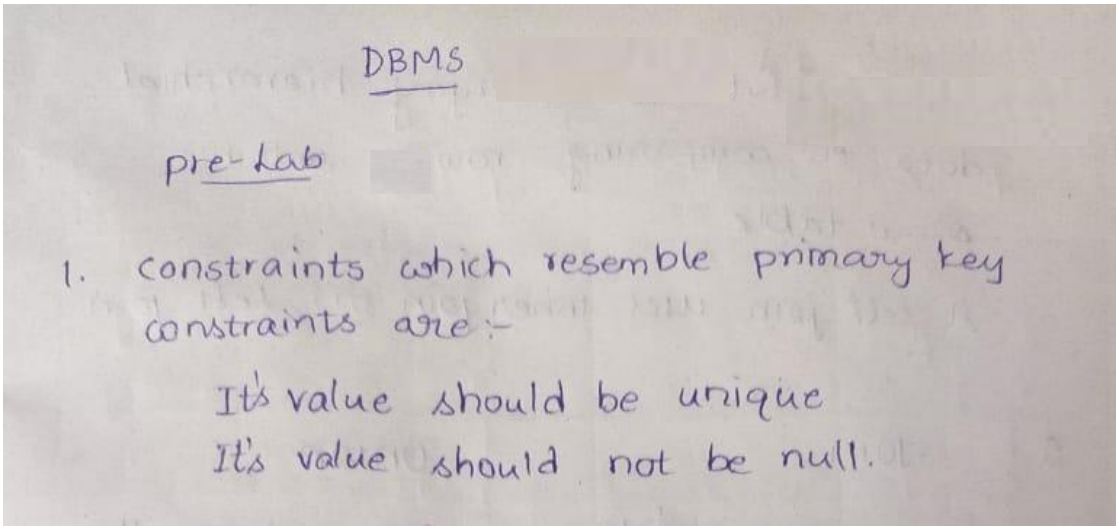
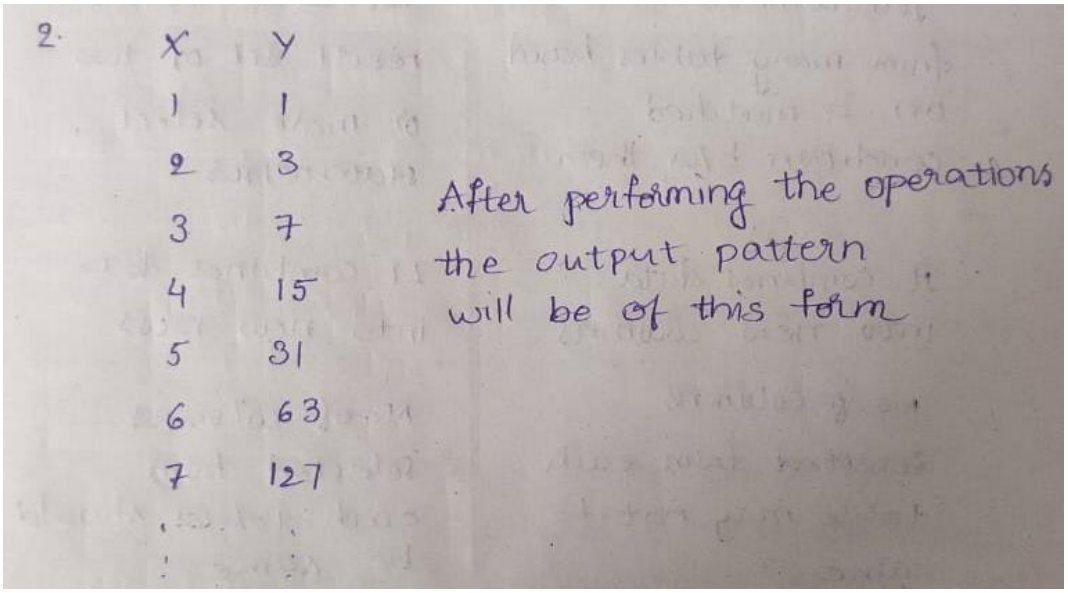
DBMS SKILL-5

PRE-LAB

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



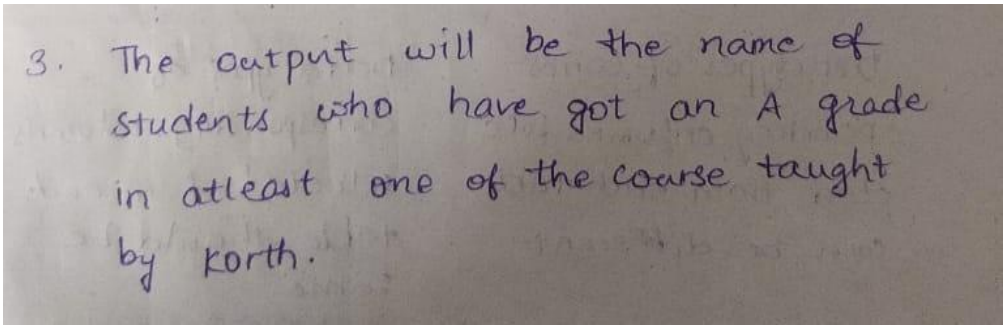
2. Consider a database table T containing two columns X and Y each of type integer. After the creation of the table, one record (X=1, Y=1) is inserted in the table. Let M_X and M_Y denote the respective maximum values of X and Y among all records in the table at any point in time. Using M_X and M_Y, 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.



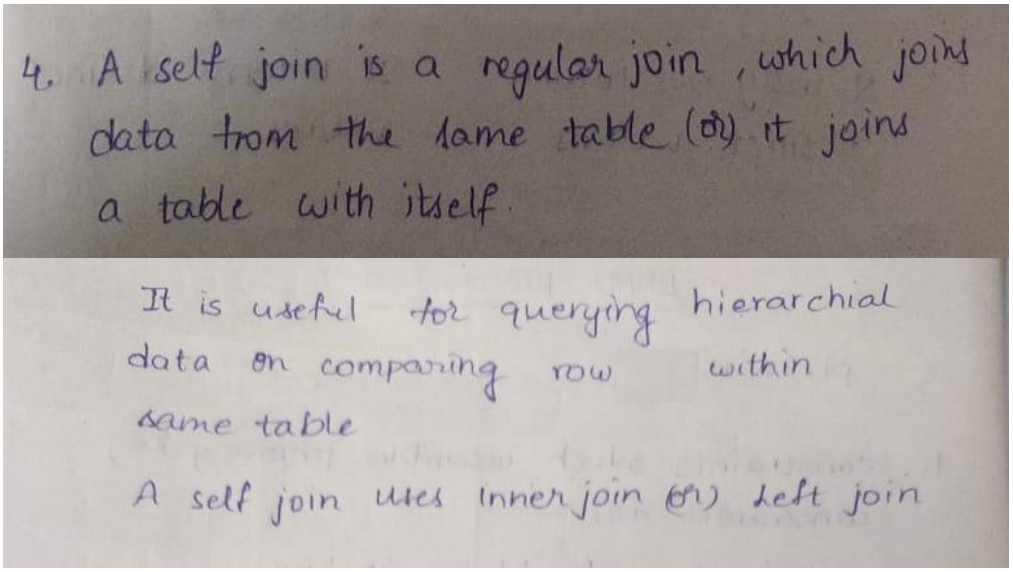
3. Consider the set of relations shown below and the SQL query that follows. Students: (Roll_number, Name, Date_of_birth)

   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'



4. What self join and why it is required?



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 corresponding columns selected 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 ⟖

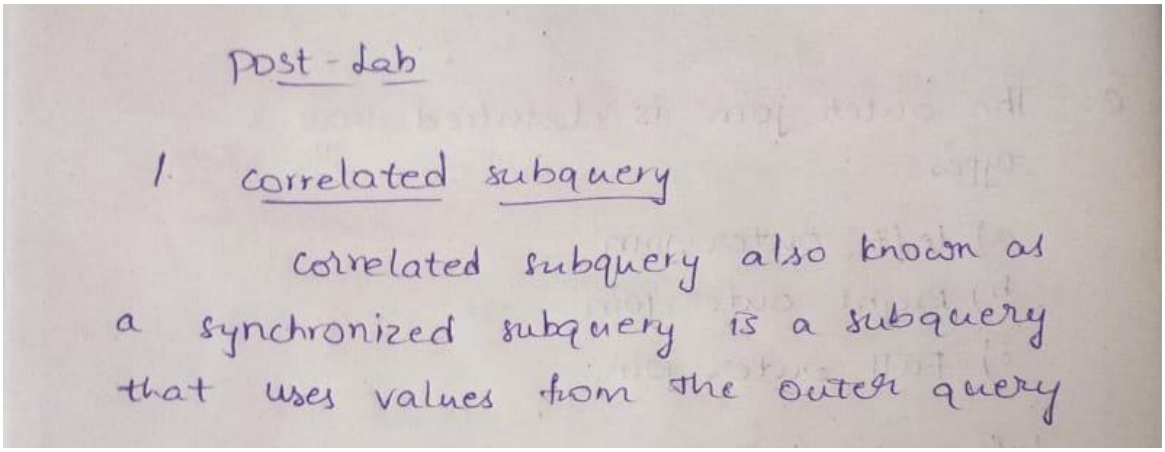
Full outer join

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?

