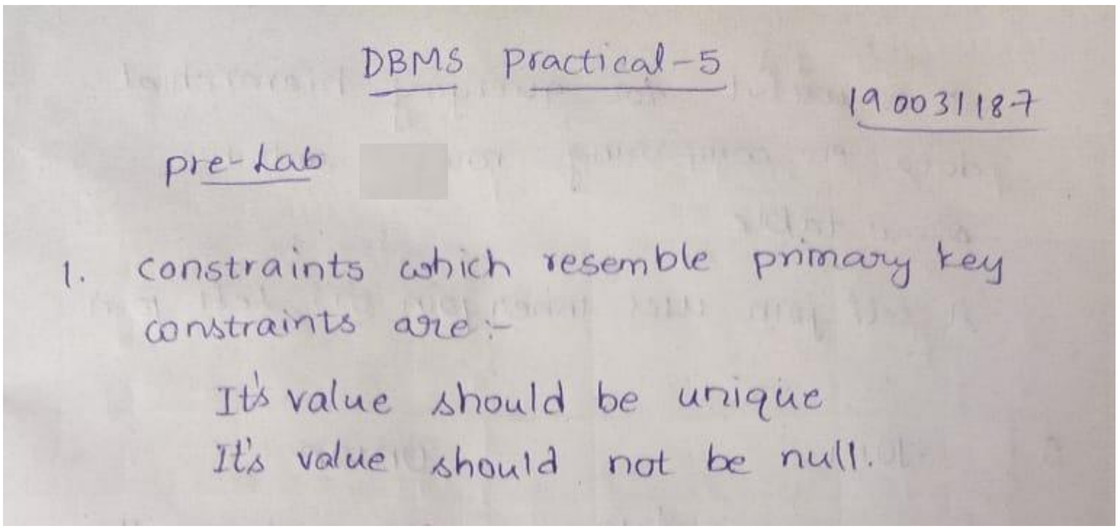
DBMS SKILL-5

PRE-LAB

1. The properties of a primary key are already known. A combination of which individual constraints resembles “Primary Key” constraint?



DBMS Practical-5

19003118-7

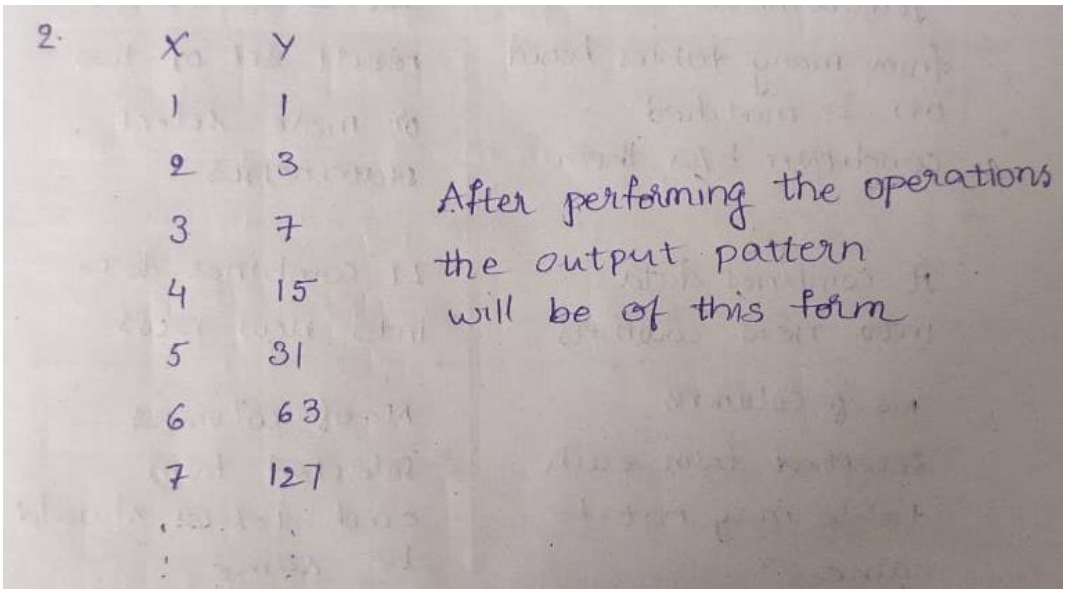
pre-Lab

1. constraints which resemble primary key constraints are:-

It's value should be unique

It's value should not be null.

2. Consider a database table T containing two columns X and Y each of type integer. After the creation of the table, one record (X=1, Y=1) is inserted in the table. Let M_X and M_Y denote the respective maximum values of X and Y among all records in the table at any point in time. Using M_X and M_Y, new records are inserted in the table 128 times with X and Y values being M_X+1, $2*M_Y+1$ respectively. It may be noted that each time after the insertion, values of M_X and M_Y change. What will be the output of the following SQL query after the steps mentioned above are carried out? Explain.



2.

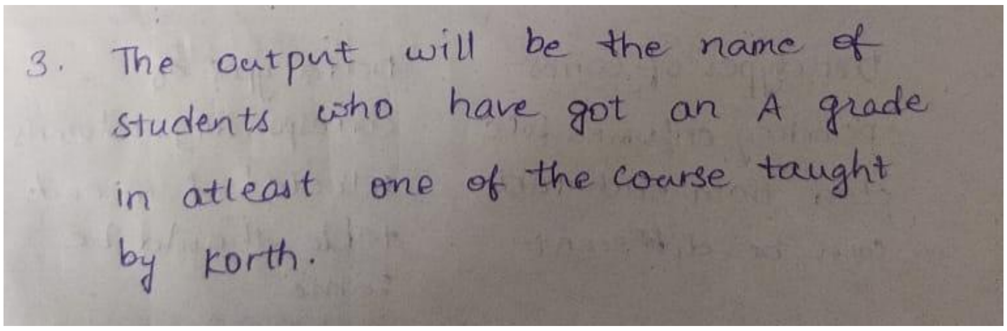
X	Y
1	1
2	3
3	7
4	15
5	31
6	63
7	127
:	:

After performing the operations the output pattern will be of this form

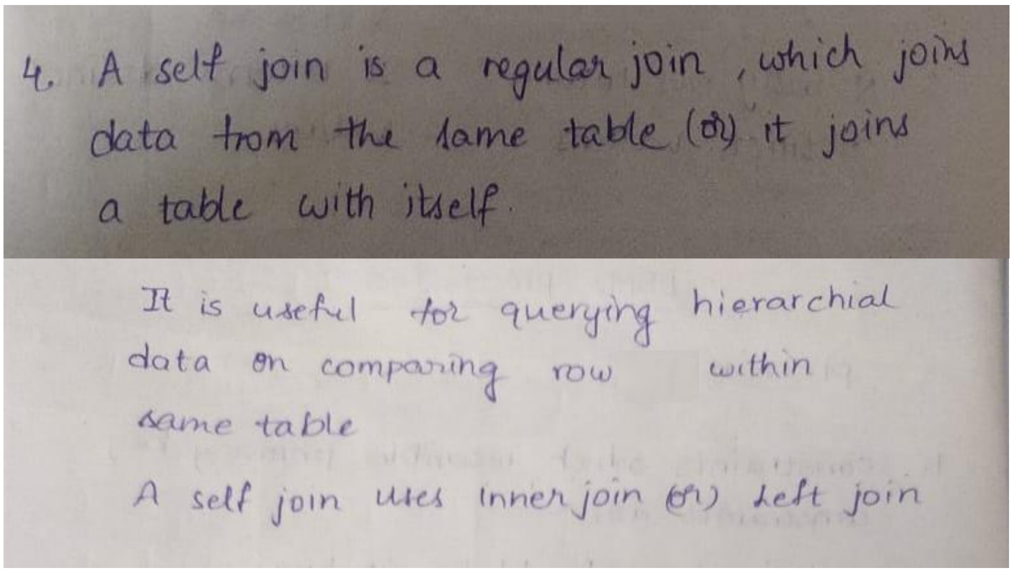
3. Consider the set of relations shown below and the SQL query that follows. Students: (Roll_number, Name, Date_of_birth)

   Courses: (Course number, Course_name, Instructor) Grades: (Roll_number, Course_number, Grade) What is the output of the given SQL query?

   select distinct Name **from** Students, Courses, Grades **where** Students. Roll_number = Grades.Roll_number **and** Courses.Instructor = 'Korth' **and** Courses.Course_number = Grades.Course_number **and** Grades.grade = 'A'


3. The output will be the name of students who have got an A grade in atleast one of the course taught by korth.

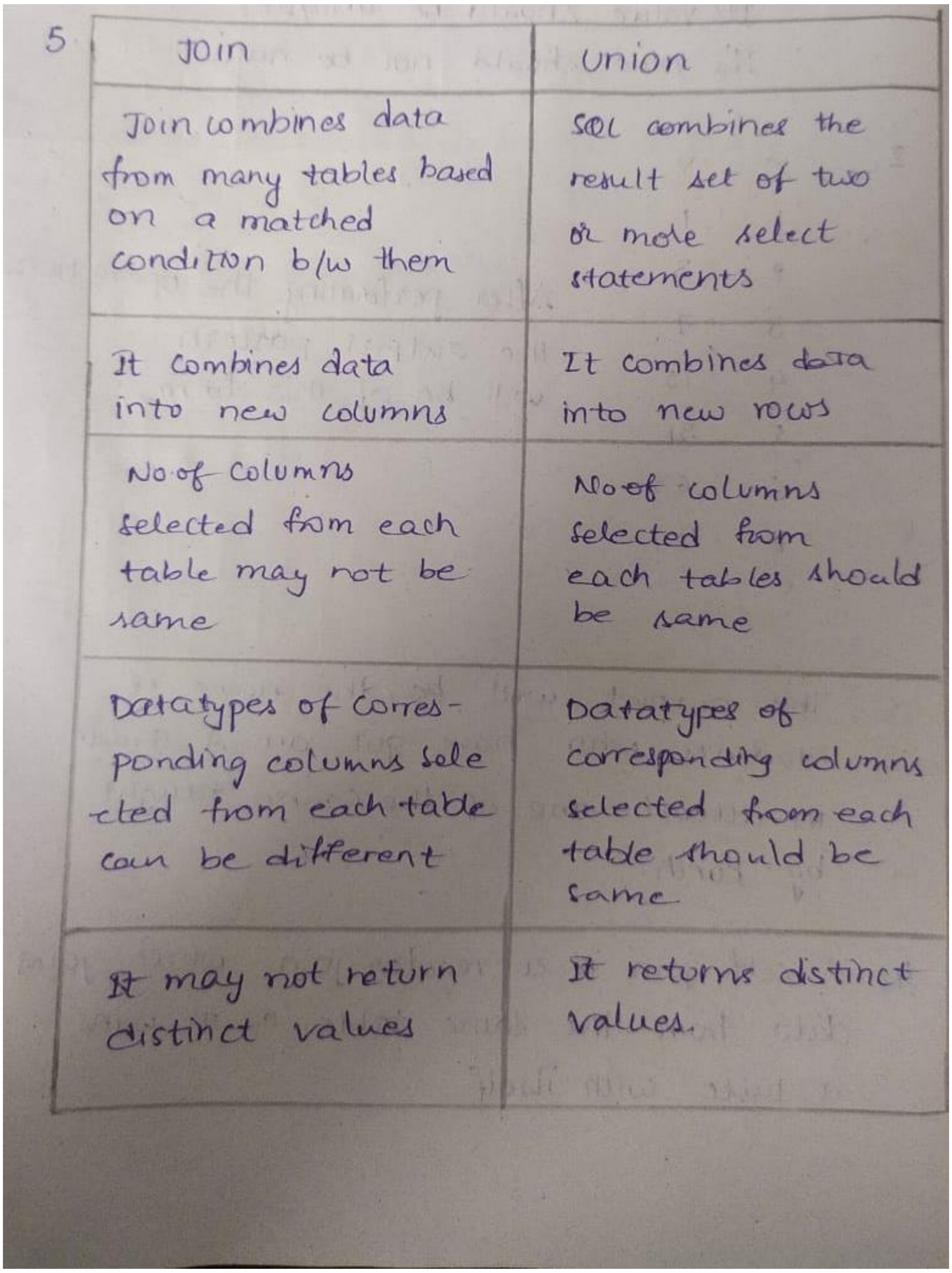
4. What self join and why it is required?


4. A self join is a regular join, which joins data from the same table (or) it joins a table with itself.

It is useful for querying hierarchial data on comparing row within same table

A self join uses Inner join (or) Left join

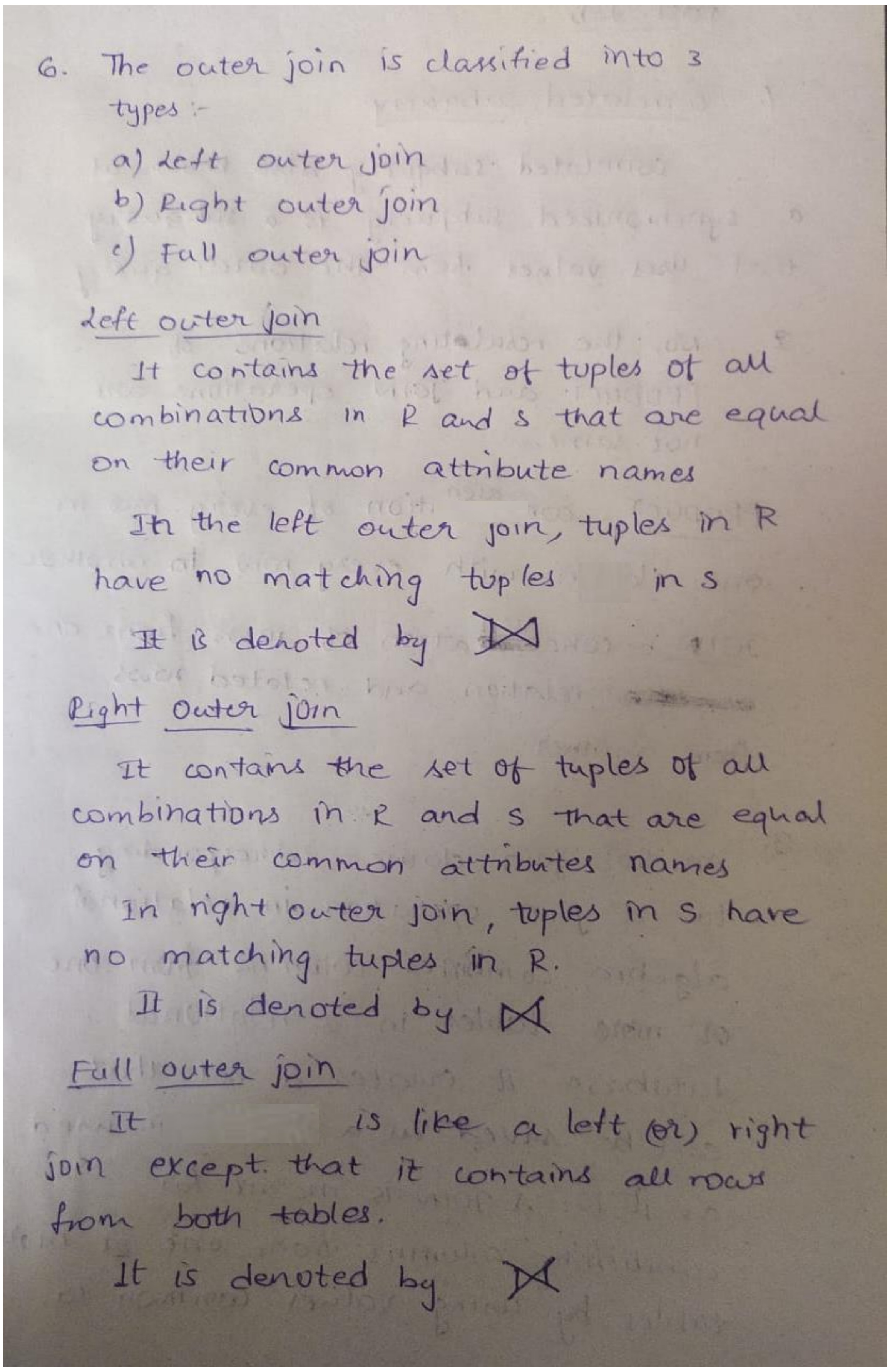
5. State the difference between UNION clause and JOIN ?



