LAB RECORD

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DEPT: CSE

SECTION : C

COURSE NAME: DATABASE MANAGEMENT SYSTEMS

LAB_BATCH:C-3

LAP PROGRAM 1:-

PROGRAM 1

Consider the following schema:

Consider the Insurance database given below. The primary keys are underlined and the data types are specified.

PERSON (driver-id #: String, name: String, address: String)

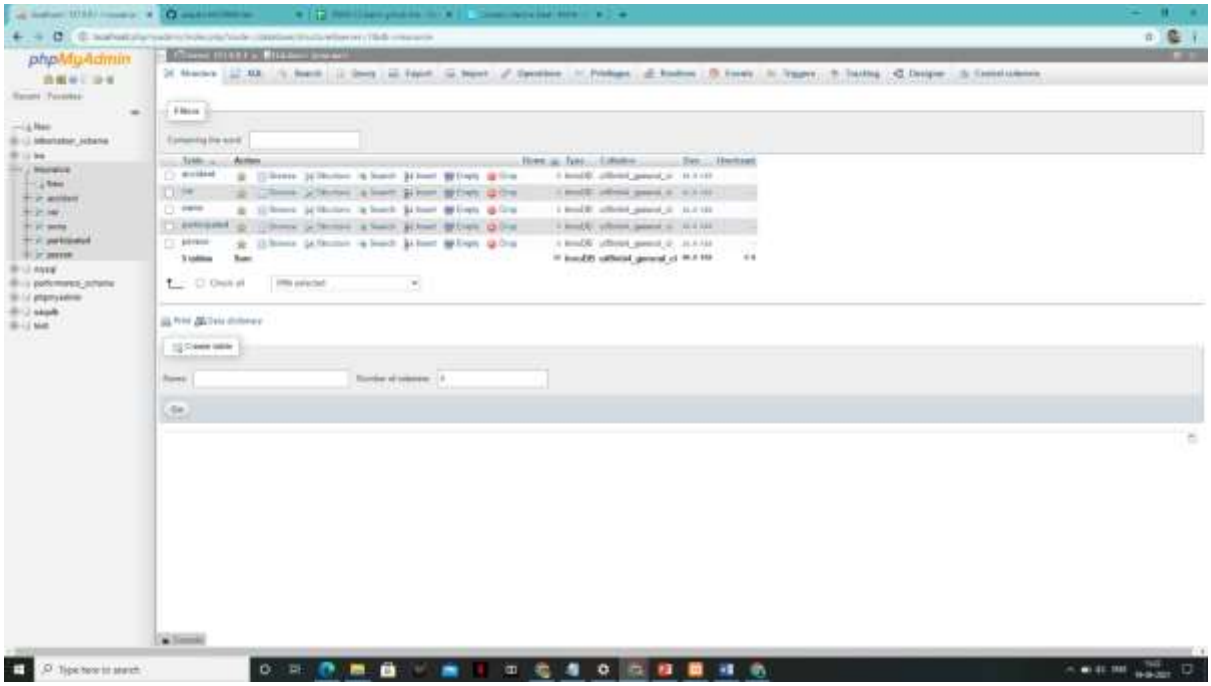
CAR (Regno: String, model: String, year: int)

ACCIDENT (report-number: int, date: date, location: String)

OWNS (driver-id #: String, Regno: String)

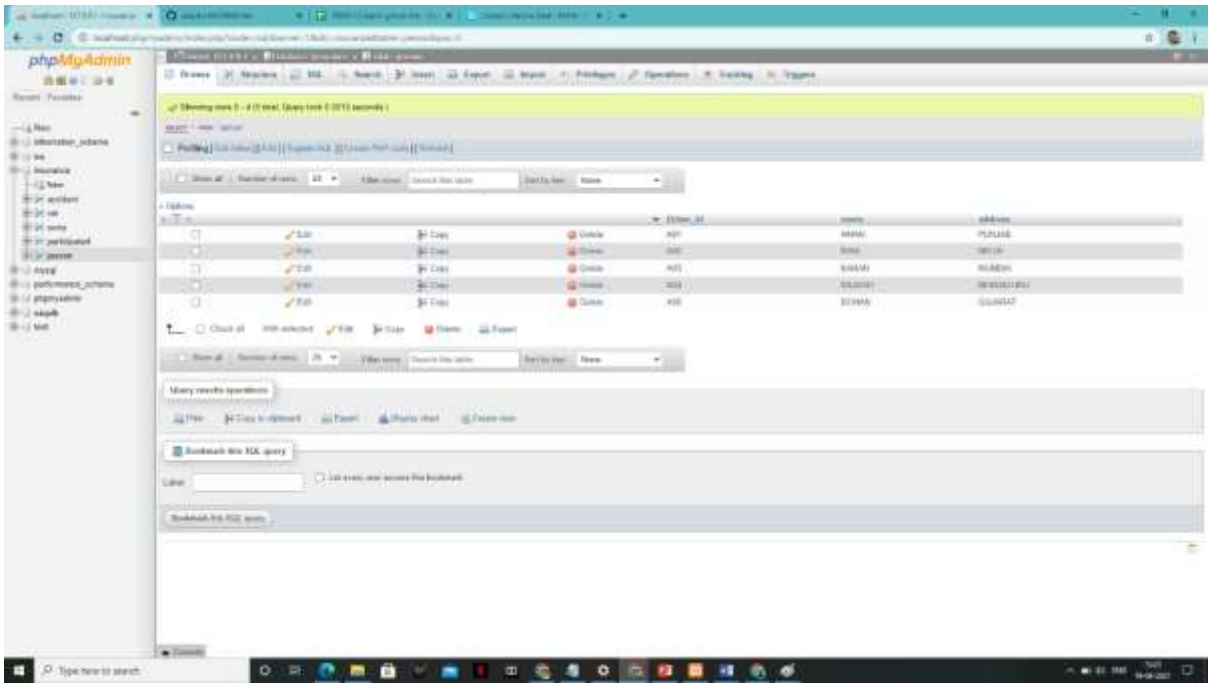
PARTICIPATED (driver-id: String, Regno: String, report-number: int, damage-amount: int)

