**JOINS GROUP BY AND SUB QUERIES**

MariaDB [(none)]> use glad;

Database changed

MariaDB [glad]> create table client1(cno int,cname varchar(15),address varchar(10));

Query OK, 0 rows affected (0.28 sec)

MariaDB [glad]> desc client1;

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

| Field | Type | Null | Key | Default | Extra |

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

| cno | int(11) | YES | | NULL | |

| cname | varchar(15) | YES | | NULL | |

| address | varchar(10) | YES | | NULL | |

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

3 rows in set (0.01 sec)

MariaDB [glad]> create table client1(cno int,cname varchar(15),address varchar(10),primary key(cno));

Query OK, 0 rows affected (0.14 sec)

MariaDB [glad]> insert into client1 values(1,'karthik','chennai');

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> insert into client1 values(1,'karthik','chennai');

ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'

MariaDB [glad]> insert into client1 values(2,'shobha','chennai');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into client1 values(3,'bala','delhi');

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> insert into client1 values(4,'abhi','bangalore');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into client1 values(5,'sruthi','mumbai');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> select \* from client1;

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

| cno | cname | address |

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

| 1 | karthik | chennai |

| 2 | shobha | chennai |

| 3 | bala | delhi |

| 4 | abhi | bangalore |

| 5 | sruthi | mumbai |

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

5 rows in set (0.00 sec)

MariaDB [glad]> create table products1(pno varchar(10),pdesc char(15),price decimal(10,2),quantity int,primary key(pno));

Query OK, 0 rows affected (0.17 sec)

MariaDB [glad]> insert into products1 values('p1','mouse',350,15);

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> desc products1;

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

| Field | Type | Null | Key | Default | Extra |

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

| pno | varchar(10) | NO | PRI | NULL | |

| pdesc | char(15) | YES | | NULL | |

| price | decimal(10,2) | YES | | NULL | |

| quantity | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

MariaDB [glad]> insert into products1 values('p2','keyboard',550,10);

Query OK, 1 row affected (0.04 sec)

MariaDB [glad]> insert into products1 values('p3','usb',250,20);

Query OK, 1 row affected (0.08 sec)

MariaDB [glad]> insert into products1 values('p4','cd',75,50);

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into products1 values('p5','printer',8000,6);

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> select \* from products1;

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

| pno | pdesc | price | quantity |

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

| p1 | mouse | 350.00 | 15 |

| p2 | keyboard | 550.00 | 10 |

| p3 | usb | 250.00 | 20 |

| p4 | cd | 75.00 | 50 |

| p5 | printer | 8000.00 | 6 |

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

5 rows in set (0.00 sec)

MariaDB [glad]> create table sorders1(sno varchar(10),cno int,pno varchar(10),quanreq int,primary key(sno),foreign key(cno) references client1(cno),foreign key(pno) references products1(pno));

Query OK, 0 rows affected (0.27 sec)

MariaDB [glad]> desc sorders1;

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

| Field | Type | Null | Key | Default | Extra |

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

| sno | varchar(10) | NO | PRI | NULL | |

| cno | int(11) | YES | MUL | NULL | |

| pno | varchar(10) | YES | MUL | NULL | |

| quanreq | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

MariaDB [glad]> insert into sorders1 values('s1',1,'p2',5);

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into sorders1 values('s2',1,'p3',5);

Query OK, 1 row affected (0.01 sec)

MariaDB [glad]> insert into sorders1 values('s3',2,'p1',5);

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> insert into sorders1 values('s4',3,'p4',10);

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into sorders1 values('s5',3,'p5',5);

Query OK, 1 row affected (0.07 sec)

MariaDB [glad]> insert into sorders1 values('s5',4,'p1',5);

ERROR 1062 (23000): Duplicate entry 's5' for key 'PRIMARY'

MariaDB [glad]> insert into sorders1 values('s6',4,'p1',5);

Query OK, 1 row affected (0.01 sec)

MariaDB [glad]> insert into sorders1 values('s7',5,'p2',5);

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into sorders1 values('s8',4,'p3',5);

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> select \* from sorders1;

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

| sno | cno | pno | quanreq |

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

| s1 | 1 | p2 | 5 |

| s2 | 1 | p3 | 5 |

| s3 | 2 | p1 | 5 |

| s4 | 3 | p4 | 10 |

| s5 | 3 | p5 | 5 |

| s6 | 4 | p1 | 5 |

| s7 | 5 | p2 | 5 |

| s8 | 4 | p3 | 5 |

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

8 rows in set (0.00 sec)

1. Select the products that are ordered by client ‘Karthik’;

MariaDB [glad]> select p.pdesc from client1 c,products1 p,sorders1 s where c.cname='karthik' and c.cno=s.cno and s.pno=p.pno;

