

SQL

What is SQL?

- SQL stands for Structured Query Language
- SQL lets you 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
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL 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?

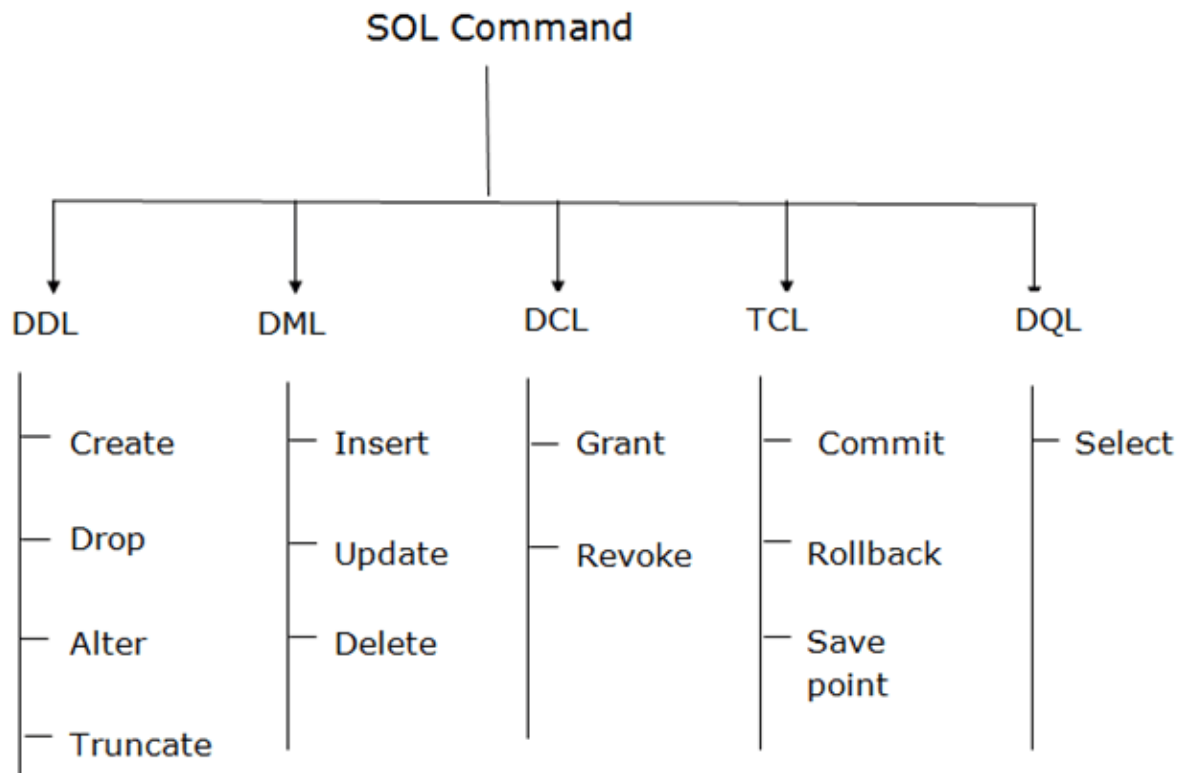
Data types define the nature of the data that can be stored in a particular column of a table MySQL has 3 main categories of data types namely

1. Numeric,

2. Text

3. Date/time

What are types of sql is used for database?



DDL

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.

Here are some commands that come under DDL:

- 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="virugambakkam" 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	virugambakkam	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
------	--------	-----------	-------

d_id	d_name	d_address	d_age
2	radha	virugambakkam	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	virugambakkam	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 | virugambakkam | 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","virukambakkam",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="virugambakkam" 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	virugambakkam	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	virugambakkam	36
3	rani	virukambakkam	45
9	pranjal	virukambakkam	45

3 rows in set (0.00 sec)

Delete command should be used in or command

1	rajesh	saligramam	30
2	radha	virugambakkam	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	virugambakkam	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	virugambakkam	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	virugambakkam	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	virugambakkam
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	virugambakkam	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 | pranjali | virukambakkam | 45 |
| 2 | radha | virugambakkam | 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 | virugambakkam | 36 |
| 9 | pranjali | 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   | virugambakkam | 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   | virugambakkam | 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   | virugambakkam | 36 |
| 3 | rani    | virukambakkam | 45 |
| 4 | raja    | nungambakkam | 56 |
| 6 | sridhar | vadapalani   | 43 |
| 7 | chaithra | saligramam   | 45 |
| 8 | chaitali | vadapalani   | 43 |
| 9 | pranjali | 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 | pranjali | virukambakkam | 45 |
| 2 | radha    | virugambakkam | 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 | Ruthra | 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 empdetails(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 empdetails(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 empdetails;
```

```
+-----+-----+-----+-----+-----+
| 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    |       |
| salary  | int       | YES  |     | NULL    |       |
| commision | int       | YES  |     | NULL    |       |
| dep_id  | int       | YES  |     | NULL    |       |
```

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

8 rows in set (0.03 sec)

```
mysql> insert into empdeetails 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 empdeetails 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 empdeetails 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 empdeetails values(68319,'kayling','president',0,19-11-18,6000,0,1001);
```

Query OK, 1 row affected (0.00 sec)

```
mysql>          insert          into          empdeetails
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 empdeetails;
```

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

----+

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 empdetails 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 empdetails;
```

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 empdetails drop column commision;
```

Query OK, 0 rows affected (0.02 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from empdetails;

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 empdetails 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 empdetails add commision int;

Query OK, 0 rows affected (0.01 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from empdetails;

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 empdeetails set commission=4000 where dep_id=1001 or
dep_id=3001;
ERROR 1054 (42S22): Unknown column 'commission' in 'field list'
mysql> update empdeetails 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 empdeetails;
```

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 empdetails where job_name='analyst';
Query OK, 2 rows affected (0.00 sec)
```

```
mysql> select * from empdetails;
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
----+
| emp_id | emp_names | job_name | manager_id | hire_date | salary | dept_id | comm |
| 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 empdetails 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 empdetails where emp_name='clare';
```

ERROR 1054 (42S22): Unknown column 'emp_name' in 'where clause'

```
mysql> delete from empdetails where emp_names='clare';
```

Query OK, 1 row affected (0.00 sec)

```
mysql> select * from empdetails;
```

```

+-----+-----+-----+-----+-----+-----+-----+
----+
| emp_id | emp_names | job_name | manager_id | hire_date | salary | 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 | salary | 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>
```

join

```
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

1

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	phonenummer
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	python	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	python
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

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)