5

Join	Union
Join combines data from many tables based on a matched condition b/w them	SQL combines the result set of two or more select statements
It combines data into new columns	It combines data into new rows
No.of columns selected from each table may not be same	No.of columns selected from each tables should be same
Datatypes of corres-ponding columns sele-cted from each table can be different	Datatypes of corresponding columns selected from each table should be same
It may not return distinct values	It returns distinct values.

6. Classify Outer join operations and explain briefly.



6. The outer join is classified into 3 types :-

a) Left outer join
b) Right outer join
c) Full outer join

Left outer join

It contains the set of tuples of all combinations in R and S that are equal on their common attribute names

In the left outer join, tuples in R have no matching tuples in S

It is denoted by ⟕

Right Outer join

It contains the set of tuples of all combinations in R and S that are equal on their common attributes names

In right outer join, tuples in S have no matching tuples in R.

It is denoted by ⟖

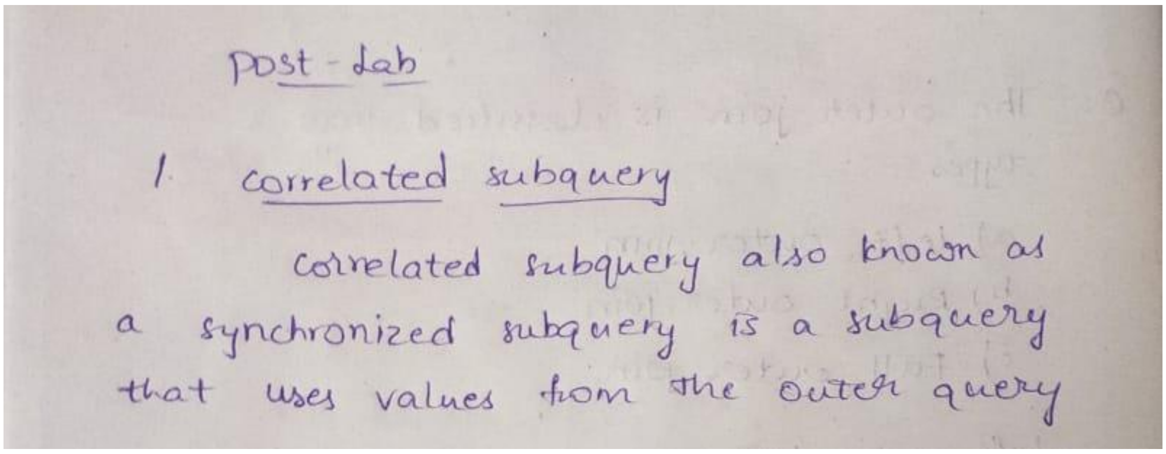
Full outer join

It is like a left (or) right join except that it contains all rows from both tables.

It is denoted by ⟗

POST LAB

1. What do you mean by Correlated subquery?

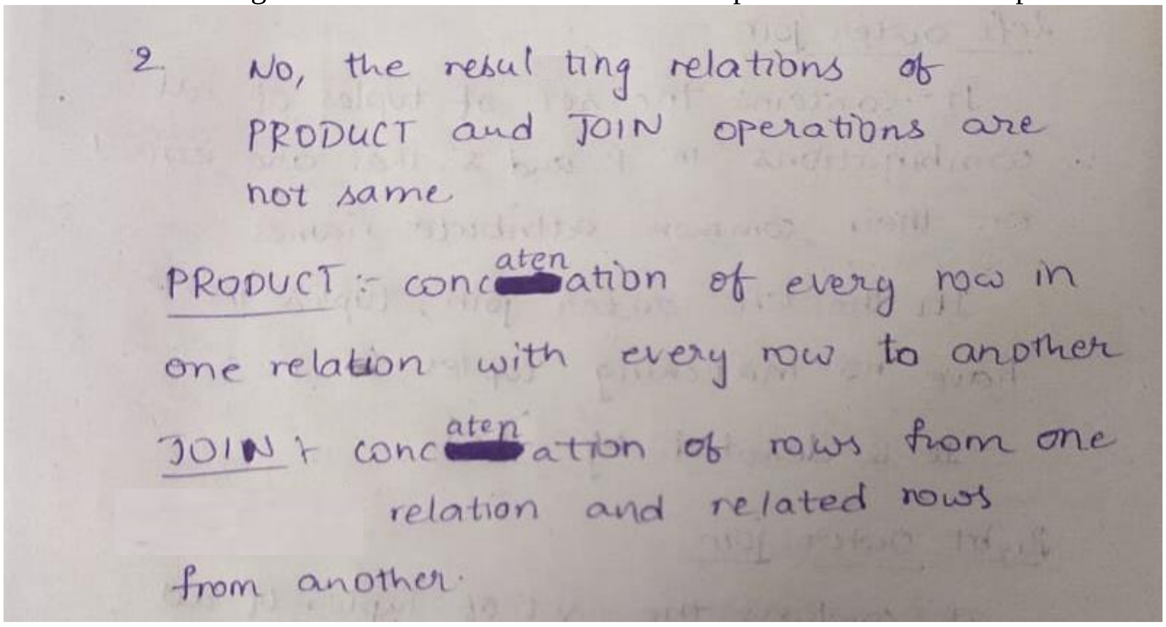


post - lab

1. correlated subquery

correlated subquery also known as a synchronized subquery is a subquery that uses values from the outer query

2. Are the resulting relations of PRODUCT and JOIN operation the same? Explain.

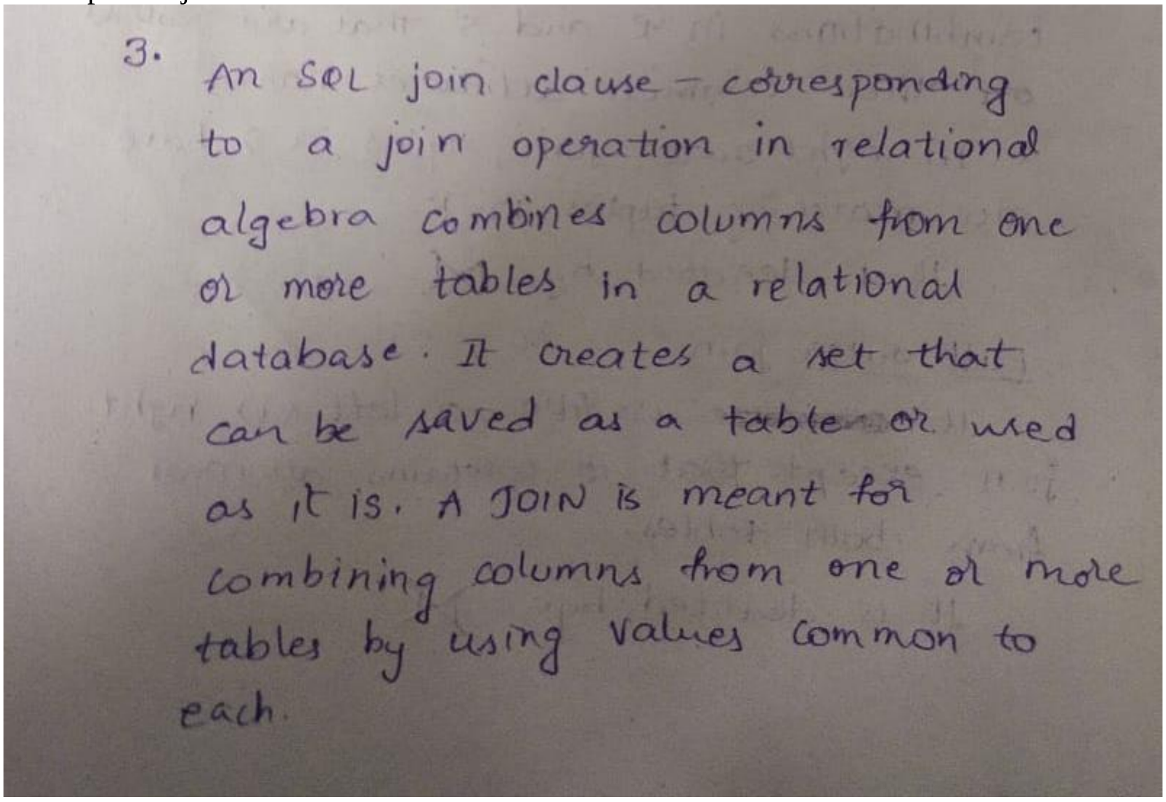


2. No, the resulting relations of PRODUCT and JOIN operations are not same

PRODUCT :- conc$\overset{\text{aten}}{\text{▬}}$ation of every row in one relation with every row to another

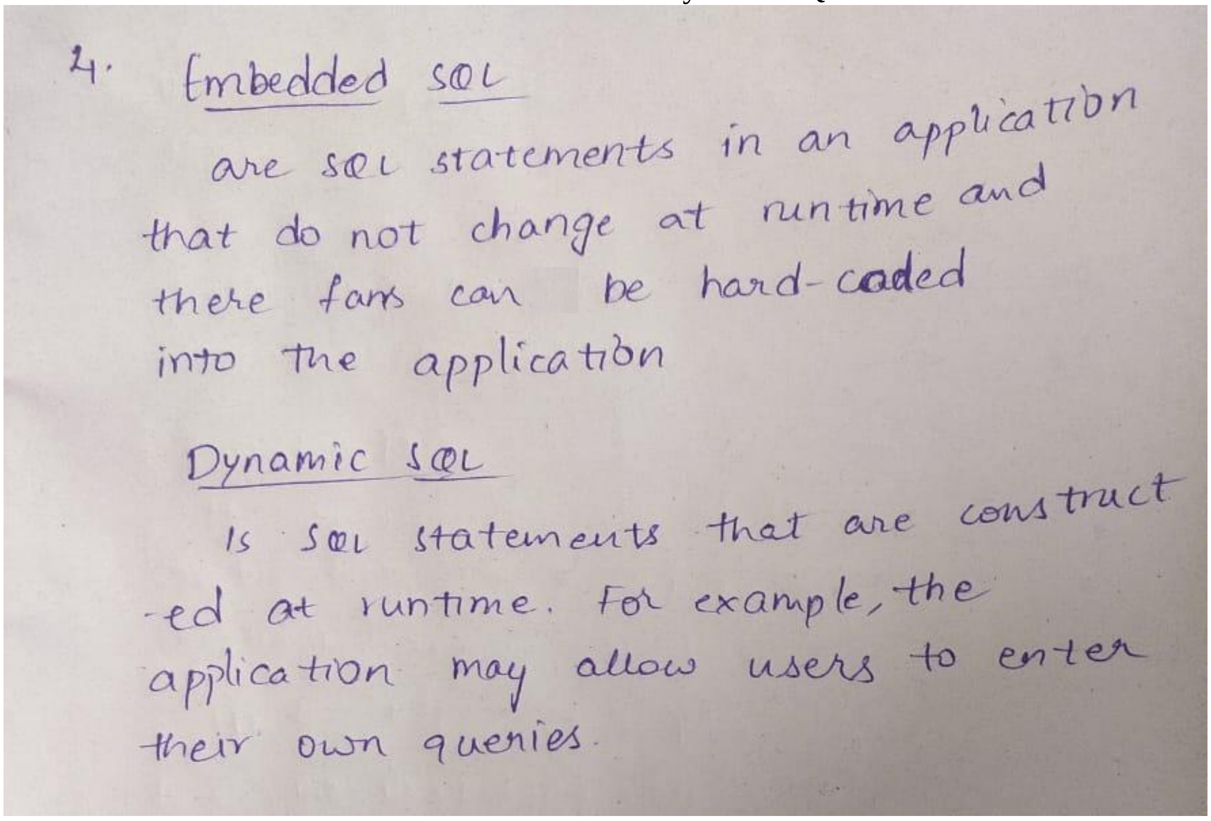
JOIN :- conc$\overset{\text{aten}}{\text{▬}}$ation of rows from one relation and related rows from another.

3. Explain a join between tables



3. An SQL join clause - corresponding to a join operation in relational algebra combines columns from one or more tables in a relational database. It creates a set that can be saved as a table or used as it is. A JOIN is meant for combining columns from one or more tables by using values common to each.

4. Describe the difference between embedded and dynamic SQL.



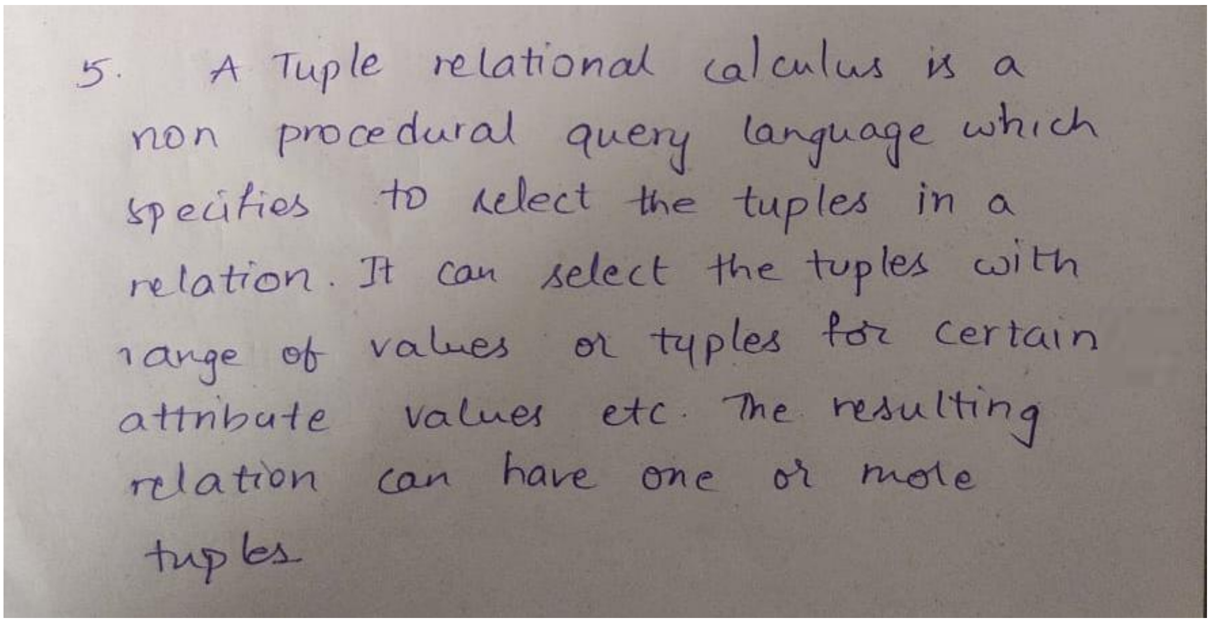
4. Embedded SQL

are SQL statements in an application that do not change at runtime and there fans can be hard-coded into the application

Dynamic SQL

is SQL statements that are construct-ed at runtime. For example, the application may allow users to enter their own queries.

