What is SQL?

- SQL stands for Structured Query Language
- It can access and manipulate databases
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.

What Can SQL do?

- SQL can execute queries against a database
- It can retrieve data from a database
- It can insert records in a database
- It can update records in a database
- It can delete records from a database
- It can create new databases
- It can create new tables in a database
- It can create stored procedures in a database
- It can create views in a database
- It can set permissions on tables, procedures, and views

What is database?

- A database is an organized collection of data, so that it can be easily accessed and managed.
- You can organize data into tables, rows, columns, and index it to make it easier to find relevant information.
- Database handlers create a database in such a way that only one set of software program provides access of data to all the users.
- The main purpose of the database is to operate a large amount of information by storing, retrieving, and managing data
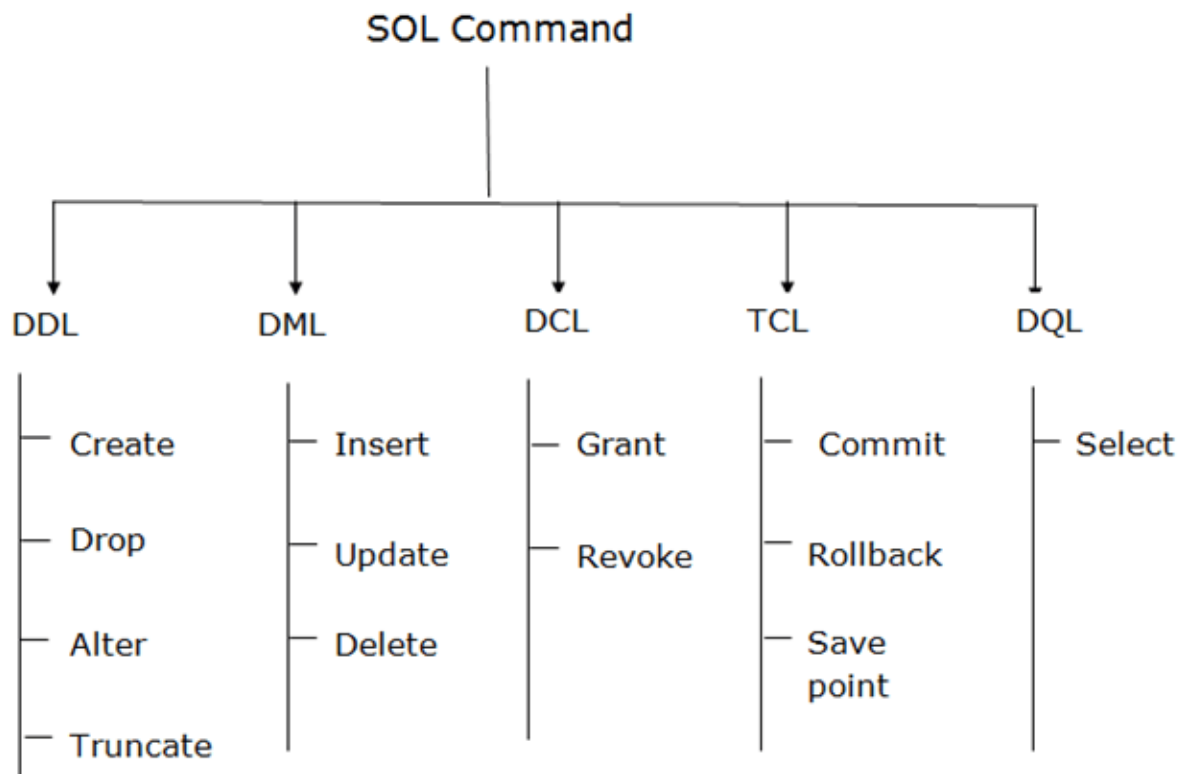
What is database table?

A database most often contains one or more tables. Each table is identified by a name (e.g. "Customers" or "Orders"). Tables contain records (rows) with data.

What is data type?

Data types define the nature of the data that can be stored in a particular column of a table MySQL has 3 main categories of data types namely

1. Numeric,

2. Text

3. Date/time

What are types of sql is used for database?

```
                        SOL Command
                             |
        +---------+----------+----------+----------+
        |         |          |          |          |
       DDL       DML        DCL        TCL        DQL
        |         |          |          |          |
      — Create  — Insert    — Grant    — Commit   — Select
        |         |          |          |
      — Drop    — Update    — Revoke   — Rollback
        |         |          |
      — Alter   — Delete               — Save
        |                                 point
      — Truncate
```

DDl-(Database Definition Language)

- DDL changes the structure of the table like creating a table, deleting a table, altering a table, etc.
- All the command of DDL are auto-committed that means it permanently save all the changes in the database.

commands

- CREATE
- ALTER
- DROP
- TRUNCATE

BASIC

mysql> create database dbfirst;

- This is first step to create database.

mysql> show databases;

- Second step to show our database

Database
dbfirst
dbsecond
dbthird
information_schema
mysql
performance_schema
sys

7 rows in set (0.04 sec)
mysql> use dbthird;

- Which database is used to select

Create table

mysql> create table bank(b_id int, b_name varchar(20), b_salary int);
mysql> select* from bank;   //show the table
mysql> desc students;

```
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| b_id     | int         | YES  |     | NULL    |       |
| b_name   | varchar(20) | YES  |     | NULL    |       |
| b_salary | varchar(20) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
```

3 rows in set (0.01 sec)

Alter

add
mysql> alter table bank add(e_address varchar(20));
mysql> select* from bank;
```
+------+---------+----------+-----------+
| b_id | b_name  | b_salary | e_address |
+------+---------+----------+-----------+
|    1 | Kajol   |    50000 | NULL      |
|    2 | prabhu  |    50000 | NULL      |
|    3 | Preetha |   120000 | NULL      |
```

```
+------+---------+----------+-----------+
```
3 rows in set (0.00 sec)

Drop

mysql> alter table learner drop column l_id;
mysql> select*from learner;
```
+---------+----------+-------+
| l_name  | l_degree | email |
+---------+----------+-------+
| Preetha | BA       | NULL  |
| Swetha  | BE       | NULL  |
| Kajol   | BE       | NULL  |
| Ragini  | BSc      | NULL  |
| Meena   | BTECH    | NULL  |
+---------+----------+-------+
```
5 rows in set (0.00 sec)

Rename

mysql> alter table learner rename column l_name to l_identity;
mysql> select *from learner;
```
+------------+----------+-------+
| l_identity | l_degree | email |
+------------+----------+-------+
| Preetha    | BA       | NULL  |
| Swetha     | BE       | NULL  |
| Kajol      | BE       | NULL  |
| Ragini     | BSc      | NULL  |
| Meena      | BTECH    | NULL  |
+------------+----------+-------+
```
5 rows in set (0.00 sec)
Truncate
mysql> truncate table learner;

mysql> select*from learner;
Empty set (0.00 sec)
Drop
mysql> drop table bank;
mysql> select*from bank;
ERROR 1146 (42S02): Table 'dbthird.bank' doesn't exist

