored as-is, without any conversion, while TIMESTAMP values are converted from the current time zone to UTC when inserted, and converted back to the current time zone when retrieved.
4. **Precision:** DATETIME can store up to microseconds (6 digits after the decimal point), while TIMESTAMP can only store up to seconds.
5. **Auto-update:** TIMESTAMP columns can be set to update automatically whenever the row is inserted or updated, using the ON UPDATE CURRENT_TIMESTAMP clause.

In general, you should use DATETIME when you need to store date and time values outside the range of TIMESTAMP, or when you need to store values with greater precision than TIMESTAMP. You should use TIMESTAMP when you need to store values that can be automatically updated, or when you want to take advantage of its smaller storage format.

Case Study - Flights

24 February 2023 11:48

1. Find the month with most number of flights
2. Which week day has most costly flights
3. Find number of indigo flights every month
4. Find list of all flights that depart between 10AM and 2PM from Delhi to Bangalore
5. Find the number of flights departing on weekends from Bangalore
6. Calculate the arrival time for all flights by adding the duration to the departure time.
7. Calculate the arrival date for all the flights
8. Calculate the average duration of flights between two cities.
9. Find all flights that arrive at their destination after midnight
10. Find quarter wise number of flights for each airline
11. Find the longest flight distance(between cities in terms of time) in India
12. Average time duration for flights that have 1 stop vs more than 1 stops
13. Find all Air India flights in a given date range originating from Delhi
14. Find the longest flight of each airline
15. Find all the pair of cities having average time duration > 3 hours