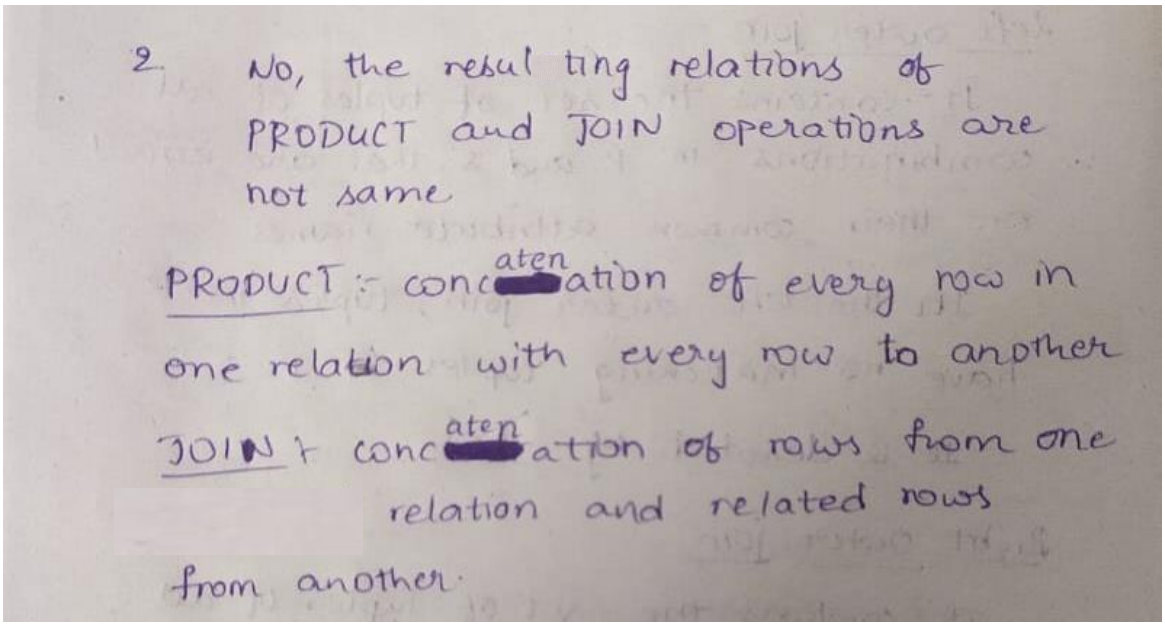


Post - lab

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.

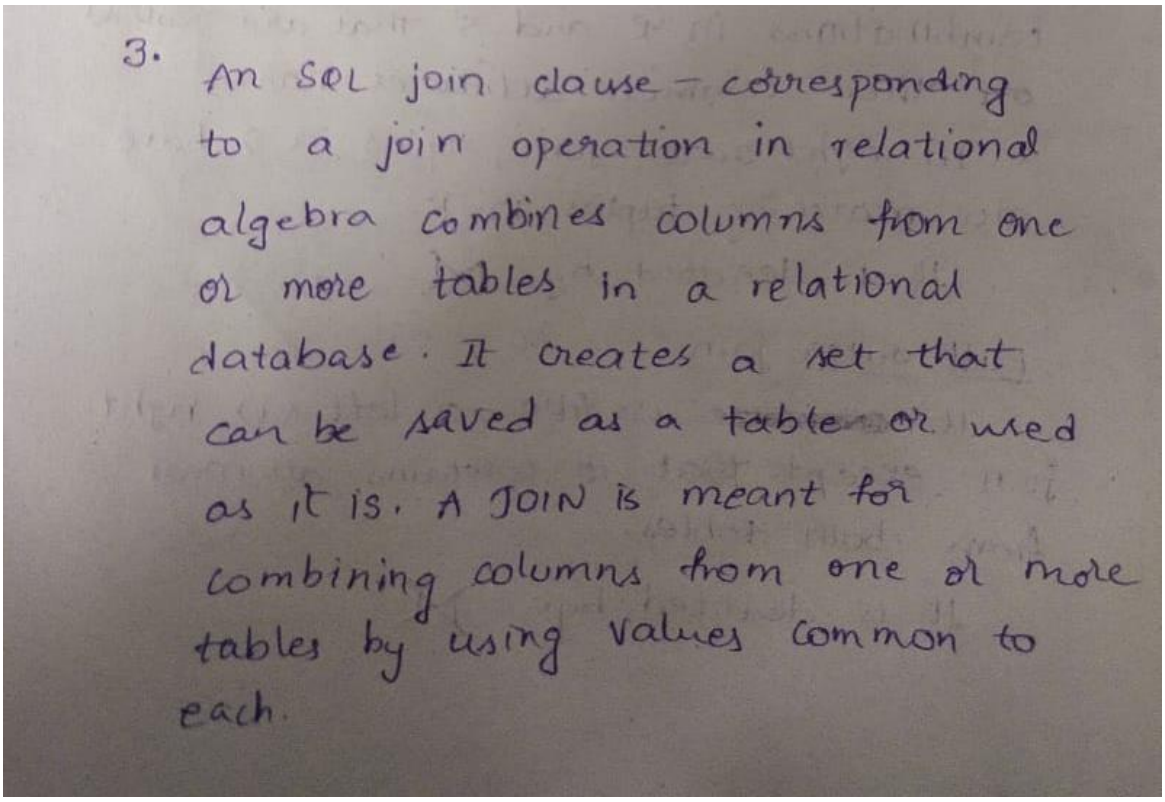


2. No, the resulting relations of PRODUCT and JOIN operations are not same

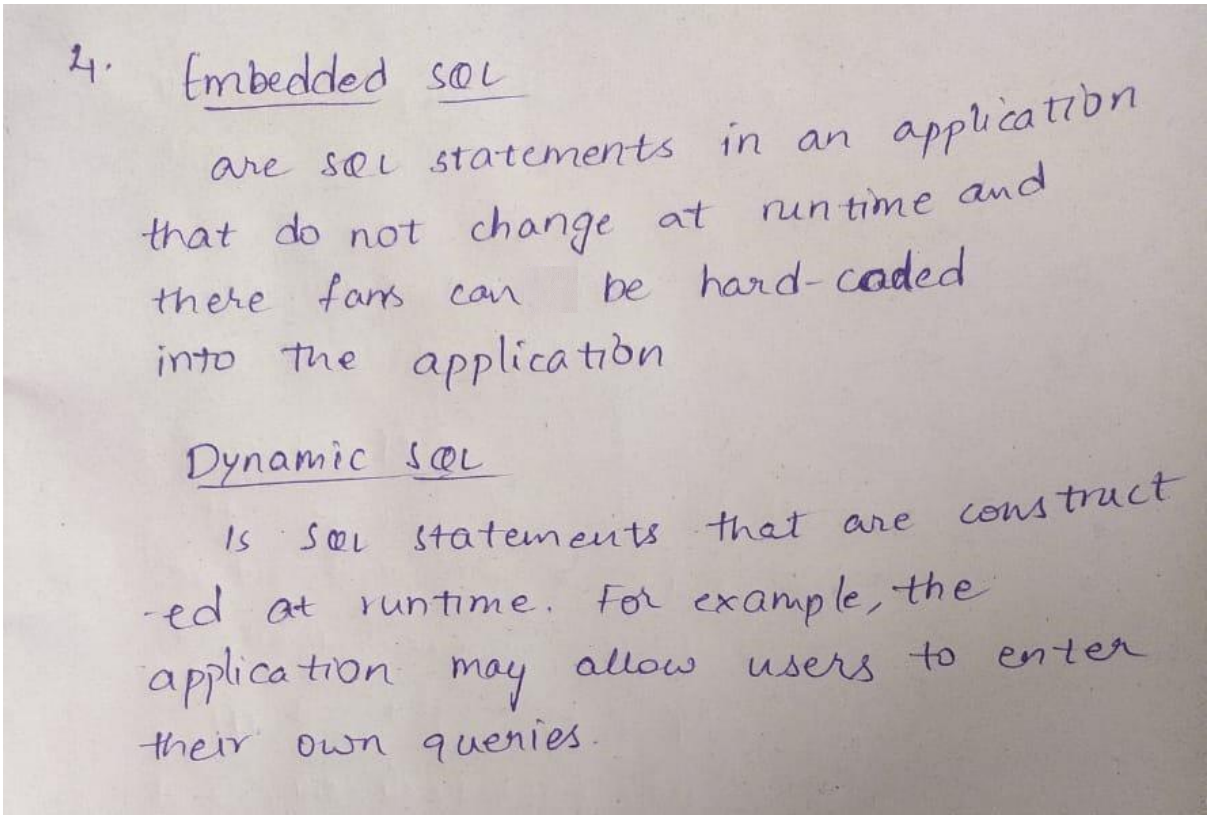
PRODUCT : concatenation of every row in one relation with every row to another

JOIN : concatenation 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.

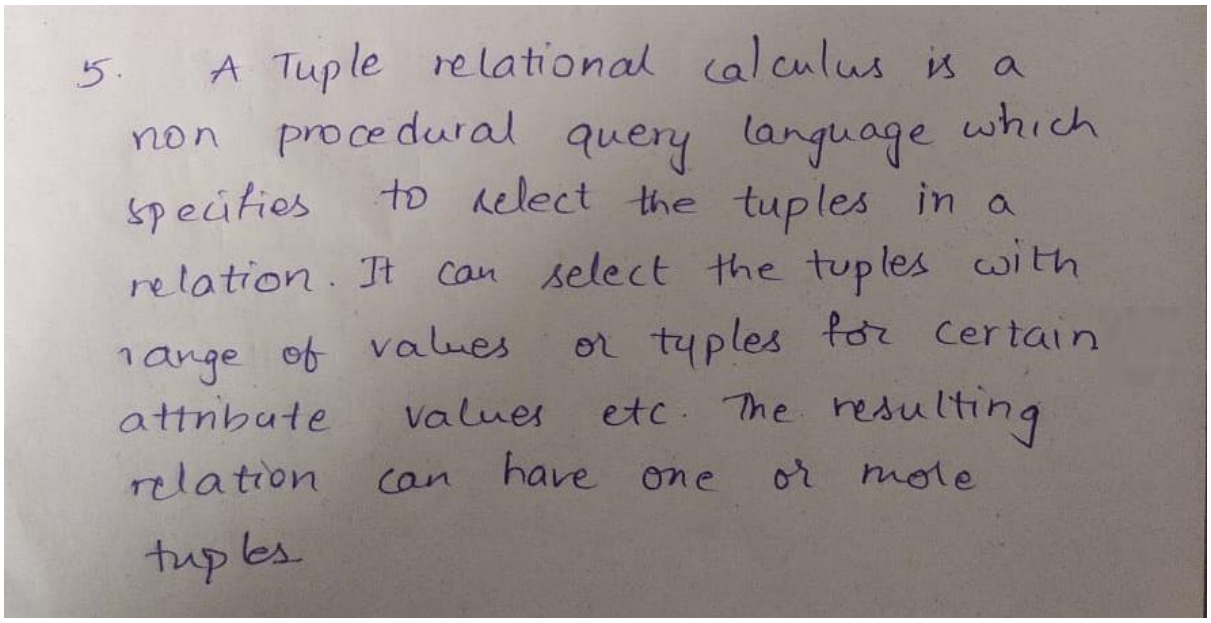

4. Embedded SQL

are SQL statements in an application that do not change at runtime and there fors 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?