5. How does Tuple-oriented relational calculus differ from domain-oriented relational calculus?

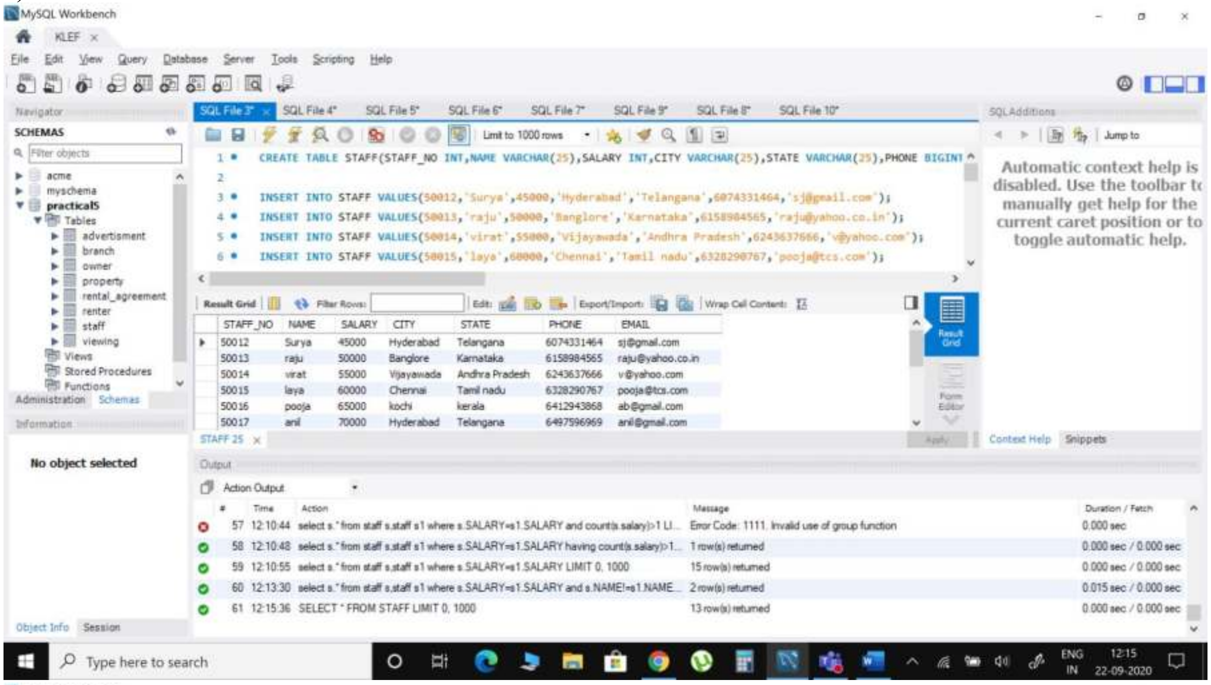


5. A Tuple relational calculus is a non procedural query language which specifies to select the tuples in a relation. It can select the tuples with range of values or tuples for certain attribute values etc. The resulting relation can have one or more tuples

DBMS SKILL-5

INLAB

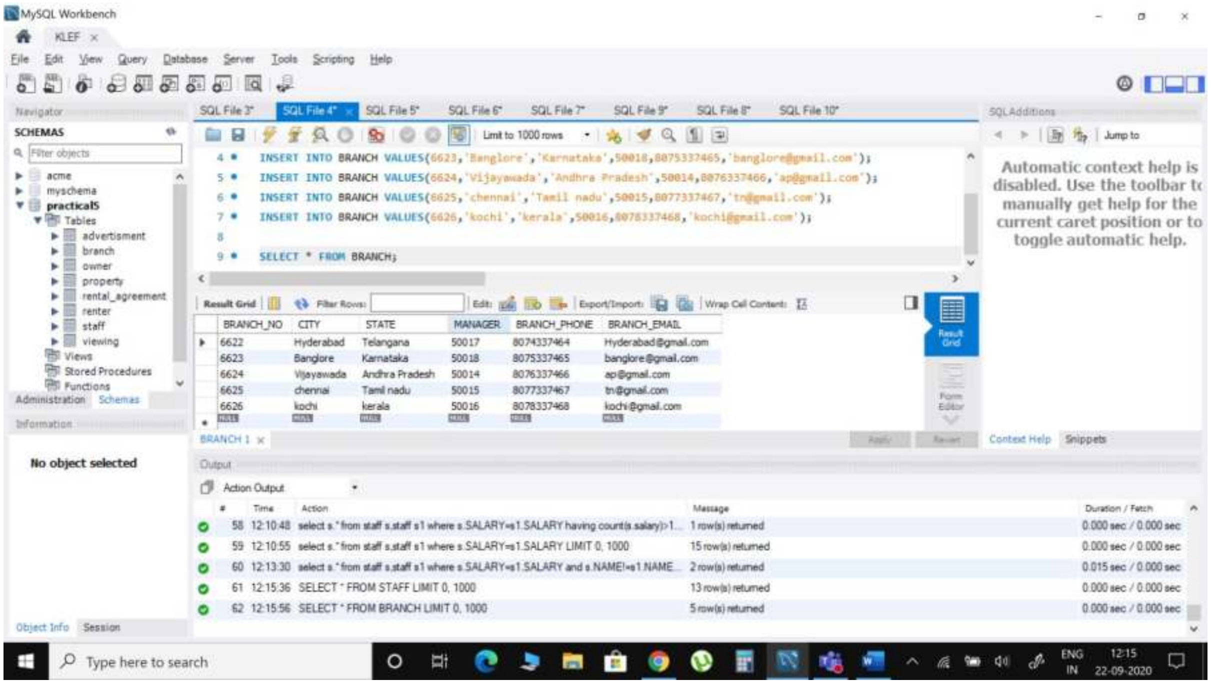
1) Create tables with the required constraints for the given case study
2) Insert 10 records into the created tables



```
CREATE TABLE STAFF(STAFF_NO INT,NAME VARCHAR(25),SALARY INT,CITY VARCHAR(25),STATE VARCHAR(25),PHONE BIGINT

INSERT INTO STAFF VALUES(50012,'Surya',45000,'Hyderabad','Telangana',6074331464,'sj@gmail.com');
INSERT INTO STAFF VALUES(50013,'raju',50000,'Banglore','Karnataka',6158984565,'raju@yahoo.co.in');
INSERT INTO STAFF VALUES(50014,'virat',55000,'Vijayawada','Andhra Pradesh',6243637666,'v@yahoo.com');
INSERT INTO STAFF VALUES(50015,'laya',60000,'Chennai','Tamil nadu',6328290767,'pooja@tcs.com');
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50012	Surya	45000	Hyderabad	Telangana	6074331464	sj@gmail.com
50013	raju	50000	Banglore	Karnataka	6158984565	raju@yahoo.co.in
50014	virat	55000	Vijayawada	Andhra Pradesh	6243637666	v@yahoo.com
50015	laya	60000	Chennai	Tamil nadu	6328290767	pooja@tcs.com
50016	pooja	65000	kochi	kerala	6412943868	ab@gmail.com
50017	anil	70000	Hyderabad	Telangana	6497596969	anil@gmail.com

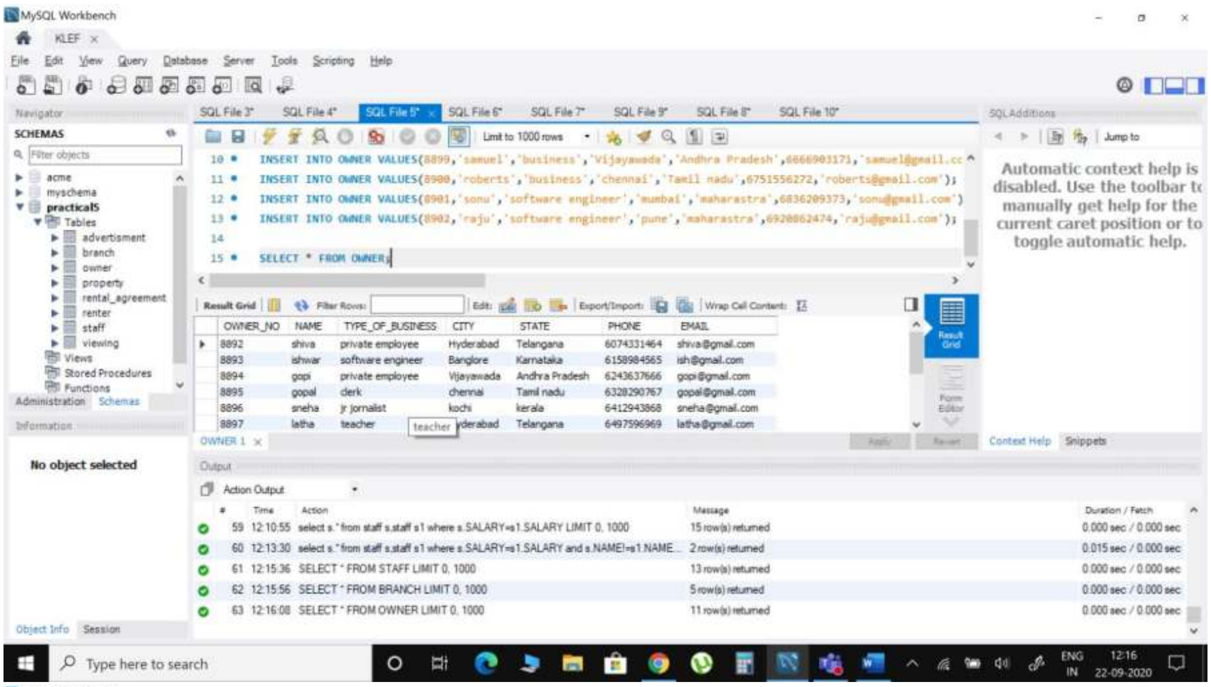
```
#   Time      Action                                                                        Message                                           Duration / Fetch
57  12:10:44  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and count(s.salary)>1 LI...  Error Code: 1111. Invalid use of group function  0.000 sec
58  12:10:48  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY having count(s.salary)>1...  1 row(s) returned                                 0.000 sec / 0.000 sec
59  12:10:55  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY LIMIT 0, 1000              15 row(s) returned                                0.000 sec / 0.000 sec
60  12:13:30  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...     2 row(s) returned                                 0.015 sec / 0.000 sec
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000                                                   13 row(s) returned                                0.000 sec / 0.000 sec
```



```
INSERT INTO BRANCH VALUES(6623,'Banglore','Karnataka',50018,8075337465,'banglore@gmail.com');
INSERT INTO BRANCH VALUES(6624,'Vijayawada','Andhra Pradesh',50014,8076337466,'ap@gmail.com');
INSERT INTO BRANCH VALUES(6625,'chennai','Tamil nadu',50015,8077337467,'tn@gmail.com');
INSERT INTO BRANCH VALUES(6626,'kochi','kerala',50016,8078337468,'kochi@gmail.com');

SELECT * FROM BRANCH;
```

BRANCH_NO	CITY	STATE	MANAGER	BRANCH_PHONE	BRANCH_EMAIL
6622	Hyderabad	Telangana	50017	8074337464	Hyderabad@gmail.com
6623	Banglore	Karnataka	50018	8075337465	banglore@gmail.com
6624	Vijayawada	Andhra Pradesh	50014	8076337466	ap@gmail.com
6625	chennai	Tamil nadu	50015	8077337467	tn@gmail.com
6626	kochi	kerala	50016	8078337468	kochi@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL

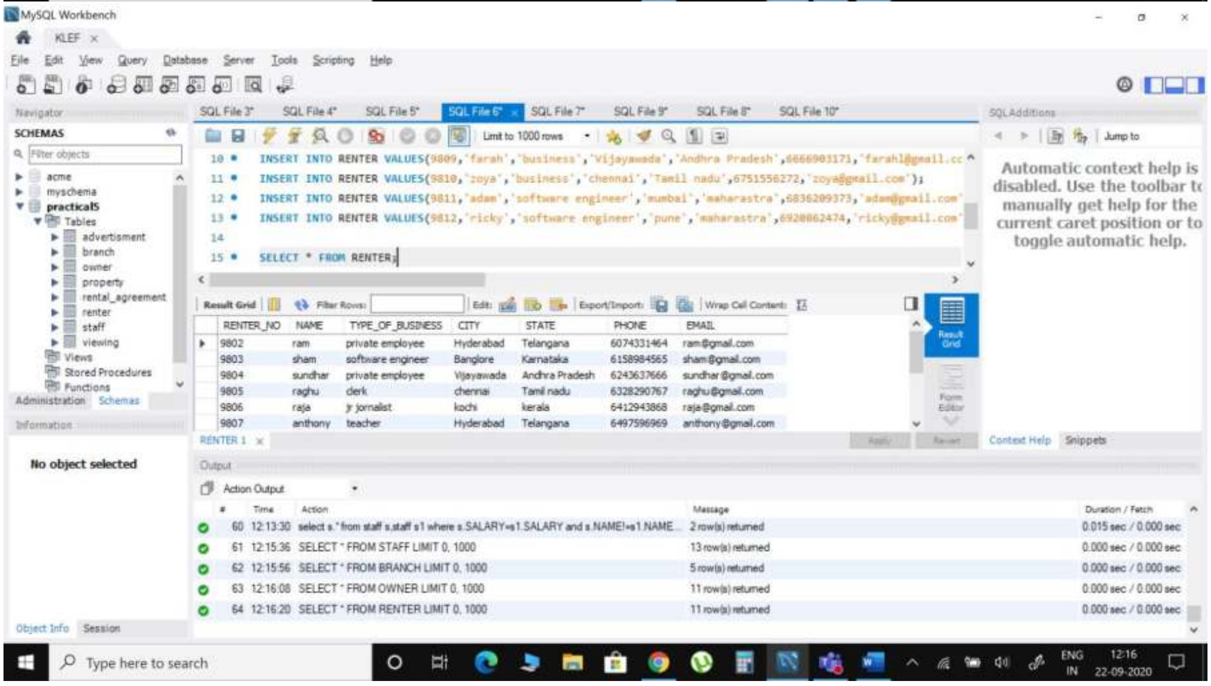
```
#   Time      Action                                                                        Message              Duration / Fetch
58  12:10:48  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY having count(s.salary)>1...  1 row(s) returned    0.000 sec / 0.000 sec
59  12:10:55  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY LIMIT 0, 1000              15 row(s) returned   0.000 sec / 0.000 sec
60  12:13:30  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...     2 row(s) returned    0.015 sec / 0.000 sec
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000                                                   13 row(s) returned   0.000 sec / 0.000 sec
62  12:15:56  SELECT * FROM BRANCH LIMIT 0, 1000                                                  5 row(s) returned    0.000 sec / 0.000 sec
```



