

Name- Payal Thakare

SQL COMANDS , CLAUSES ,OPERATORS, JOINS and KEYS

```
mysql> use student;
```

Database changed

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+-----+
| id  | name  | branch | city  | email      |
+-----+-----+-----+-----+-----+
| 101 | sneha | CSE    | Mumbai | efg@gmail.com |
| 102 | payal | Ctech  | Nagpur | NULL       |
| 103 | roshni | ETC    | Sangli | NULL       |
| 104 | rekha | Mech   | pune   | NULL       |
+-----+-----+-----+-----+-----+
```

Delete , Truncate and Drop

```
mysql> delete from stud1 where id=101;
```

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+-----+
| id  | name  | branch | city  | email |
+-----+-----+-----+-----+-----+
| 102 | payal | Ctech  | Nagpur | NULL |
| 103 | roshni | ETC    | Sangli | NULL |
| 104 | rekha | Mech   | pune   | NULL |
+-----+-----+-----+-----+-----+
```

```
mysql> truncate table stud1;
```

```
mysql> select * from stud1;
```

Empty set (0.01 sec)

```
mysql> desc stud1;
```

Field	Type	Null	Key	Default	Extra
id	int	YES		NULL	
name	varchar(20)	YES		NULL	
branch	varchar(10)	YES		NULL	
city	varchar(30)	YES		NULL	
email	varchar(20)	YES		NULL	

5 rows in set (0.01 sec)

```
mysql> drop table stud1;
```

Query OK, 0 rows affected (0.06 sec)

```
mysql> select * from stud1;
```

ERROR 1146 (42S02): Table 'student.stud1' doesn't exist

Create table and Insert values

```
mysql> use student;
```

Database changed

```
mysql> create table stud1(name varchar(20),id int,age int,address varchar(30));
```

Query OK, 0 rows affected (0.26 sec)

```
mysql> insert into stud1(name,id,age,address)values('payal',101,24,'nagpur');
```

Query OK, 1 row affected (0.01 sec)

```
mysql> insert into stud1(name,id,age,address)values('huzefa',102,23,'pune');
```

Query OK, 1 row affected (0.05 sec)

```
mysql> insert into stud1(name,id,age,address)values('rekha',103,25,'mumbai');
```

Query OK, 1 row affected (0.01 sec)

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+
| name  | id   | age  | address |
+-----+-----+-----+-----+
| payal | 101  | 24   | nagpur  |
| huzefa | 102  | 23   | pune    |
| rekha | 103  | 25   | mumbai  |
+-----+-----+-----+-----+
```

3 rows in set (0.00 sec)

Rename

```
mysql> rename table stud1 to stud2;
```

Query OK, 0 rows affected (0.06 sec)

```
mysql> select * from stud2;
```

```
+-----+-----+-----+-----+
| name  | id   | age  | address |
+-----+-----+-----+-----+
| payal | 101  | 24   | nagpur  |
| huzefa | 102  | 23   | pune    |
| rekha | 103  | 25   | mumbai  |
+-----+-----+-----+-----+
```

3 rows in set (0.00 sec)

Alter

```
mysql> alter table stud2 rename to stud1;
```

Query OK, 0 rows affected (0.07 sec)

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+
| name  | id   | age  | address |
+-----+-----+-----+-----+
| payal | 101  | 24   | nagpur  |
| huzefa | 102 | 23   | pune    |
| rekha | 103  | 25   | mumbai  |
+-----+-----+-----+-----+
```

3 rows in set (0.00 sec)

Distinct

```
mysql> select distinct address,age from stud1;
```

```
+-----+-----+
| address | age |
+-----+-----+
| mumbai  | 25  |
| pune    | 23  |
| nagpur  | 24  |
+-----+-----+
```

3 rows in set (0.01 sec)

Adding more data in table at one time

```
mysql> insert into
stud1(name,id,age,address)values('neha',105,23,'mumbai'),('roshni',108,26,'pune');
```

Query OK, 2 rows affected (0.08 sec)

Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+
| name  | id   | age  | address |
+-----+-----+-----+-----+
| rekha | 103  | 25   | mumbai  |
| huzefa | 102  | 23   | pune    |
| payal | 101  | 24   | nagpur  |
| neha  | 151  | 24   | nagpur  |
| neha  | 105  | 23   | mumbai  |
| roshni | 108  | 26   | pune    |
+-----+-----+-----+-----+
```

6 rows in set (0.00 sec)

Count

```
mysql> select count(age) as totalage from stud1;
```

```
+-----+
| totalage |
+-----+
|      6 |
+-----+
```

1 row in set (0.08 sec)

```
mysql> select count(distinct age) as totalage from stud1;
```

```
+-----+
| totalage |
+-----+
|      4 |
+-----+
```

1 row in set (0.07 sec)