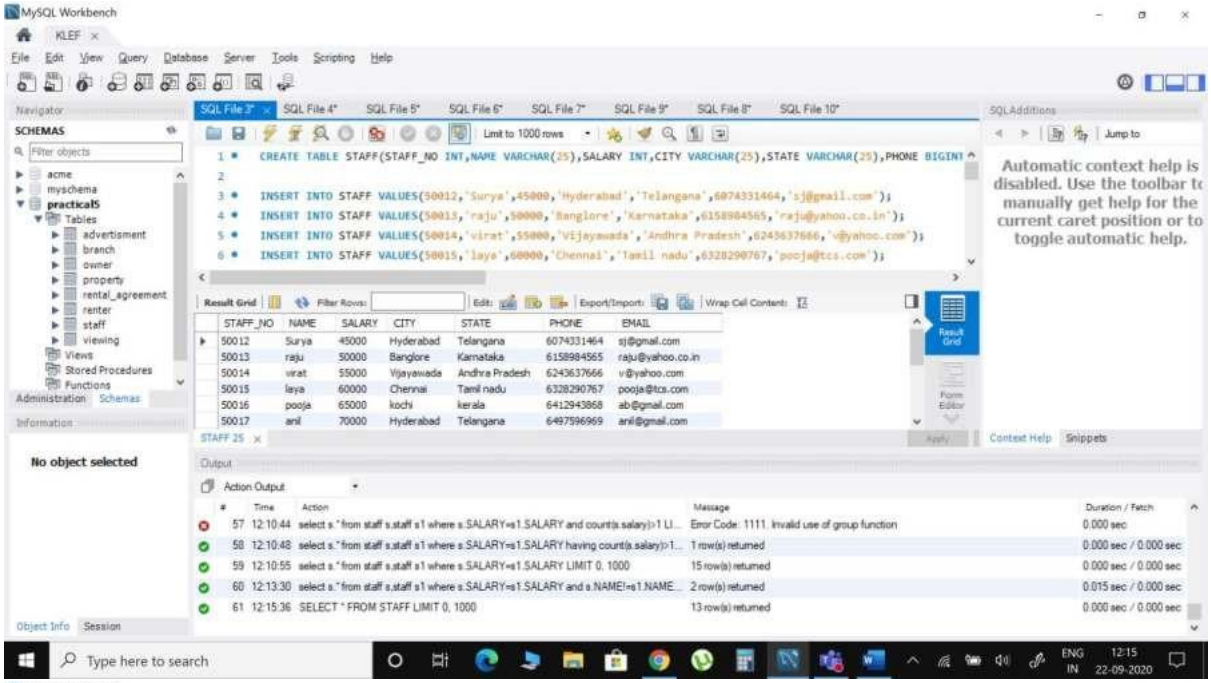


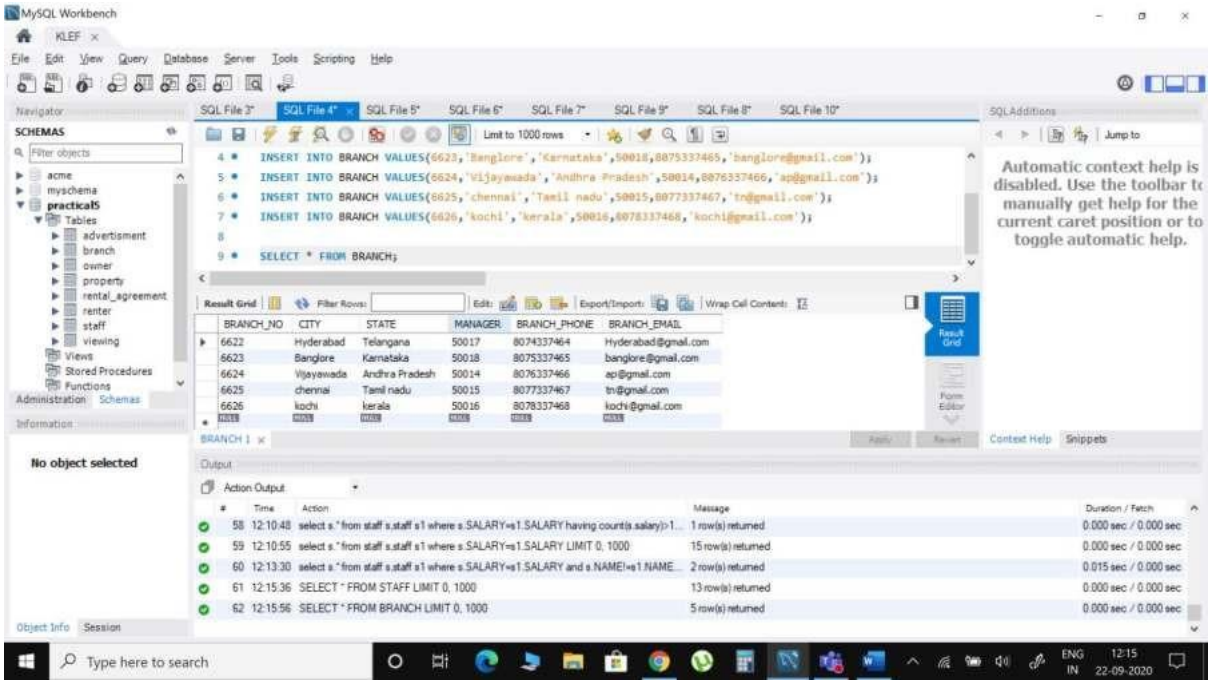
5. A Tuple relational calculus is a non procedural query language which specifies to select the tuples in a relation. It can select the tuples with range of values or tuples for certain attribute values etc. The resulting relation can have one or more tuples.