1) **Create the above tables y properly specifying the primary keys and the foreign keys.**

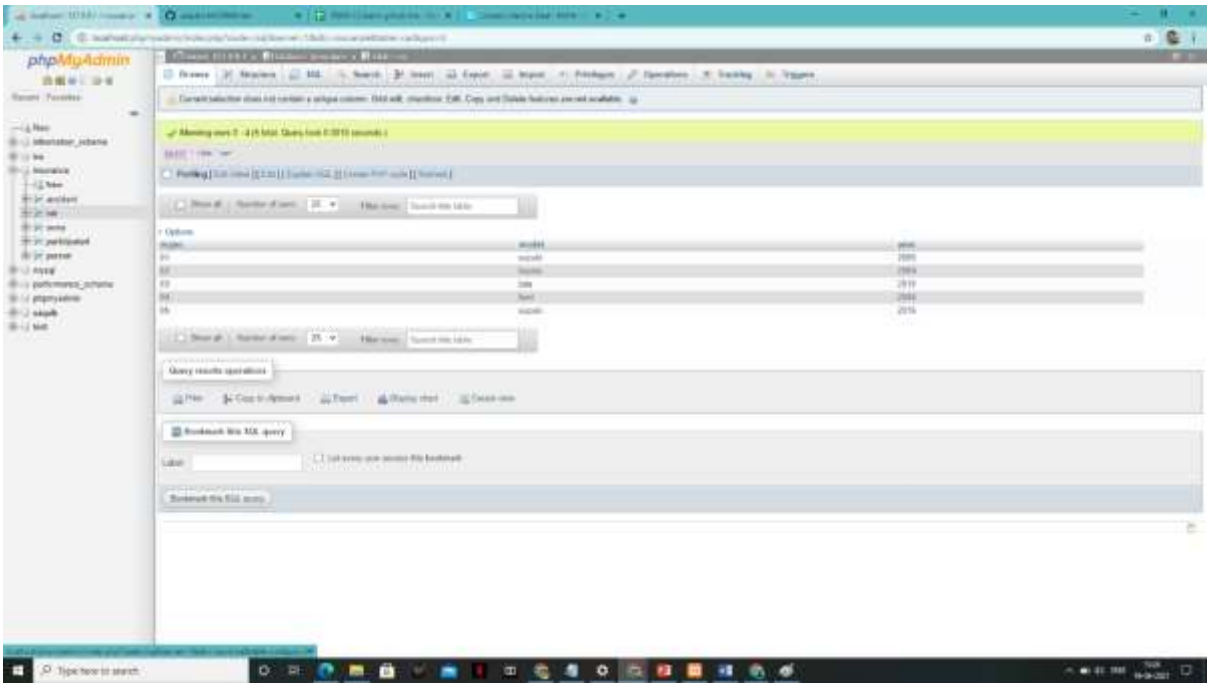


2) Enter at least 5 tuples for each relation.

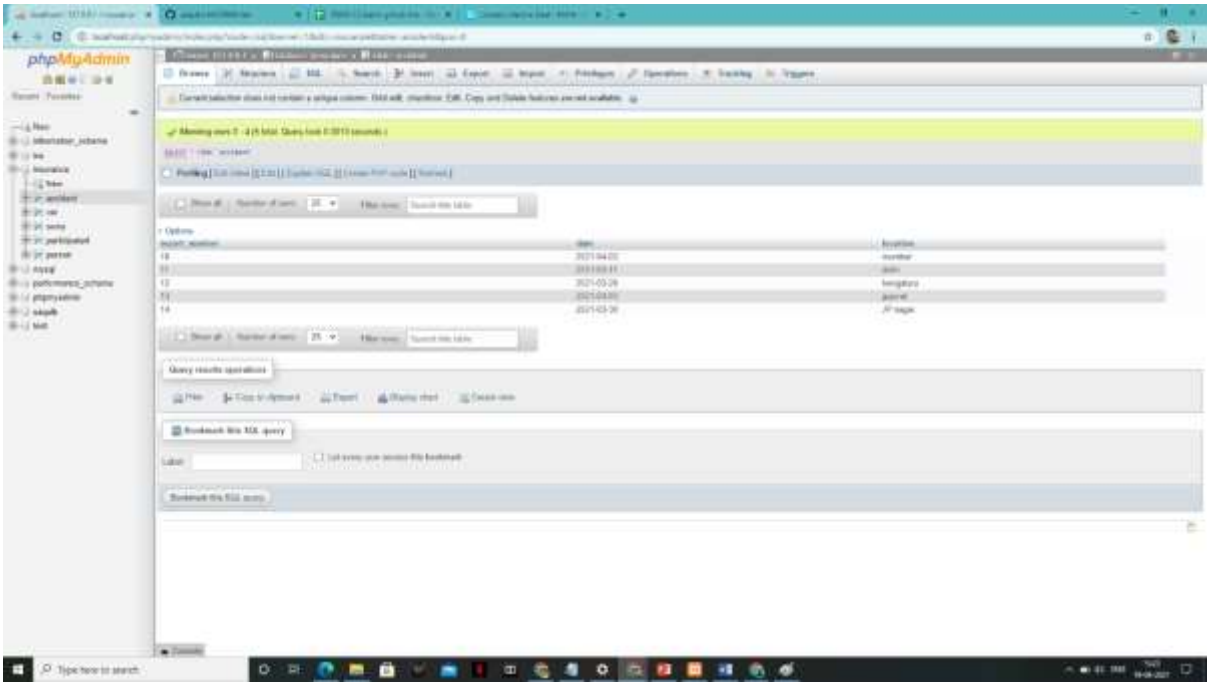
'PERSON' table:



