NETAJI SUBAS UNIVERSITY OF TECHNOLOGY
NEW DELHI

COCSC05
DATABASE MANAGEMENT SYSTEM
PRACTICAL FILE

NAME:AMOGH GARG
ROLL NUMBER:2020UCO1688
COE SECTION-3

INDEX

List of Experiments

EXPERIMENT-1

Question-1

1. DDL

Create – It is used to create a table in the current database.

```
CODE- CREATE TABLE Student (

        Student_ID int,

        Name varchar (50),

        GuardianName varchar (50),

        GuardianPhone decimal (10, 0)

);
```

Alter – It is used to add, edit or delete columns in a table.

```
        CODE-ALTER TABLE Student

        ADD PRIMARY KEY (Student_ID);
```

Drop – It is used to delete a table

```
        CODE-DROP TABLE Student;
```

Rename – Can be done using alter and rename or rename table statement, for renaming a table

```
        CODE-RENAME TABLE Student To Student_of_2021;
```

Alternatively,

```
ALTER TABLE Student

RENAME To Students_of_2021;
```

Truncate – Deletes all the data inside the table, but not the table itself.

```
CODE-TRUNCATE TABLE Students;
```

2. DML

Select – Used to select data from a database.

```
CODE-SELECT * from Student;
```

Insert – To insert rows into a table

```
CODE-INSERT INTO Student

VALUES (1, ”ABC”, “DEF”, 9012345678),

(2, ”PQR”, ”DEF”, 9912345678);
```

Update – Used to modify the records(rows) present inside a table, with or without a condition.

```
CODE-UPDATE Student

SET GuardianPhone = 9882345678

WHERE Student_ID = 1;
```

Delete – Used to delete records(rows) inside a table, without a condition it works like Truncate.

```
CODE-DELETE FROM Student WHERE Student_ID = 23;
```

Question-2

Question-1:

-> select MIN(salary) as Minimum_Salary from Employee;
-> select MAX(salary) as Maximum_Salary from Employee;

```
-> select COUNT(salary) as Salary_Count from Employee;
-> select AVG(salary) as Average_Salary from Employee;
-> select SUM(salary) as Sum_of_Salary from Employee;
```

Question-2:

```
-> select DISTINCT(MIN(salary)) as DMinimum_Salary from Employee;
-> select DISTINCT(MAX(salary)) as DMaximum_Salary from Employee;
-> select DISTINCT(COUNT(salary)) as DSalary_Count from Employee;
-> select DISTINCT(AVG(salary)) as DAverage_Salary from Employee;
-> select DISTINCT(SUM(salary)) as DSum_of_Salary from Employee;
```

Distinct keyword takes into consideration only different values.

EXPERIMENT-2

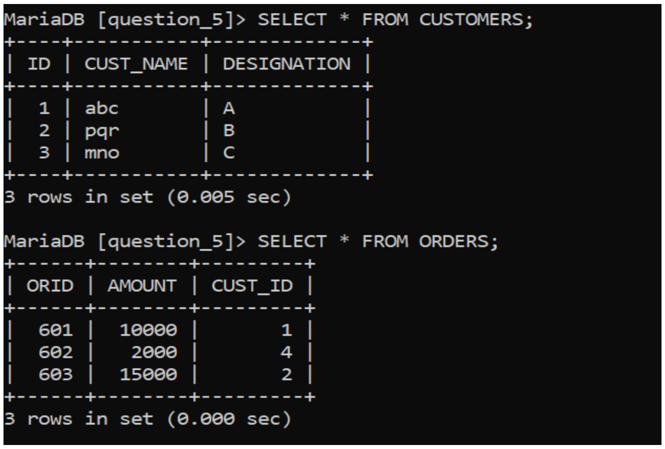
QUESTION-1

CREATING TABLE:

```
CREATE TABLE CUSTOMERS(
            ID  INT   NOT NULL,
   CUST_NAME   VARCHAR(45) NOT NULL,
   DESIGNATION VARCHAR(45)    NOT NULL);


INSERT INTO CUSTOMERS VALUES(1, "abc", "A");
INSERT INTO CUSTOMERS VALUES(2, "pqr", "B");
INSERT INTO CUSTOMERS VALUES(3, "mno", "C");
CREATE TABLE ORDERS(
            ORID                    INT             NOT NULL,
AMOUNT                              INT             NOT NULL,
CUST_ID                             INT             NOT NULL
);
```

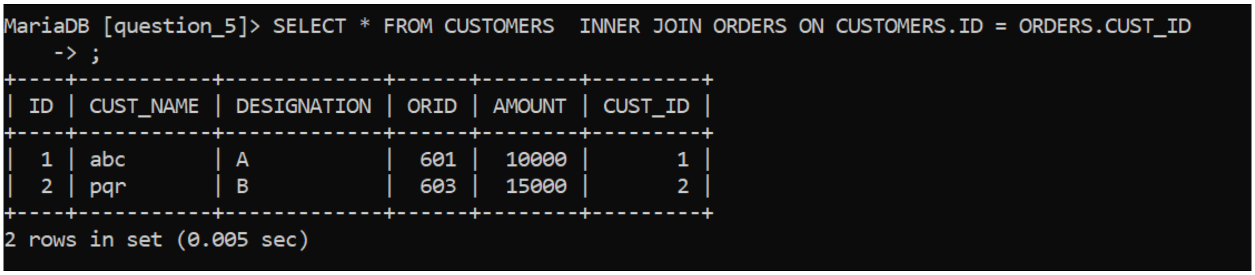
INSERTING VALUES:

```
INSERT INTO ORDERS VALUES(601, 10000, 1);
INSERT INTO ORDERS VALUES(602, 2000, 4);
INSERT INTO ORDERS VALUES(603, 15000, 2);
```



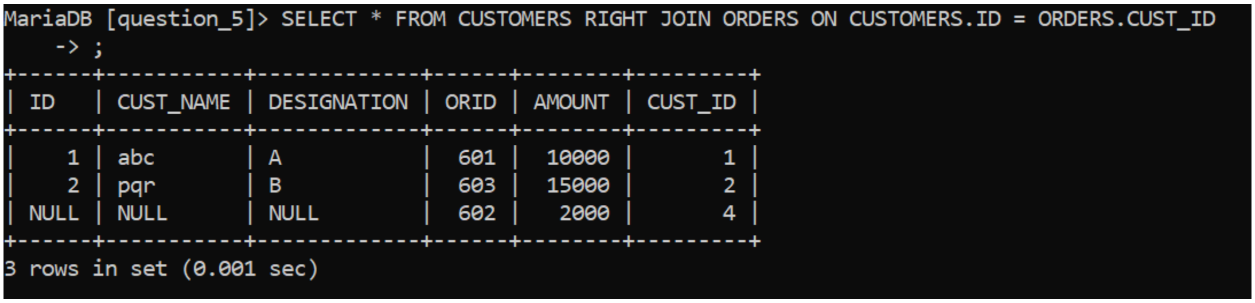
```
MariaDB [question_5]> SELECT * FROM CUSTOMERS;
+----+-----------+-------------+
| ID | CUST_NAME | DESIGNATION |
+----+-----------+-------------+
|  1 | abc       | A           |
|  2 | pqr       | B           |
|  3 | mno       | C           |
+----+-----------+-------------+
3 rows in set (0.005 sec)

MariaDB [question_5]> SELECT * FROM ORDERS;
+------+--------+---------+
| ORID | AMOUNT | CUST_ID |
+------+--------+---------+
|  601 |  10000 |       1 |
|  602 |   2000 |       4 |
|  603 |  15000 |       2 |
+------+--------+---------+
3 rows in set (0.000 sec)
```