DML

mysql> insert into doctor values(8,"chaitali","vadapalani",43),(9,"pranjal","vir
ukambakkam",45);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> select *from doctor;
```
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|    1 | rajesh   | saligramam    |    30 |
|    2 | radha    | virukambakam  |    36 |
|    3 | rani     | virukambakkam |    45 |
|    4 | raja     | nungambakkam  |    56 |
|    5 | kumar    | adayar        |    50 |
|    6 | sridhar  | vadapalani    |    43 |
|    7 | chaithra | saligramam    |    45 |
|    8 | chaitali | vadapalani    |    43 |
|    9 | pranjal  | virukambakkam |    45 |
+------+----------+---------------+-------+
9 rows in set (0.00 sec)
```

mysql> select* from doctor where d_address='vadapalani' and d_age=43;
```
+------+----------+------------+-------+
| d_id | d_name   | d_address  | d_age |
+------+----------+------------+-------+
|    6 | sridhar  | vadapalani |    43 |
|    8 | chaitali | vadapalani |    43 |
+------+----------+------------+-------+
2 rows in set (0.00 sec)
```

mysql>   update   doctor   set   d_address="virugammbakkam"   where
d_name="radha";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select*from doctor;
```
+------+----------+----------------+-------+
| d_id | d_name   | d_address      | d_age |
+------+----------+----------------+-------+
|    1 | rajesh   | saligramam     |    30 |
|    2 | radha    | virugammbakkam |    36 |
|    3 | rani     | virukambakkam  |    45 |
```

```
|    4 | raja    | nungambakkam  |    56 |
|    5 | kumar   | adayar        |    50 |
|    6 | sridhar | vadapalani    |    43 |
|    7 | chaithra| saligramam    |    45 |
|    8 | chaitali| vadapalani    |    43 |
|    9 | pranjal | virukambakkam |    45 |
+------+----------+---------------+-------+
9 rows in set (0.00 sec)

mysql> select * from doctor where d_address="virukambakkam" or d_age=36;
+------+----------+---------------+-------+
| d_id | d_name  | d_address      | d_age |
+------+----------+---------------+-------+
|    2 | radha   | virugammbakkam |    36 |
|    3 | rani    | virukambakkam  |    45 |
|    9 | pranjal | virukambakkam  |    45 |
+------+----------+---------------+-------+
3 rows in set (0.00 sec)

mysql> select * from doctor;
+------+----------+---------------+-------+
| d_id | d_name  | d_address      | d_age |
+------+----------+---------------+-------+
|    1 | rajesh  | saligramam     |    30 |
|    2 | radha   | virugammbakkam |    36 |
|    3 | rani    | virukambakkam  |    45 |
|    4 | raja    | nungambakkam   |    56 |
|    5 | kumar   | adayar         |    50 |
|    6 | sridhar | vadapalani     |    43 |
|    7 | chaithra| saligramam     |    45 |
|    8 | chaitali| vadapalani     |    43 |
|    9 | pranjal | virukambakkam  |    45 |
+------+----------+---------------+-------+
9 rows in set (0.00 sec)

mysql> delete from doctor where d_address="adayar" or d_name="kumar";
Query OK, 1 row affected (0.00 sec)

mysql> selcet * from doctor;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'selcet * from doctor' at line 1
mysql> delete from doctor where d_address="adayar" or d_name="kumar";
```

Query OK, 0 rows affected (0.00 sec)

mysql> select*from doctor;
```
+------+----------+----------------+-------+
| d_id | d_name   | d_address      | d_age |
+------+----------+----------------+-------+
|    1 | rajesh   | saligramam     |    30 |
|    2 | radha    | virugammbakkam |    36 |
|    3 | rani     | virukambakkam  |    45 |
|    4 | raja     | nungambakkam   |    56 |
|    6 | sridhar  | vadapalani     |    43 |
|    7 | chaithra | saligramam     |    45 |
|    8 | chaitali | vadapalani     |    43 |
|    9 | pranjal  | virukambakkam  |    45 |
+------+----------+----------------+-------+
```
8 rows in set (0.00 sec)

DQL or DSL or DRL

(Data Query language)or(data selection language)or(data request or retrived language)

Create the database
Show databases
```
+-------------------+
| Database          |
+-------------------+
| dbfirst           |
| dbfive            |
| dbsecond          |
| dbseven           |
| dbsix             |
| dbthird           |
| information_schema |
| mysql             |
| performance_schema |
| sys               |
+-------------------+
```

Creating the table
create table doctor(d_id int,d_name varchar(20),d_address varchar(20),d_age int);

insert the values

```
mysql>    insert    into    doctor    values(1,"rajesh","saligramam",
30),(2,"radha","virukambakam",36),(3,"rani","virukambakkam",45),(4,"r
aja","nungambakkam",56),(5,"kumar","adayar",50),(6,"sridhar","vadapal
ani",43);

select*from doctor;
+------+---------+--------------+-------+
| d_id | d_name  | d_address    | d_age |
+------+---------+--------------+-------+
|    1 | rajesh  | saligramam   |    30 |
|    2 | radha   | virukambakam |    36 |
|    3 | rani    | virukambakkam|    45 |
|    4 | raja    | nungambakkam |    56 |
|    5 | kumar   | adayar       |    50 |
|    6 | sridhar | vadapalani   |    43 |
+------+---------+--------------+-------+

insert into doctor values(7,"chaithra","saligramam",45);
Query OK, 1 row affected (0.01 sec)

mysql> select * from doctor;
+------+----------+--------------+-------+
| d_id | d_name   | d_address    | d_age |
+------+----------+--------------+-------+
|    1 | rajesh   | saligramam   |    30 |
|    2 | radha    | virukambakam |    36 |
|    3 | rani     | virukambakkam|    45 |
|    4 | raja     | nungambakkam |    56 |
|    5 | kumar    | adayar       |    50 |
|    6 | sridhar  | vadapalani   |    43 |
|    7 | chaithra | saligramam   |    45 |
+------+----------+--------------+-------+
7 rows in set (0.00 sec)
Where command  should be used(=)
mysql> select d_name from doctor where d_age=45;
+----------+
| d_name   |
+----------+
| rani     |
| chaithra |
+----------+
Where command  should be used(>)
```

ysql> select d_name from doctor where d_age>40;
```
+----------+
| d_name   |
+----------+
| rani     |
| raja     |
| kumar    |
| sridhar  |
| chaithra |
+----------+
```
5 rows in set (0.00 sec)
insert into doctor values(8,"chaitali","vadapalani",43),(9,"pranjal","vir ukambakkam",45);
select *from doctor;
```
+------+----------+--------------+-------+
| d_id | d_name   | d_address    | d_age |
+------+----------+--------------+-------+
|    1 | rajesh   | saligramam   |    30 |
|    2 | radha    | virukambakam |    36 |
|    3 | rani     | virukambakkam |   45 |
|    4 | raja     | nungambakkam |    56 |
|    5 | kumar    | adayar       |    50 |
|    6 | sridhar  | vadapalani   |    43 |
|    7 | chaithra | saligramam   |    45 |
|    8 | chaitali | vadapalani   |    43 |
|    9 | pranjal  | virukambakkam |   45 |
+------+----------+--------------+------
```