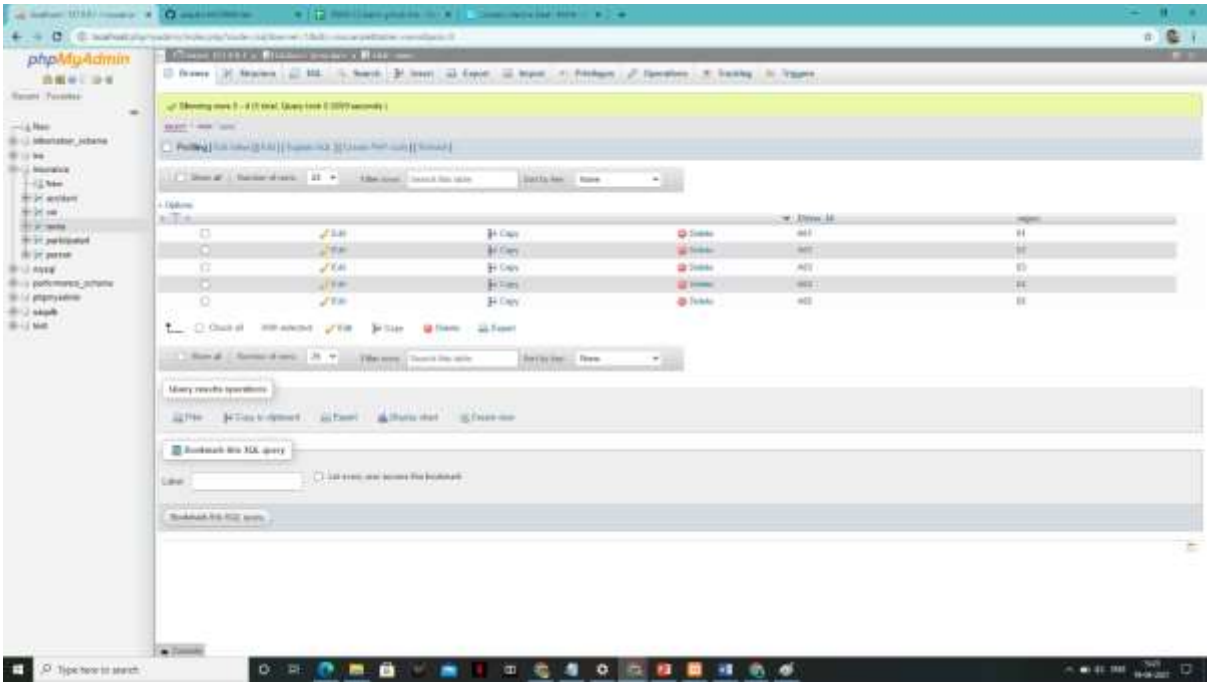
'CAR' table:



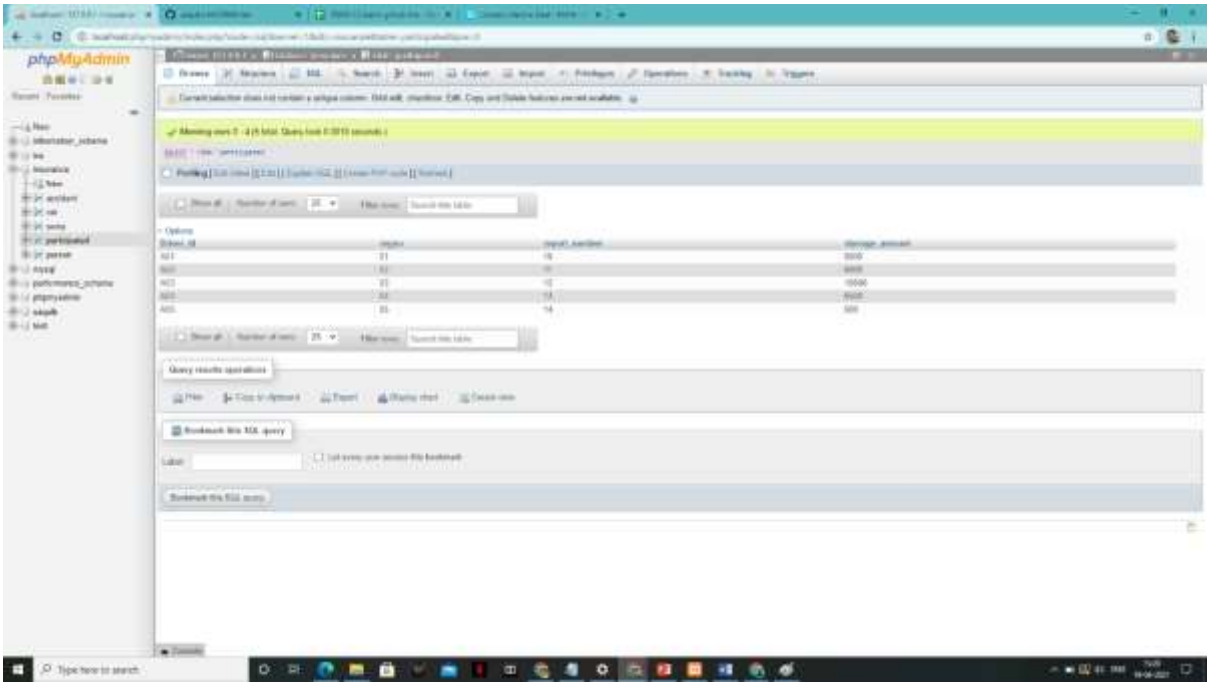
‘ACCIDENT’ table:



‘OWNS’ table:

