---------To display date of first day of month 3 months before

Select date_format(date_sub(curdate() , interval 3 month),’01-%m-%Y’)

--------find the year in which more than 10 employees joined

Select year(hiredate),count(*)

From emp

Group by year(hiredate)

Having count(*)>=2

--------DDL(Data definition language)

1. Create table

Data types in mysql

- Numeric
- Date and Time
- String Types.

Let us now discuss them in detail.

Numeric Data Types

MySQL uses all the standard ANSI SQL numeric data types, so if you're coming to MySQL from a different database system, these definitions will look familiar to you. The following list shows the common numeric data types and their descriptions −

- **INT** − A normal-sized integer that can be signed or unsigned. If signed, the allowable range is from -2147483648 to 2147483647. If unsigned, the allowable range is from 0 to 4294967295. You can specify a width of up to 11 digits.
- **TINYINT** − A very small integer that can be signed or unsigned. If signed, the allowable range is from -128 to 127. If unsigned, the allowable range is from 0 to 255. You can specify a width of up to 4 digits.
- **SMALLINT** − A small integer that can be signed or unsigned. If signed, the allowable range is from -32768 to 32767. If unsigned, the allowable range is from 0 to 65535. You can specify a width of up to 5 digits.
- **MEDIUMINT** − A medium-sized integer that can be signed or unsigned. If signed, the allowable range is from -8388608 to 8388607. If unsigned, the allowable range is from 0 to 16777215. You can specify a width of up to 9 digits.

- **BIGINT** − A large integer that can be signed or unsigned. If signed, the allowable range is from -9223372036854775808 to 9223372036854775807. If unsigned, the allowable range is from 0 to 18446744073709551615. You can specify a width of up to 20 digits.
- **FLOAT(M,D)** − A floating-point number that cannot be unsigned. You can define the display length (M) and the number of decimals (D). This is not required and will default to 10,2, where 2 is the number of decimals and 10 is the total number of digits (including decimals). Decimal precision can go to 24 places for a FLOAT.
- **DOUBLE(M,D)** − A double precision floating-point number that cannot be unsigned. You can define the display length (M) and the number of decimals (D). This is not required and will default to 16,4, where 4 is the number of decimals. Decimal precision can go to 53 places for a DOUBLE. REAL is a synonym for DOUBLE.
- **DECIMAL(M,D)** − An unpacked floating-point number that cannot be unsigned. In the unpacked decimals, each decimal corresponds to one byte. Defining the display length (M) **Date and Time Types**

The MySQL date and time datatypes are as follows −

- **DATE** − A date in YYYY-MM-DD format, between 1000-01-01 and 9999-12-31. For example, December 30th, 1973 would be stored as 1973-12-30.
- **DATETIME** − A date and time combination in YYYY-MM-DD HH:MM:SS format, between 1000-01-01 00:00:00 and 9999-12-31 23:59:59. For example, 3:30 in the afternoon on December 30th, 1973 would be stored as 1973-12-30 15:30:00.
- **TIMESTAMP** − A timestamp between midnight, January 1st, 1970 and sometime in 2037. This looks like the previous DATETIME format, only without the hyphens between numbers; 3:30 in the afternoon on December 30th, 1973 would be stored as 19731230153000 (YYYYMMDDHHMMSS).
- **TIME** − Stores the time in a HH:MM:SS format.
- **YEAR(M)** − Stores a year in a 2-digit or a 4-digit format. If the length is specified as 2 (for example YEAR(2)), YEAR can be between 1970 to 2069 (70 to 69). If the length is specified as 4, then YEAR can be 1901 to 2155. The default length is 4.

String Types

Although the numeric and date types are fun, most data you'll store will be in a string format. This list describes the common string datatypes in MySQL.

- **CHAR(M)** − A fixed-length string between 1 and 255 characters in length (for example CHAR(5)), right-padded with spaces to the specified length when stored. Defining a length is not required, but the default is 1.
- **VARCHAR(M)** − A variable-length string between 1 and 255 characters in length. For example, VARCHAR(25). You must define a length when creating a VARCHAR field.
- **Nvarchar** stores Unicode or Non-English character data types, and it can contain a maximum of 4000 characters. It supports ASCII values as well as special characters. To support multiple languages, nvarchar is a must.

- **BLOB or TEXT** − A field with a maximum length of 65535 characters. BLOBs are "Binary Large Objects" and are used to store large amounts of binary data, such as images or other types of files. Fields defined as TEXT also hold large amounts of data. The difference between the two is that the sorts and comparisons on the stored data are **case sensitive** on BLOBs and are **not case sensitive** in TEXT fields. You do not specify a length with BLOB or TEXT.
- **TINYBLOB or TINYTEXT** − A BLOB or TEXT column with a maximum length of 255 characters. You do not specify a length with TINYBLOB or TINYTEXT.
- **MEDIUMBLOB or MEDIUMTEXT** − A BLOB or TEXT column with a maximum length of 16777215 characters. You do not specify a length with MEDIUMBLOB or MEDIUMTEXT.
- **LONGBLOB or LONGTEXT** − A BLOB or TEXT column with a maximum length of 4294967295 characters. You do not specify a length with LONGBLOB or LONGTEXT.
- **ENUM** − An enumeration, which is a fancy term for list. When defining an ENUM, you are creating a list of items from which the value must be selected (or it can be NULL). For example, if you wanted your field to contain "A" or "B" or "C", you would define your ENUM as ENUM ('A', 'B', 'C') and only those values (or NULL) could ever populate that field.

Constraints in create table

All field level constraint should be written immediately after the field, and table level constraint can be written after last field

1. Not null--- do not allow null values.(field level)
2. Check--→ allows only values which satisfies given condition (table level)
3. Unique --→ all not null values should be unique (table level)
4. Primary--→ unique+not null, there can be only one primary key(table level)
5. Foreign key--→ it refers values of some other column of same table or different table for data validity(table level)
6. Default-→ it specifies the value to be inserted in the table if user gives null.(field level)

Student(sid, sname,mobile)

```
create table student(

sid int  primary key,

sname varchar(30) not null,

mobile int unique

)


insert into student values(12,'Atharva',123456);

insert into student values(13,'Atharva',123457);

insert into student(sid,sname) values(14,'Rajan');
```

----create table member

Member(mid,mname,adarnum,feespaid,bk_issued)

Mid—primary key, mname→ not null, adhar num---unique, feespaid >100,books issued---default 2

```
Create table member(
Mid int primary key,
Mname varchar(20) not null,
Adhar_num int  unique,
Fees_paid float(10,2) check(fees_paid>100),
Bk_issued int default 2
)
```

Loan(loanid,name,loan_required,loan_approved)

```
Create table loan(
Loanid int primary key auto_increment,
Name varchar(30),
Loan_required double(9,2),
Loan_approved double(9,2),
Constraint l_chk check(loan_approved <=loan_required)
);
```