SQL "AND" example with "SELECT" statement

select* from doctor where d_address='vadapalani' and d_age=43;
```
+------+----------+------------+-------+
| d_id | d_name   | d_address  | d_age |
+------+----------+------------+-------+
|    6 | sridhar  | vadapalani |    43 |
|    8 | chaitali | vadapalani |    43 |
+------+----------+------------+-------+
```

SQL "AND" example with "UPDATE" statement

mysql> update doctor set d_address="virugammbakkam" where d_name="radha";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select*from doctor;

d_id	d_name	d_address	d_age
1	rajesh	saligramam	30
2	radha	virugammbakkam	36
3	rani	virukambakkam	45
4	raja	nungambakkam	56
5	kumar	adayar	50
6	sridhar	vadapalani	43
7	chaithra	saligramam	45
8	chaitali	vadapalani	43
9	pranjal	virukambakkam	45

9 rows in set (0.00 sec)

Sql 'or' condition

select * from doctor where d_address="virukambakkam" or d_age=36;

d_id	d_name	d_address	d_age
2	radha	virugammbakkam	36
3	rani	virukambakkam	45
9	pranjal	virukambakkam	45

3 rows in set (0.00 sec)

Delete command should be used in or command

d_id	d_name	d_address	d_age
1	rajesh	saligramam	30
2	radha	virugammbakkam	36
3	rani	virukambakkam	45
4	raja	nungambakkam	56
5	kumar	adayar	50

```
|   6 | sridhar  | vadapalani     |   43 |
|   7 | chaithra | saligramam     |   45 |
|   8 | chaitali | vadapalani     |   43 |
|   9 | pranjal  | virukambakkam  |   45 |
+------+----------+---------------+------+
```
9 rows in set (0.00 sec)

mysql> delete from doctor where d_address="adayar" or d_name="kumar";
Query OK, 1 row affected (0.00 sec)

mysql> delete from doctor where d_address="adayar" or d_name="kumar";
Query OK, 0 rows affected (0.00 sec)

mysql> select*from doctor;
```
+------+----------+---------------+------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+------+
|   1 | rajesh   | saligramam     |   30 |
|   2 | radha    | virugammbakkam |   36 |
|   3 | rani     | virukambakkam  |   45 |
|   4 | raja     | nungambakkam   |   56 |
|   6 | sridhar  | vadapalani     |   43 |
|   7 | chaithra | saligramam     |   45 |
|   8 | chaitali | vadapalani     |   43 |
|   9 | pranjal  | virukambakkam  |   45 |
+------+----------+---------------+------+
```

Sql 'as' to be used

select d_id as ID,d_name as 'Name',d_address as 'Address',d_age as Age from doctor;
```
+------+----------+---------------+------+
| ID  | Name     | Address       | Age  |
+------+----------+---------------+------+
|   1 | rajesh   | saligramam     |   30 |
|   2 | radha    | virugammbakkam |   36 |
|   3 | rani     | virukambakkam  |   45 |
|   4 | raja     | nungambakkam   |   56 |
|   6 | sridhar  | vadapalani     |   43 |
|   7 | chaithra | saligramam     |   45 |
|   8 | chaitali | vadapalani     |   43 |
|   9 | pranjal  | virukambakkam  |   45 |
```

```
+------+----------+---------------+------+
```
8 rows in set (0.00 sec)

(its used to change the table name)

mysql> select sum(Age),Address from doctor group by Address;
ERROR 1054 (42S22): Unknown column 'Age' in 'field list'
mysql> select*from doctor;
```
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|    1 | rajesh   | saligramam    |    30 |
|    2 | radha    | virugammbakkam |   36 |
|    3 | rani     | virukambakkam |    45 |
|    4 | raja     | nungambakkam  |    56 |
|    6 | sridhar  | vadapalani    |    43 |
|    7 | chaithra | saligramam    |    45 |
|    8 | chaitali | vadapalani    |    43 |
|    9 | pranjal  | virukambakkam |    45 |
+------+----------+---------------+-------+
```
8 rows in set (0.00 sec)

Group by

mysql> select sum(d_age),d_address from doctor group by d_address;
```
+------------+----------------+
| sum(d_age) | d_address      |
+------------+----------------+
|         75 | saligramam     |
|         36 | virugammbakkam |
|         90 | virukambakkam  |
|         56 | nungambakkam   |
|         86 | vadapalani     |
+------------+----------------+
```
5 rows in set (0.01 sec)

Sql 'order by'

mysql> select * from doctor;
```
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|    1 | rajesh   | saligramam    |    30 |
```

```
|    2 | radha   | virugammbakkam |   36 |
|    3 | rani    | virukambakkam  |   45 |
|    4 | raja    | nungambakkam   |   56 |
|    6 | sridhar | vadapalani     |   43 |
|    7 | chaithra| saligramam     |   45 |
|    8 | chaitali| vadapalani     |   43 |
|    9 | pranjal | virukambakkam  |   45 |
+------+----------+---------------+-------+
8 rows in set (0.00 sec)

mysql> select* from doctor order by d_name asc;
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|    8 | chaitali | vadapalani    |   43 |
|    7 | chaithra | saligramam    |   45 |
|    9 | pranjal  | virukambakkam |   45 |
|    2 | radha    | virugammbakkam|   36 |
|    4 | raja     | nungambakkam  |   56 |
|    1 | rajesh   | saligramam    |   30 |
|    3 | rani     | virukambakkam |   45 |
|    6 | sridhar  | vadapalani    |   43 |
+------+----------+---------------+-------+
8 rows in set (0.00 sec)

mysql> select* from doctor order by d_name dsc;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near 'dsc' at line 1
mysql> select* from doctor order by d_name desc;
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|    6 | sridhar  | vadapalani    |   43 |
|    3 | rani     | virukambakkam |   45 |
|    1 | rajesh   | saligramam    |   30 |
|    4 | raja     | nungambakkam  |   56 |
|    2 | radha    | virugammbakkam|   36 |
|    9 | pranjal  | virukambakkam |   45 |
|    7 | chaithra | saligramam    |   45 |
|    8 | chaitali | vadapalani    |   43 |
+------+----------+---------------+-------+
8 rows in set (0.00 sec)
```

```
mysql> select* from doctor order by rand() limit 1;
+------+--------+--------------+-------+
| d_id | d_name | d_address    | d_age |
+------+--------+--------------+-------+
|    3 | rani   | virukambakkam |   45 |
+------+--------+--------------+-------+
1 row in set (0.01 sec)

mysql> select* from doctor order by d_name asc where d_age >40;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near 'where d_age >40' at line 1
mysql> select* from doctor order by rand();
+------+----------+--------------+-------+
| d_id | d_name   | d_address    | d_age |
+------+----------+--------------+-------+
|    9 | pranjal  | virukambakkam |   45 |
|    7 | chaithra | saligramam   |   45 |
|    3 | rani     | virukambakkam |   45 |
|    6 | sridhar  | vadapalani   |   43 |
|    8 | chaitali | vadapalani   |   43 |
|    1 | rajesh   | saligramam   |   30 |
|    2 | radha    | virugammbakkam |  36 |
|    4 | raja     | nungambakkam |   56 |
+------+----------+--------------+-------+
8 rows in set (0.00 sec)
```