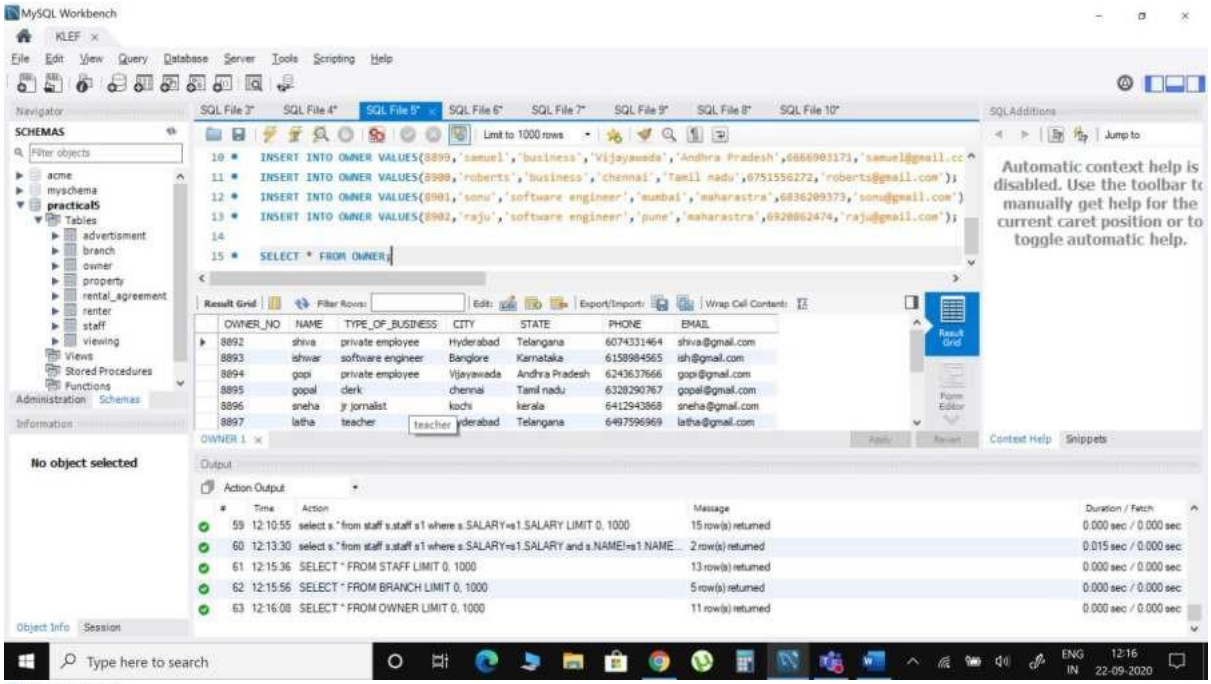
DBMS SKILL-5

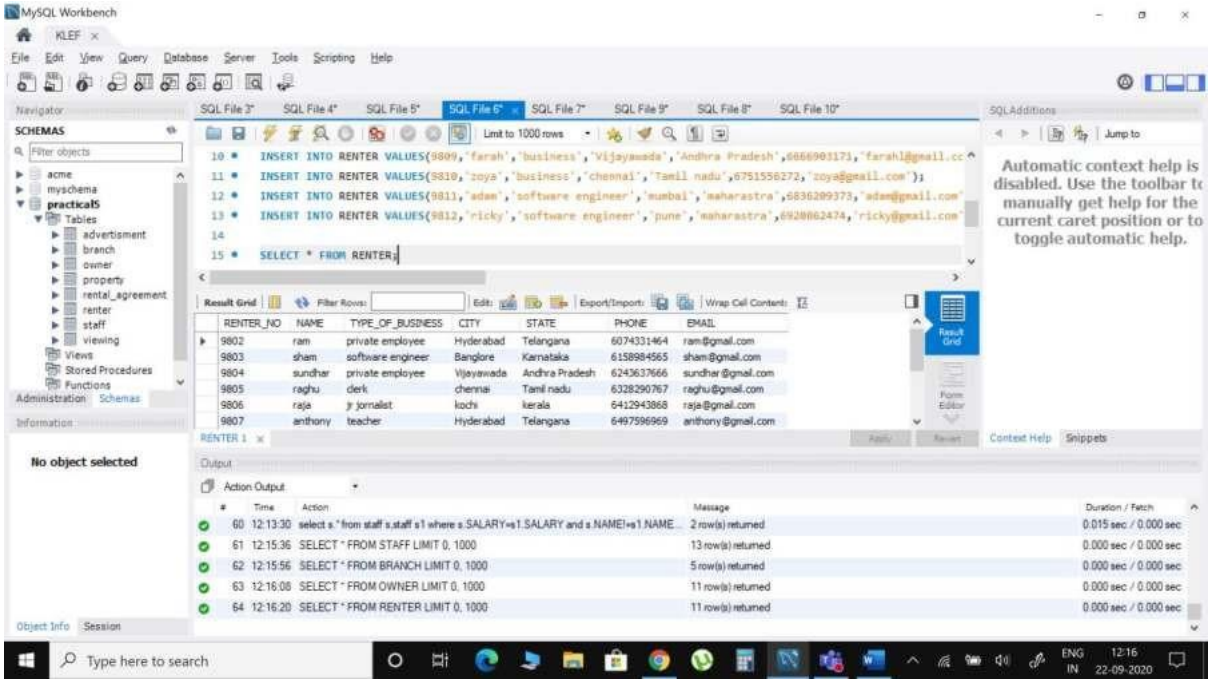
INLAB

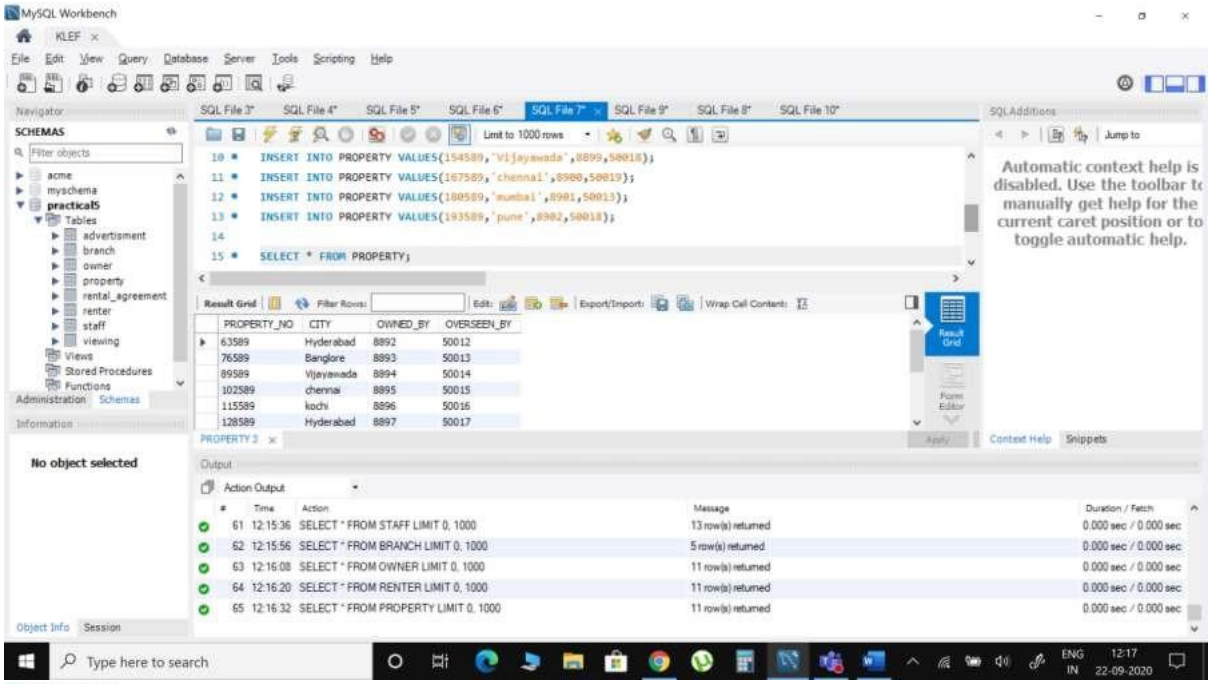
1) Create tables with the required constraints for the given case study
2) Insert 10 records into the created tables






MySQL Workbench
KLEF
File Edit View Query Database Server Tools Scripting Help
SCHEMAS
practical5
Tables
advertisment
branch
owner
property
rental_agreement
renter
staff
viewing
Views
Stored Procedures
Functions
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 9* SQL File 8* SQL File 10*
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',6928062474,'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
No object selected
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Action Output
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
Type here to search
ENG IN 12:16 22-09-2020


MySQL Workbench
KLEF
File Edit View Query Database Server Tools Scripting Help
SCHEMAS
practical5
Tables
advertisment
branch
owner
property
rental_agreement
renter
staff
viewing
Views
Stored Procedures
Functions
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 9* SQL File 8* SQL File 10*
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',6928062474,'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
No object selected
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Action Output
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
Type here to search
ENG IN 12:16 22-09-2020