1.SELECT * FROM CUSTOMERS INNER JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID



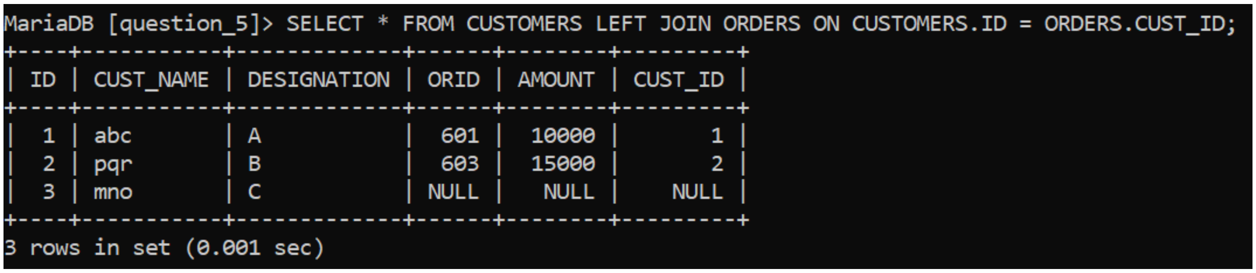
```
MariaDB [question_5]> SELECT * FROM CUSTOMERS  INNER JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID
    -> ;
+----+-----------+-------------+------+--------+---------+
| ID | CUST_NAME | DESIGNATION | ORID | AMOUNT | CUST_ID |
+----+-----------+-------------+------+--------+---------+
|  1 | abc       | A           |  601 |  10000 |       1 |
|  2 | pqr       | B           |  603 |  15000 |       2 |
+----+-----------+-------------+------+--------+---------+
2 rows in set (0.005 sec)
```

2.SELECT * FROM CUSTOMERS RIGHT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID



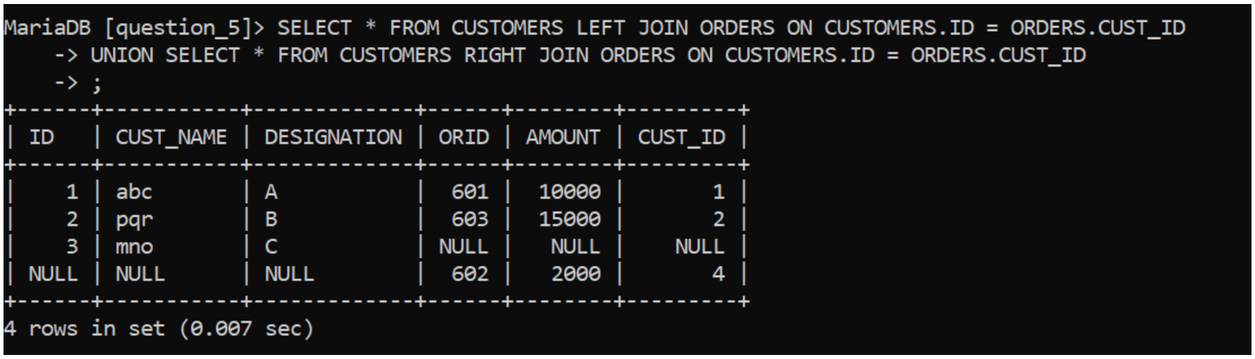
```
MariaDB [question_5]> SELECT * FROM CUSTOMERS RIGHT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID
    -> ;
+------+-----------+-------------+------+--------+---------+
| ID   | CUST_NAME | DESIGNATION | ORID | AMOUNT | CUST_ID |
+------+-----------+-------------+------+--------+---------+
|    1 | abc       | A           |  601 |  10000 |       1 |
|    2 | pqr       | B           |  603 |  15000 |       2 |
| NULL | NULL      | NULL        |  602 |   2000 |       4 |
+------+-----------+-------------+------+--------+---------+
3 rows in set (0.001 sec)
```

3.SELECT * FROM CUSTOMERS LEFT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID



```
MariaDB [question_5]> SELECT * FROM CUSTOMERS LEFT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID;
+----+-----------+-------------+------+--------+---------+
| ID | CUST_NAME | DESIGNATION | ORID | AMOUNT | CUST_ID |
+----+-----------+-------------+------+--------+---------+
|  1 | abc       | A           |  601 |  10000 |       1 |
|  2 | pqr       | B           |  603 |  15000 |       2 |
|  3 | mno       | C           | NULL |   NULL |    NULL |
+----+-----------+-------------+------+--------+---------+
3 rows in set (0.001 sec)
```

4.SELECT * FROM CUSTOMERS LEFT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID
UNION SELECT * FROM CUSTOMERS RIGHT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID



```
MariaDB [question_5]> SELECT * FROM CUSTOMERS LEFT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID
    -> UNION SELECT * FROM CUSTOMERS RIGHT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUST_ID
    -> ;
+------+-----------+-------------+------+--------+---------+
| ID   | CUST_NAME | DESIGNATION | ORID | AMOUNT | CUST_ID |
+------+-----------+-------------+------+--------+---------+
|    1 | abc       | A           |  601 |  10000 |       1 |
|    2 | pqr       | B           |  603 |  15000 |       2 |
|    3 | mno       | C           | NULL |   NULL |    NULL |
| NULL | NULL      | NULL        |  602 |   2000 |       4 |
+------+-----------+-------------+------+--------+---------+
4 rows in set (0.007 sec)
```

QUESTION-2

1. Primary key in the first table in Accession_Number which is the foreign key of the second table.

CREATING TABLES:

```
CREATE TABLE LIBRARYBOOKS(
            ACCESSION_NUMBER INT NOT NULL,
   TITLE VARCHAR(45) NOT NULL,
   AUTHOR VARCHAR(45) NOT NULL,
   DEPARTMENT VARCHAR(45) NOT NULL,
   PURCHASEDATE DATE NOT NULL,
   PRICE  INT NOT NULL,
   CONSTRAINT LIBRARYBOOKSPK PRIMARY KEY(ACCESSION_NUMBER));
```