COUNT

```
select *from doctor;
+------+----------+--------------+-------+
| d_id | d_name   | d_address    | d_age |
+------+----------+--------------+-------+
|    1 | rajesh   | saligramam   |   30 |
|    2 | radha    | virugammbakkam |  36 |
|    3 | rani     | virukambakkam |   45 |
|    4 | raja     | nungambakkam |   56 |
|    6 | sridhar  | vadapalani   |   43 |
|    7 | chaithra | saligramam   |   45 |
|    8 | chaitali | vadapalani   |   43 |
|    9 | pranjal  | virukambakkam |   45 |
+------+----------+--------------+-------+
```

8 rows in set (0.00 sec)

select count(*) from doctor where d_age>=30;
```
+----------+
| count(*) |
+----------+
|        8 |
+----------+
```
1 row in set (0.00 sec)

mysql> select count(distinct d_name) from doctor;
```
+-----------------------+
| count( distinct d_name) |
+-----------------------+
|                     8 |
+-----------------------+
```
1 row in set (0.01 sec)

mysql> select d_age,count(*) from doctor group by d_age;
```
+-------+----------+
| d_age | count(*) |
+-------+----------+
|    30 |        1 |
|    36 |        1 |
|    45 |        3 |
|    56 |        1 |
|    43 |        2 |
+-------+----------+
```
5 rows in set (0.00 sec)

mysql> select d_age,count(*) from doctor group by d_age having count(*)>40;
Empty set (0.00 sec)

mysql> select d_age,count(*) from doctor group by d_age having count(*)>30;
Empty set (0.00 sec)

AGGREGATION

mysql> select sum(d_age) from doctor;
```
+------------+
| sum(d_age) |
+------------+
```

```
|      343 |
+------------+
1 row in set (0.00 sec)
mysql> select avg(d_age) from doctor;
+------------+
| avg(d_age) |
+------------+
|    42.8750 |
+------------+
1 row in set (0.00 sec)
mysql> select MAX(d_age) from doctor;
+------------+
| MAX(d_age) |
+------------+
|       56 |
+------------+
1 row in set (0.00 sec)
mysql> select Min(d_age) from doctor;
+------------+
| Min(d_age) |
+------------+
|       30 |
+------------+
1 row in set (0.00 sec)

ql>
mysql> select  d_age,count(*)  from  doctor  group  by  d_age  having
count(*)>40;
Empty set (0.00 sec)

mysql> select count(*) from doctor where d_age>=30;
+----------+
| count(*) |
+----------+
|        8 |
+----------+
1 row in set (0.00 sec)

mysql>
mysql> select *from doctor;
+------+----------+----------------+-------+
| d_id | d_name   | d_address      | d_age |
+------+----------+----------------+-------+
```

```
|  1 | rajesh  | saligramam      |  30 |
|  2 | radha   | virugammbakkam  |  36 |
|  3 | rani    | virukambakkam   |  45 |
|  4 | raja    | nungambakkam    |  56 |
|  6 | sridhar | vadapalani      |  43 |
|  7 | chaithra| saligramam      |  45 |
|  8 | chaitali| vadapalani      |  43 |
|  9 | pranjal | virukambakkam   |  45 |
+------+----------+---------------+-------+
8 rows in set (0.00 sec)

mysql> select* from doctor order by d_name asc,d_age desc;
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|  8 | chaitali | vadapalani      |  43 |
|  7 | chaithra | saligramam      |  45 |
|  9 | pranjal  | virukambakkam   |  45 |
|  2 | radha    | virugammbakkam  |  36 |
|  4 | raja     | nungambakkam    |  56 |
|  1 | rajesh   | saligramam      |  30 |
|  3 | rani     | virukambakkam   |  45 |
|  6 | sridhar  | vadapalani      |  43 |
+------+----------+---------------+-------+
8 rows in set (0.00 sec)

mysql> select *from doctor where d_age=45 order by name asc;
ERROR 1054 (42S22): Unknown column 'name' in 'order clause'
mysql> select *from doctor where d_age=45 order by d_name asc;
+------+----------+---------------+-------+
| d_id | d_name   | d_address     | d_age |
+------+----------+---------------+-------+
|  7 | chaithra | saligramam      |  45 |
|  9 | pranjal  | virukambakkam   |  45 |
|  3 | rani     | virukambakkam   |  45 |
+------+----------+---------------+-------+
```