```
INSERT INTO OWNER VALUES(8899,'samuel','business','Vijayawada','Andhra Pradesh',6666903171,'samuel@gmail.cc
INSERT INTO OWNER VALUES(8900,'roberts','business','chennai','Tamil nadu',6751556272,'roberts@gmail.com');
INSERT INTO OWNER VALUES(8901,'sonu','software engineer','mumbai','maharastra',6836209373,'sonu@gmail.com')
INSERT INTO OWNER VALUES(8902,'raju','software engineer','pune','maharastra',6920862474,'raju@gmail.com');

SELECT * FROM OWNER;
```

OWNER_NO	NAME	TYPE_OF_BUSINESS	CITY	STATE	PHONE	EMAIL
8892	shiva	private employee	Hyderabad	Telangana	6074331464	shiva@gmail.com
8893	ishwar	software engineer	Banglore	Karnataka	6158984565	ish@gmail.com
8894	gopi	private employee	Vijayawada	Andhra Pradesh	6243637666	gopi@gmail.com
8895	gopal	clerk	chennai	Tamil nadu	6328290767	gopal@gmail.com
8896	sneha	jr jornalist	kochi	kerala	6412943868	sneha@gmail.com
8897	latha	teacher	Hyderabad	Telangana	6497596969	latha@gmail.com

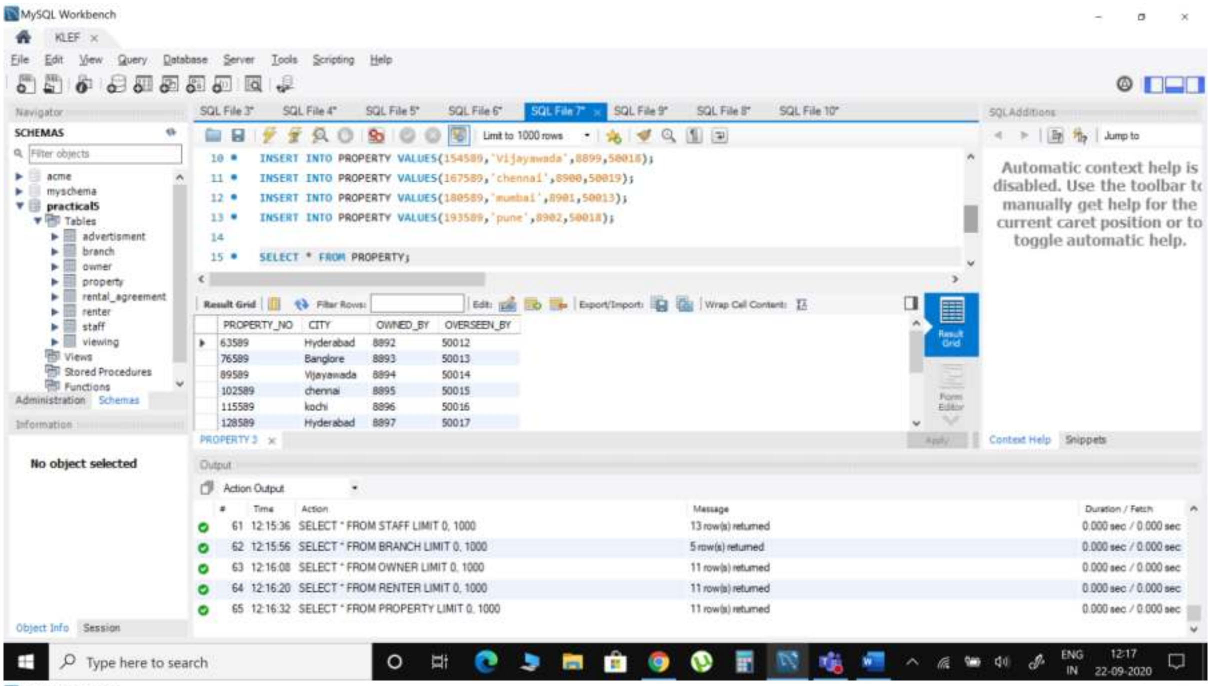
```
#   Time      Action                                                                  Message              Duration / Fetch
59  12:10:55  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY LIMIT 0, 1000    15 row(s) returned   0.000 sec / 0.000 sec
60  12:13:30  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...  2 row(s) returned   0.015 sec / 0.000 sec
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000                                          13 row(s) returned   0.000 sec / 0.000 sec
62  12:15:56  SELECT * FROM BRANCH LIMIT 0, 1000                                         5 row(s) returned    0.000 sec / 0.000 sec
63  12:16:08  SELECT * FROM OWNER LIMIT 0, 1000                                          11 row(s) returned   0.000 sec / 0.000 sec
```



```
INSERT INTO RENTER VALUES(9809,'farah','business','Vijayawada','Andhra Pradesh',6666903171,'farahl@gmail.cc
INSERT INTO RENTER VALUES(9810,'zoya','business','chennai','Tamil nadu',6751556272,'zoya@gmail.com');
INSERT INTO RENTER VALUES(9811,'adam','software engineer','mumbai','maharastra',6836209373,'adam@gmail.com'
INSERT INTO RENTER VALUES(9812,'ricky','software engineer','pune','maharastra',6920862474,'ricky@gmail.com'

SELECT * FROM RENTER;
```

RENTER_NO	NAME	TYPE_OF_BUSINESS	CITY	STATE	PHONE	EMAIL
9802	ram	private employee	Hyderabad	Telangana	6074331464	ram@gmail.com
9803	sham	software engineer	Banglore	Karnataka	6158984565	sham@gmail.com
9804	sundhar	private employee	Vijayawada	Andhra Pradesh	6243637666	sundhar@gmail.com
9805	raghu	clerk	chennai	Tamil nadu	6328290767	raghu@gmail.com
9806	raja	jr jornalist	kochi	kerala	6412943868	raja@gmail.com
9807	anthony	teacher	Hyderabad	Telangana	6497596969	anthony@gmail.com

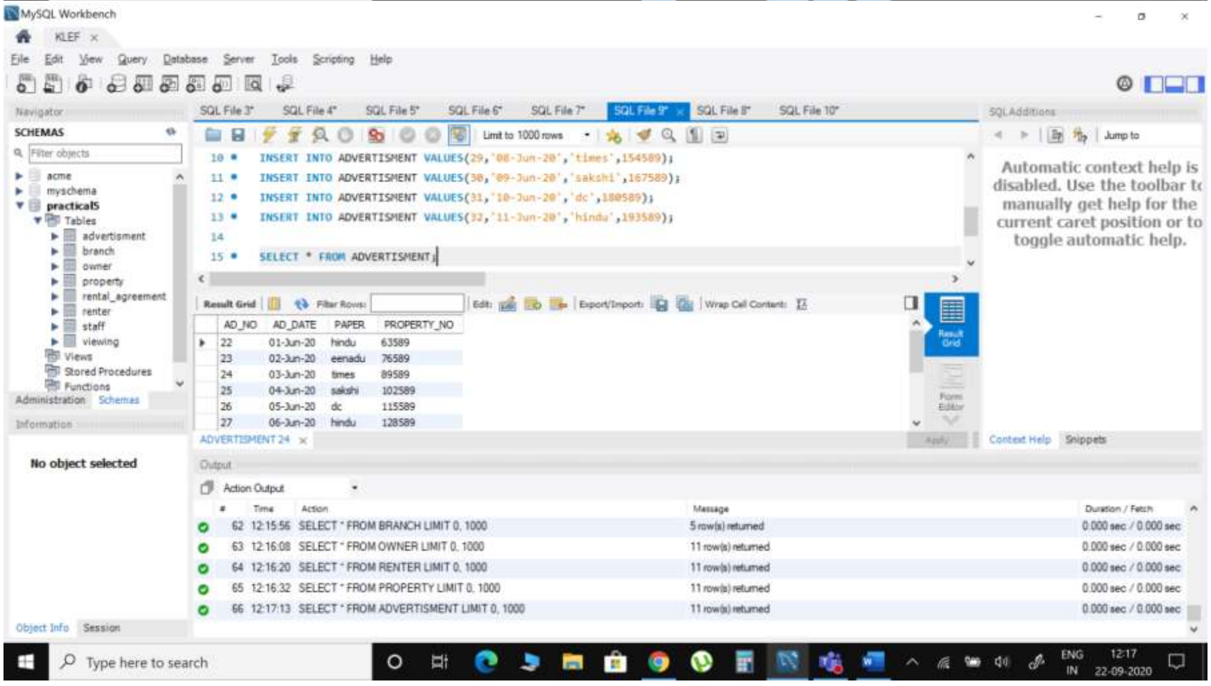
```
#   Time      Action                                                                  Message              Duration / Fetch
60  12:13:30  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...  2 row(s) returned   0.015 sec / 0.000 sec
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000                                          13 row(s) returned   0.000 sec / 0.000 sec
62  12:15:56  SELECT * FROM BRANCH LIMIT 0, 1000                                         5 row(s) returned    0.000 sec / 0.000 sec
63  12:16:08  SELECT * FROM OWNER LIMIT 0, 1000                                          11 row(s) returned   0.000 sec / 0.000 sec
64  12:16:20  SELECT * FROM RENTER LIMIT 0, 1000                                         11 row(s) returned   0.000 sec / 0.000 sec
```



```
INSERT INTO PROPERTY VALUES(154589,'Vijayawada',8899,50018);
INSERT INTO PROPERTY VALUES(167589,'chennai',8900,50019);
INSERT INTO PROPERTY VALUES(180589,'mumbai',8901,50013);
INSERT INTO PROPERTY VALUES(193589,'pune',8902,50018);

SELECT * FROM PROPERTY;
```

PROPERTY_NO	CITY	OWNED_BY	OVERSEEN_BY
63589	Hyderabad	8892	50012
76589	Banglore	8893	50013
89589	Vijayawada	8894	50014
102589	chennai	8895	50015
115589	kochi	8896	50016
128589	Hyderabad	8897	50017

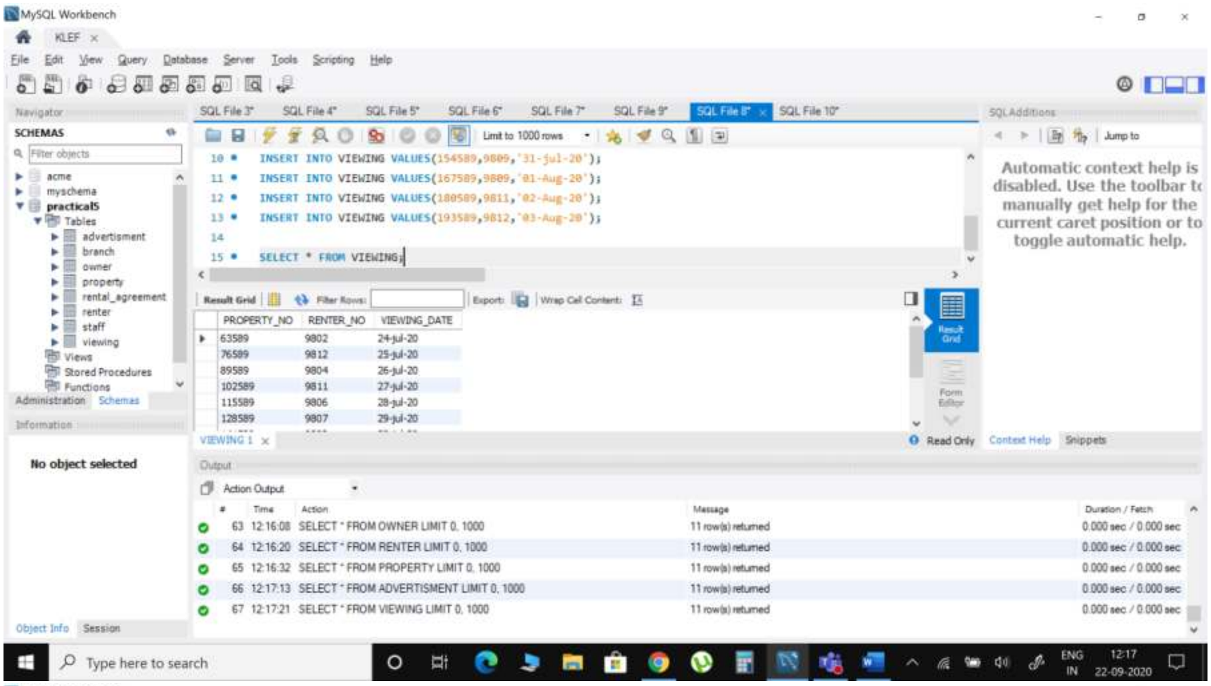
```
#   Time      Action                                  Message             Duration / Fetch
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000       13 row(s) returned  0.000 sec / 0.000 sec
62  12:15:56  SELECT * FROM BRANCH LIMIT 0, 1000      5 row(s) returned   0.000 sec / 0.000 sec
63  12:16:08  SELECT * FROM OWNER LIMIT 0, 1000       11 row(s) returned  0.000 sec / 0.000 sec
64  12:16:20  SELECT * FROM RENTER LIMIT 0, 1000      11 row(s) returned  0.000 sec / 0.000 sec
65  12:16:32  SELECT * FROM PROPERTY LIMIT 0, 1000    11 row(s) returned  0.000 sec / 0.000 sec
```



```
INSERT INTO ADVERTISMENT VALUES(29,'08-Jun-20','times',154589);
INSERT INTO ADVERTISMENT VALUES(30,'09-Jun-20','sakshi',167589);
INSERT INTO ADVERTISMENT VALUES(31,'10-Jun-20','dc',180589);
INSERT INTO ADVERTISMENT VALUES(32,'11-Jun-20','hindu',193589);