INSERTING VALUES:

```
INSERT INTO LIBRARYBOOKS VALUES(101, "DATABASE SYSTEM CONCEPTS", "NAVATHE", "CS", "2003-03-23", 480);
INSERT INTO LIBRARYBOOKS VALUES(102, "DISCRETE MATHS MADE EASY", "RK MISHRA", "DISCRETE MATHS", "2000-01-24", 510);
INSERT INTO LIBRARYBOOKS VALUES(103, "DESIGN AND ANALYSIS OF ALGORITHMS", "OP TANDON", "COMPETITIVE PROGRAMMING", "2001-05-18", 560);
INSERT INTO LIBRARYBOOKS VALUES(104, "COMPUTER ARCHITECTURE", "CORMEN", "CS", "2002-12-12", 470);
INSERT INTO LIBRARYBOOKS VALUES(105, "MICROPROCESSORS", "SIDWICK", "ELECTRONICS", "1999-07-08", 340);
```

```
CREATE TABLE ISSUEDBOOKS(
   ACCESSION_NUMBER INT NOT NULL,
   BORROWER VARCHAR(45) NOT NULL,
   CONSTRAINT ISSUEDBOOKSFK FOREIGN KEY(ACCESSION_NUMBER) REFERENCES LIBRARYBOOKS(ACCESSION_NUMBER));
```

```
INSERT INTO ISSUEDBOOKS VALUES(101, "ARYAN");
INSERT INTO ISSUEDBOOKS VALUES(104, "AKHIL");

INSERT INTO ISSUEDBOOKS VALUES(103, "AMAN");

INSERT INTO ISSUEDBOOKS VALUES(105, "NIKHIL");

INSERT INTO ISSUEDBOOKS VALUES(102, "VISHAL");
```

```
1. DELETE FROM LIBRARYBOOKS WHERE TITLE = "DATABASE SYSTEM CONCEPTS";

2.UPDATE LIBRARYBOOKS SET DEPARTMENT = "CS" WHERE DEPARTMENT = "DISCRETE MATHS";

3.SELECT * FROM LIBRARYBOOKS WHERE DEPARTMENT = "CS";

4.SELECT * FROM LIBRARYBOOKS WHERE DEPARTMENT = "CS" AND AUTHOR = "NAVATHE";

5.SELECT * FROM LIBRARYBOOKS L, ISSUEDBOOKS I WHERE L.DEPARTMENT = "CS" AND
L.ACCESSION_NUMBER = I.ACCESSION_NUMBER

6.SELECT * FROM LIBRARYBOOKS L, ISSUEDBOOKS I WHERE L.PRICE <= 500 OR L.PURCHASEDATE <=
"01-01-2003" AND L.PURCHASEDATE >= "01-01-1999"AND L.ACCESSION_NUMBER =
I.ACCESSION_NUMBER;
```

EXPERIMENT-3

QUESTION-1

1. UNION:SELECT cust_fname FROM customer UNION SELECT cust_num FROM invoice;

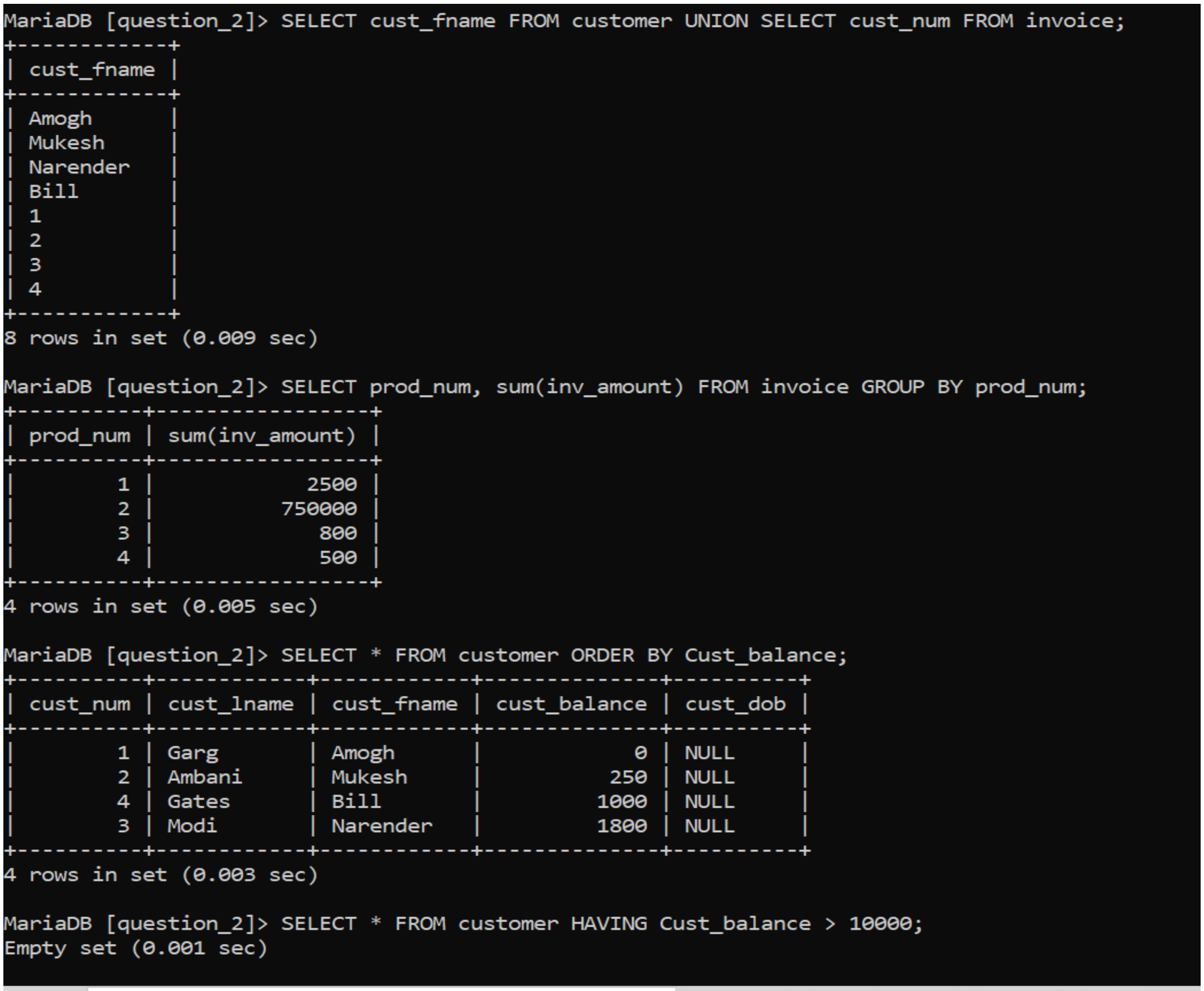
2. GROUP BY: SELECT prod_num, sum(inv_amount) FROM invoice GROUP BY prod_num;