MySQL Workbench
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File Edit View Query Database Server Tools Scripting Help
SCHEMAS
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Tables
advertisment
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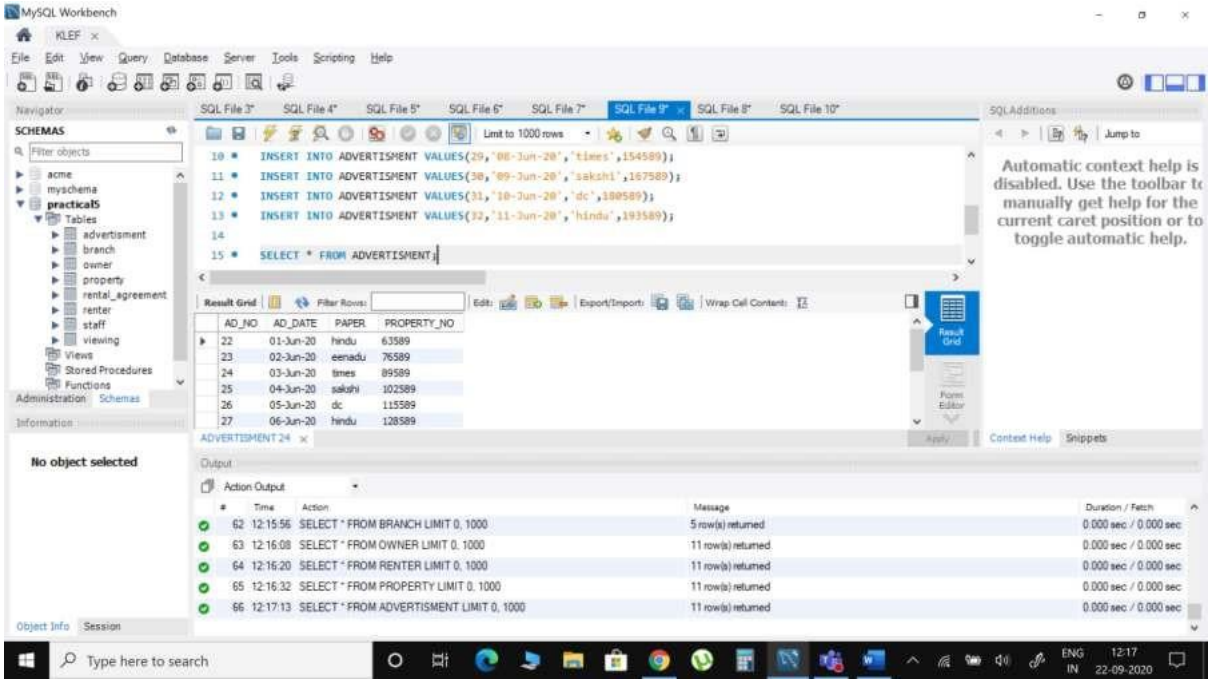
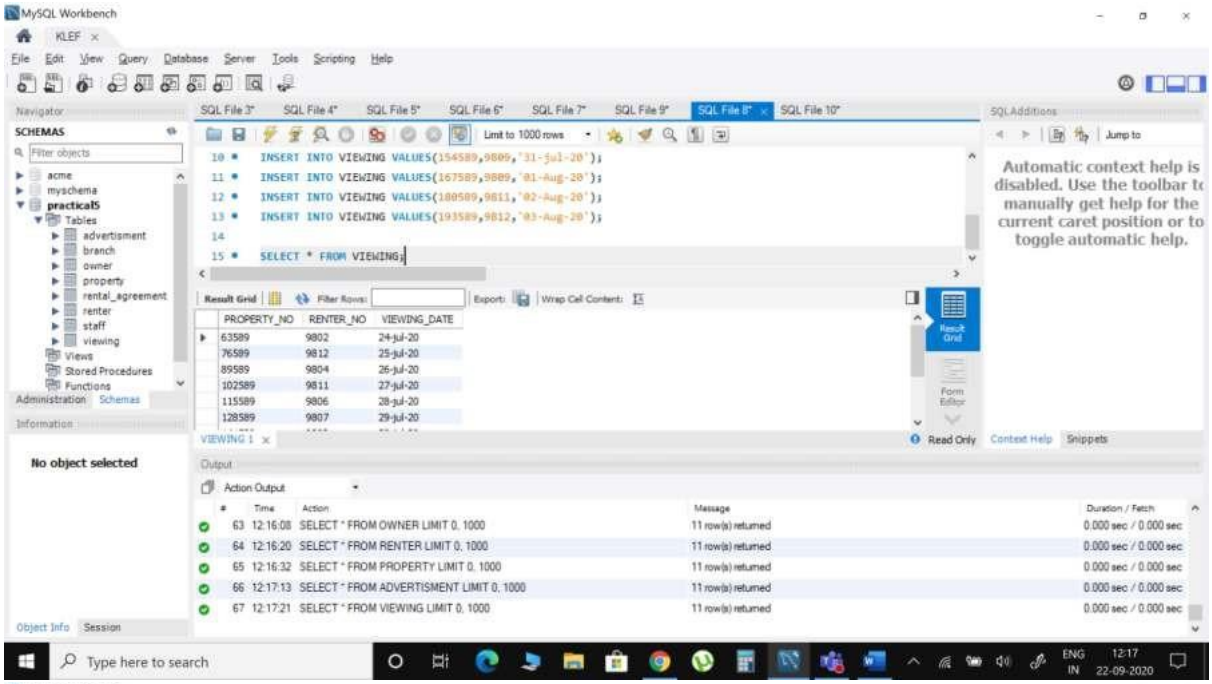
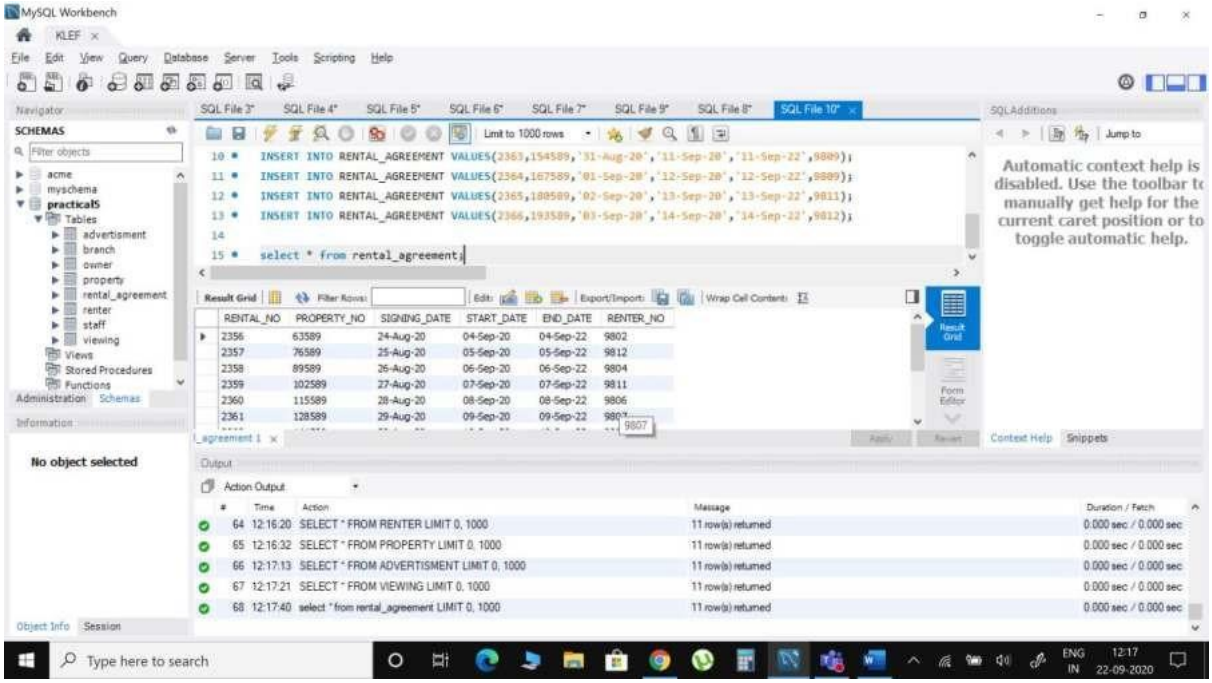
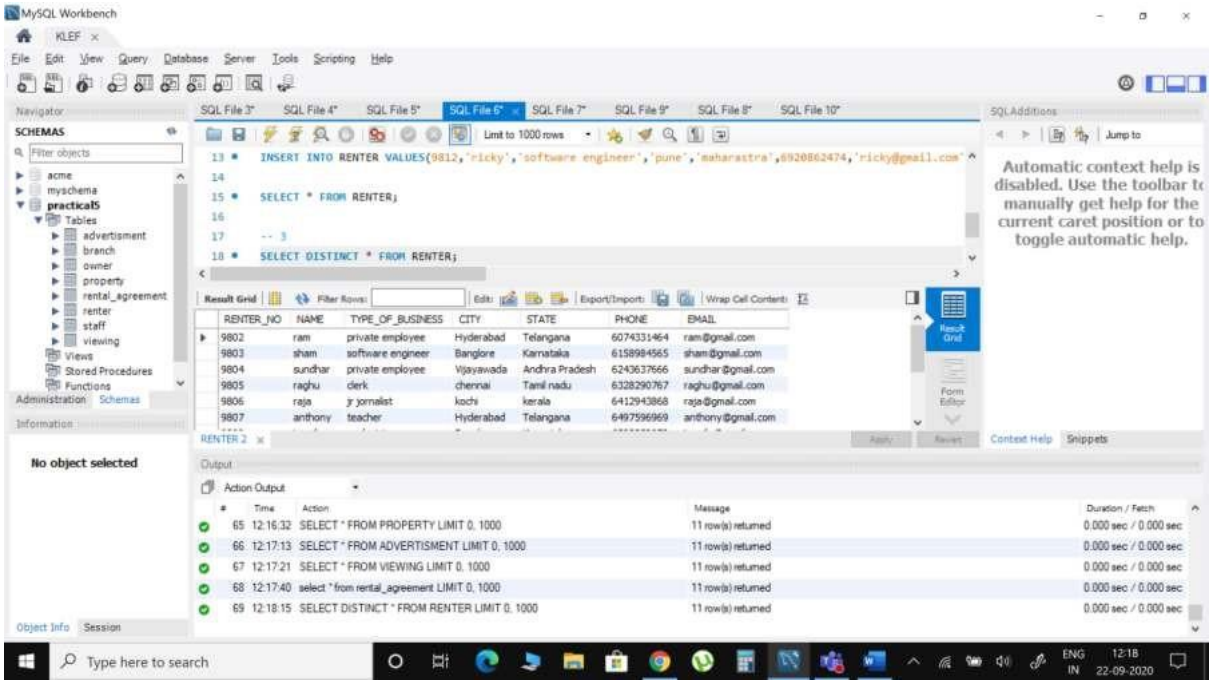
property
rental_agreement
renter
staff
viewing
Views
Stored Procedures
Functions
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 9* SQL File 8* SQL File 10*
Limit to 1000 rows
10 • INSERT INTO PROPERTY VALUES(154589,'Vijayawada',8899,50018);
11 • INSERT INTO PROPERTY VALUES(167589,'chennai',8900,50019);
12 • INSERT INTO PROPERTY VALUES(180589,'mumbai',8901,50013);
13 • INSERT INTO PROPERTY VALUES(193589,'pune',8902,50018);
14
15 • 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
No object selected
Action Output
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
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Type here to search
ENG IN 12:17 22-09-2020


MySQL Workbench
KLEF
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 9* SQL File 8* SQL File 10*
10 • INSERT INTO ADVERTISMENT VALUES(29,'08-Jun-20','times',154589);
11 • INSERT INTO ADVERTISMENT VALUES(30,'09-Jun-20','sakshi',167589);
12 • INSERT INTO ADVERTISMENT VALUES(31,'10-Jun-20','dc',180589);
13 • INSERT INTO ADVERTISMENT VALUES(32,'11-Jun-20','hindu',193589);
14
15 • 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
No object selected
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
Type here to search
ENG IN 12:17 22-09-2020