SELECT * FROM ADVERTISMENT;
```

AD_NO	AD_DATE	PAPER	PROPERTY_NO
22	01-Jun-20	hindu	63589
23	02-Jun-20	eenadu	76589
24	03-Jun-20	times	89589
25	04-Jun-20	sakshi	102589
26	05-Jun-20	dc	115589
27	06-Jun-20	hindu	128589

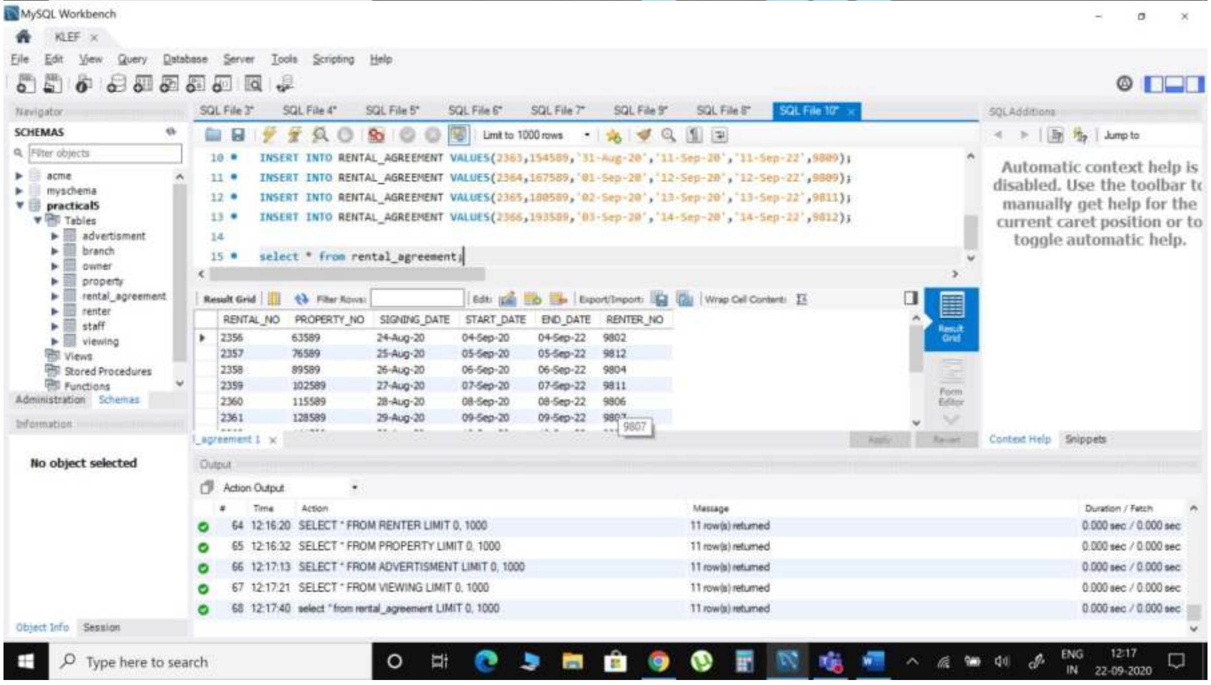
```
#   Time      Action                                     Message             Duration / Fetch
62  12:15:56  SELECT * FROM BRANCH LIMIT 0, 1000         5 row(s) returned   0.000 sec / 0.000 sec
63  12:16:08  SELECT * FROM OWNER LIMIT 0, 1000          11 row(s) returned  0.000 sec / 0.000 sec
64  12:16:20  SELECT * FROM RENTER LIMIT 0, 1000         11 row(s) returned  0.000 sec / 0.000 sec
65  12:16:32  SELECT * FROM PROPERTY LIMIT 0, 1000       11 row(s) returned  0.000 sec / 0.000 sec
66  12:17:13  SELECT * FROM ADVERTISMENT LIMIT 0, 1000   11 row(s) returned  0.000 sec / 0.000 sec
```



```sql
INSERT INTO VIEWING VALUES(154589,9809,'31-jul-20');
INSERT INTO VIEWING VALUES(167589,9809,'01-Aug-20');
INSERT INTO VIEWING VALUES(180589,9811,'02-Aug-20');
INSERT INTO VIEWING VALUES(193589,9812,'03-Aug-20');

SELECT * FROM VIEWING;
```

PROPERTY_NO	RENTER_NO	VIEWING_DATE
63589	9802	24-jul-20
76589	9812	25-jul-20
89589	9804	26-jul-20
102589	9811	27-jul-20
115589	9806	28-jul-20
128589	9807	29-jul-20

```
#   Time      Action                                          Message              Duration / Fetch
63  12:16:08  SELECT * FROM OWNER LIMIT 0, 1000               11 row(s) returned   0.000 sec / 0.000 sec
64  12:16:20  SELECT * FROM RENTER LIMIT 0, 1000              11 row(s) returned   0.000 sec / 0.000 sec
65  12:16:32  SELECT * FROM PROPERTY LIMIT 0, 1000            11 row(s) returned   0.000 sec / 0.000 sec
66  12:17:13  SELECT * FROM ADVERTISMENT LIMIT 0, 1000        11 row(s) returned   0.000 sec / 0.000 sec
67  12:17:21  SELECT * FROM VIEWING LIMIT 0, 1000             11 row(s) returned   0.000 sec / 0.000 sec
```

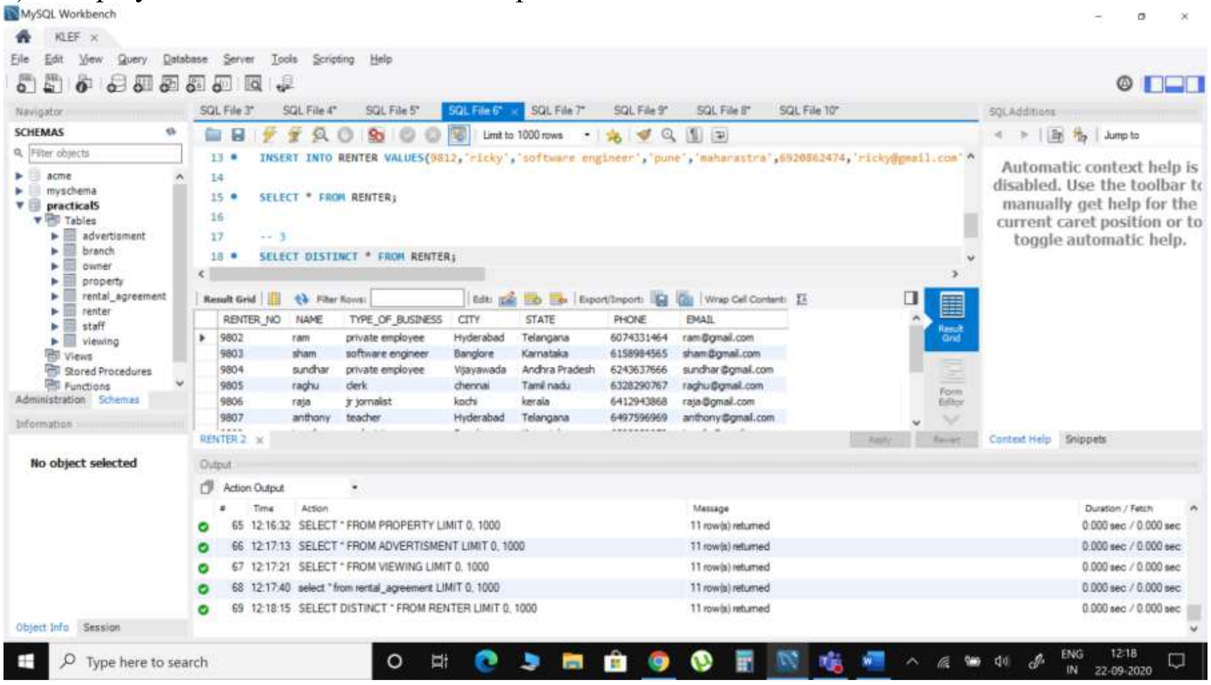


```sql
INSERT INTO RENTAL_AGREEMENT VALUES(2363,154589,'31-Aug-20','11-Sep-20','11-Sep-22',9809);
INSERT INTO RENTAL_AGREEMENT VALUES(2364,167589,'01-Sep-20','12-Sep-20','12-Sep-22',9809);
INSERT INTO RENTAL_AGREEMENT VALUES(2365,180589,'02-Sep-20','13-Sep-20','13-Sep-22',9811);
INSERT INTO RENTAL_AGREEMENT VALUES(2366,193589,'03-Sep-20','14-Sep-20','14-Sep-22',9812);

select * from rental_agreement;
```

RENTAL_NO	PROPERTY_NO	SIGNING_DATE	START_DATE	END_DATE	RENTER_NO
2356	63589	24-Aug-20	04-Sep-20	04-Sep-22	9802
2357	76589	25-Aug-20	05-Sep-20	05-Sep-22	9812
2358	89589	26-Aug-20	06-Sep-20	06-Sep-22	9804
2359	102589	27-Aug-20	07-Sep-20	07-Sep-22	9811
2360	115589	28-Aug-20	08-Sep-20	08-Sep-22	9806
2361	128589	29-Aug-20	09-Sep-20	09-Sep-22	9807

```
#   Time      Action                                          Message              Duration / Fetch
64  12:16:20  SELECT * FROM RENTER LIMIT 0, 1000              11 row(s) returned   0.000 sec / 0.000 sec
65  12:16:32  SELECT * FROM PROPERTY LIMIT 0, 1000            11 row(s) returned   0.000 sec / 0.000 sec
66  12:17:13  SELECT * FROM ADVERTISMENT LIMIT 0, 1000        11 row(s) returned   0.000 sec / 0.000 sec
67  12:17:21  SELECT * FROM VIEWING LIMIT 0, 1000             11 row(s) returned   0.000 sec / 0.000 sec
68  12:17:40  select * from rental_agreement LIMIT 0, 1000    11 row(s) returned   0.000 sec / 0.000 sec
```

3) Display renter details which are unique.

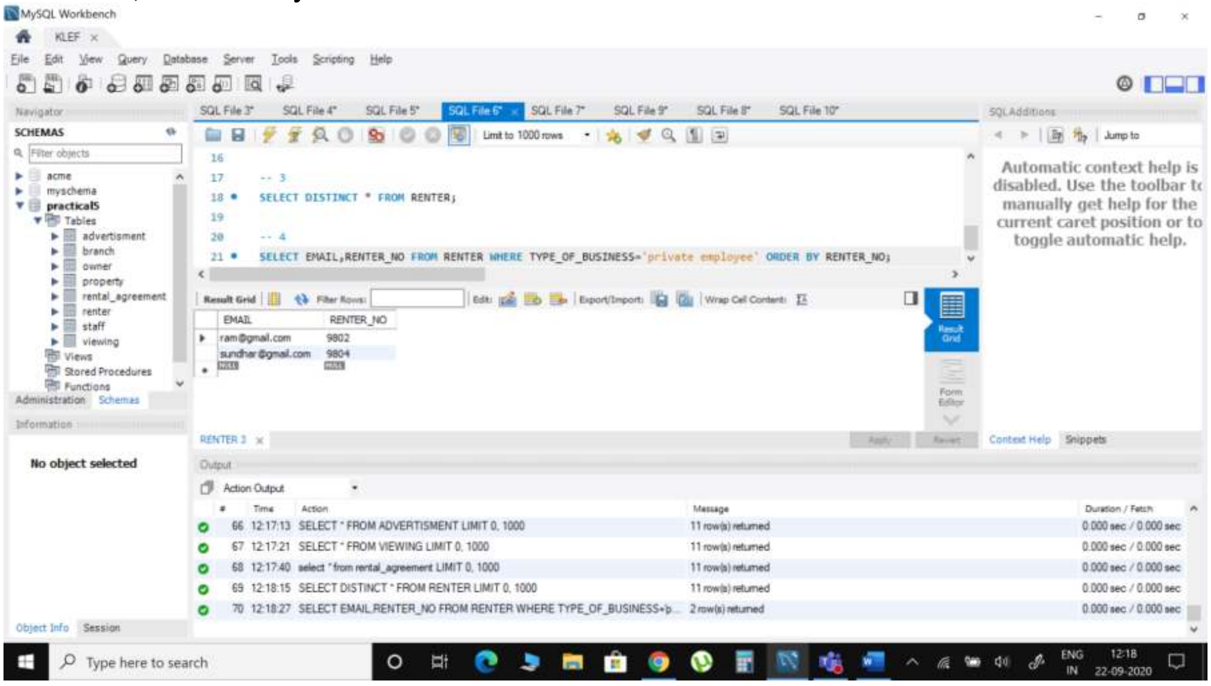


```
INSERT INTO RENTER VALUES(9812,'ricky','software engineer','pune','maharastra',6920862474,'ricky@gmail.com'

SELECT * FROM RENTER;

-- 3
SELECT DISTINCT * FROM RENTER;
```

RENTER_NO	NAME	TYPE_OF_BUSINESS	CITY	STATE	PHONE	EMAIL
9802	ram	private employee	Hyderabad	Telangana	6074331464	ram@gmail.com
9803	sham	software engineer	Banglore	Karnataka	6158984565	sham@gmail.com
9804	sundhar	private employee	Vijayawada	Andhra Pradesh	6243637666	sundhar@gmail.com
9805	raghu	clerk	chennai	Tamil nadu	6328290767	raghu@gmail.com
9806	raja	jr jornalist	kochi	kerala	6412943868	raja@gmail.com
9807	anthony	teacher	Hyderabad	Telangana	6497596969	anthony@gmail.com

```
#   Time      Action                                          Message             Duration / Fetch
65  12:16:32  SELECT * FROM PROPERTY LIMIT 0, 1000            11 row(s) returned  0.000 sec / 0.000 sec
66  12:17:13  SELECT * FROM ADVERTISMENT LIMIT 0, 1000        11 row(s) returned  0.000 sec / 0.000 sec
67  12:17:21  SELECT * FROM VIEWING LIMIT 0, 1000             11 row(s) returned  0.000 sec / 0.000 sec
68  12:17:40  select * from rental_agreement LIMIT 0, 1000    11 row(s) returned  0.000 sec / 0.000 sec
69  12:18:15  SELECT DISTINCT * FROM RENTER LIMIT 0, 1000     11 row(s) returned  0.000 sec / 0.000 sec
```

4) Give the email addresses and the renter number for all the private renters. Please, sort them by the renter number.

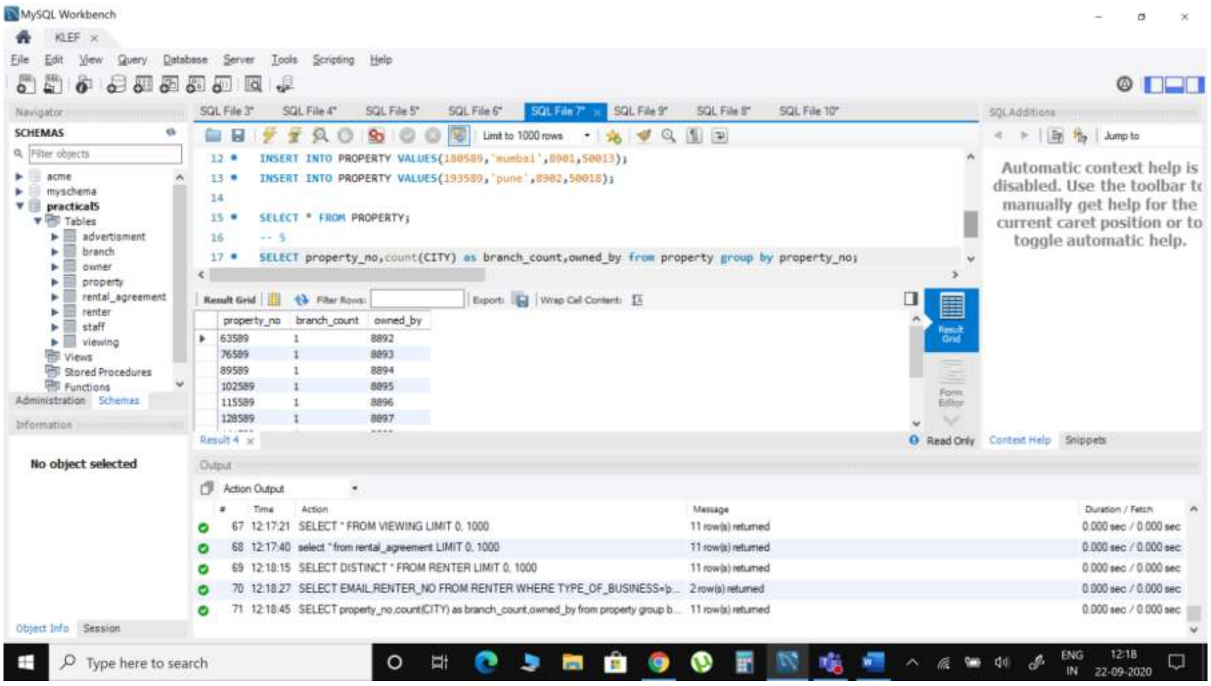