3. ORDER BY: SELECT * FROM customer ORDER BY Cust_balance;

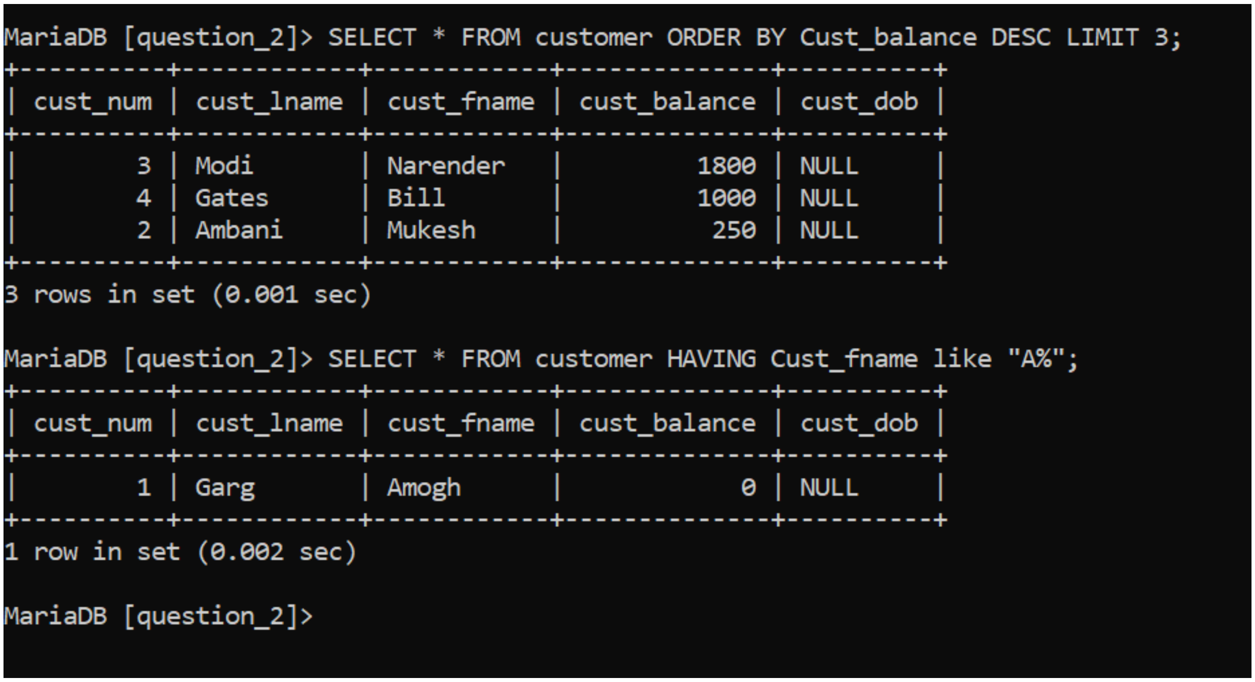
4. HAVING: SELECT * FROM customer HAVING Cust_balance > 10000;

5. LIMIT: SELECT * FROM customer ORDER BY Cust_balance DESC LIMIT 3;

6. LIKE: SELECT * FROM customer HAVING Cust_fname like "A%";



```
MariaDB [question_2]> SELECT cust_fname FROM customer UNION SELECT cust_num FROM invoice;
+------------+
| cust_fname |
+------------+
| Amogh      |
| Mukesh     |
| Narender   |
| Bill       |
| 1          |
| 2          |
| 3          |
| 4          |
+------------+
8 rows in set (0.009 sec)

MariaDB [question_2]> SELECT prod_num, sum(inv_amount) FROM invoice GROUP BY prod_num;
+----------+-----------------+
| prod_num | sum(inv_amount) |
+----------+-----------------+
|        1 |            2500 |
|        2 |          750000 |
|        3 |             800 |
|        4 |             500 |
+----------+-----------------+
4 rows in set (0.005 sec)

MariaDB [question_2]> SELECT * FROM customer ORDER BY Cust_balance;
+----------+------------+------------+--------------+----------+
| cust_num | cust_lname | cust_fname | cust_balance | cust_dob |
+----------+------------+------------+--------------+----------+
|        1 | Garg       | Amogh      |            0 | NULL     |
|        2 | Ambani     | Mukesh     |          250 | NULL     |
|        4 | Gates      | Bill       |         1000 | NULL     |
|        3 | Modi       | Narender   |         1800 | NULL     |
+----------+------------+------------+--------------+----------+
4 rows in set (0.003 sec)

MariaDB [question_2]> SELECT * FROM customer HAVING Cust_balance > 10000;
Empty set (0.001 sec)
```



```
MariaDB [question_2]> SELECT * FROM customer ORDER BY Cust_balance DESC LIMIT 3;
+----------+------------+------------+--------------+----------+
| cust_num | cust_lname | cust_fname | cust_balance | cust_dob |
+----------+------------+------------+--------------+----------+
|        3 | Modi       | Narender   |         1800 | NULL     |
|        4 | Gates      | Bill       |         1000 | NULL     |
|        2 | Ambani     | Mukesh     |          250 | NULL     |
+----------+------------+------------+--------------+----------+
3 rows in set (0.001 sec)

MariaDB [question_2]> SELECT * FROM customer HAVING Cust_fname like "A%";
+----------+------------+------------+--------------+----------+
| cust_num | cust_lname | cust_fname | cust_balance | cust_dob |
+----------+------------+------------+--------------+----------+
|        1 | Garg       | Amogh      |            0 | NULL     |
+----------+------------+------------+--------------+----------+
1 row in set (0.002 sec)

MariaDB [question_2]>
```

QUESTION-2

1. Cust_ID is the primary key in Customer table. Bicycle_ID is the primary key in Bicycle table and foreign key in Service table. In BicycleModel ModelNo is the primary key.