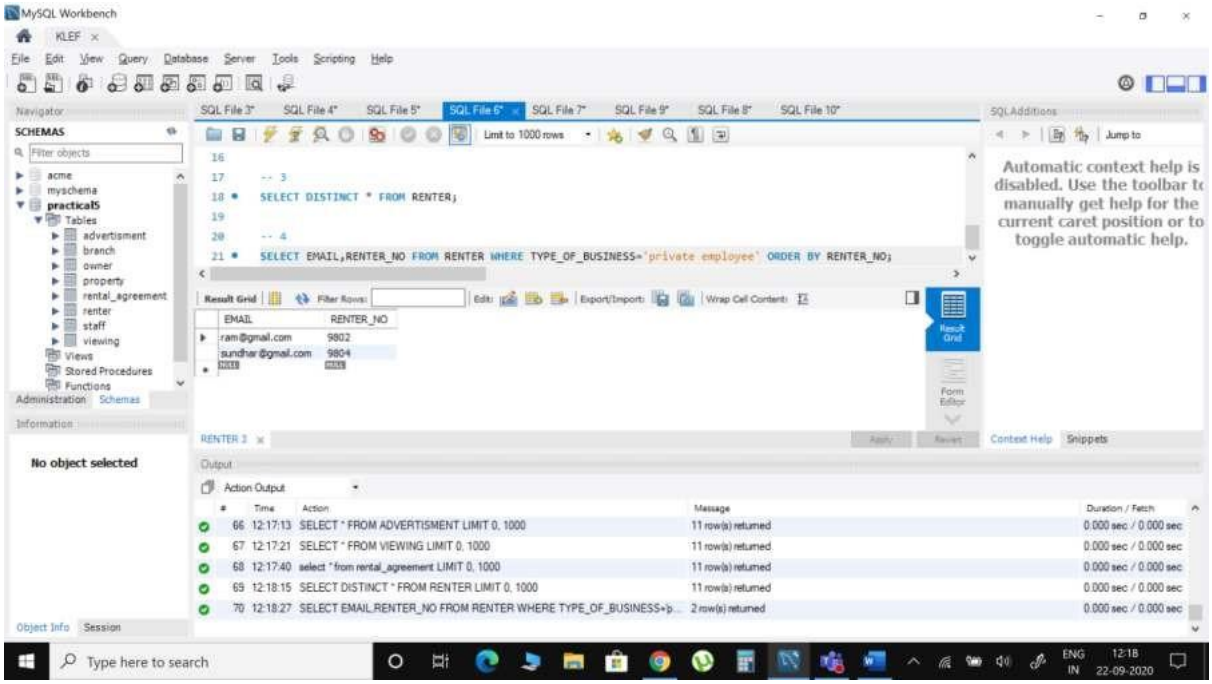




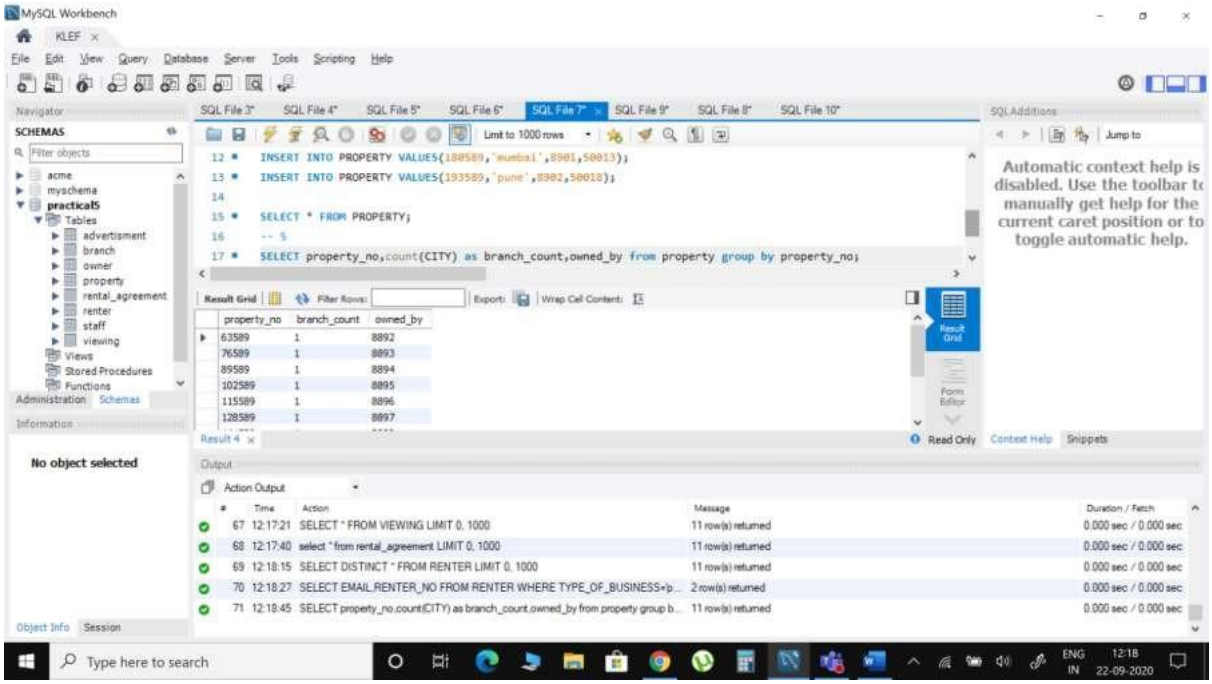
3) Display renter details which are unique.



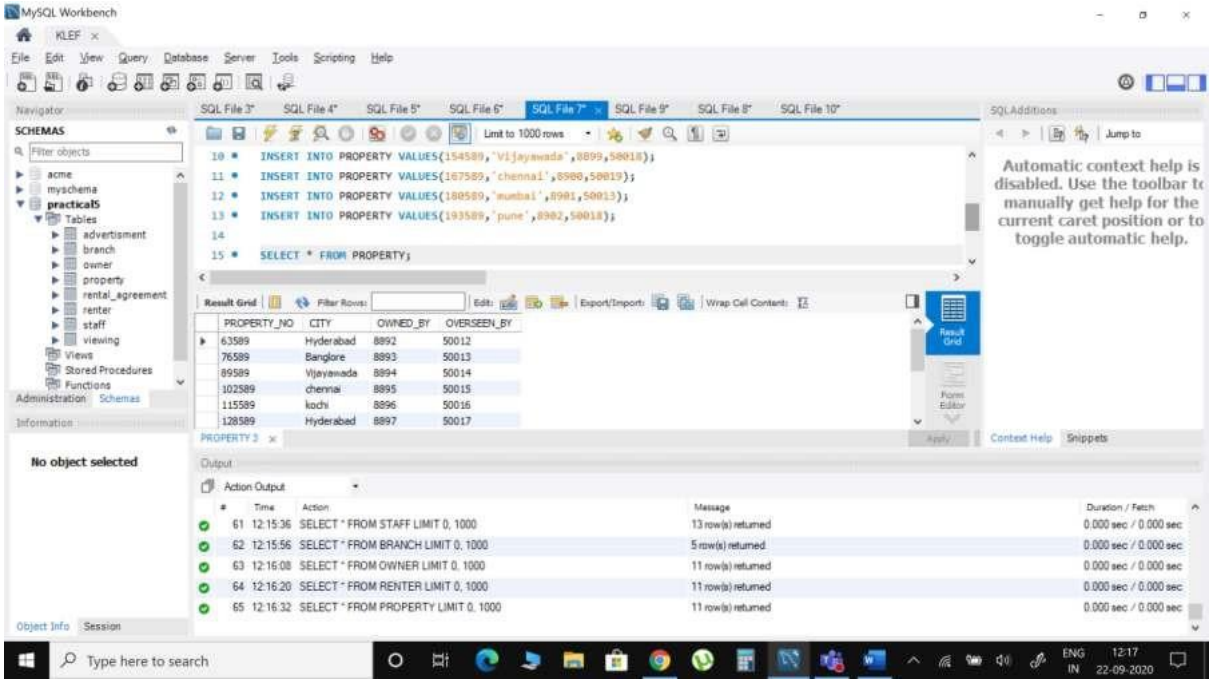
4) Give the email addresses and the renter number for all the private renters. Please, sort them by the renter number.



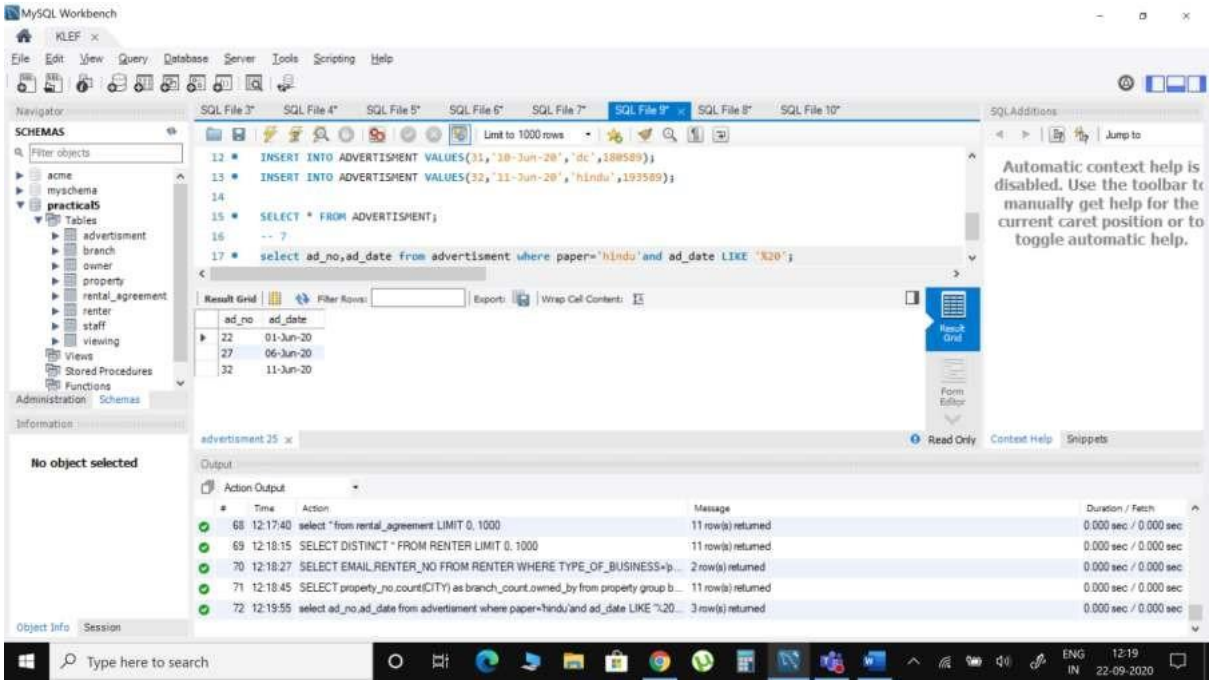
5) Find unique property name and number of branches for each property.



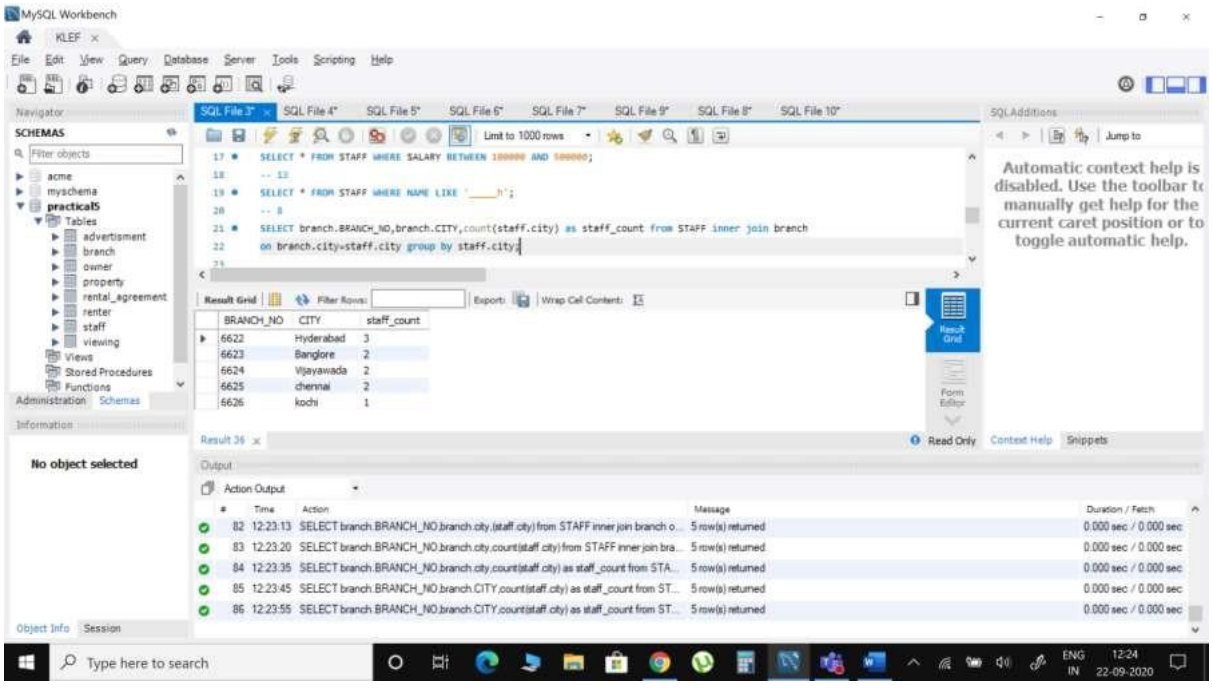
6) Create table for staff member and insert all the details of the staff members.