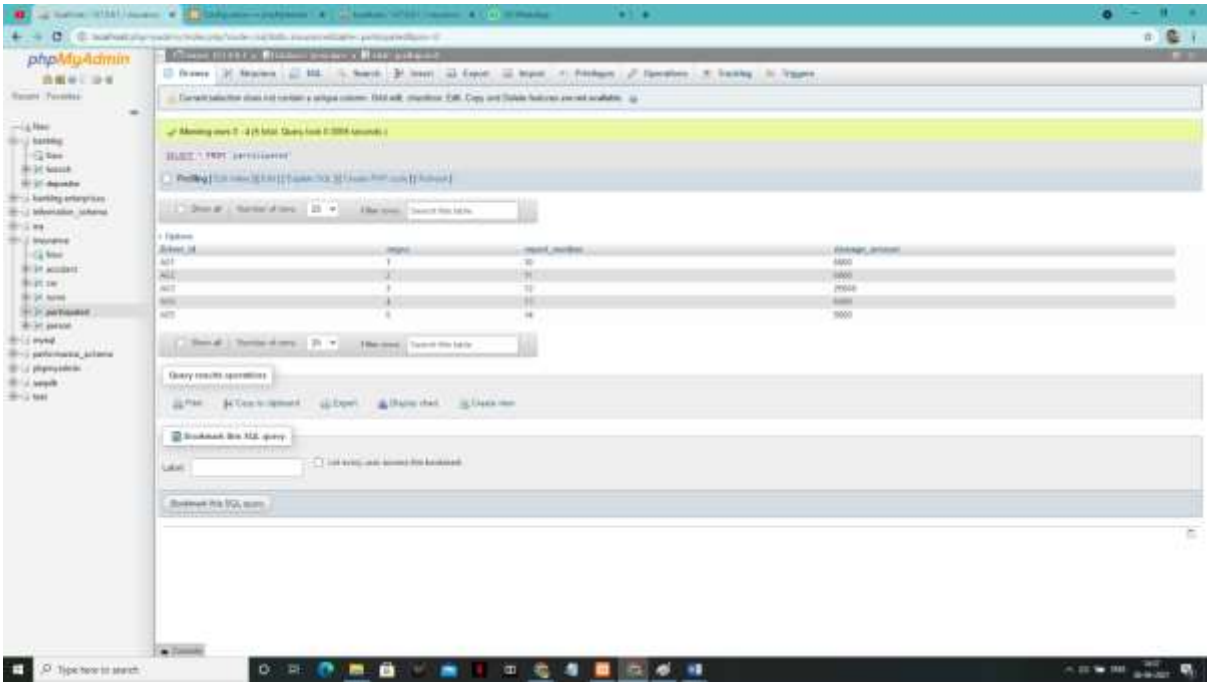


‘PARTICIPATED’ table:

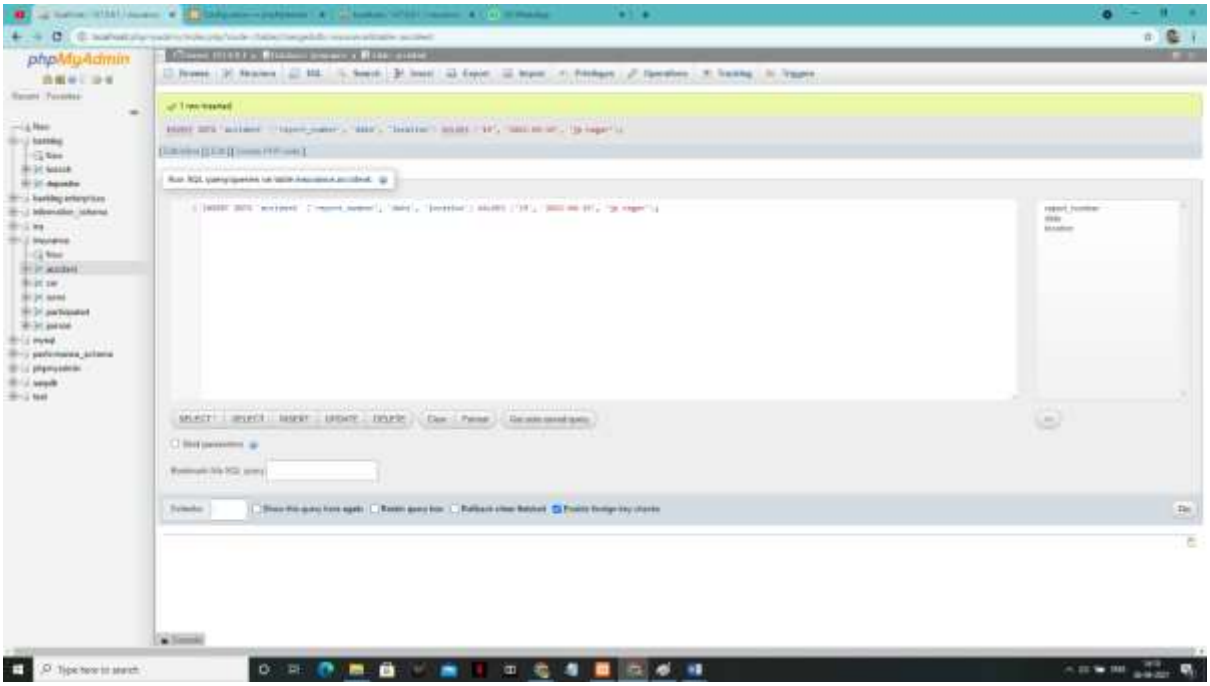


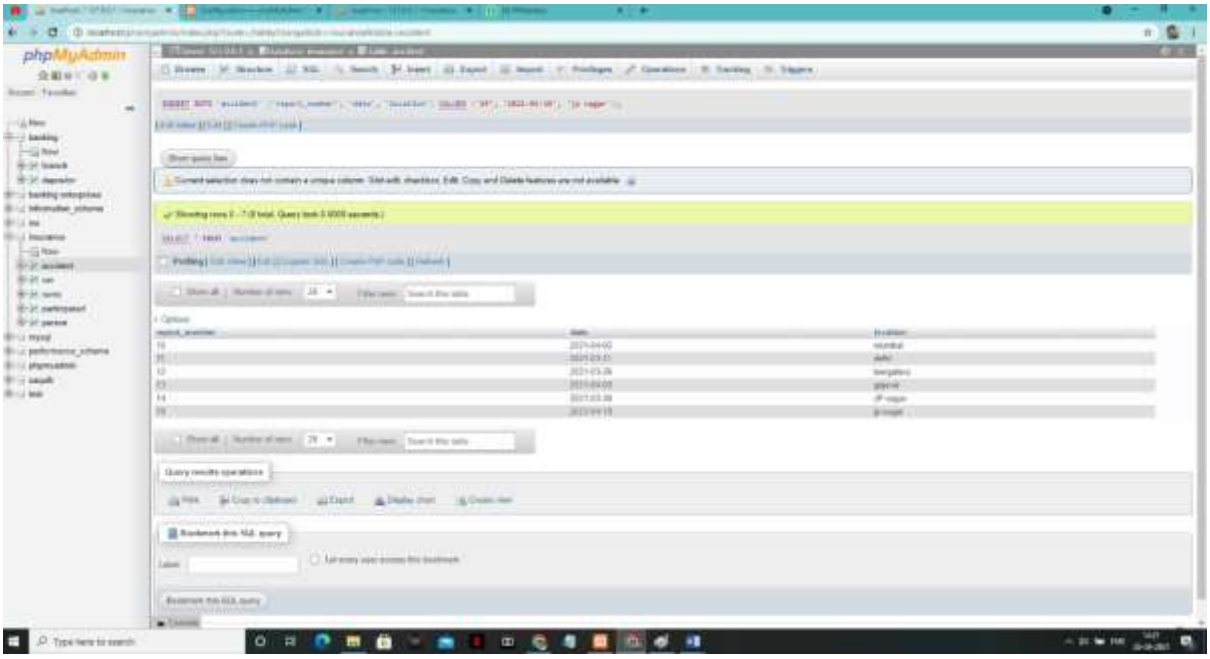
3) Demonstrate how you

a) **Update the damage amount for the car with a specific Regno in the accident with report number 12 to 25000.**