2. SELECT Name FROM Customer C,Bicycle B, BicycleModel BM WHERE C.Cust_ID=B.Cust_ID AND B.ModelNo=BM.ModelNo AND Manufacturer= “Honda”;

3. SELECT Cust_ID, Name FROM Customer WHERE ReferID= “1”;

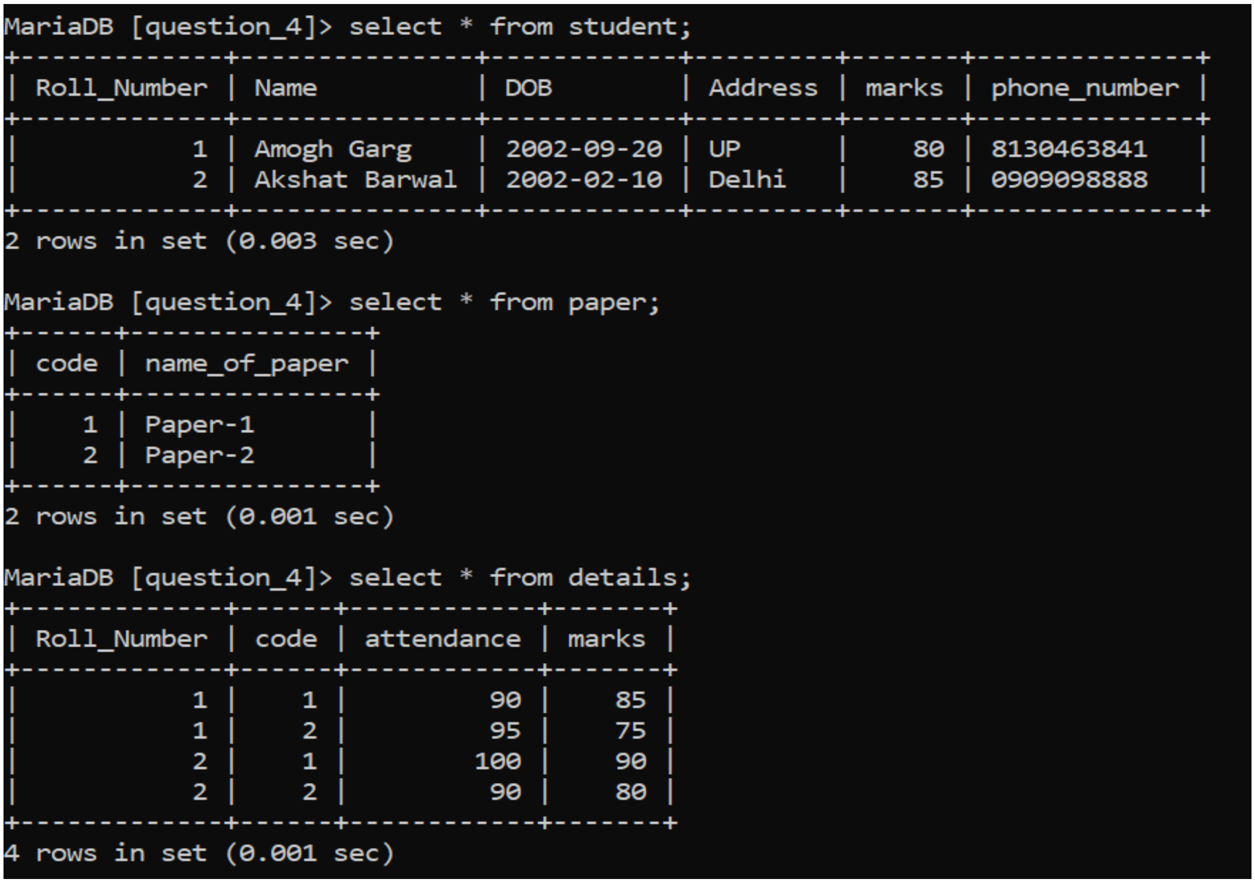
4. SELECT Manufacturer FROM Bicycle B, BicycleModel BM WHERE B.ModelNo=BM.ModelNo AND Color= “Red”;

5. SELECT ModelNo FROM Bicycle B, Service S WHERE B.Bicyle_ID=S.Bicycle_ID;

EXPERIMENT-4

CREATING TABLES:
create table student(Roll_Number int primary key,Name varchar(20),DOB date,Address varchar(20));
alter table student add column marks int;
alter table student add column phone_number varchar(10);
create table paper(code int primary key,name_of_paper varchar(10));
create table details(Roll_Number int not null,code int not null,attendance int,marks int,foreign key(Roll_Number) references student(Roll_Number), foreign key(code) references paper(code));

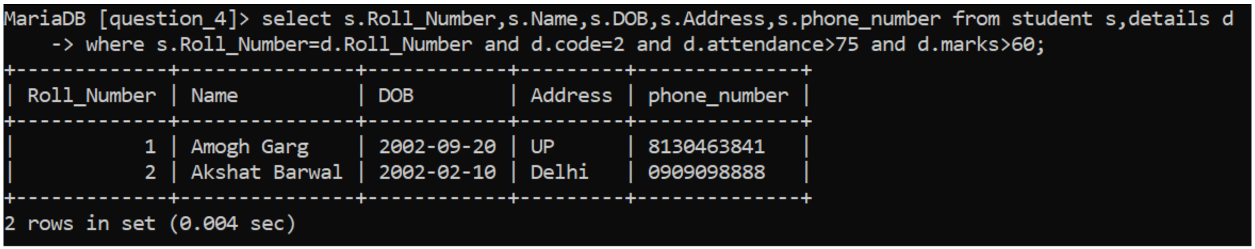
INSERTING VALUES:
insert into paper values (1,'Paper-1'),(2,'Paper-2');
insert into student values (1,'Amogh Garg','2002-09-20','UP','80','8130463841'),(2,'Akshat Barwal','2002-02-10','Delhi','85','0909098888');
insert into details values (1,1,90,85),(1,2,95,75),(2,1,100,90),(2,2,90,80);



```
MariaDB [question_4]> select * from student;
+-------------+---------------+------------+---------+-------+--------------+
| Roll_Number | Name          | DOB        | Address | marks | phone_number |
+-------------+---------------+------------+---------+-------+--------------+
|           1 | Amogh Garg    | 2002-09-20 | UP      |    80 | 8130463841   |
|           2 | Akshat Barwal | 2002-02-10 | Delhi   |    85 | 0909098888   |
+-------------+---------------+------------+---------+-------+--------------+
2 rows in set (0.003 sec)

MariaDB [question_4]> select * from paper;
+------+---------------+
| code | name_of_paper |
+------+---------------+
|    1 | Paper-1       |
|    2 | Paper-2       |
+------+---------------+
2 rows in set (0.001 sec)

MariaDB [question_4]> select * from details;
+-------------+------+------------+-------+
| Roll_Number | code | attendance | marks |
+-------------+------+------------+-------+
|           1 |    1 |         90 |    85 |
|           1 |    2 |         95 |    75 |
|           2 |    1 |        100 |    90 |
|           2 |    2 |         90 |    80 |
+-------------+------+------------+-------+
4 rows in set (0.001 sec)
```