```
-- 3
SELECT DISTINCT * FROM RENTER;

-- 4
SELECT EMAIL,RENTER_NO FROM RENTER WHERE TYPE_OF_BUSINESS='private employee' ORDER BY RENTER_NO;
```

EMAIL	RENTER_NO
ram@gmail.com	9802
sundhar@gmail.com	9804
NULL	NULL

```
#   Time      Action                                                           Message             Duration / Fetch
66  12:17:13  SELECT * FROM ADVERTISMENT LIMIT 0, 1000                         11 row(s) returned  0.000 sec / 0.000 sec
67  12:17:21  SELECT * FROM VIEWING LIMIT 0, 1000                              11 row(s) returned  0.000 sec / 0.000 sec
68  12:17:40  select * from rental_agreement LIMIT 0, 1000                     11 row(s) returned  0.000 sec / 0.000 sec
69  12:18:15  SELECT DISTINCT * FROM RENTER LIMIT 0, 1000                      11 row(s) returned  0.000 sec / 0.000 sec
70  12:18:27  SELECT EMAIL,RENTER_NO FROM RENTER WHERE TYPE_OF_BUSINESS=p...   2 row(s) returned   0.000 sec / 0.000 sec
```

5) Find unique property name and number of branches for each property.

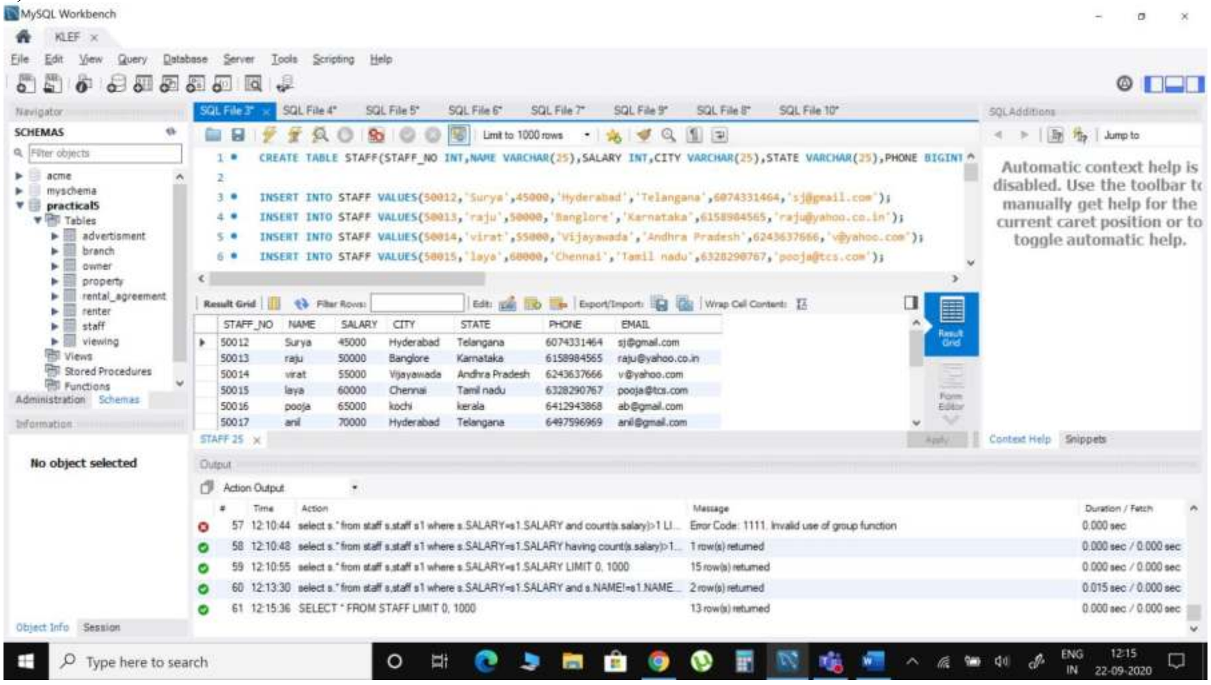


```sql
INSERT INTO PROPERTY VALUES(180589,'mumbai',8901,50013);
INSERT INTO PROPERTY VALUES(193589,'pune',8902,50018);

SELECT * FROM PROPERTY;
-- 5
SELECT property_no,count(CITY) as branch_count,owned_by from property group by property_no;
```

property_no	branch_count	owned_by
63589	1	8892
76589	1	8893
89589	1	8894
102589	1	8895
115589	1	8896
128589	1	8897

```
#   Time      Action                                                               Message              Duration / Fetch
67  12:17:21  SELECT * FROM VIEWING LIMIT 0, 1000                                  11 row(s) returned   0.000 sec / 0.000 sec
68  12:17:40  select * from rental_agreement LIMIT 0, 1000                         11 row(s) returned   0.000 sec / 0.000 sec
69  12:18:15  SELECT DISTINCT * FROM RENTER LIMIT 0, 1000                          11 row(s) returned   0.000 sec / 0.000 sec
70  12:18:27  SELECT EMAIL,RENTER_NO FROM RENTER WHERE TYPE_OF_BUSINESS='p...      2 row(s) returned    0.000 sec / 0.000 sec
71  12:18:45  SELECT property_no,count(CITY) as branch_count,owned_by from property group b...  11 row(s) returned   0.000 sec / 0.000 sec
```

6) Create table for staff member and insert all the details of the staff members.

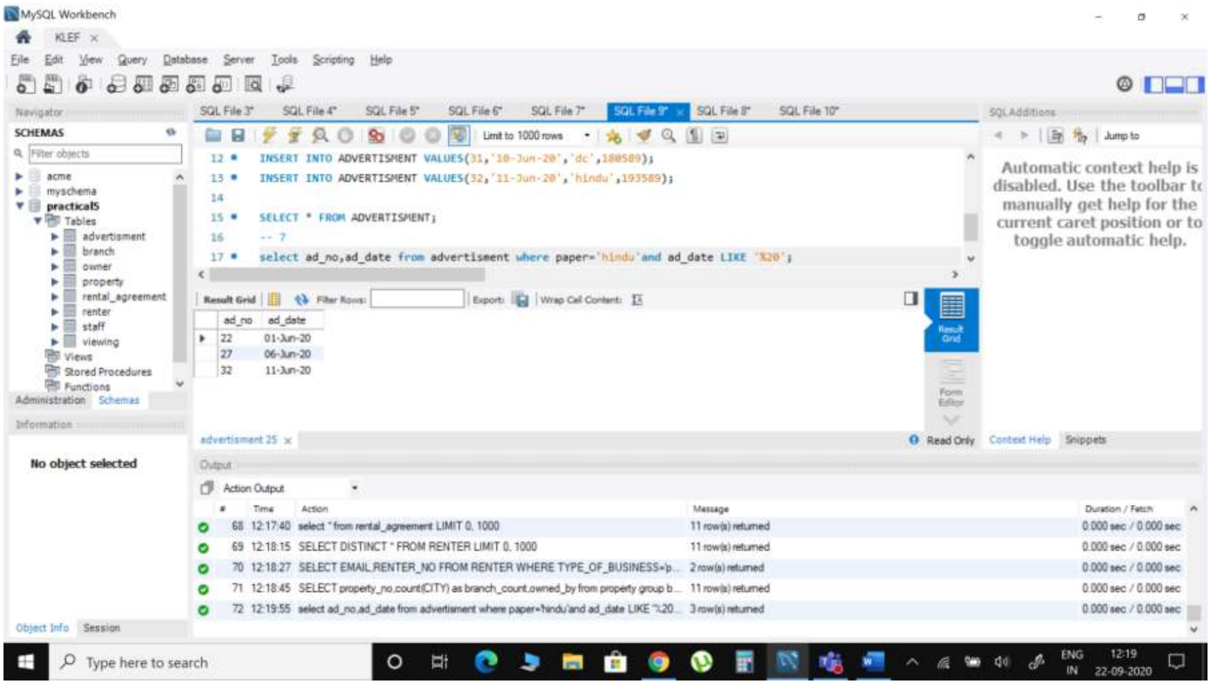


```sql
CREATE TABLE STAFF(STAFF_NO INT,NAME VARCHAR(25),SALARY INT,CITY VARCHAR(25),STATE VARCHAR(25),PHONE BIGINT

INSERT INTO STAFF VALUES(50012,'Surya',45000,'Hyderabad','Telangana',6074331464,'sj@gmail.com');
INSERT INTO STAFF VALUES(50013,'raju',50000,'Banglore','Karnataka',6158984565,'raju@yahoo.co.in');
INSERT INTO STAFF VALUES(50014,'virat',55000,'Vijayawada','Andhra Pradesh',6243637666,'v@yahoo.com');
INSERT INTO STAFF VALUES(50015,'laya',60000,'Chennai','Tamil nadu',6328290767,'pooja@tcs.com');
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50012	Surya	45000	Hyderabad	Telangana	6074331464	sj@gmail.com
50013	raju	50000	Banglore	Karnataka	6158984565	raju@yahoo.co.in
50014	virat	55000	Vijayawada	Andhra Pradesh	6243637666	v@yahoo.com
50015	laya	60000	Chennai	Tamil nadu	6328290767	pooja@tcs.com
50016	pooja	65000	kochi	kerala	6412943868	ab@gmail.com
50017	anil	70000	Hyderabad	Telangana	6497596969	anil@gmail.com

```
#   Time      Action                                                                      Message                                      Duration / Fetch
57  12:10:44  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and count(s.salary)>1 LI...  Error Code: 1111. Invalid use of group function   0.000 sec
58  12:10:48  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY having count(s.salary)>1...  1 row(s) returned    0.000 sec / 0.000 sec
59  12:10:55  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY LIMIT 0, 1000                 15 row(s) returned   0.000 sec / 0.000 sec
60  12:13:30  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...        2 row(s) returned    0.015 sec / 0.000 sec
61  12:15:36  SELECT * FROM STAFF LIMIT 0, 1000                                                      13 row(s) returned   0.000 sec / 0.000 sec
```

7) Give the dates of all the advertisements posted in THE GLOBE AND MAIL in 2005.

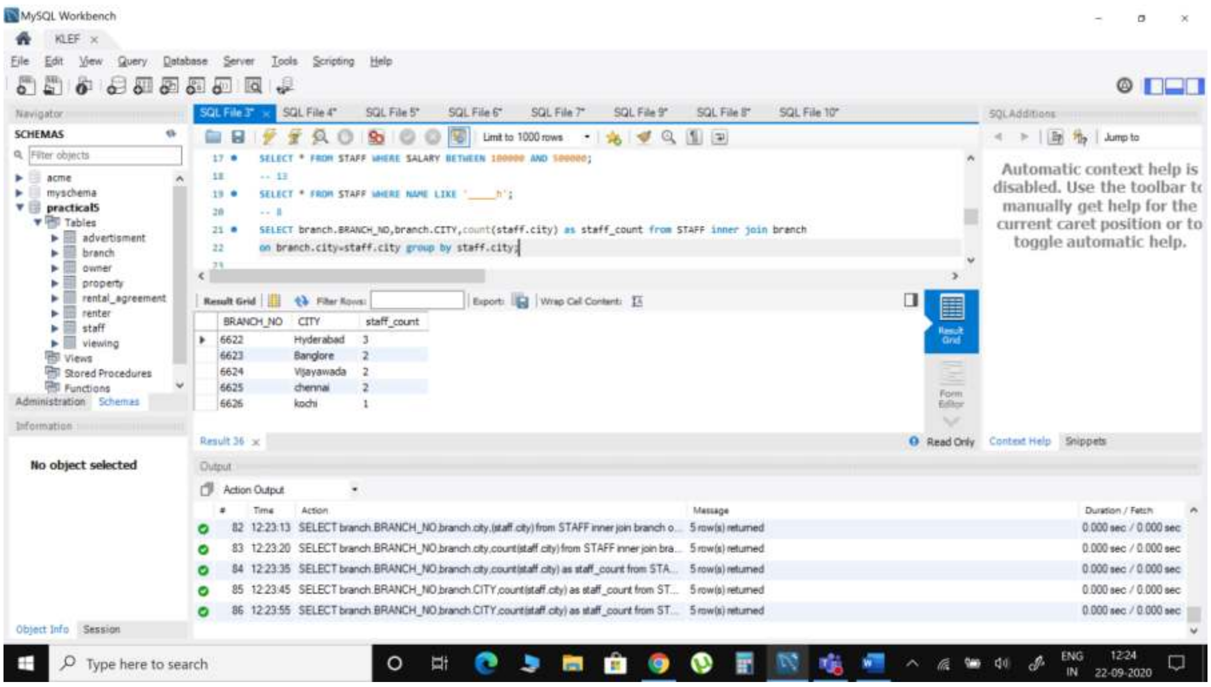


```
INSERT INTO ADVERTISMENT VALUES(31,'10-Jun-20','dc',180589);
INSERT INTO ADVERTISMENT VALUES(32,'11-Jun-20','hindu',193589);

SELECT * FROM ADVERTISMENT;
-- 7
select ad_no,ad_date from advertisment where paper='hindu'and ad_date LIKE '%20';
```

ad_no	ad_date
22	01-Jun-20
27	06-Jun-20
32	11-Jun-20

```
#   Time      Action                                                                         Message             Duration / Fetch
68  12:17:40  select * from rental_agreement LIMIT 0, 1000                                   11 row(s) returned  0.000 sec / 0.000 sec
69  12:18:15  SELECT DISTINCT * FROM RENTER LIMIT 0, 1000                                    11 row(s) returned  0.000 sec / 0.000 sec
70  12:18:27  SELECT EMAIL,RENTER_NO FROM RENTER WHERE TYPE_OF_BUSINESS='p...                2 row(s) returned   0.000 sec / 0.000 sec
71  12:18:45  SELECT property_no,count(CITY) as branch_count,owned_by from property group b... 11 row(s) returned  0.000 sec / 0.000 sec
72  12:19:55  select ad_no,ad_date from advertisment where paper='hindu'and ad_date LIKE '%20... 3 row(s) returned   0.000 sec / 0.000 sec
```

8) Display the count of staff in each branch and display them in descending order on count.