```
mysql> select count(*) from stud1;
```

```

+-----+
| count(*) |
+-----+
|      6 |
+-----+
1 row in set (0.04 sec)

```

Where

mysql> select count(age) as totalage from stud1 where age = 24;

```

+-----+
| totalage |
+-----+
|        2 |
+-----+
1 row in set (0.00 sec)

```

mysql> select count(distinct address) as totaladd from stud1;

```

+-----+
| totaladd |
+-----+
|        3 |
+-----+
1 row in set (0.05 sec)

```

mysql> select age from stud1;

```

+-----+
| age |
+-----+
|  25 |
|  23 |
|  24 |
|  24 |

```

| 23 |

| 26 |

+-----+

6 rows in set (0.00 sec)

(mysql does not support top, last, first)

mysql> **select top 3 age from stud1;**

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 '3 age from stud1' at line 1

mysql> **SELECT TOP 4 * FROM stud1 WHERE age = 23 ;**

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 '4 * FROM stud1 WHERE age = 23' at line 1

mysql> **select top3 * from stud1;**

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 'from stud1' at line 1

Limit

mysql> **select * from stud1 limit 2;**

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

| name | id | age | address |

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

| rekha | 103 | 25 | mumbai |

| huzefa | 102 | 23 | pune |

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

2 rows in set (0.00 sec)

Rownum is not supported by mysql

mysql> **select * from stud1 where rownum=3;**

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

mysql> **SELECT * FROM stud1 WHERE ROWNUM <= 3;**

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

For displaying table structure

mysql> desc stud1;

Field	Type	Null	Key	Default	Extra
name	varchar(20)	YES		NULL	
id	int	YES		NULL	
age	int	YES		NULL	
address	varchar(30)	YES		NULL	

4 rows in set (0.01 sec)

Order by

mysql> select age from stud1 order by age desc limit 1;

age
26

1 row in set (0.00 sec)

mysql> select name from stud1 order by name desc limit 2;

name
roshni
rekha

2 rows in set (0.02 sec)


```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+
| name  | id   | age  | address |
+-----+-----+-----+-----+
| rekha | 103  | 25   | mumbai  |
| huzefa | 102  | 23   | pune    |
| payal | 101  | 24   | nagpur  |
| neha  | 151  | 24   | nagpur  |
| neha  | 105  | 23   | mumbai  |
| roshni | 108  | 26   | pune    |
+-----+-----+-----+-----+
```

6 rows in set (0.00 sec)

```
mysql> select name from stud1 order by name desc limit 4;
```

```
+-----+
| name  |
+-----+
| roshni |
| rekha  |
| payal  |
| neha   |
+-----+
```

4 rows in set (0.00 sec)

```
mysql> select id from stud1 order by id desc limit 3;
```

```
+-----+
| id   |
+-----+
| 151  |
| 108  |
| 105  |
```

+-----+

3 rows in set (0.00 sec)

```
mysql> select id from stud1 order by id desc limit 1;
```

+-----+

| id |

+-----+

| 151 |

+-----+

1 row in set (0.00 sec)

```
mysql> insert into stud1(name,id,age,address)values('anu',109,23,'delhi');
```

Query OK, 1 row affected (0.05 sec)

```
mysql> select * from stud1;
```

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

| name | id | age | address |

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

| rekha | 103 | 25 | mumbai |

| huzefa | 102 | 23 | pune |

| payal | 101 | 24 | nagpur |

| neha | 151 | 24 | nagpur |

| neha | 105 | 23 | mumbai |

| roshni | 108 | 26 | pune |

| anu | 109 | 23 | delhi |

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

7 rows in set (0.00 sec)

```
mysql> select name from stud1 order by name desc limit 1;
```

```
+-----+
| name |
+-----+
| roshni |
+-----+
1 row in set (0.00 sec)
```

Order by asc

```
mysql> select name from stud1 order by name asc limit 1;
```

```
+-----+
| name |
+-----+
| anu |
+-----+
1 row in set (0.05 sec)
```

```
mysql> select * from stud1;
```

```
+-----+-----+-----+-----+
| name | id | age | address |
+-----+-----+-----+-----+
| rekha | 103 | 25 | mumbai |
| huzefa | 102 | 23 | pune |
| payal | 101 | 24 | nagpur |
| neha | 151 | 24 | nagpur |
| neha | 105 | 23 | mumbai |
| roshni | 108 | 26 | pune |
| anu | 109 | 23 | delhi |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

Sum

```
mysql> select sum(age) as 'ta' from stud1;
```

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

```
| ta |
```

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

```
| 168 |
```

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

```
1 row in set (0.05 sec)
```

```
mysql> select sum(distinct age) as 'ta' from stud1;
```