TCL commands

```
mysql> use dbsecond;
Database changed
mysql> select *from students;
```

```
+------+--------+----------+
| s_id | s_name | s_degree |
+------+--------+----------+
|    1 | Ruthra | BE       |
|    2 | Durga  | BE       |
|    3 | Vicky  | BE       |
|    4 | rajesh | BE       |
|    5 | Ramya  | BE       |
|    6 | Raja   | BA       |
|    7 | Ragav  | BSC      |
|    8 | vidhya | BA       |
+------+--------+----------+
8 rows in set (0.00 sec)

mysql> commit;
Query OK, 0 rows affected (0.00 sec)

mysql> insert students set s_name='sheela' where s_id=6;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near 'where s_id=6' at line 1
mysql> update students set s_name='sheela' where s_id=6;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> savepoint A;
Query OK, 0 rows affected (0.00 sec)

mysql> update students set s_name='srihari' where s_id=7;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> savepoint B;
Query OK, 0 rows affected (0.00 sec)

mysql> ROLLBACK to B;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from students;
+------+---------+----------+
| s_id | s_name  | s_degree |
```

```
+------+---------+----------+
|   1 | Ruthra  | BE       |
|   2 | Durga   | BE       |
|   3 | Vicky   | BE       |
|   4 | rajesh  | BE       |
|   5 | Ramya   | BE       |
|   6 | sheela  | BA       |
|   7 | srihari | BSC      |
|   8 | vidhya  | BA       |
+------+---------+----------+
8 rows in set (0.00 sec)

mysql> ROLLBACK to A;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from students;
+------+---------+----------+
| s_id | s_name | s_degree |
+------+---------+----------+
|   1 | Ruthra | BE       |
|   2 | Durga  | BE       |
|   3 | Vicky  | BE       |
|   4 | rajesh | BE       |
|   5 | Ramya  | BE       |
|   6 | sheela | BA       |
|   7 | Ragav  | BSC      |
|   8 | vidhya | BA       |
+------+---------+----------+
8 rows in set (0.00 sec)

mysql> select *from students where s_degree='BA';
+------+---------+----------+
| s_id | s_name | s_degree |
+------+---------+----------+
|   6 | sheela | BA       |
|   8 | vidhya | BA       |
+------+---------+----------+
2 rows in set (0.00 sec)

mysql> alter table students add s_salary int;
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

BOOLEAN EXPRESSION

mysql> alter table students add s_salary int;
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select* from students;

s_id	s_name	s_degree	s_salary
1	Ruthra	BE	NULL
2	Durga	BE	NULL
3	Vicky	BE	NULL
4	rajesh	BE	NULL
5	Ramya	BE	NULL
6	sheela	BA	NULL
7	Ragav	BSC	NULL
8	vidhya	BA	NULL

8 rows in set (0.00 sec)

mysql> update students set s_salary= 10000 where s_id=1;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select* from students;

s_id	s_name	s_degree	s_salary
1	Ruthr	BE	10000
2	Durga	BE	NULL
3	Vicky	BE	NULL
4	rajesh	BE	NULL
5	Ramya	BE	NULL
6	sheela	BA	NULL
7	Ragav	BSC	NULL
8	vidhya	BA	NULL

8 rows in set (0.00 sec)

mysql> update students set s_salary= 20000 where s_id=2;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 20000 where s_id=3;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 25000 where s_id=4;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 25000 where s_id=5;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 15000 where s_id=6;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 15000 where s_id=7;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update students set s_salary= 10000 where s_id=8;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select *from students;
+------+--------+----------+----------+
| s_id | s_name | s_degree | s_salary |
+------+--------+----------+----------+
1	Ruthra	BE	10000
2	Durga	BE	20000
3	Vicky	BE	20000
4	rajesh	BE	25000
5	Ramya	BE	25000
6	sheela	BA	15000
7	Ragav	BSC	15000
8	vidhya	BA	10000
+------+--------+----------+----------+
8 rows in set (0.00 sec)

'WHERE' CONDITION

mysql> select * from students where s_salary=10000;
+------+--------+----------+----------+
| s_id | s_name | s_degree | s_salary |

```
+------+--------+----------+----------+
|   1  | Ruthra | BE       |   10000  |
|   8  | vidhya | BA       |   10000  |
+------+--------+----------+----------+
2 rows in set (0.00 sec)
```

ADDITION

```
mysql> select (25000+25000) as addition;
+----------+
| addition |
+----------+
|   50000  |
+----------+
1 row in set (0.00 sec)
```

GET TIME

```
mysql> select current_timestamp;
+---------------------+
| current_timestamp   |
+---------------------+
| 2023-06-28 11:26:27 |
+---------------------+
1 row in set (0.00 sec)
```

ACTIVITY query

```
create database dbnine;
Query OK, 1 row affected (0.01 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| dbfirst            |
| dbfive             |
| dbnine             |
| dbsecond           |
| dbseven            |
| dbsix              |
| dbthird            |
| information_schema |
| mysql              |
```

| performance_schema |
| sys |
+--------------------+
11 rows in set (0.01 sec)

mysql> use dbnine;
Database changed
mysql>   create   table   empdeatails(emp_id   int,emp_names
varchar(20),job_name verchar(20),manager_id int,hire_date int,salry
 int,commision int,dep_id int);
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near 'verchar(20),manager_id int,hire_date int,salry
int,commision int,dep_id int)' at line 1
mysql>   create   table   empdeatails(emp_id   int,emp_names
varchar(20),job_name   varchar(20),manager_id   int,hire_date   int,salry
int,commision int,dep_id int);
Query OK, 0 rows affected (0.03 sec)

mysql> desc empdeatails;
+------------+-------------+------+-----+---------+-------+
| Field | Type | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
emp_id	int	YES		NULL	
emp_names	varchar(20)	YES		NULL	
job_name	varchar(20)	YES		NULL	
manager_id	int	YES		NULL	
hire_date	int	YES		NULL	
salry	int	YES		NULL	
commision	int	YES		NULL	
dep_id	int	YES		NULL	
+------------+-------------+------+-----+---------+-------+
8 rows in set (0.03 sec)

mysql> insert into empdeatails values(68319,'kayling','president', ,19-11-
18,6000, ,1001);
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near ',19-11-18,6000, ,1001)' at line 1
mysql> insert into empdeatails values(68319,'kayling','president',19-11-
18,6000,1001);
ERROR 1136 (21S01): Column count doesn't match value count at row 1

mysql> insert into empdeatails values(68319,'kayling','president','null',19-11-18,6000,'null',1001);
ERROR 1366 (HY000): Incorrect integer value: 'null' for column 'manager_id' at row 1
mysql> insert into empdeatails values(68319,'kayling','president',0,19-11-18,6000,0,1001);
Query OK, 1 row affected (0.00 sec)

mysql>insert into empdeatails values(66928,'blaze','manager',68319,1991-05-01,2750,0,3001),(67832,'clare','manager',68319,1991-06-09,2550,0,1001),(65646,'jonas','manager',68319,1991-04-02,2957,0,2001),(67858,'scarlet','analyst',65646,1997-04-19,3100,0,2001),(69062,'frank','analyst',65646,1991-12-03,3100,0,2001);
Query OK, 5 rows affected (0.00 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> select*from empdeatails;
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
| emp_id | emp_names | job_name | manager_id | hire_date | salry | commision | dep_id |
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
68319	kayling	president	0	-10	6000	0	1001
66928	blaze	manager	68319	1985	2750	0	3001
67832	clare	manager	68319	1976	2550	0	1001
65646	jonas	manager	68319	1985	2957	0	2001
67858	scarlet	analyst	65646	1974	3100	0	2001
69062	frank	analyst	65646	1976	3100	0	2001
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
6 rows in set (0.00 sec)

mysql> update empdeatails set hire_date=1991-11-18 where emp_id=68319;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select*from empdeatails;