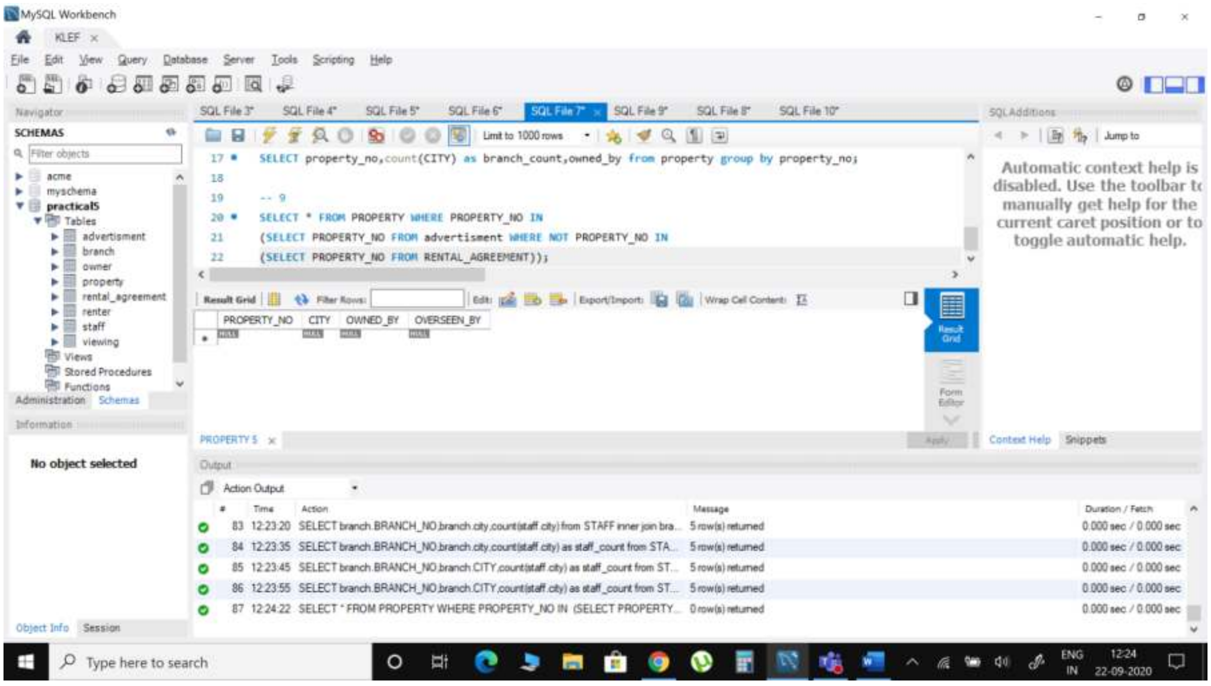


```
SELECT * FROM STAFF WHERE SALARY BETWEEN 100000 AND 500000;
-- 13
SELECT * FROM STAFF WHERE NAME LIKE '____h';
-- 8
SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from STAFF inner join branch
on branch.city=staff.city group by staff.city;
```

BRANCH_NO	CITY	staff_count
6622	Hyderabad	3
6623	Banglore	2
6624	Vijayawada	2
6625	chennai	2
6626	kochi	1

```
#   Time      Action                                                                          Message            Duration / Fetch
82  12:23:13  SELECT branch.BRANCH_NO,branch.city,(staff.city) from STAFF inner join branch o... 5 row(s) returned  0.000 sec / 0.000 sec
83  12:23:20  SELECT branch.BRANCH_NO,branch.city,count(staff.city) from STAFF inner join bra... 5 row(s) returned  0.000 sec / 0.000 sec
84  12:23:35  SELECT branch.BRANCH_NO,branch.city,count(staff.city) as staff_count from STA...    5 row(s) returned  0.000 sec / 0.000 sec
85  12:23:45  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...     5 row(s) returned  0.000 sec / 0.000 sec
86  12:23:55  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...     5 row(s) returned  0.000 sec / 0.000 sec
```

9) Find the properties that are already advertised but not yet rented.

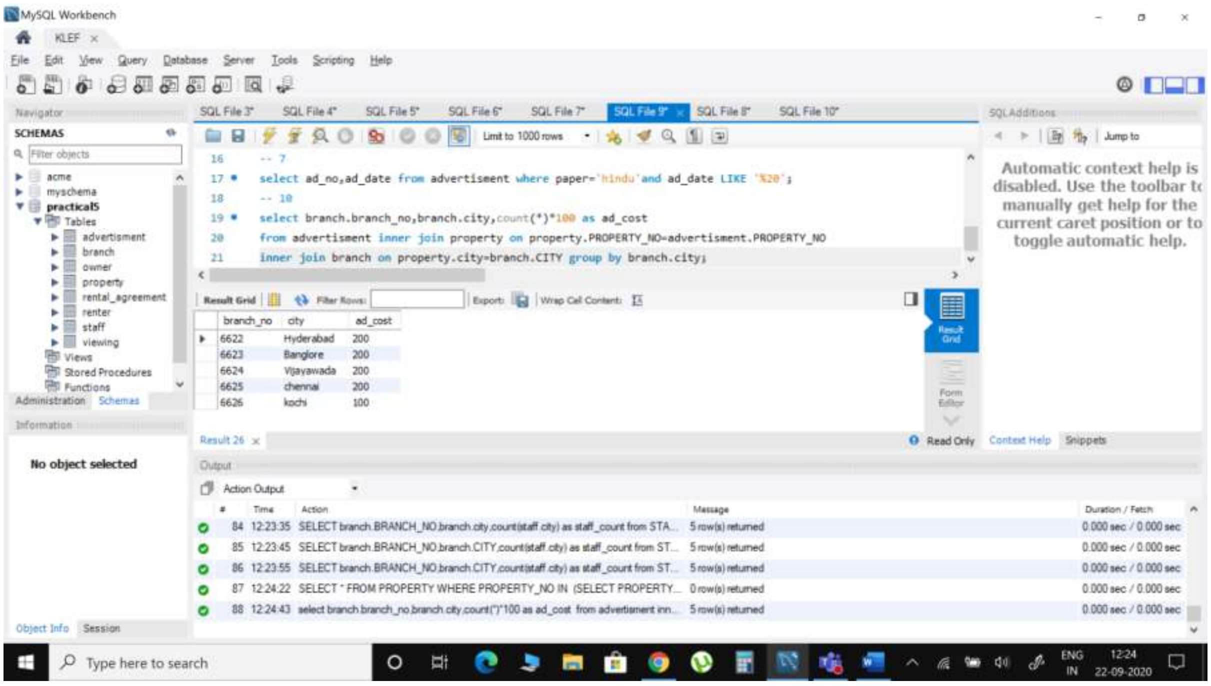


```
SELECT property_no,count(CITY) as branch_count,owned_by from property group by property_no;

-- 9
SELECT * FROM PROPERTY WHERE PROPERTY_NO IN
(SELECT PROPERTY_NO FROM advertisment WHERE NOT PROPERTY_NO IN
(SELECT PROPERTY_NO FROM RENTAL_AGREEMENT));
```

PROPERTY_NO	CITY	OWNED_BY	OVERSEEN_BY
NULL	NULL	NULL	NULL

```
#   Time      Action                                                                      Message             Duration / Fetch
83  12:23:20  SELECT branch.BRANCH_NO,branch.city,count(staff.city) from STAFF inner join bra...  5 row(s) returned  0.000 sec / 0.000 sec
84  12:23:35  SELECT branch.BRANCH_NO,branch.city,count(staff.city) as staff_count from STA...  5 row(s) returned  0.000 sec / 0.000 sec
85  12:23:45  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...   5 row(s) returned  0.000 sec / 0.000 sec
86  12:23:55  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...   5 row(s) returned  0.000 sec / 0.000 sec
87  12:24:22  SELECT * FROM PROPERTY WHERE PROPERTY_NO IN (SELECT PROPERTY...                 0 row(s) returned  0.000 sec / 0.000 sec
```

10) Assuming that each advertisement costs 100 dollars, give the branch number and the amount spent on the advertisements for each branch. Name the branch number as Branch no, and the amount as ad cost.

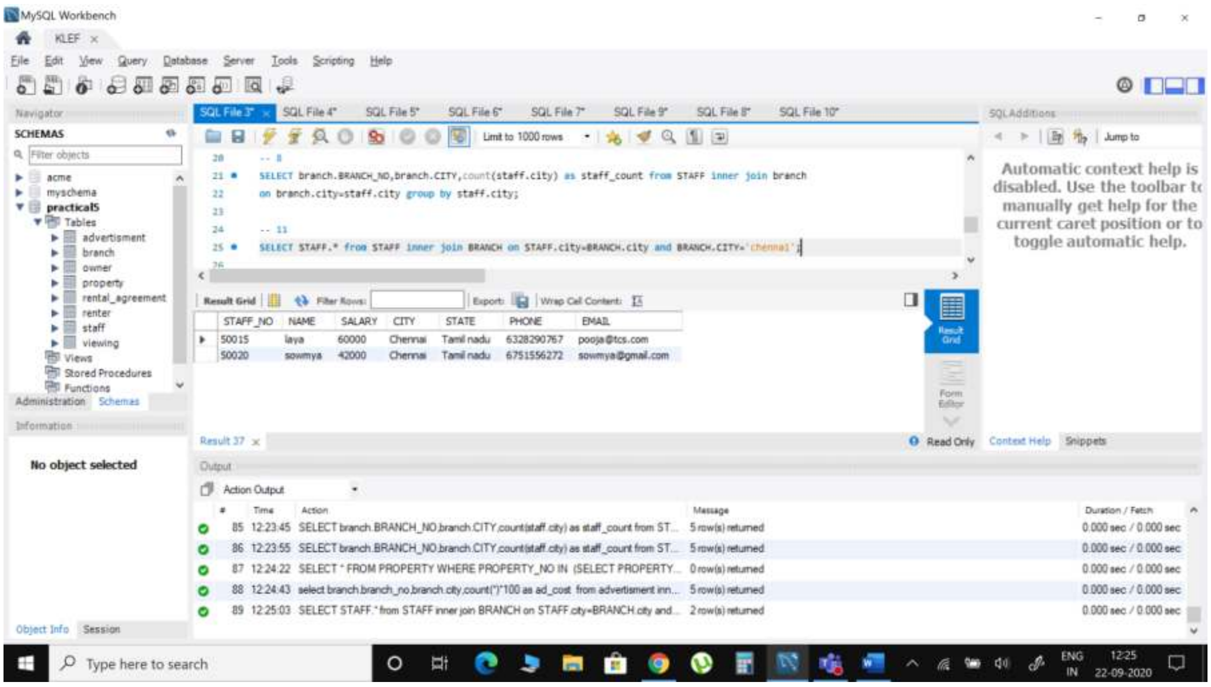


```
-- 7
select ad_no,ad_date from advertisment where paper='hindu'and ad_date LIKE '%20';
-- 10
select branch.branch_no,branch.city,count(*)*100 as ad_cost
from advertisment inner join property on property.PROPERTY_NO=advertisment.PROPERTY_NO
inner join branch on property.city=branch.CITY group by branch.city;
```

branch_no	city	ad_cost
6622	Hyderabad	200
6623	Banglore	200
6624	Vijayawada	200
6625	chennai	200
6626	kochi	100

```
#   Time      Action                                                                      Message             Duration / Fetch
84  12:23:35  SELECT branch.BRANCH_NO,branch.city,count(staff.city) as staff_count from STA...  5 row(s) returned  0.000 sec / 0.000 sec
85  12:23:45  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...   5 row(s) returned  0.000 sec / 0.000 sec
86  12:23:55  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...   5 row(s) returned  0.000 sec / 0.000 sec
87  12:24:22  SELECT * FROM PROPERTY WHERE PROPERTY_NO IN (SELECT PROPERTY...                 0 row(s) returned  0.000 sec / 0.000 sec
88  12:24:43  select branch.branch_no,branch.city,count(*)*100 as ad_cost from advertisment inn...  5 row(s) returned  0.000 sec / 0.000 sec
```

11) Display the details of staff who are working in a particular branch.

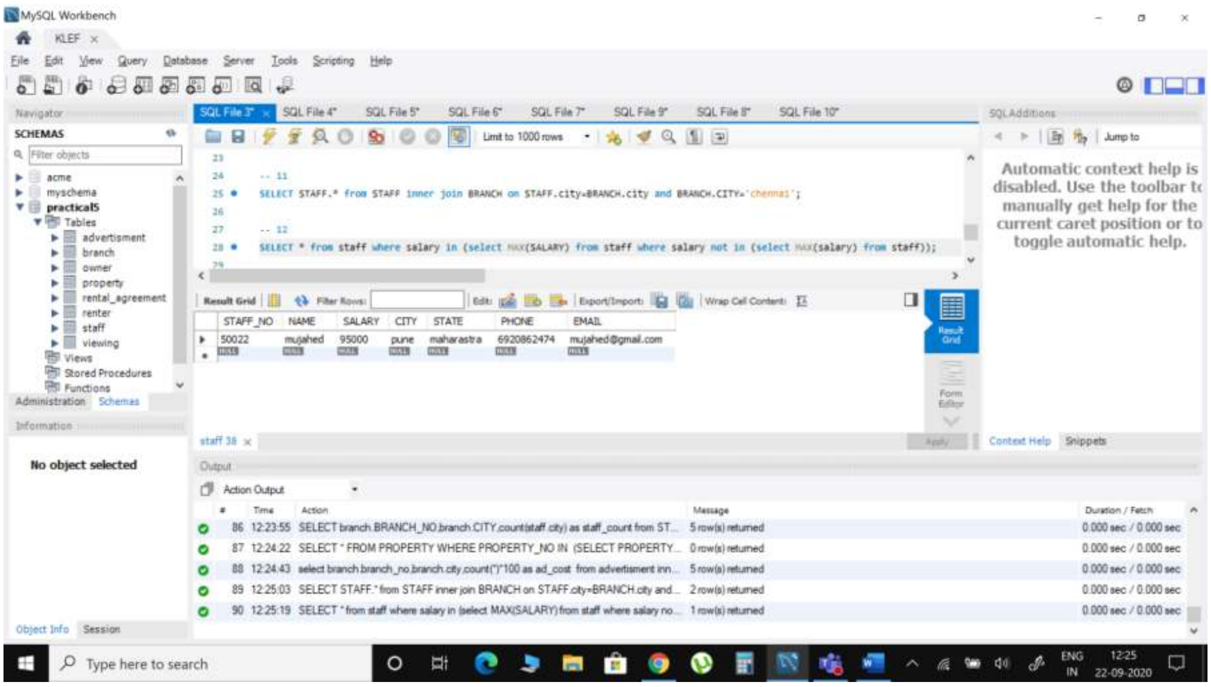


```
-- 8
SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from STAFF inner join branch
on branch.city=staff.city group by staff.city;

-- 11
SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and BRANCH.CITY='chennai';
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50015	laya	60000	Chennai	Tamil nadu	6328290767	pooja@tcs.com
50020	sowmya	42000	Chennai	Tamil nadu	6751556272	sowmya@gmail.com