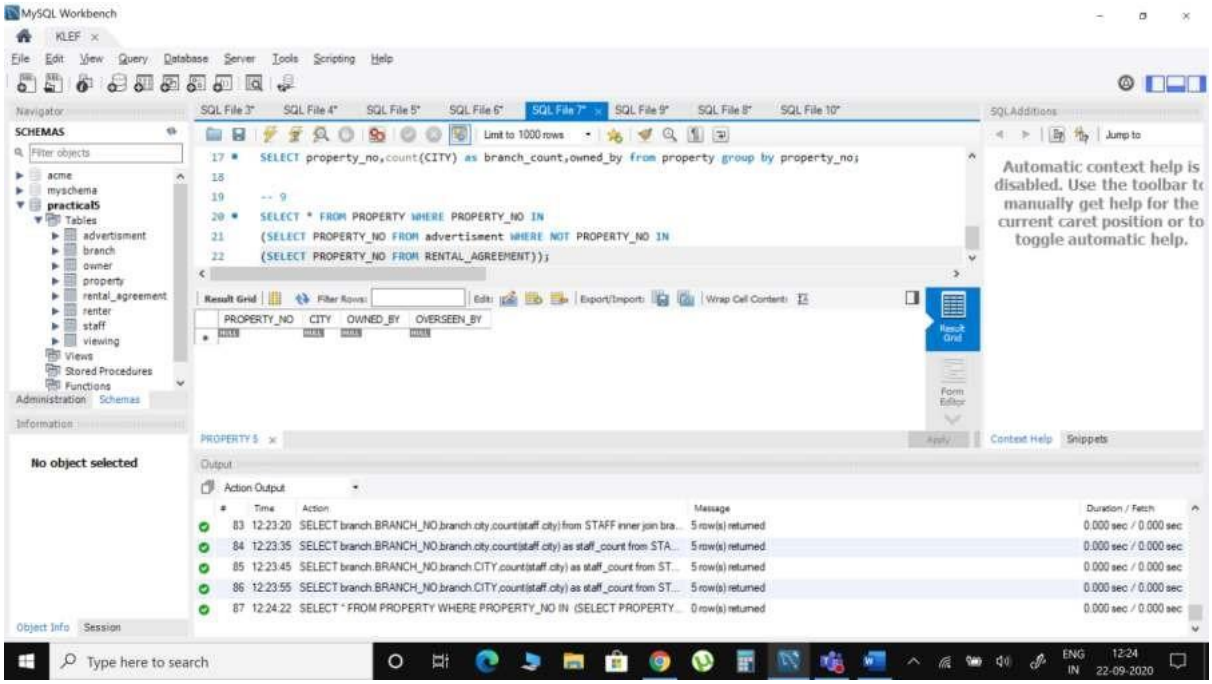
7) Give the dates of all the advertisements posted in THE GLOBE AND MAIL in 2005.



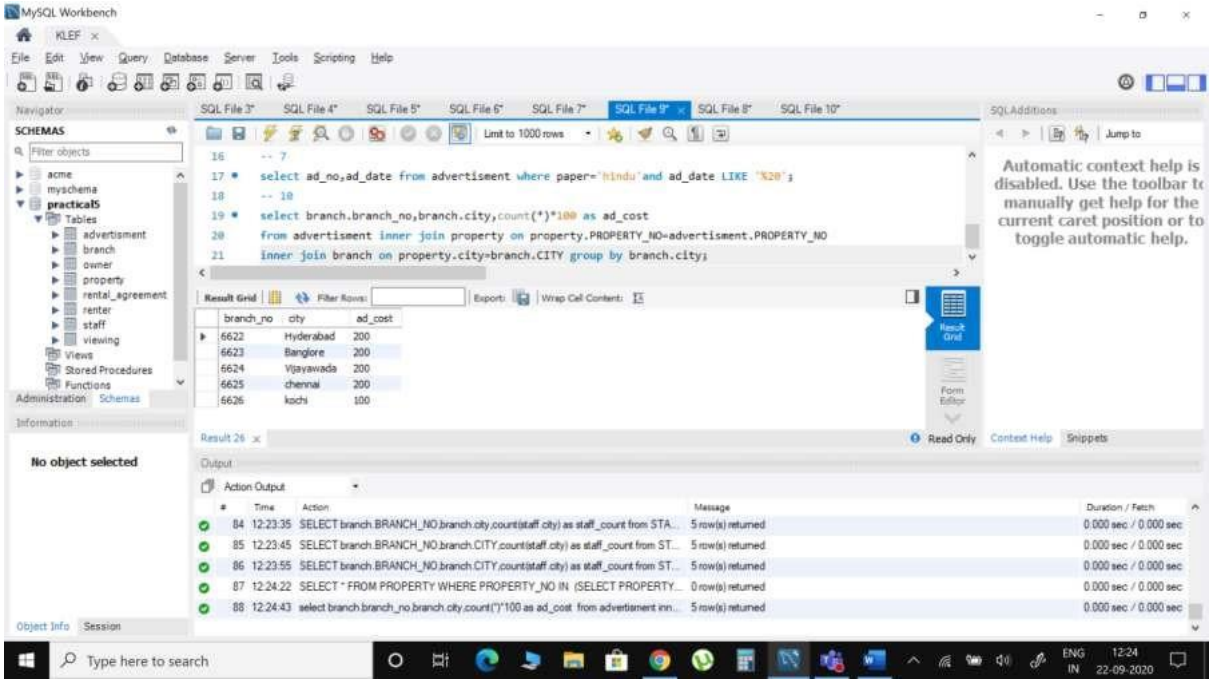
8) Display the count of staff in each branch and display them in descending order on count.



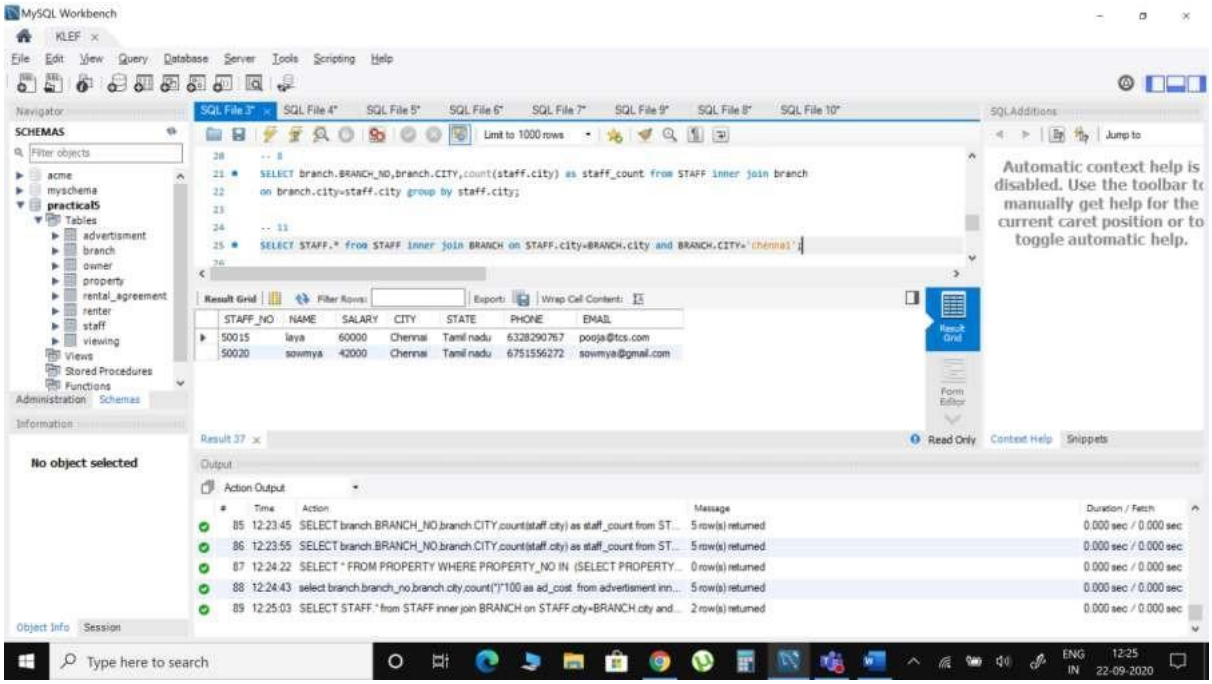
9) Find the properties that are already advertised but not yet rented.



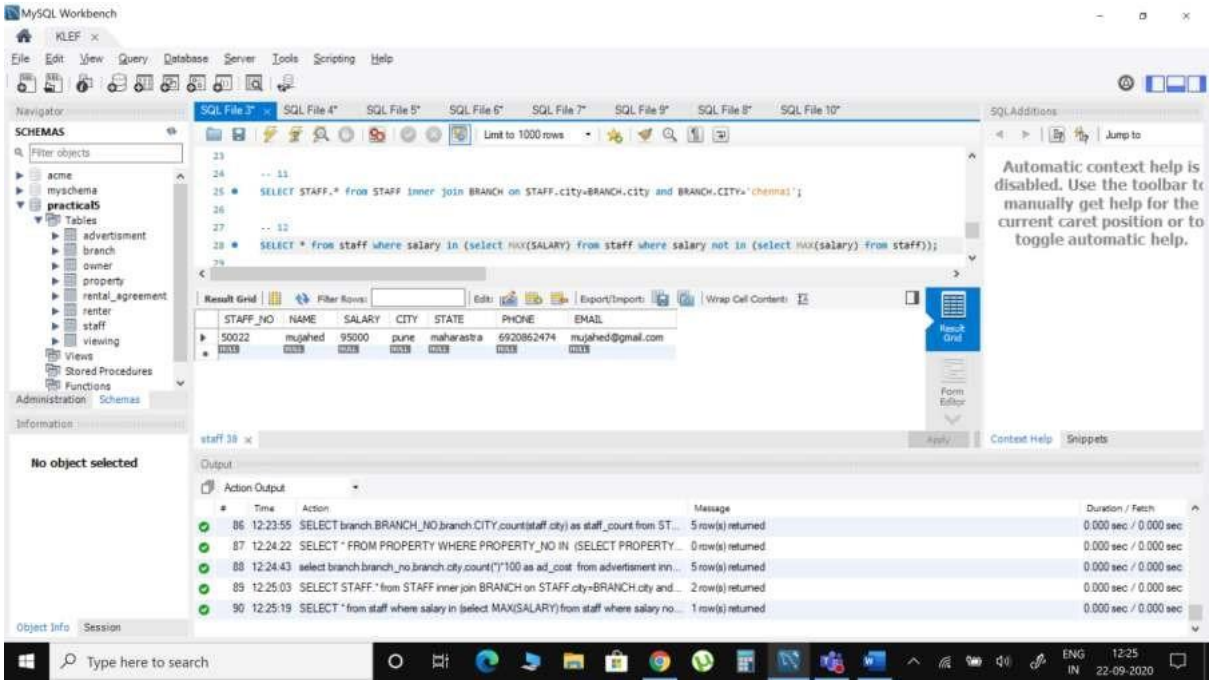
10) Assuming that each advertisement costs 100 dollars, give the branch number and the amount spent on the advertisements for each branch. Name the branch number as Branch no, and the amount as ad cost.