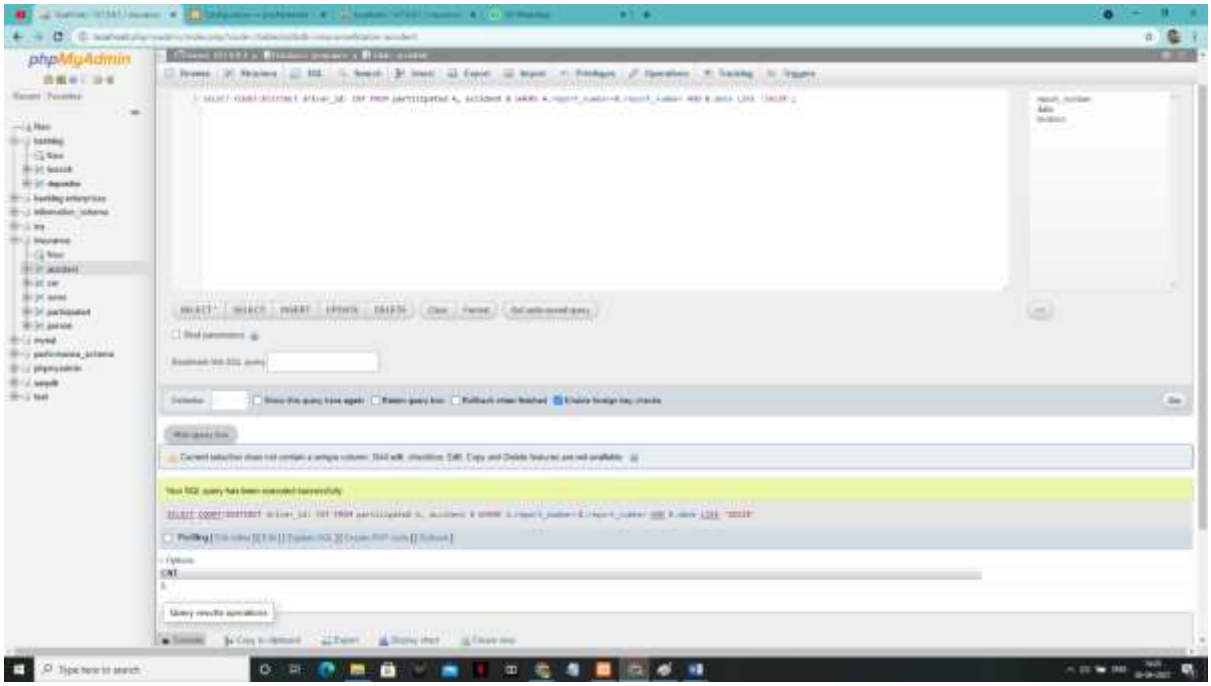


b) **Add a new accident to the database.**

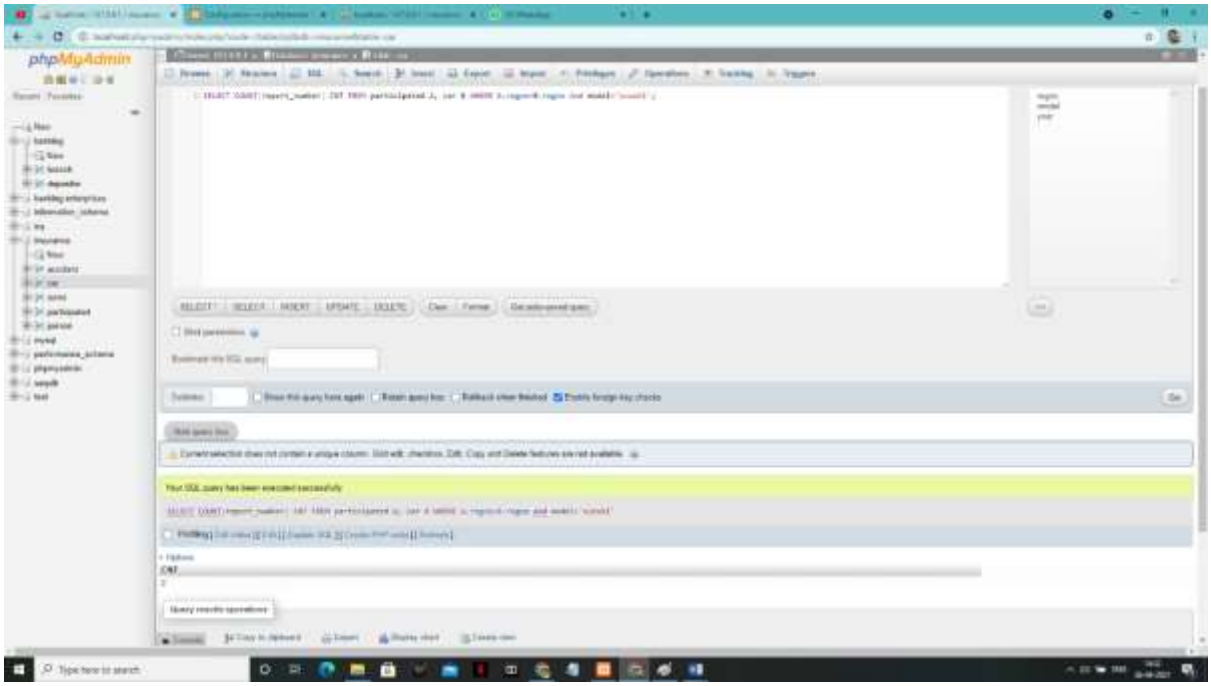




4) **Find the total number of people who owned cars that were involved in accidents in 2021.**



5) **Find the number of accidents in which cars belonging to a specific model (say ‘Suzuki’) were involved.**



LAB PROGRAM 2:-

PROGRAM 2

Consider the following database for a banking enterprise.

BRANCH (branch-name: String, branch-city: String, assets: real)

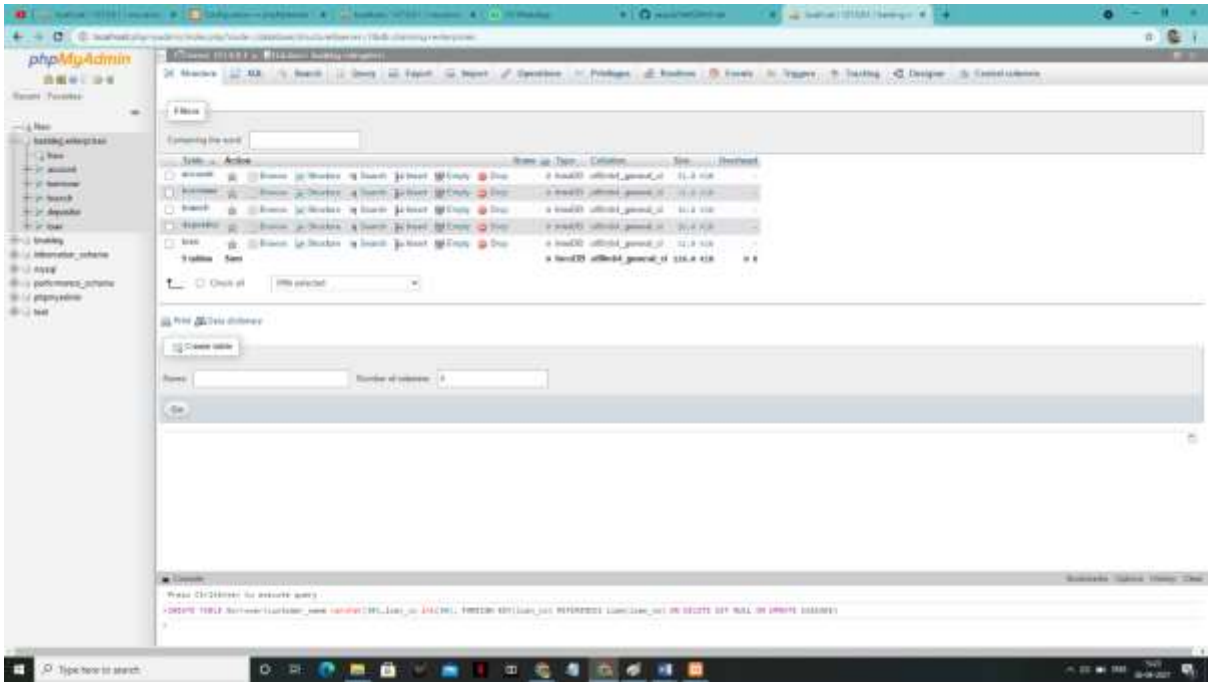
ACCOUNTS (accno: int, branch-name: String, balance: real)

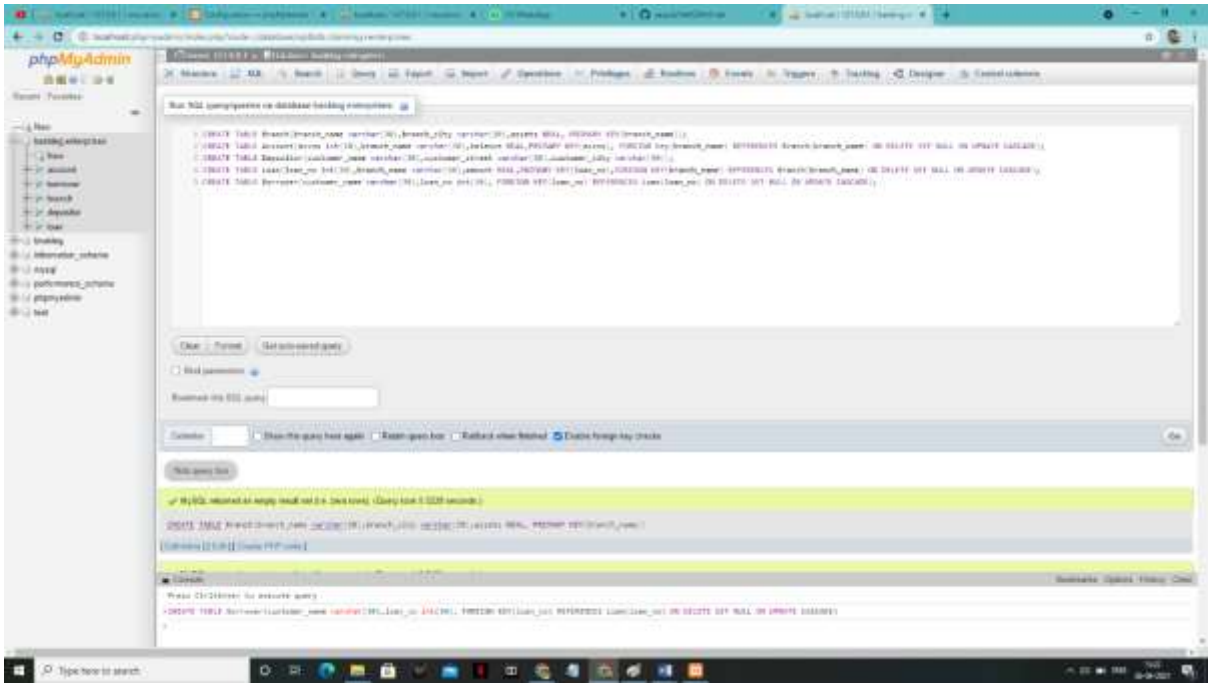
DEPOSITOR (customer-name: String, customer-street: String, customer-city: String)