```
#   Time      Action                                                                   Message            Duration / Fetch
85  12:23:45  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...  5 row(s) returned  0.000 sec / 0.000 sec
86  12:23:55  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...  5 row(s) returned  0.000 sec / 0.000 sec
87  12:24:22  SELECT * FROM PROPERTY WHERE PROPERTY_NO IN (SELECT PROPERTY...              0 row(s) returned  0.000 sec / 0.000 sec
88  12:24:43  select branch.branch_no,branch.city,count(*)*100 as ad_cost from advertisment inn...  5 row(s) returned  0.000 sec / 0.000 sec
89  12:25:03  SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and...  2 row(s) returned  0.000 sec / 0.000 sec
```

12) Write down a query to find out the Name, Address and Position of the branch staff whose salary is the second highest without using TOP or limit method.

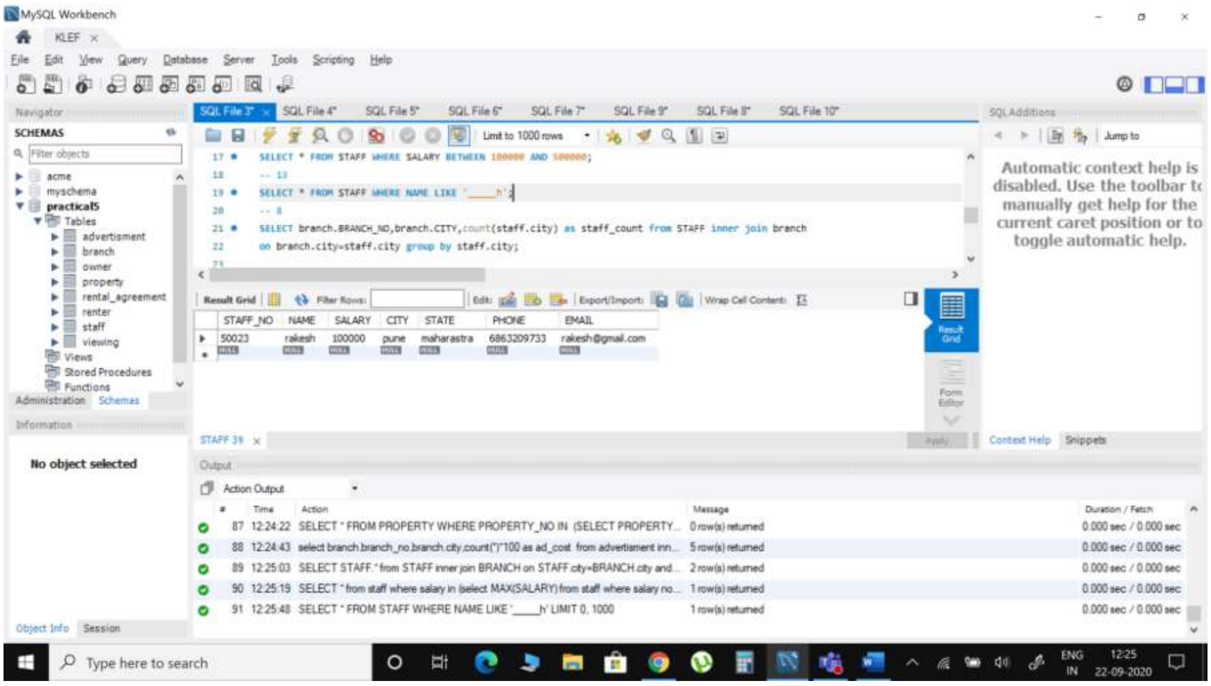


```
-- 11
SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and BRANCH.CITY='chennai';

-- 12
SELECT * from staff where salary in (select MAX(SALARY) from staff where salary not in (select MAX(salary) from staff));
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50022	mujahed	95000	pune	maharastra	6920862474	mujahed@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#   Time      Action                                                                   Message            Duration / Fetch
86  12:23:55  SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from ST...  5 row(s) returned  0.000 sec / 0.000 sec
87  12:24:22  SELECT * FROM PROPERTY WHERE PROPERTY_NO IN (SELECT PROPERTY...              0 row(s) returned  0.000 sec / 0.000 sec
88  12:24:43  select branch.branch_no,branch.city,count(*)*100 as ad_cost from advertisment inn...  5 row(s) returned  0.000 sec / 0.000 sec
89  12:25:03  SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and...  2 row(s) returned  0.000 sec / 0.000 sec
90  12:25:19  SELECT * from staff where salary in (select MAX(SALARY) from staff where salary no...  1 row(s) returned  0.000 sec / 0.000 sec
```

13) Write a query to print details of the staff whose Name ends with ‘h’ and contains six alphabets.

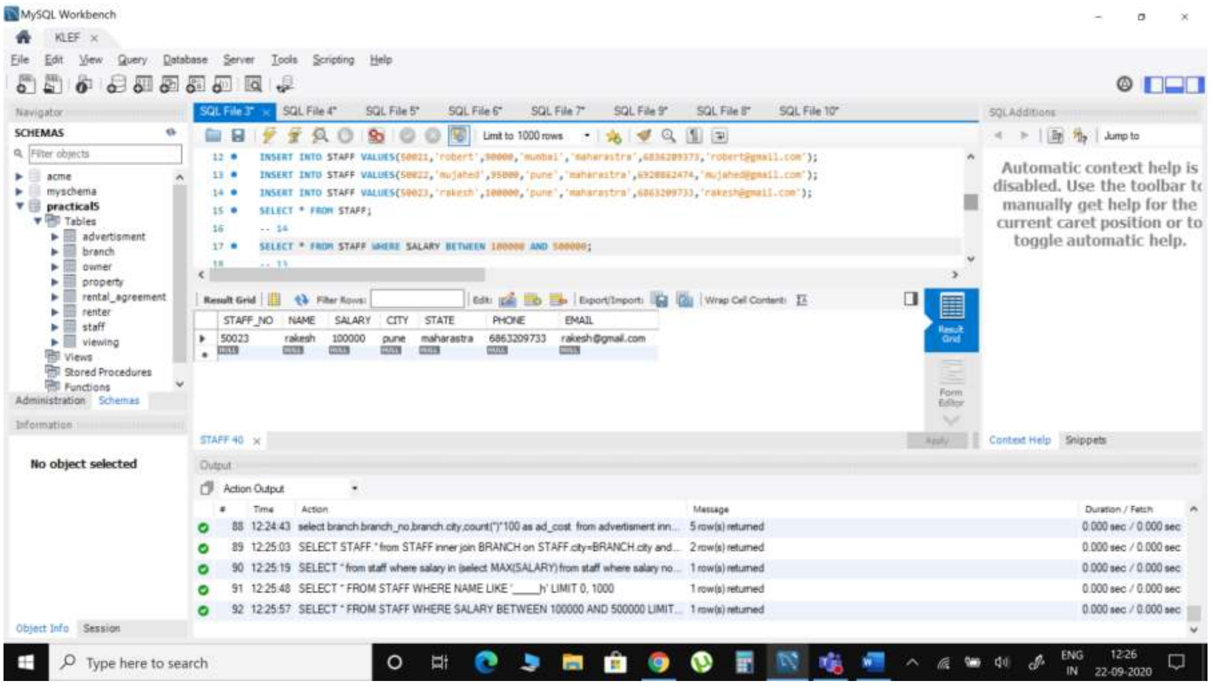


```
SELECT * FROM STAFF WHERE SALARY BETWEEN 100000 AND 500000;
-- 13
SELECT * FROM STAFF WHERE NAME LIKE '____h';
-- 8
SELECT branch.BRANCH_NO,branch.CITY,count(staff.city) as staff_count from STAFF inner join branch
on branch.city=staff.city group by staff.city;
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50023	rakesh	100000	pune	maharastra	6863209733	rakesh@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#   Time      Action                                                                        Message             Duration / Fetch
87  12:24:22  SELECT * FROM PROPERTY WHERE PROPERTY_NO IN (SELECT PROPERTY...               0 row(s) returned   0.000 sec / 0.000 sec
88  12:24:43  select branch.branch_no,branch.city,count(*)*100 as ad_cost from advertisment inn...  5 row(s) returned   0.000 sec / 0.000 sec
89  12:25:03  SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and...  2 row(s) returned   0.000 sec / 0.000 sec
90  12:25:19  SELECT * from staff where salary in (select MAX(SALARY) from staff where salary no...  1 row(s) returned   0.000 sec / 0.000 sec
91  12:25:48  SELECT * FROM STAFF WHERE NAME LIKE '____h' LIMIT 0, 1000                    1 row(s) returned   0.000 sec / 0.000 sec
```

14) Write a query to print details of the staff whose SALARY lies between 100000 and 500000.

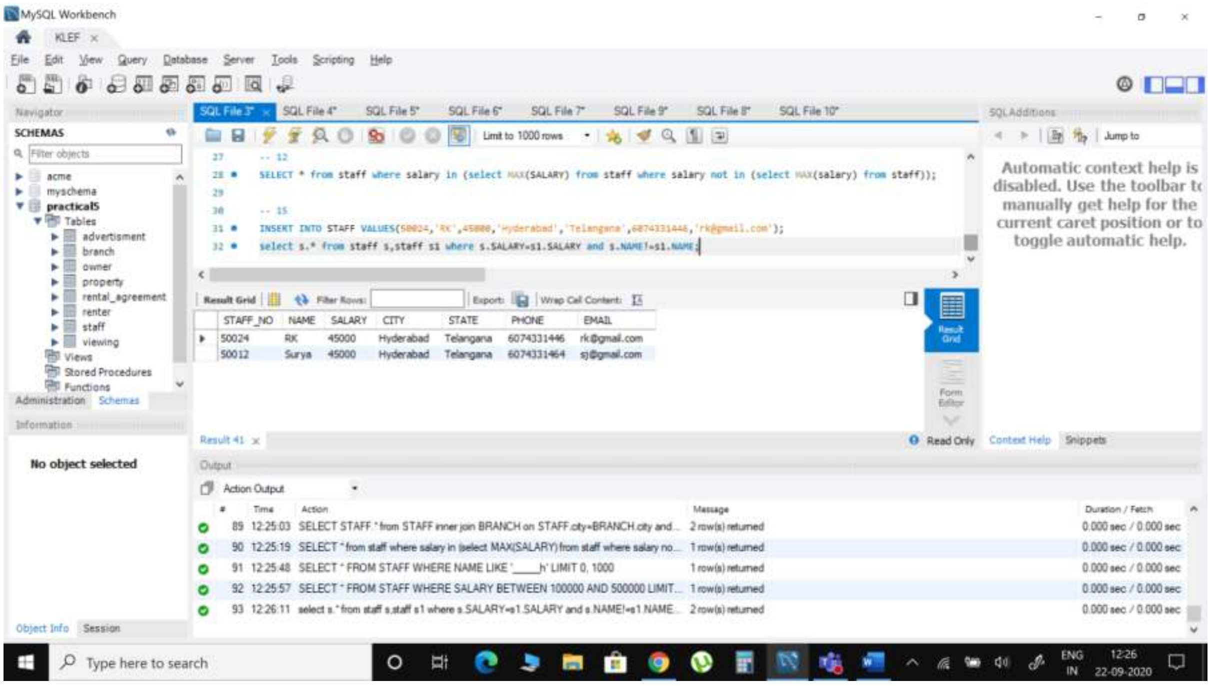


```
INSERT INTO STAFF VALUES(50021,'robert',90000,'mumbai','maharastra',6836209373,'robert@gmail.com');
INSERT INTO STAFF VALUES(50022,'mujahed',95000,'pune','maharastra',6928862474,'mujahed@gmail.com');
INSERT INTO STAFF VALUES(50023,'rakesh',100000,'pune','maharastra',6863209733,'rakesh@gmail.com');
SELECT * FROM STAFF;
-- 14
SELECT * FROM STAFF WHERE SALARY BETWEEN 100000 AND 500000;
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50023	rakesh	100000	pune	maharastra	6863209733	rakesh@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#   Time      Action                                                                        Message             Duration / Fetch
88  12:24:43  select branch.branch_no,branch.city,count(*)*100 as ad_cost from advertisment inn...  5 row(s) returned   0.000 sec / 0.000 sec
89  12:25:03  SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and...  2 row(s) returned   0.000 sec / 0.000 sec
90  12:25:19  SELECT * from staff where salary in (select MAX(SALARY) from staff where salary no...  1 row(s) returned   0.000 sec / 0.000 sec
91  12:25:48  SELECT * FROM STAFF WHERE NAME LIKE '____h' LIMIT 0, 1000                    1 row(s) returned   0.000 sec / 0.000 sec
92  12:25:57  SELECT * FROM STAFF WHERE SALARY BETWEEN 100000 AND 500000 LIMIT...          1 row(s) returned   0.000 sec / 0.000 sec
```

15) Write a query to display the list of employees who draw same salary



```
-- 12
SELECT * from staff where salary in (select MAX(SALARY) from staff where salary not in (select MAX(salary) from staff));

-- 15
INSERT INTO STAFF VALUES(50024,'RK',45000,'Hyderabad','Telangana',6074331446,'rk@gmail.com');
select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME;
```

STAFF_NO	NAME	SALARY	CITY	STATE	PHONE	EMAIL
50024	RK	45000	Hyderabad	Telangana	6074331446	rk@gmail.com
50012	Surya	45000	Hyderabad	Telangana	6074331464	sj@gmail.com

```
#   Time      Action                                                                      Message            Duration / Fetch
89  12:25:03  SELECT STAFF.* from STAFF inner join BRANCH on STAFF.city=BRANCH.city and...  2 row(s) returned  0.000 sec / 0.000 sec
90  12:25:19  SELECT * from staff where salary in (select MAX(SALARY) from staff where salary no...  1 row(s) returned  0.000 sec / 0.000 sec
91  12:25:48  SELECT * FROM STAFF WHERE NAME LIKE '____h' LIMIT 0, 1000                    1 row(s) returned  0.000 sec / 0.000 sec
92  12:25:57  SELECT * FROM STAFF WHERE SALARY BETWEEN 100000 AND 500000 LIMIT...          1 row(s) returned  0.000 sec / 0.000 sec
93  12:26:11  select s.* from staff s,staff s1 where s.SALARY=s1.SALARY and s.NAME!=s1.NAME...  2 row(s) returned  0.000 sec / 0.000 sec
```