DATE AND TIME FUNCTIONS

In SQL, dates are complicated for newbies, since while working with a database, the format of the data in the table must be matched with the input data to insert. In various scenarios instead of date, datetime (time is also involved with date) is used.

For storing a date or a date and time value in a database,MySQL offers the following data types:

Data Type	Format	Example
DATE	YYYY-MM-DD	2024-07-19
DATETIME	YYYY-MM-DD HH:MM:SS	2024-07-19 14:30:00
TIMESTAMP	YYYY-MM-DD HH:MM:SS	2024-07-19 14:30:00
YEAR	YYYY or YY	2024 or 24

Now, come to some popular functions in SQL date functions.

NOW()

Returns the current date and time.

Query

```
SELECT NOW();
```

Output

Number of Records: 1

NOW()
2023-04-04 07:29:38

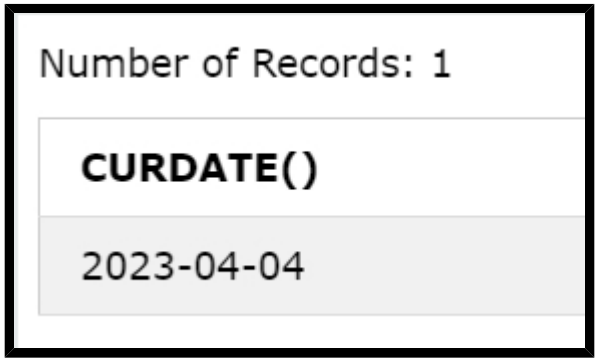
CURDATE()

Returns the current date.

Query

```
SELECT CURDATE();
```

Output



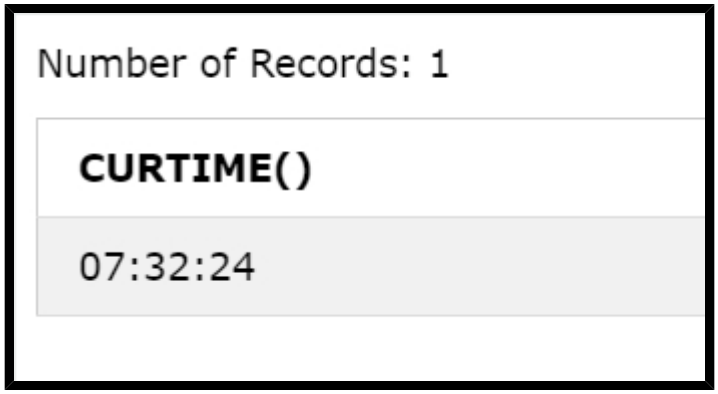
CURTIME()

Returns the current time.

Query

```
SELECT CURTIME();
```

Output



DATE()

Extracts the date part of a date or date/time expression. Example: For the below table named 'Test'.

Id	Name	BirthTime
4120	Pratik	1996-09-26 16:44:15.581

Query

```
SELECT Name,
DATE(BirthTime)
AS BirthDate
FROM Test;
```

Output

Name	BirthDate
Pratik	1996-09-26

EXTRACT()

Returns a single part of a date/time.

Syntax

```
EXTRACT(unit FROM date);
```

Several units can be considered but only some are used such as **MICROSECOND**, **SECOND**, **MINUTE**, **HOUR**, **DAY**, **WEEK**, **MONTH**, **QUARTER**, **YEAR**, etc. And 'date' is a valid date expression. Example: For the below table named 'Test'

Id	Name	BirthTime
4120	Pratik	1996-09-26 16:44:15.581

Query

```
SELECT Name,
EXTRACT(DAY FROM BirthTime)
AS BirthDay
FROM Test;
```

Output

Name	Birthday
Pratik	26

Query

```
SELECT Name,
EXTRACT(YEAR FROM BirthTime)
AS BirthYear
FROM Test;
```

Output

Name	BirthYear
Pratik	1996

Query

```
SELECT Name,
EXTRACT(SECOND FROM BirthTime)
AS BirthSecond
FROM Test;
```

Output

Name	BirthSecond
Pratik	581

DATE_ADD()

Adds a specified time interval to a date.

Syntax

```
DATE_ADD(date,
INTERVAL expr type);
```

Where, date – valid date expression, and expr is the number of intervals we want to add. and type can be one of the following: MICROSECOND, SECOND, MINUTE, HOUR, DAY, WEEK, MONTH, QUARTER, YEAR, etc. Example: For the below table named 'Test'.

Id	Name	BirthTime
4120	Pratik	1996-09-26 16:44:15.581

Query

```
SELECT Name,
DATE_ADD(BirthTime,
INTERVAL
1 YEAR)
AS BirthTimeModified
FROM Test;
```

Output

Name	BirthTimeModified
Pratik	1997-09-26 16:44:15.581

Query

```
SELECT Name,
DATE_ADD(BirthTime,
```

```
INTERVAL 30 DAY)
AS BirthDayModified
FROM Test;
```

Output

Name	BirthDayModified
Pratik	1996-10-26 16:44:15.581

Query

```
SELECT Name,
DATE_ADD(BirthTime,
INTERVAL 4 HOUR)
AS BirthHourModified
FROM Test;
```

Output

Name	BirthSecond
Pratik	1996-10-26 20:44:15.581

DATE_SUB()

Subtracts a specified time interval from a date. The syntax for DATE_SUB is the same as DATE_ADD just the difference is that DATE_SUB is used to subtract a given interval of date.

DATEDIFF()

Returns the number of days between two dates.

Syntax

```
DATEDIFF(interval, date1, date2);
```

Query

```
SELECT
DATEDIFF(month, '2017-01-13', '2017-01-03')
AS DateDiff;
```

Output

DateDiff

DATE_FORMAT()

Displays date/time data in different formats.

Syntax

```
DATE_FORMAT(date, format);
```

The date is a valid date and the format specifies the output format for the date/time. The formats that can be used are:

- D%a-Abbreviated weekday name (Sun-Sat)
- %b-Abbreviated month name (Jan-Dec)
- %c-Month, numeric (0-12)
- %D-Day of month with English suffix (0th, 1st, 2nd, 3rd)
- %d-Day of the month, numeric (00-31)
- %e-Day of the month, numeric (0-31)
- %f - Microseconds (000000-999999)
- %H - Hour (00-23)
- %h - Hour (01-12)
- %I - Hour (01-12)
- %i - Minutes, numeric (00-59)
- %j - Day of the year (001-366)
- %k - Hour (0-23)
- %l - Hour (1-12)
- %M - Month name (January-December)
- %m - Month, numeric (00-12)
- %p - AM or PM
- %r - Time, 12-hour (hh:mm:ss followed by AM or PM)
- %S - Seconds (00-59)
- %s - Seconds (00-59)
- %T - Time, 24-hour (hh:mm:ss)
- %U - Week (00-53) where Sunday is the first day of the week
- %u - Week (00-53) where Monday is the first day of the week
- %V - Week (01-53) where Sunday is the first day of the week, used with %X
- %v - Week (01-53) where Monday is the first day of the week, used with %x
- %W - Weekday name (Sunday-Saturday)
- %w - Day of the week (0=Sunday, 6=Saturday)
- %X - Year for the week where Sunday is the first day of the week, four digits, used with %V
- %x - Year for the week where Monday is the first day of the week, four digits, used with %v
- %Y - Year, numeric, four digits
- %y - Year, numeric, two digits