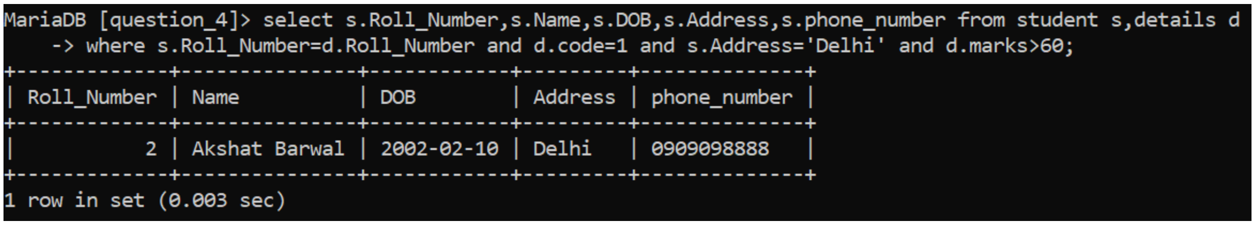
1. Table student- Primary key is Roll_Number
Table paper- Primary key is code;
Table details- Foreign key is Roll_Number and code

2. select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d where s.Roll_Number=d.Roll_Number and d.code=2 and d.attendance>75 and d.marks>60;



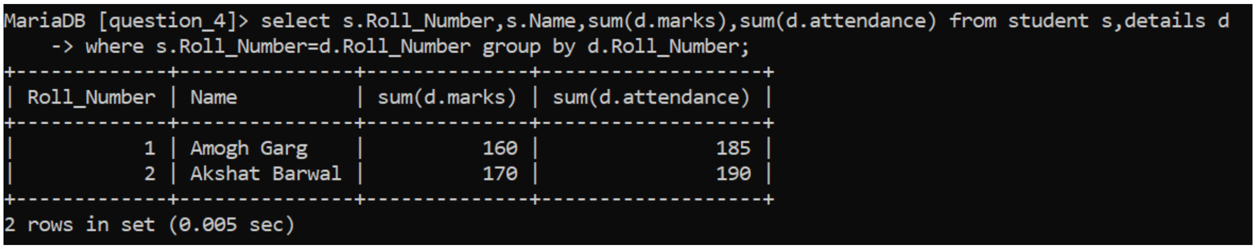
```
MariaDB [question_4]> select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d
    -> where s.Roll_Number=d.Roll_Number and d.code=2 and d.attendance>75 and d.marks>60;
+-------------+---------------+------------+---------+--------------+
| Roll_Number | Name          | DOB        | Address | phone_number |
+-------------+---------------+------------+---------+--------------+
|           1 | Amogh Garg    | 2002-09-20 | UP      | 8130463841   |
|           2 | Akshat Barwal | 2002-02-10 | Delhi   | 0909098888   |
+-------------+---------------+------------+---------+--------------+
2 rows in set (0.004 sec)
```

3. select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d where s.Roll_Number=d.Roll_Number and d.code=1 and s.Address='Delhi' and d.marks>60;



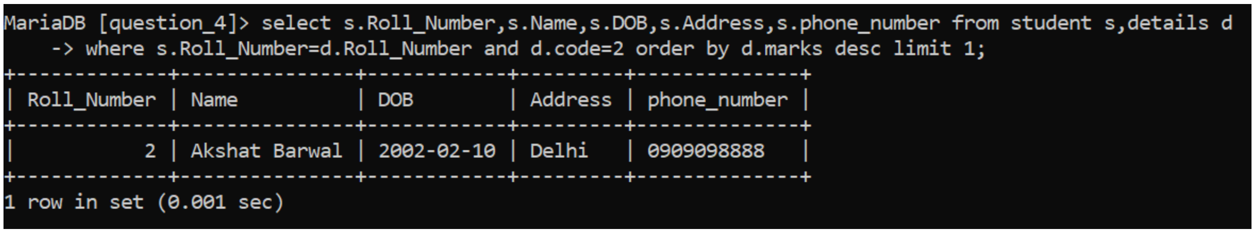
```
MariaDB [question_4]> select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d
    -> where s.Roll_Number=d.Roll_Number and d.code=1 and s.Address='Delhi' and d.marks>60;
+-------------+---------------+------------+---------+--------------+
| Roll_Number | Name          | DOB        | Address | phone_number |
+-------------+---------------+------------+---------+--------------+
|           2 | Akshat Barwal | 2002-02-10 | Delhi   | 0909098888   |
+-------------+---------------+------------+---------+--------------+
1 row in set (0.003 sec)
```

4. select s.Roll_Number,s.Name,sum(d.marks),sum(d.attendance) from student s,details d where s.Roll_Number=d.Roll_Number group by d.Roll_Number;



```
MariaDB [question_4]> select s.Roll_Number,s.Name,sum(d.marks),sum(d.attendance) from student s,details d
    -> where s.Roll_Number=d.Roll_Number group by d.Roll_Number;
+-------------+---------------+--------------+-------------------+
| Roll_Number | Name          | sum(d.marks) | sum(d.attendance) |
+-------------+---------------+--------------+-------------------+
|           1 | Amogh Garg    |          160 |               185 |
|           2 | Akshat Barwal |          170 |               190 |
+-------------+---------------+--------------+-------------------+
2 rows in set (0.005 sec)
```

5. select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d where s.Roll_Number=d.Roll_Number and d.code=2 order by d.marks desc limit 1;

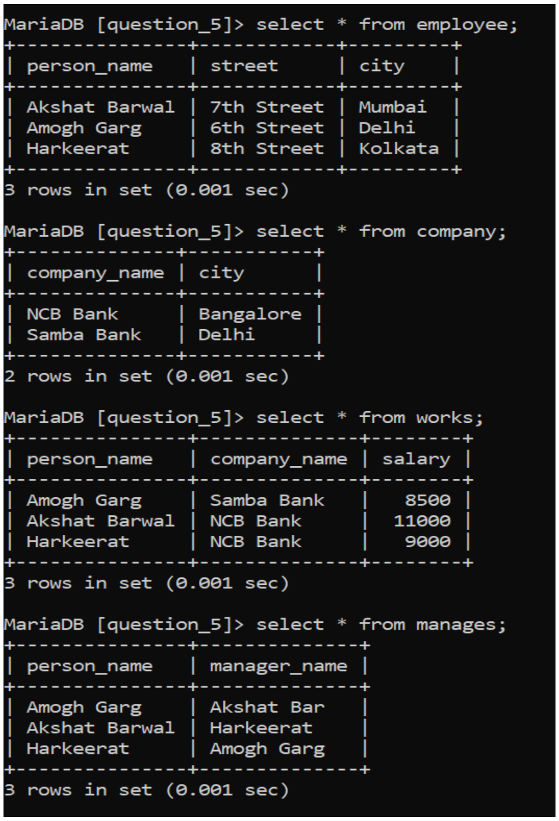


```
MariaDB [question_4]> select s.Roll_Number,s.Name,s.DOB,s.Address,s.phone_number from student s,details d
    -> where s.Roll_Number=d.Roll_Number and d.code=2 order by d.marks desc limit 1;
+-------------+---------------+------------+---------+--------------+
| Roll_Number | Name          | DOB        | Address | phone_number |
+-------------+---------------+------------+---------+--------------+
|           2 | Akshat Barwal | 2002-02-10 | Delhi   | 0909098888   |
+-------------+---------------+------------+---------+--------------+
1 row in set (0.001 sec)
```