```
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry | commision | dep_id |
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
| 68319  | kayling   | president |         0  |    1962   | 6000  |        0  |  1001  |
| 66928  | blaze     | manager   |    68319   |    1985   | 2750  |        0  |  3001  |
| 67832  | clare     | manager   |    68319   |    1976   | 2550  |        0  |  1001  |
| 65646  | jonas     | manager   |    68319   |    1985   | 2957  |        0  |  2001  |
| 67858  | scarlet   | analyst   |    65646   |    1974   | 3100  |        0  |  2001  |
| 69062  | frank     | analyst   |    65646   |    1976   | 3100  |        0  |  2001  |
+--------+-----------+-----------+------------+-----------+-------+-----------+--------+
6 rows in set (0.00 sec)

mysql> alter table empdeatails drop column commision;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from empdeatails;
+--------+-----------+-----------+------------+-----------+-------+--------+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry | dep_id |
+--------+-----------+-----------+------------+-----------+-------+--------+
| 68319  | kayling   | president |         0  |    1962   | 6000  |  1001  |
| 66928  | blaze     | manager   |    68319   |    1985   | 2750  |  3001  |
| 67832  | clare     | manager   |    68319   |    1976   | 2550  |  1001  |
| 65646  | jonas     | manager   |    68319   |    1985   | 2957  |  2001  |
| 67858  | scarlet   | analyst   |    65646   |    1974   | 3100  |  2001  |
| 69062  | frank     | analyst   |    65646   |    1976   | 3100  |  2001  |
+--------+-----------+-----------+------------+-----------+-------+--------+
6 rows in set (0.00 sec)

mysql> alter table empdeatails add column commision;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near '' at line 1
mysql> alter table empdeatails add commision int;
Query OK, 0 rows affected (0.01 sec)
```

Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from empdeatails;
```
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry |
dep_id | commision |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| 68319 | kayling   | president |          0 |      1962 | 6000 |   1001
|    NULL |
| 66928 | blaze     | manager   |      68319 |      1985 | 2750 |   3001
|    NULL |
| 67832 | clare     | manager   |      68319 |      1976 | 2550 |   1001
|    NULL |
| 65646 | jonas     | manager   |      68319 |      1985 | 2957 |   2001
|    NULL |
| 67858 | scarlet   | analyst   |      65646 |      1974 | 3100 |   2001
|    NULL |
| 69062 | frank     | analyst   |      65646 |      1976 | 3100 |   2001
|    NULL |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
6 rows in set (0.00 sec)
```

mysql> update empdeatails set commission=4000 where dep_id=1001 or dep_id=3001;
ERROR 1054 (42S22): Unknown column 'commission' in 'field list'
mysql> update empdeatails set commision=4000 where dep_id=1001 or dep_id=3001;
Query OK, 3 rows affected (0.00 sec)
Rows matched: 3 Changed: 3 Warnings: 0

mysql> select * from empdeatails;
```
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry |
dep_id | commision |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| 68319 | kayling   | president |          0 |      1962 | 6000 |   1001 |     4000
|
```

```
| 66928 | blaze     | manager   |       68319 |      1985 | 2750 |    3001
|    4000 |
| 67832 | clare     | manager   |       68319 |      1976 | 2550 |    1001
|    4000 |
| 65646 | jonas     | manager   |       68319 |      1985 | 2957 |    2001
|    NULL |
| 67858 | scarlet   | analyst   |       65646 |      1974 | 3100 |    2001
|    NULL |
| 69062 | frank     | analyst   |       65646 |      1976 | 3100 |    2001
|    NULL |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
6 rows in set (0.00 sec)

mysql> delete from empdeatails where job_name='analyst';
Query OK, 2 rows affected (0.00 sec)

mysql> select * from empdeatails;
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry |
dep_id | commision |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
| 68319 | kayling   | president |         0  |      1962 | 6000 |    1001 |    4000
|
| 66928 | blaze     | manager   |       68319 |      1985 | 2750 |    3001
|    4000 |
| 67832 | clare     | manager   |       68319 |      1976 | 2550 |    1001
|    4000 |
| 65646 | jonas     | manager   |       68319 |      1985 | 2957 |    2001
|    NULL |
+--------+-----------+-----------+------------+-----------+-------+--------+-------
----+
4 rows in set (0.00 sec)

mysql> delete    from    empdeatails    where    job_name='manager'
,emp_name='clare';
ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near ',emp_name='clare'' at line 1
mysql> delete from empdeatails where emp_name='clare';
ERROR 1054 (42S22): Unknown column 'emp_name' in 'where clause'
```

mysql> delete from empdeatails where emp_names='clare';
Query OK, 1 row affected (0.00 sec)

mysql> select * from empdeatails;
```
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry | dep_id | commision |
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
| 68319  | kayling   | president |         0  |      1962 |  6000 |   1001 |      4000 |
| 66928  | blaze     | manager   |     68319  |      1985 |  2750 |   3001 |      4000 |
| 65646  | jonas     | manager   |     68319  |      1985 |  2957 |   2001 |      NULL |
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
```
3 rows in set (0.00 sec)

mysql> update empdeatails set manager_id=68310 where job_name='president';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from empdeatails;
```
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
| emp_id | emp_names | job_name  | manager_id | hire_date | salry | dep_id | commision |
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
| 68319  | kayling   | president |     68310  |      1962 |  6000 |   1001 |      4000 |
| 66928  | blaze     | manager   |     68319  |      1985 |  2750 |   3001 |      4000 |
| 65646  | jonas     | manager   |     68319  |      1985 |  2957 |   2001 |      NULL |
+--------+-----------+-----------+------------+-----------+-------+--------+-----------+
```
3 rows in set (0.00 sec)

mysql> truncate table empdeatails;

```
Query OK, 0 rows affected (0.02 sec)

mysql> select * from empdeatails;
Empty set (0.00 sec)

mysql> drop table empdeatails;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from empdeatails;
ERROR 1146 (42S02): Table 'dbnine.empdeatails' doesn't exist
mysql>
```

```
mysql> create database DBA;

Query OK, 1 row affected (0.06 sec)

mysql> show databases;

+--------------------+
| Database           |
+--------------------+
| dba                |
| dbfirst            |
| dbfive             |
| dbnine             |
| dbsecond           |
| dbseven            |
| dbsix              |
| dbthird            |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
12 rows in set (0.03 sec)
```

mysql> use DBA;

Database changed

mysql> create table A(id int, name varchar(20), amount int, age int, phonenumber int);

Query OK, 0 rows affected (0.04 sec)

mysql> create table B(id int, course varchar(20), address varchar(20));

Query OK, 0 rows affected (0.02 sec)

mysql> insert into A values(112,"ruthra",20000,23,0987),(113,"santhya",15000,21,7654),(116,"akash",34000,25,8765),(117,"sathish",20000,27,8978),(119,"suren",30000,24,9867),(210,"narmatha",23000,22,9768);

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select*from A;