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

```
| ta |
```

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

```
| 98 |
```

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

```
1 row in set (0.00 sec)
```

AND

```
mysql> select * from stud1 where age =24 and address ='nagpur';
```

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

```
| name | id | age | address |
```

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

```
| payal | 101 | 24 | nagpur |
```

```
| neha | 151 | 24 | nagpur |
```

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

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

OR

```
mysql> select * from stud1 where age =24 or address ='nagpur';
```

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

```
| name | id | age | address |
```

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

	payal		101		24		nagpur	
	neha		151		24		nagpur	
+	-----	+	-----	+	-----	+	-----	+

2 rows in set (0.00 sec)

```
mysql> select * from stud1 where age =26 or address ='nagpur';
```

+	-----	+	-----	+	-----	+	-----	+
	name		id		age		address	
+	-----	+	-----	+	-----	+	-----	+
	payal		101		24		nagpur	
	neha		151		24		nagpur	
	roshni		108		26		pune	
+	-----	+	-----	+	-----	+	-----	+

3 rows in set (0.00 sec)

NOT

```
mysql> select * from stud1 where not age=24;
```

+	-----	+	-----	+	-----	+	-----	+
	name		id		age		address	
+	-----	+	-----	+	-----	+	-----	+
	rekha		103		25		mumbai	
	huzefa		102		23		pune	
	neha		105		23		mumbai	
	roshni		108		26		pune	
	anu		109		23		delhi	
+	-----	+	-----	+	-----	+	-----	+

5 rows in set (0.00 sec)

Here I create 2 tables stud1 and stud2

```
mysql> use student;
```

Database changed

```
mysql> select * from stud1;
```

name	id	age	address
rekha	103	25	mumbai
huzefa	102	23	pune
payal	101	24	nagpur
neha	151	24	nagpur
neha	105	23	mumbai
roshni	108	26	pune
anu	109	23	delhi

7 rows in set (0.00 sec)

```
mysql> select * from stud2;
```

id	science	maths
101	23	25
108	25	25
105	20	26
109	20	66
111	24	26
121	14	86

6 rows in set (0.00 sec)

Group by

```
mysql> select count(age), address from stud1 group by address;
```

count(age)	address
------------	---------

```

+-----+-----+
|      2 | mumbai |
|      2 | pune   |
|      2 | nagpur |
|      1 | delhi  |
+-----+-----+
4 rows in set (0.03 sec)

```

mysql> **select sum(age) , address from stud1 group by address;**

```

+-----+-----+
| sum(age) | address |
+-----+-----+
|      48 | mumbai |
|      49 | pune   |
|      48 | nagpur |
|      23 | delhi  |
+-----+-----+
4 rows in set (0.05 sec)

```

Having

mysql> **select sum(age) , address from stud1 group by address having sum(age) >40;**

```

+-----+-----+
| sum(age) | address |
+-----+-----+
|      48 | mumbai |
|      49 | pune   |
|      48 | nagpur |
+-----+-----+
3 rows in set (0.06 sec)

```

mysql> **select sum(age) , address from stud1 group by address having sum(age) >40 order by sum(age) desc;**

```

+-----+-----+
| sum(age) | address |
+-----+-----+
|    49 | pune   |
|    48 | mumbai |
|    48 | nagpur  |
+-----+-----+
3 rows in set (0.01 sec)

```

Savepoint ,commit

```
mysql> create table stud3(name varchar(20),age int,email varchar(20));
```

Query OK, 0 rows affected (0.51 sec)

```
mysql> start transaction;
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> insert into stud3(name,age,email)values('neha',24,'neha2@gmail.com');
```

Query OK, 1 row affected (0.01 sec)

```
mysql> insert into stud3(name,age,email)values('ruby',22,'ruby@gmail.com');
```

Query OK, 1 row affected (0.00 sec)

```
mysql> insert into stud3(name,age,email)values('rekha',20,'rekha@gmail.com');
```

Query OK, 1 row affected (0.00 sec)

```
mysql> insert into stud3(name,age,email)values('sonal',21,'sonal@gmail.com');
```

Query OK, 1 row affected (0.00 sec)

```
mysql> select * from stud3;
```

```

+-----+-----+-----+
| name | age | email      |

```



```
+-----+-----+-----+
| neha | 24 | neha2@gmail.com |
| ruby | 22 | ruby@gmail.com |
| rekha | 20 | rekha@gmail.com |
| sonal | 21 | sonal@gmail.com |
```

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

4 rows in set (0.00 sec)

mysql> **commit;**

Query OK, 0 rows affected (0.03 sec)

mysql> **savepoint insertion;**

Query OK, 0 rows affected (0.00 sec)

