NAME:ROSHNI SUNIL POKHARKAR

**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;

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

| 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 bigest\_of\_no;

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

| bigest\_of\_no |

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

| 56 |

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

1 row in set (0.00 sec)