LOAN (loan-number: int, branch-name: String, amount: real)

BORROWER (customer-name: String, loan-number: int)

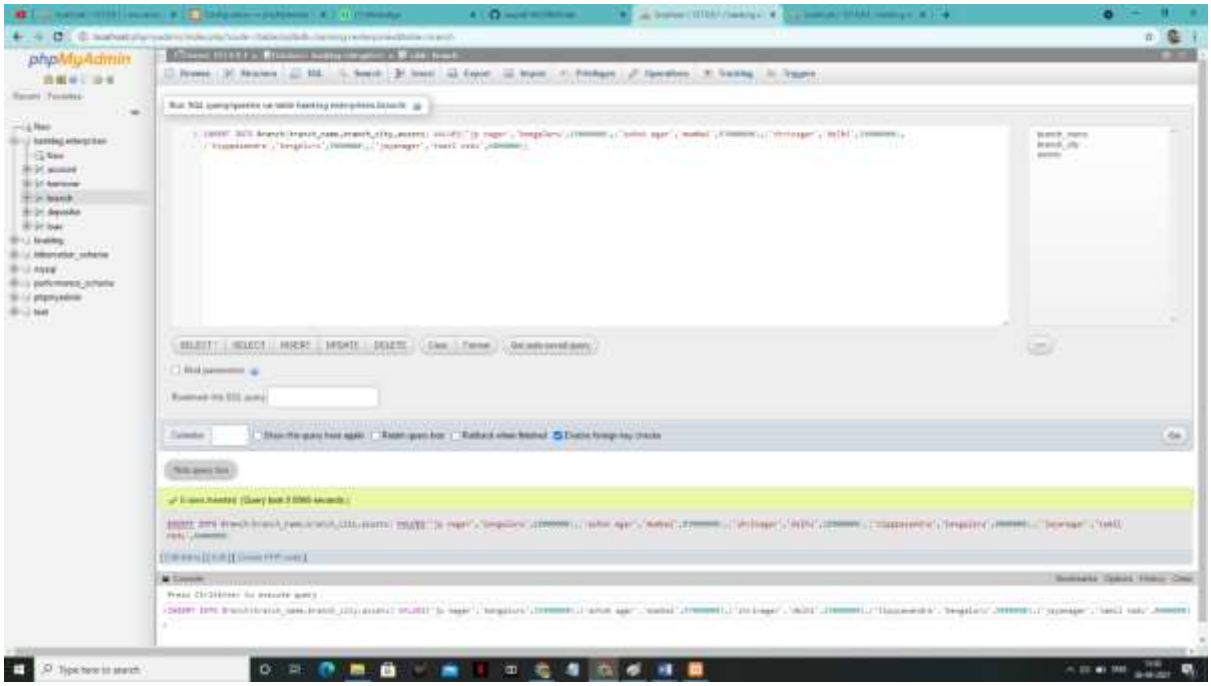
1) **Create the above tables by properly specifying the primary keys and the foreign keys.**