```
+------+----------+--------+------+-------------+
| id   | name     | amount | age  | phonenumber |
+------+----------+--------+------+-------------+
|  112 | ruthra   |  20000 |  23  |         987 |
|  113 | santhya  |  15000 |  21  |        7654 |
|  116 | akash    |  34000 |  25  |        8765 |
|  117 | sathish  |  20000 |  27  |        8978 |
|  119 | suren    |  30000 |  24  |        9867 |
|  210 | narmatha |  23000 |  22  |        9768 |
+------+----------+--------+------+-------------+
```

6 rows in set (0.00 sec)

mysql> insert into B values(117,"phython","saligramam");

Query OK, 1 row affected (0.03 sec)
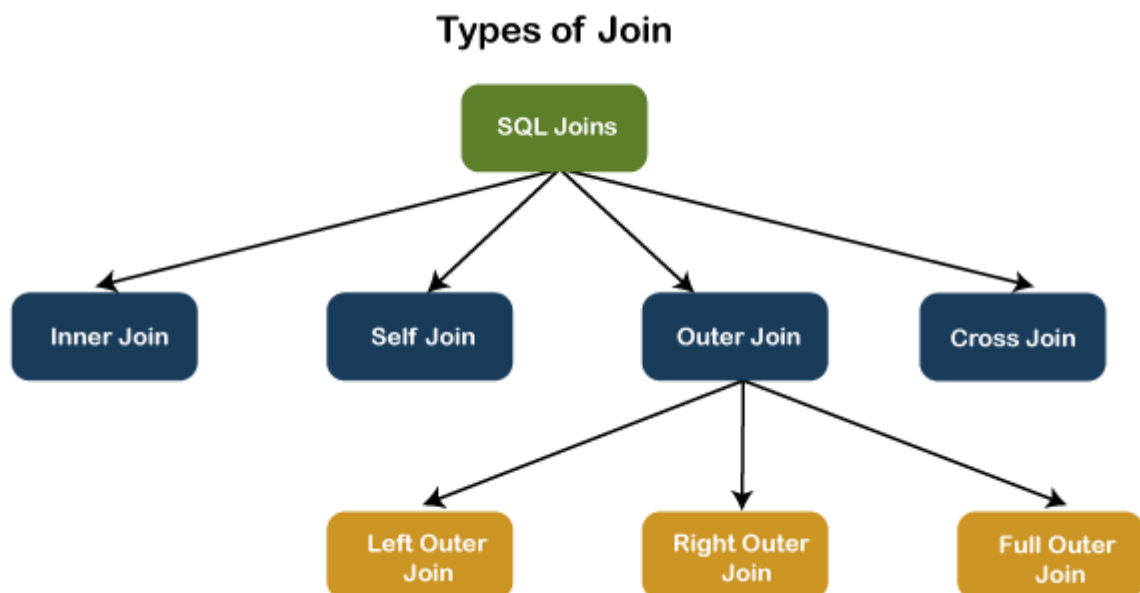
mysql> insert into B values(210,"ccna","nungambakkam");

Query OK, 1 row affected (0.00 sec)

mysql> insert into B values(113," sql","nandhanam"),(220,"java","annanagar");

Query OK, 2 rows affected (0.00 sec)

Records: 2 Duplicates: 0 Warnings: 0

JOIN

mysql> select*from A;

```
+------+----------+--------+------+-------------+
| id   | name     | amount | age  | phonenumber |
+------+----------+--------+------+-------------+
| 112  | ruthra   | 20000  | 23   |         987 |
| 113  | santhya  | 15000  | 21   |        7654 |
| 116  | akash    | 34000  | 25   |        8765 |
| 117  | sathish  | 20000  | 27   |        8978 |
```

```
| 119 | suren    | 30000 | 24 |      9867 |
| 210 | narmatha | 23000 | 22 |      9768 |
+------+----------+--------+------+-------------+
```
6 rows in set (0.00 sec)

mysql> SELECT * FROM B;

```
+------+---------+--------------+
| id   | course  | address      |
+------+---------+--------------+
| 117 | phython | saligramam   |
| 210 | ccna    | nungambakkam |
| 113 | sql     | nandhanam    |
| 220 | java    | annanagar    |
+------+---------+--------------+
```
4 rows in set (0.00 sec)

INNER JOIN
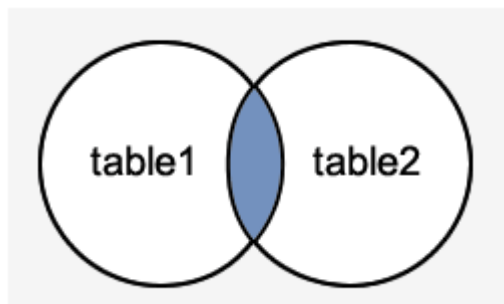
sql> select A.name,A.amount,B.course from A inner join B on A.id = B.id;

```
+----------+--------+---------+
| name     | amount | course  |
+----------+--------+---------+
| santhya  | 15000 | sql     |
```

```
| sathish  |  20000 | phython |
| narmatha |  23000 | ccna    |
+----------+--------+---------+
3 rows in set (0.00 sec)
```

LEFT OUTER JOIN
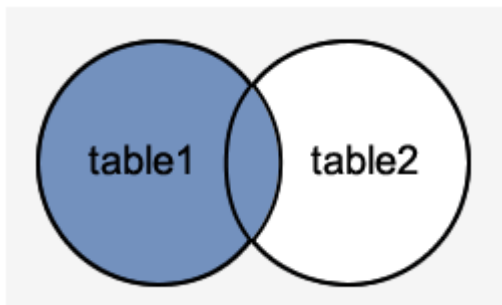
mysql> select A.name,A.amount,B.course from A left outer join B on A.id = B.id;

```
+----------+--------+---------+
| name     | amount | course  |
+----------+--------+---------+
| ruthra   |  20000 | NULL    |
| santhya  |  15000 | sql     |
| akash    |  34000 | NULL    |
| sathish  |  20000 | phython |
| suren    |  30000 | NULL    |
| narmatha |  23000 | ccna    |
+----------+--------+---------+
6 rows in set (0.00 sec)
```

RIGHT OUTER JOIN
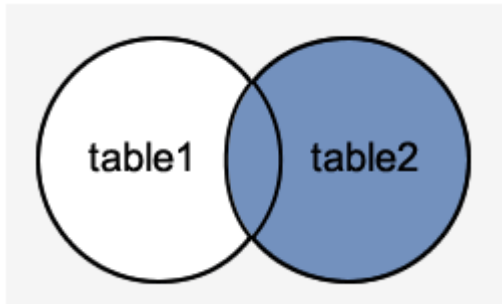
mysql> select A.name,A.amount,B.course from A right outer join B on A.id = B.id;