EXPERIMENT-5

CREATING TABLES:
create table employee(person_name varchar(20) primary key,street varchar(20),city varchar(10));
create table company(company_name varchar(10) primary key,city varchar(10));
create table works(person_name varchar(20) not null,company_name varchar(10) not null,salary int,foreign key(person_name) references employee(person_name),foreign key(company_name) references company(company_name));
create table manages(person_name varchar(20) not null,manager_name varchar(10),foreign key(person_name) references employee(person_name));

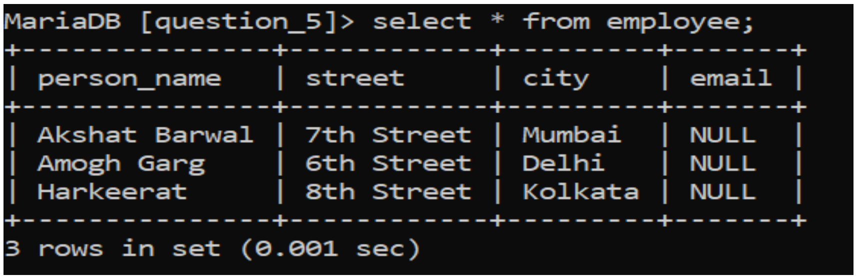
INSERTING VALUES:
insert into employee values ('Amogh Garg','6th Street','Delhi'),('Akshat Barwal','7th Street','Mumbai'),('Harkeerat','8th Street','Kolkata');
insert into company values ('Samba Bank','Delhi'),('NCB Bank','Bangalore');
insert into works values ('Amogh Garg','Samba Bank',8500),('Akshat Barwal','NCB Bank',11000),('Harkeerat','NCB Bank',9000);
insert into manages values('Amogh Garg','Akshat Barwal'),('Akshat Barwal','Harkeerat'),('Harkeerat','Amogh Garg');



```
MariaDB [question_5]> select * from employee;
+---------------+------------+---------+
| person_name   | street     | city    |
+---------------+------------+---------+
| Akshat Barwal | 7th Street | Mumbai  |
| Amogh Garg    | 6th Street | Delhi   |
| Harkeerat     | 8th Street | Kolkata |
+---------------+------------+---------+
3 rows in set (0.001 sec)

MariaDB [question_5]> select * from company;
+--------------+-----------+
| company_name | city      |
+--------------+-----------+
| NCB Bank     | Bangalore |
| Samba Bank   | Delhi     |
+--------------+-----------+
2 rows in set (0.001 sec)

MariaDB [question_5]> select * from works;
+---------------+--------------+--------+
| person_name   | company_name | salary |
+---------------+--------------+--------+
| Amogh Garg    | Samba Bank   |   8500 |
| Akshat Barwal | NCB Bank     |  11000 |
| Harkeerat     | NCB Bank     |   9000 |
+---------------+--------------+--------+
3 rows in set (0.001 sec)

MariaDB [question_5]> select * from manages;
+---------------+--------------+
| person_name   | manager_name |
+---------------+--------------+
| Amogh Garg    | Akshat Bar   |
| Akshat Barwal | Harkeerat    |
| Harkeerat     | Amogh Garg   |
+---------------+--------------+
3 rows in set (0.001 sec)
```

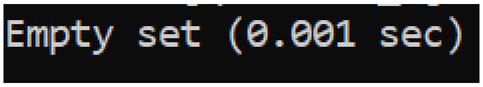
1. Table employee-Primary key is person_name
Table company-Primary key is company_name
Table works-Foreign key is person_name and company_name
Table manages-Foreign key is person_name

2. alter table employee add column email varchar(20) null;



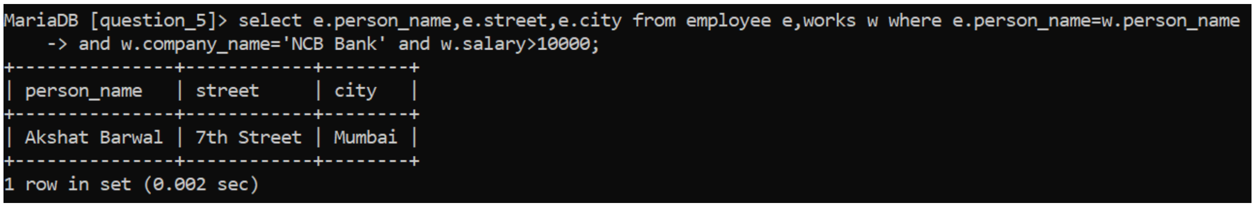
```
MariaDB [question_5]> select * from employee;
+---------------+------------+---------+-------+
| person_name   | street     | city    | email |
+---------------+------------+---------+-------+
| Akshat Barwal | 7th Street | Mumbai  | NULL  |
| Amogh Garg    | 6th Street | Delhi   | NULL  |
| Harkeerat     | 8th Street | Kolkata | NULL  |
+---------------+------------+---------+-------+
3 rows in set (0.001 sec)
```

3. select m.manager_name from manages m,works w where m.person_name=w.person_name and w.company_name='Samba Bank' and w.company_name='NCB Bank';



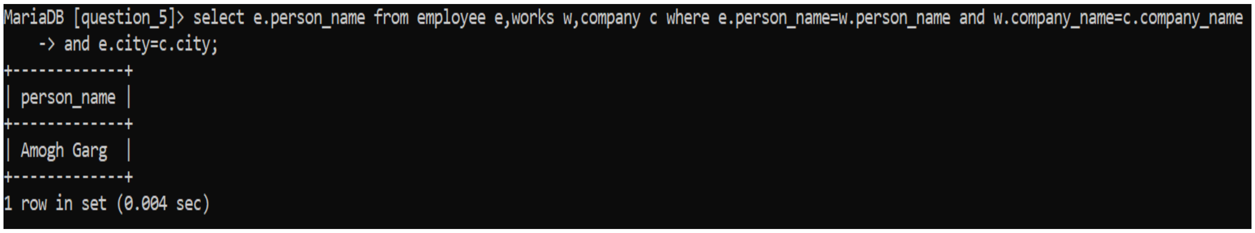
```
Empty set (0.001 sec)
```

4. select e.person_name,e.street,e.city from employee e,works w where e.person_name=w.person_name and w.company_name='NCB Bank' and w.salary>10000;