Update

mysql> **update stud3 set name = 'chhaya' where age = 20;**

Query OK, 1 row affected (0.09 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> **select * from stud3;**

```
+-----+-----+-----+
| name | age | email |
```

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

```
| neha | 24 | neha2@gmail.com |
```

```
| ruby | 22 | ruby@gmail.com |
```

```
| chhaya | 20 | rekha@gmail.com |
```

```
| sonal | 21 | sonal@gmail.com |
```

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

4 rows in set (0.00 sec)

mysql> **savepoint updation;**

Query OK, 0 rows affected (0.00 sec)

```
mysql> rollback to insertion;
```

ERROR 1305 (42000): SAVEPOINT insertion does not exist

JOINS

```
mysql> select *from student;
```

	name	roll_no	maths	English	Science
	Payal	1	78	67	77
	Sneha	2	98	67	47
	Mayuri	3	86	78	76
	Hujefa	4	82	71	70
	Rekha	5	77	68	86

5 rows in set (0.27 sec)

```
mysql> select *from student1;
```

	roll_no	Marathi	Hindi
	5	68	86
	6	68	86
	7	68	86

3 rows in set (0.00 sec)

INNER JOIN

```
mysql> select student.name, student.maths, student.English, student.Science from student inner join student1 on student.roll_no=student1.roll_no;
```

```
+-----+-----+-----+-----+
| name | maths | English | Science |
+-----+-----+-----+-----+
| Rekha | 77 | 68 | 86 |
+-----+-----+-----+-----+

1 row in set (0.28 sec)
```

Full join doesn't supported by mysql

```
mysql> select student.name, student.maths, student.English, student.Science from student full join student1 on student.roll_no=student1.roll_no;
```

Right join

```
mysql> select student.name, student.maths, student.English, student.Science from student right join student1 on student.roll_no=student1.roll_no;
```

```
+-----+-----+-----+-----+
| name | maths | English | Science |
+-----+-----+-----+-----+
| Rekha | 77 | 68 | 86 |
| NULL | NULL | NULL | NULL |
| NULL | NULL | NULL | NULL |
+-----+-----+-----+-----+

3 rows in set (0.28 sec)
```

Right join

```
mysql> select student.name, student.maths, student.English, student.Science from student left join student1 on student.roll_no=student1.roll_no;
```

```
+-----+-----+-----+-----+
| name | maths | English | Science |
+-----+-----+-----+-----+
| Payal | 78 | 67 | 77 |
| Sneha | 98 | 67 | 47 |
```

Mayuri	86	78	76
Hujefa	82	71	70
Rekha	77	68	86
+-----+-----+-----+-----+			

5 rows in set (0.00 sec)

Primary key

It is unique key ,it doesn't allow null value

```
mysql> create table stud4( empid int,name varchar(20),salary int,designation varchar(30) ,primary
key(empid));
```

Query OK, 0 rows affected (0.21 sec)

Foreign key

Foreign key used to establish link between two table , foreign key in one table used to point primary key in another table.

Composite key

Sometimes more than one attributes are needed to uniquely identify an entity. A primary key that is made by the combination of more than one attribute is known as a composite key.

CASE

```
mysql> select * from stud1;
```

+-----+-----+-----+-----+			
name	id	age	address
+-----+-----+-----+-----+			
rekha	103	25	mumbai
huzefa	102	23	pune
payal	101	24	nagpur
neha	151	24	nagpur
neha	105	23	mumbai

roshni	108	26	pune
--------	-----	----	------

anu	109	23	delhi
-----	-----	----	-------

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

7 rows in set (0.00 sec)

```
mysql> select name,id,age,address, case when age>24 then 'eligible for election' else 'not eligible'end  
as result from stud1;
```

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

name	id	age	address	result
------	----	-----	---------	--------

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

rekha	103	25	mumbai	eligible for election
-------	-----	----	--------	-----------------------

huzefa	102	23	pune	not eligible
--------	-----	----	------	--------------

payal	101	24	nagpur	not eligible
-------	-----	----	--------	--------------

neha	151	24	nagpur	not eligible
------	-----	----	--------	--------------

neha	105	23	mumbai	not eligible
------	-----	----	--------	--------------

roshni	108	26	pune	eligible for election
--------	-----	----	------	-----------------------

anu	109	23	delhi	not eligible
-----	-----	----	-------	--------------

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

7 rows in set (0.00 sec)

Greatest

```
mysql> SELECT GREATEST(22, 88, 98, 108, 55, 22, 45, 22) AS greatest_of_numbers;
```

+-----+

greatest_of_numbers

+-----+

108

+-----+

1 row in set (0.00 sec)

```
mysql> select greatest(34,45,56,32,12,21) as biggest_of_no;
```

+-----+

| biggest_of_no |

+-----+

| 56 |

+-----+

1 row in set (0.00 sec)