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

| pdesc |

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

| keyboard |

| usb |

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

2 rows in set (0.02 sec)

2. Select list of clients who placed orders on ‘keyboard’.

MariaDB [glad]> select c.cname from client1 c,products1 p,sorders1 s where p.pdesc='keyboard' and p.pno=s.pno and s.cno=c.cno;

+---------+

| cname |

+---------+

| karthik |

| sruthi |

+---------+

2 rows in set (0.00 sec)

3. Select names of products whose quantity on hand is greater than quantity required by customer.

MariaDB [glad]> select p.pdesc from products1 p,sorders1 s where p.pno=s.pno and p.quantity>s.quanreq;

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

| pdesc |

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

| keyboard |

| usb |

| mouse |

| cd |

| printer |

| mouse |

| keyboard |

| usb |

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

1. rows in set (0.00 sec)

4. Select the total quantity of orders placed for each product.

MariaDB [glad]> select s.pno, p.pdesc, sum(s.quanreq) from products1 p, sorder

s1 s where p.pno=s.pno group by s.pno,p.pdesc;

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

| pno | pdesc | sum(s.quanreq) |

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

| p1 | mouse | 10 |

| p2 | keyboard | 10 |

| p3 | usb | 10 |

| p4 | cd | 10 |

| p5 | printer | 5 |

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

1. rows in set (0.01 sec)

5. Select the total quantity of orders placed for each product.

MariaDB [glad]> select s.cno,c.cname,sum(s.quanreq\*p.price) from client1 c, products1 p, sorders1 s where c.cno=s.cno and p.pno=s.pno group by s.cno,c.cname;

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

| cno | cname | sum(s.quanreq\*p.price) |

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

| 1 | karthik | 4000.00 |

| 2 | shobha | 1750.00 |

| 3 | bala | 40750.00 |

| 4 | abhi | 3000.00 |

| 5 | sruthi | 2750.00 |

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

1. rows in set (0.01 sec)

6. Select the total quantity of orders placed for each product.

MariaDB [glad]> select c.cname,count(s.pno) from client1 c, sorders1 s where s.cno=c.cno group by c.cname;

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

| cname | count(s.pno) |

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

| abhi | 2 |

| bala | 2 |

| karthik | 2 |

| shobha | 1 |

| sruthi | 1 |

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

5 rows in set (0.00 sec)

7. Create employ table

MariaDB [glad]> create table employ(eno varchar(5), ename char(10), manager varchar(10));

Query OK, 0 rows affected (0.21 sec)

MariaDB [glad]> insert into employ values('e1','sruthi','e2');

Query OK, 1 row affected (0.02 sec)

MariaDB [glad]> insert into employ values('e2','bala','e3');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into employ values('e3','abhi','e4');

Query OK, 1 row affected (0.01 sec)

MariaDB [glad]> insert into employ values('e4','karthik','e5');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> insert into employ values('e5','shobha','e1');

Query OK, 1 row affected (0.03 sec)

MariaDB [glad]> select \* from employ;

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

| eno | ename | manager |

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

| e1 | sruthi | e2 |

| e2 | bala | e3 |

| e3 | abhi | e4 |

| e4 | karthik | e5 |

| e5 | shobha | e1 |

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

1. rows in set (0.00 sec)

8. Select name of employee and manager to the corresponding employee.

MariaDB [glad]> select e.ename,m.ename from employ e, employ m where e.eno=m.m

anager;

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

| ename | ename |

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

| bala | sruthi |

| abhi | bala |

| karthik | abhi |

| shobha | karthik |

| sruthi | shobha |

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

5 rows in set (0.00 sec)

**SUB QUERIES:**

Retrieve all products ordered by ‘Karthik’;

MariaDB [glad]> select \* from products1 where pno in(select pno from sorders1 where cno=(select cno from client1 where cname='karthik'));

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

| pno | pdesc | price | quantity |

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

| p2 | keyboard | 550.00 | 10 |

| p3 | usb | 250.00 | 20 |

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

2 rows in set (0.00 sec)

Retrieve all clients who placed orders on ‘mouse’ using sub queries.

MariaDB [glad]> select \* from client where cno in(select cno from sorder where pno=(select pno from products where pdesc='mouse'));

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

| cno | cname | address |

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

| 2 | shobha | chennai |

| 4 | abhi | bangalore |

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

2 rows in set (0.00 sec)

Retrieve all the products ordered by all clients except ‘Karthik’;

MariaDB [glad]> select \* from products where pno in (select pno from sorder where cno in(select cno from client where cname not in 'Karthik'));

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

| pno | pdesc | price | quantity |

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

| p1 | mouse | 350.00 | 15 |

| p4 | cd | 75.00 | 50 |

| p5 | printer | 8000.00 | 6 |

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

3 rows in set (0.00 sec)