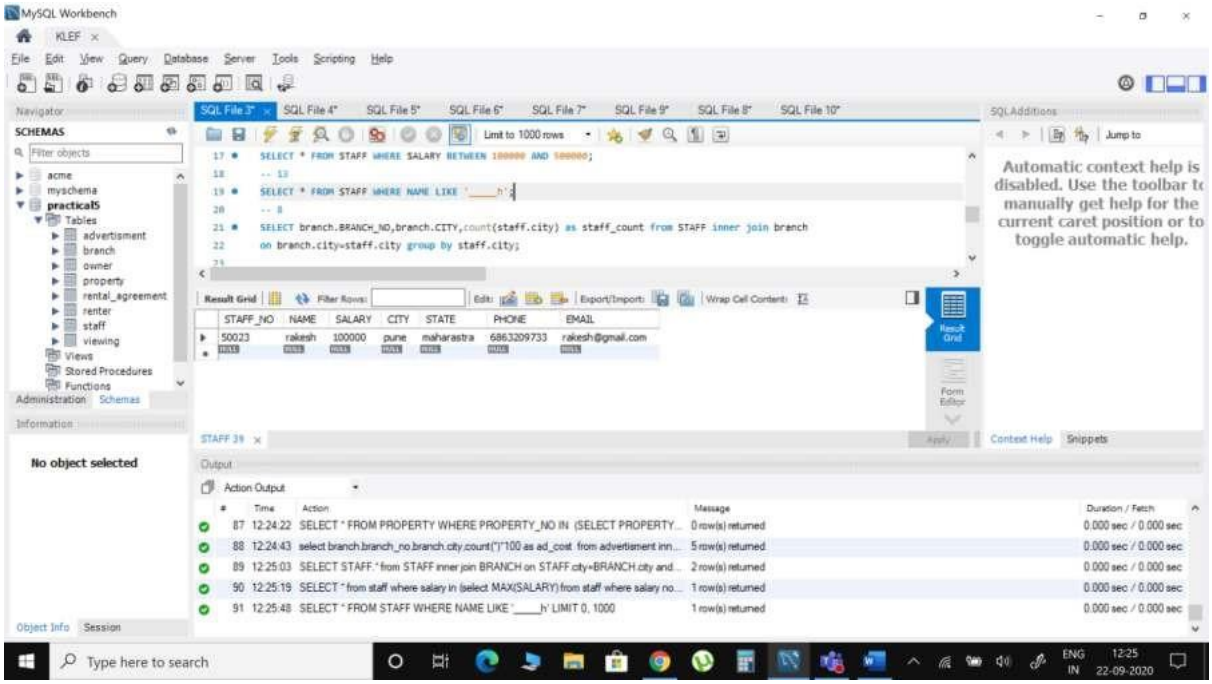
11) Display the details of staff who are working in a particular branch.



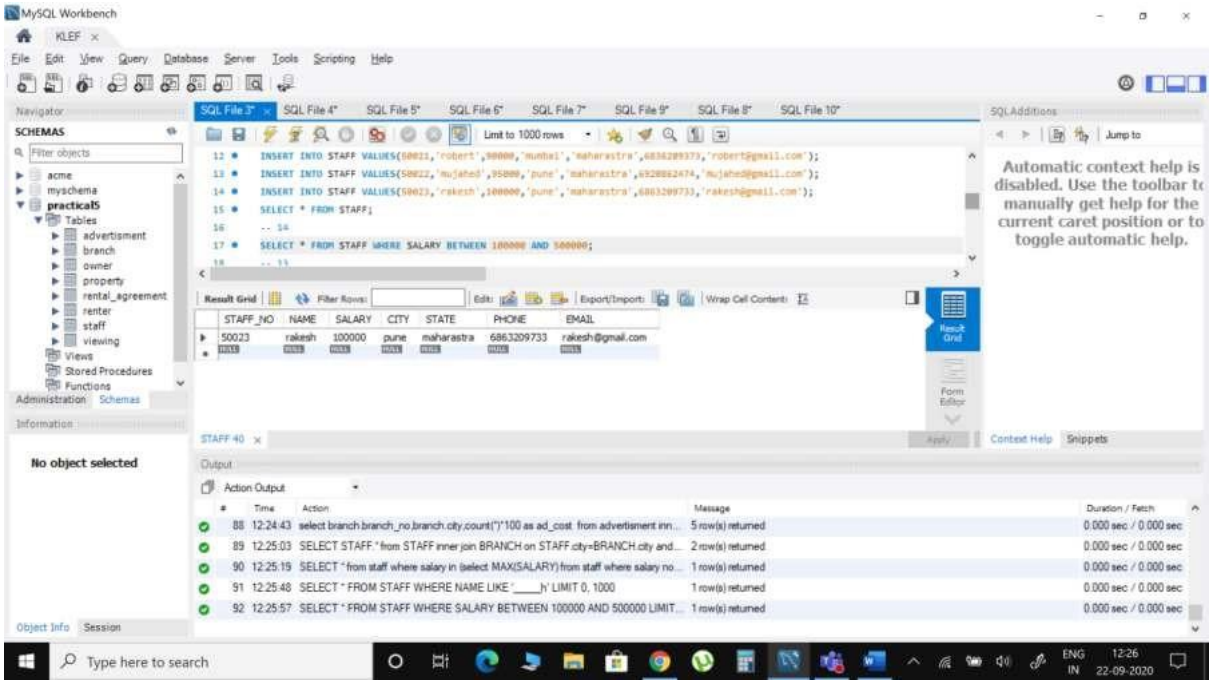
12) Write down a query to find out the Name, Address and Position of the branch staff whose salary is the second highest without using TOP or limit method.



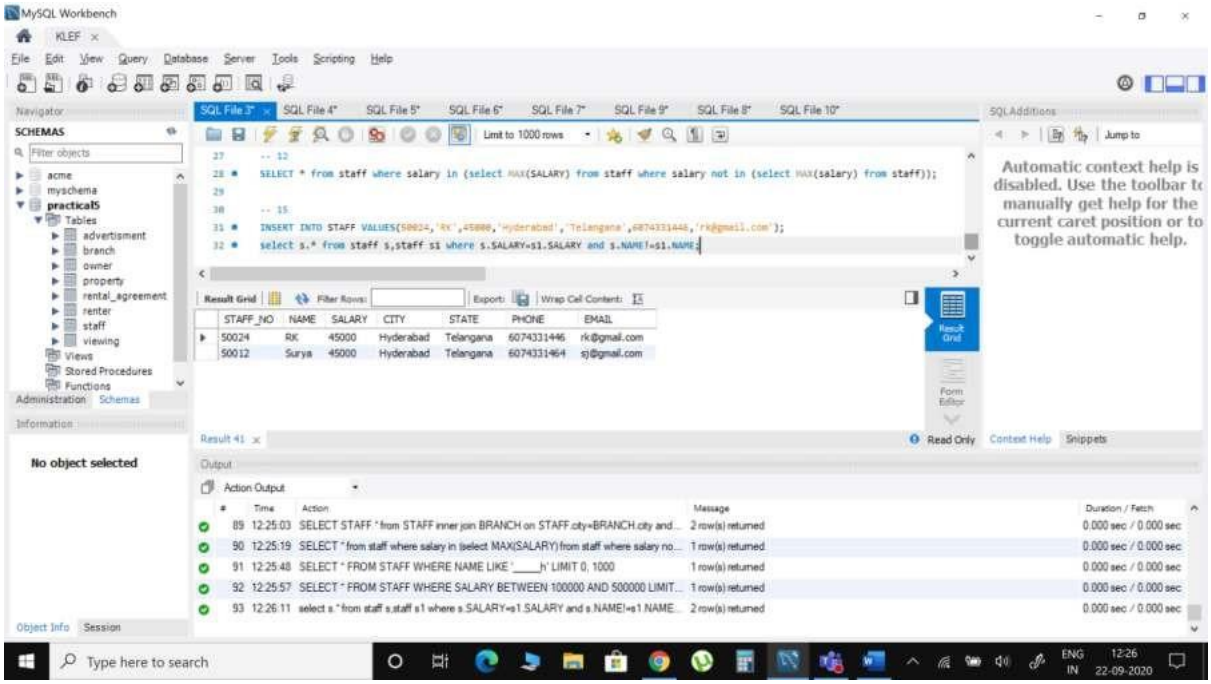
13) Write a query to print details of the staff whose Name ends with ‘h’ and contains six alphabets.



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



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


MySQL Workbench
KLEF
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
acme
myschema
practical5
Tables
advertisment
branch
owner
property
rental_agreement
renter
staff
viewing
Views
Stored Procedures
Functions
Administration Schemas
Information
No object selected
Object Info Session
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 9* SQL File 8* SQL File 10*
Limit to 1000 rows
-- 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;
Result Grid Filter Rows: Export: Wrap Cell Content:
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
Result 41
Read Only
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
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
Type here to search
ENG IN 12:26 22-09-2020