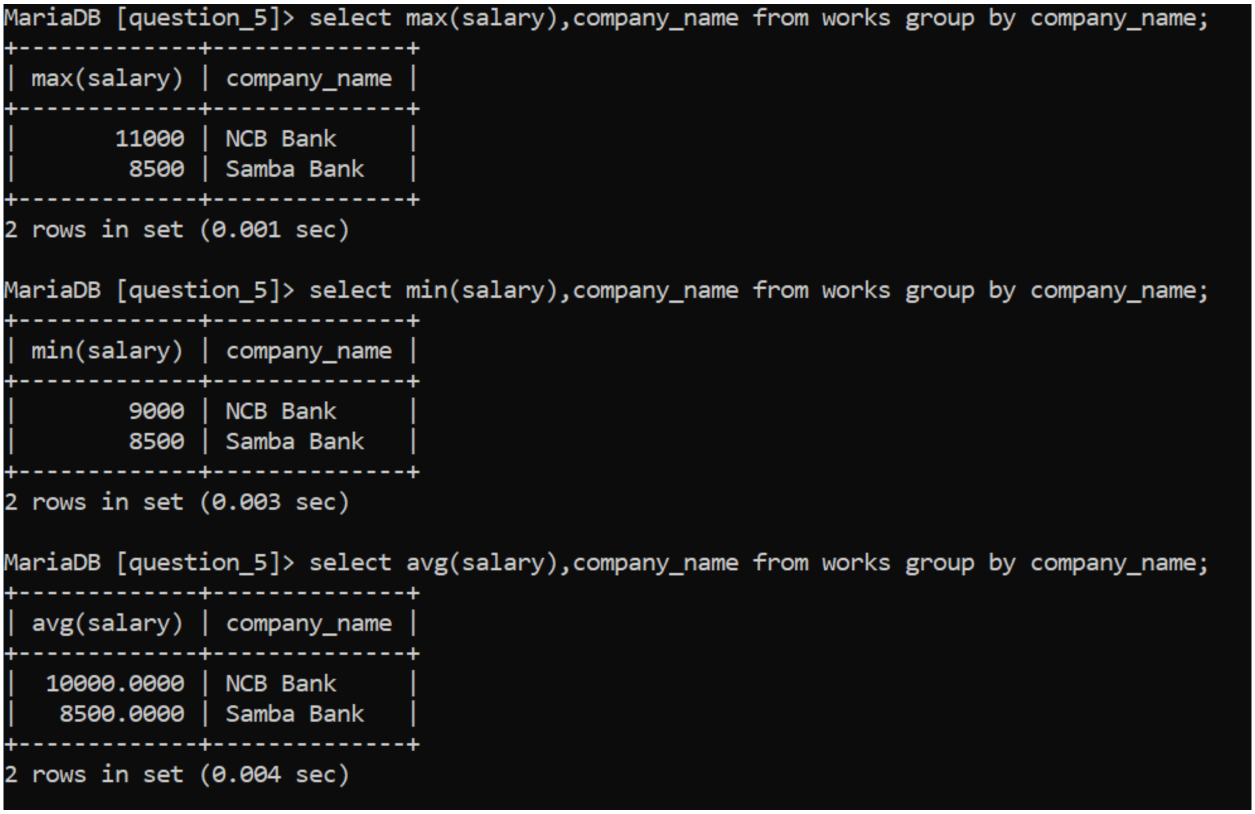
```
MariaDB [question_5]> select e.person_name,e.street,e.city from employee e,works w where e.person_name=w.person_name
    -> and w.company_name='NCB Bank' and w.salary>10000;
+---------------+------------+--------+
| person_name   | street     | city   |
+---------------+------------+--------+
| Akshat Barwal | 7th Street | Mumbai |
+---------------+------------+--------+
1 row in set (0.002 sec)
```

5. select e.person_name from employee e,works w,company c where e.person_name=w.person_name and w.company_name=c.company_name and e.city=c.city;



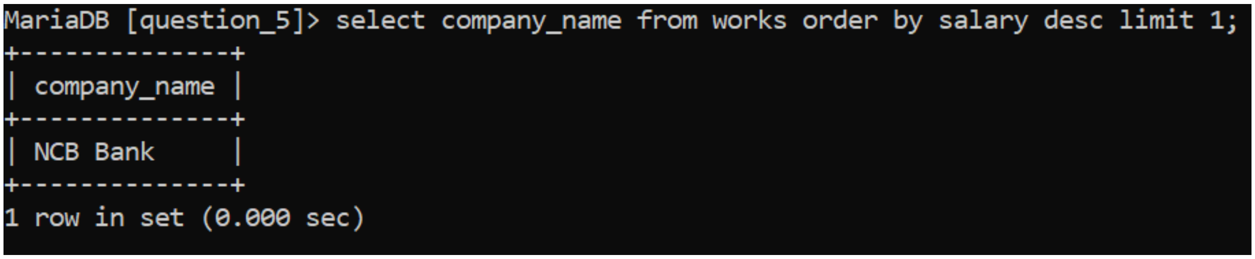
```
MariaDB [question_5]> select e.person_name from employee e,works w,company c where e.person_name=w.person_name and w.company_name=c.company_name
    -> and e.city=c.city;
+-------------+
| person_name |
+-------------+
| Amogh Garg  |
+-------------+
1 row in set (0.004 sec)
```

6. select max(salary),company_name from works group by company_name;
select min(salary),company_name from works group by company_name;
select avg(salary),company_name from works group by company_name;



```
MariaDB [question_5]> select max(salary),company_name from works group by company_name;
+-------------+--------------+
| max(salary) | company_name |
+-------------+--------------+
|       11000 | NCB Bank     |
|        8500 | Samba Bank   |
+-------------+--------------+
2 rows in set (0.001 sec)

MariaDB [question_5]> select min(salary),company_name from works group by company_name;
+-------------+--------------+
| min(salary) | company_name |
+-------------+--------------+
|        9000 | NCB Bank     |
|        8500 | Samba Bank   |
+-------------+--------------+
2 rows in set (0.003 sec)

MariaDB [question_5]> select avg(salary),company_name from works group by company_name;
+-------------+--------------+
| avg(salary) | company_name |
+-------------+--------------+
|  10000.0000 | NCB Bank     |
|   8500.0000 | Samba Bank   |
+-------------+--------------+
2 rows in set (0.004 sec)
```

7. select company_name from works order by salary desc limit 1;



```
MariaDB [question_5]> select company_name from works order by salary desc limit 1;
+--------------+
| company_name |
+--------------+
| NCB Bank     |
+--------------+
1 row in set (0.000 sec)
```