```
+----------+--------+---------+
| name     | amount | course  |
+----------+--------+---------+
| sathish  |  20000 | phython |
| narmatha |  23000 | ccna    |
| santhya  |  15000 | sql     |
| NULL     |   NULL | java    |
+----------+--------+---------+
4 rows in set (0.00 sec)
```

mysql> select A.name,A.amount,B.course from A full outer join B on A.id = B.id;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'outer join B on A.id = B.id' at line 1

FULL OUTER JOIN
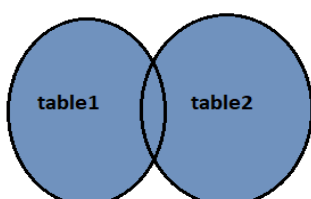
mysql>SELECT EMPLOYEE.ID, EMPLOYEE.NAME, DEPARTMENT.NAME AS DEPARTMENT_NAME
    -> FROM EMPLOYEE
    -> FULL OUTER JOIN DEPARTMENT ON EMPLOYEE.DEPARTMENT_ID = DEPARTMENT.ID;

CROSS JOIN
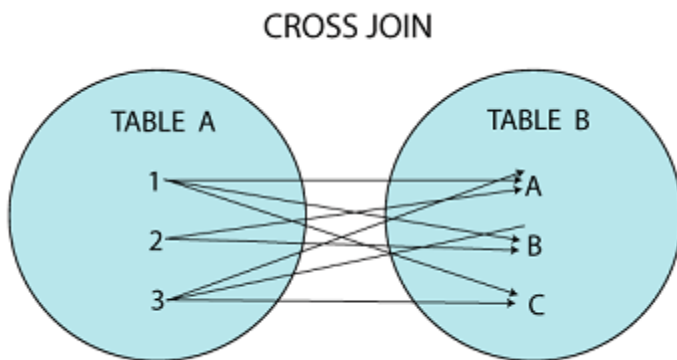
CROSS JOIN

mysql> SELECT EMPLOYEE.ID, EMPLOYEE.NAME, DEPARTMENT.NAME AS DEPARTMENT_NAME
    -> FROM EMPLOYEE
    -> CROSS JOIN DEPARTMENT;

```
+----+----------------+----------------+
| ID | NAME           | DEPARTMENT_NAME |
+----+----------------+----------------+
|  1 | JOHN DOE       | BPO            |
|  1 | JOHN DOE       | TECHNICAL      |
|  1 | JOHN DOE       | SALES          |
|  1 | JOHN DOE       | HR             |
|  1 | JOHN DOE       | IT             |
|  2 | JANE SMITH     | BPO            |
|  2 | JANE SMITH     | TECHNICAL      |
|  2 | JANE SMITH     | SALES          |
|  2 | JANE SMITH     | HR             |
|  2 | JANE SMITH     | IT             |
|  3 | MICHAEL JOHNSON | BPO           |
|  3 | MICHAEL JOHNSON | TECHNICAL     |
|  3 | MICHAEL JOHNSON | SALES         |
|  3 | MICHAEL JOHNSON | HR            |
|  3 | MICHAEL JOHNSON | IT            |
```

```
| 4 | SARAH WILLIAMS | BPO          |
| 4 | SARAH WILLIAMS | TECHNICAL    |
| 4 | SARAH WILLIAMS | SALES        |
| 4 | SARAH WILLIAMS | HR           |
| 4 | SARAH WILLIAMS | IT           |
| 5 | ROBERT LEE     | BPO          |
| 5 | ROBERT LEE     | TECHNICAL    |
| 5 | ROBERT LEE     | SALES        |
| 5 | ROBERT LEE     | HR           |
| 5 | ROBERT LEE     | IT           |
| 6 | ROBERT DAVE    | BPO          |
| 6 | ROBERT DAVE    | TECHNICAL    |
| 6 | ROBERT DAVE    | SALES        |
| 6 | ROBERT DAVE    | HR           |
| 6 | ROBERT DAVE    | IT           |
| 7 | SMITH          | BPO          |
| 7 | SMITH          | TECHNICAL    |
| 7 | SMITH          | SALES        |
| 7 | SMITH          | HR           |
| 7 | SMITH          | IT           |
+----+----------------+----------------+
35 rows in set (0.01 sec)
```

SELF JOIN

```
mysql> SELECT e1.ID, e1.NAME FROM EMPLOYEE AS e1, EMPLOYEE
e2 WHERE e1.ID = e2.ID;
+----+----------------+
| ID | NAME           |
+----+----------------+
| 1 | JOHN DOE        |
| 2 | JANE SMITH      |
| 3 | MICHAEL JOHNSON |
| 4 | SARAH WILLIAMS  |
| 5 | ROBERT LEE      |
| 6 | ROBERT DAVE     |
| 7 | SMITH           |
+----+----------------+
7 rows in set (0.00 sec)
```

Other function

select*from eb;

```
+----------+-----------+-----------+
| car_Name | car_color | car_price |
+----------+-----------+-----------+
| hyundai  | red       |    900000 |
| KiaSonet | white     |   1000000 |
| KiaSonet | black     |   1500000 |
| hyundai  | black     |   1250000 |
+----------+-----------+-----------+
4 rows in set (0.00 sec)
```

WILD CARD

mysql> select* from eb where car_color like 'bla%';

```
+----------+-----------+-----------+
| car_Name | car_color | car_price |
+----------+-----------+-----------+
| KiaSonet | black     |   1500000 |
| hyundai  | black     |   1250000 |
+----------+-----------+-----------+
2 rows in set (0.00 sec)
```

mysql> select *from eb where car_name like '%so%';

```
+----------+-----------+-----------+
| car_Name | car_color | car_price |
+----------+-----------+-----------+
| KiaSonet | white     |   1000000 |
| KiaSonet | black     |   1500000 |
```

```
+----------+----------+----------+
```
2 rows in set (0.00 sec)

mysql> select*from eb where car_color like 'b_a_k';

```
+----------+----------+----------+
| car_Name | car_color | car_price |
+----------+----------+----------+
| KiaSonet | black    |   1500000 |
| hyundai  | black    |   1250000 |
+----------+----------+----------+
```
2 rows in set (0.00 sec)

CONCAT

mysql> select concat('hyundai','kiasonet');

```
+-----------------------------+
| concat('hyundai','kiasonet') |
+-----------------------------+
| hyundaikiasonet             |
+-----------------------------+
```
1 row in set (0.01 sec)

UPPER

mysql> select upper('hyundai');

```
+-----------------+
| upper('hyundai') |
+-----------------+
| HYUNDAI          |
```

```
+-----------------+
```

1 row in set (0.01 sec)

LOWER

mysql> select lower('HYUNDAI');

```
+-----------------+
| lower('HYUNDAI') |
+-----------------+
| hyundai         |
+-----------------+
```

1 row in set (0.00 sec)

LENGTH

mysql> select char_length('kiasonet');

```
+------------------------+
| char_length('kiasonet') |
+------------------------+
|                      8 |
+------------------------+
```

1 row in set (0.00 sec)

REVERSE

mysql> select reverse(car_name)from eb;

```
+------------------+
| reverse(car_name) |
+------------------+
| iadnuyh          |
```

| tenoSaiK |

| tenoSaiK |

| iadnuyh |

+------------------+

4 rows in set (0.00 sec)

CLAUSE

mysql> select car_name,car_color,car_price from eb order by (case when car_color is null then car_price else car_color end);

+----------+-----------+-----------+

| car_name | car_color | car_price |

+----------+-----------+-----------+

| KiaSonet | black | 1500000 |

| hyundai | black | 1250000 |

| hyundai | red | 900000 |

| KiaSonet | white | 1000000 |

+----------+-----------+-----------+

4 rows in set (0.00 sec)

If

Mysql>select if (900000>50000,'yes','no');

+-----------------------------+

| if (900000>50000,'yes','no') |

+-----------------------------+

```
| yes                       |
+--------------------------+
```

1 row in set (0.00 sec)