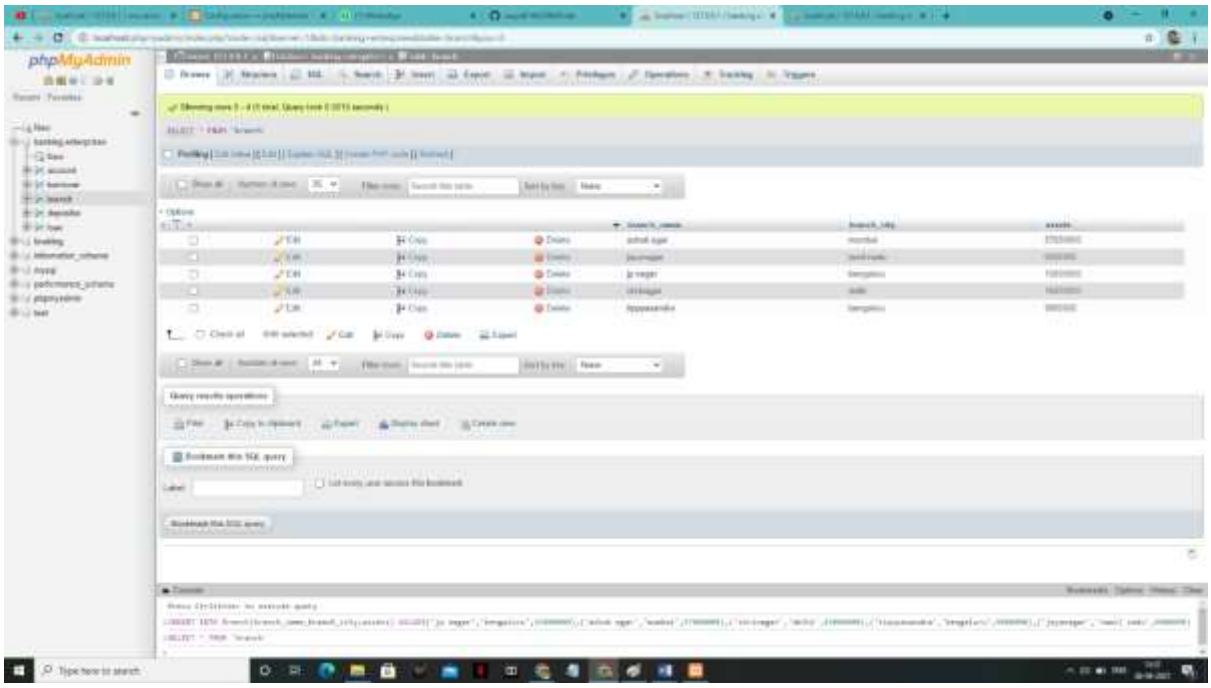




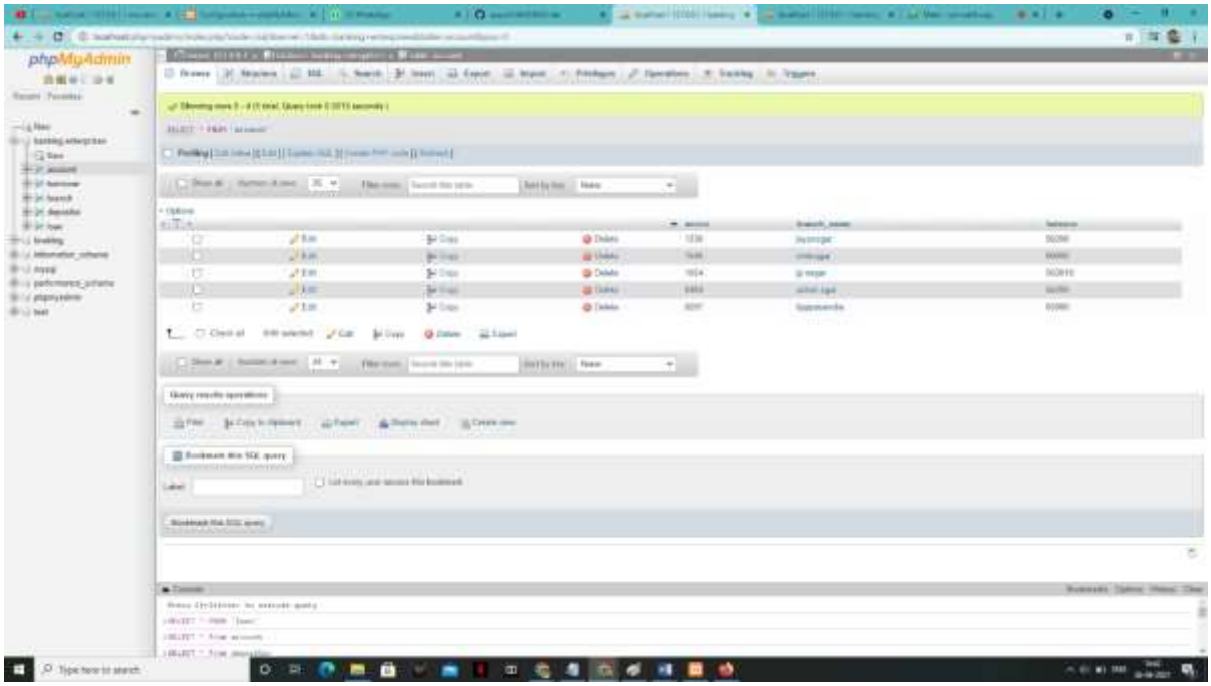
2) Enter at least 5 tuples for each relation.

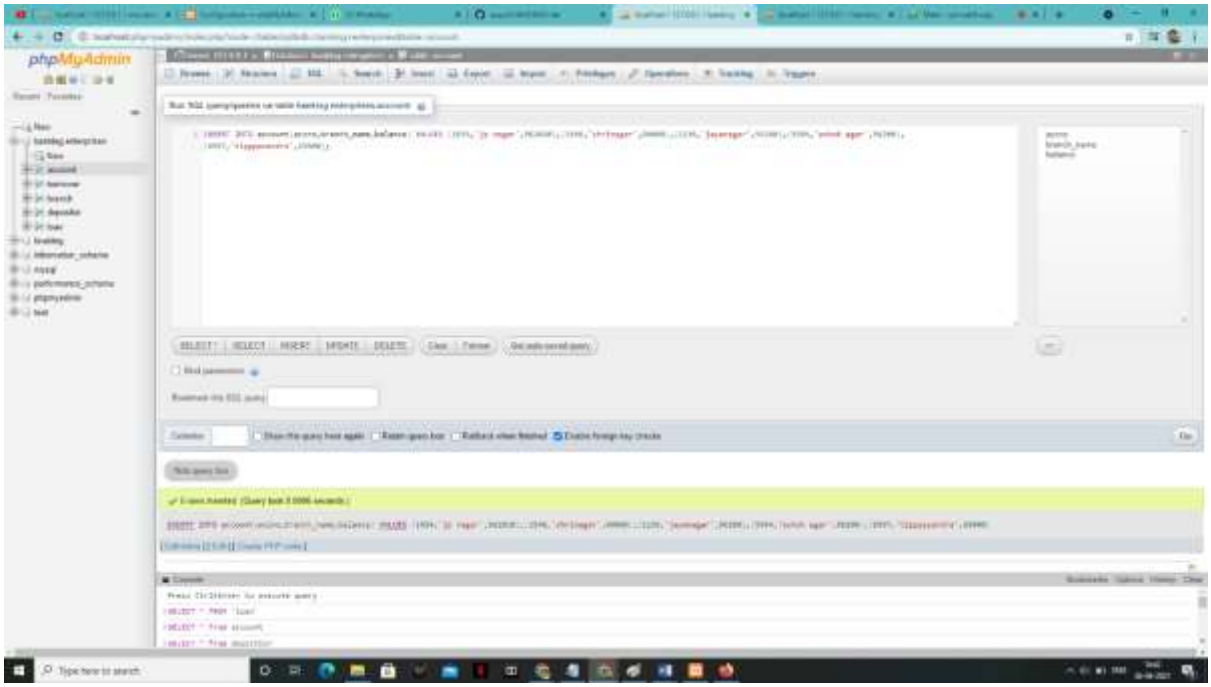
‘BRANCH’ table:



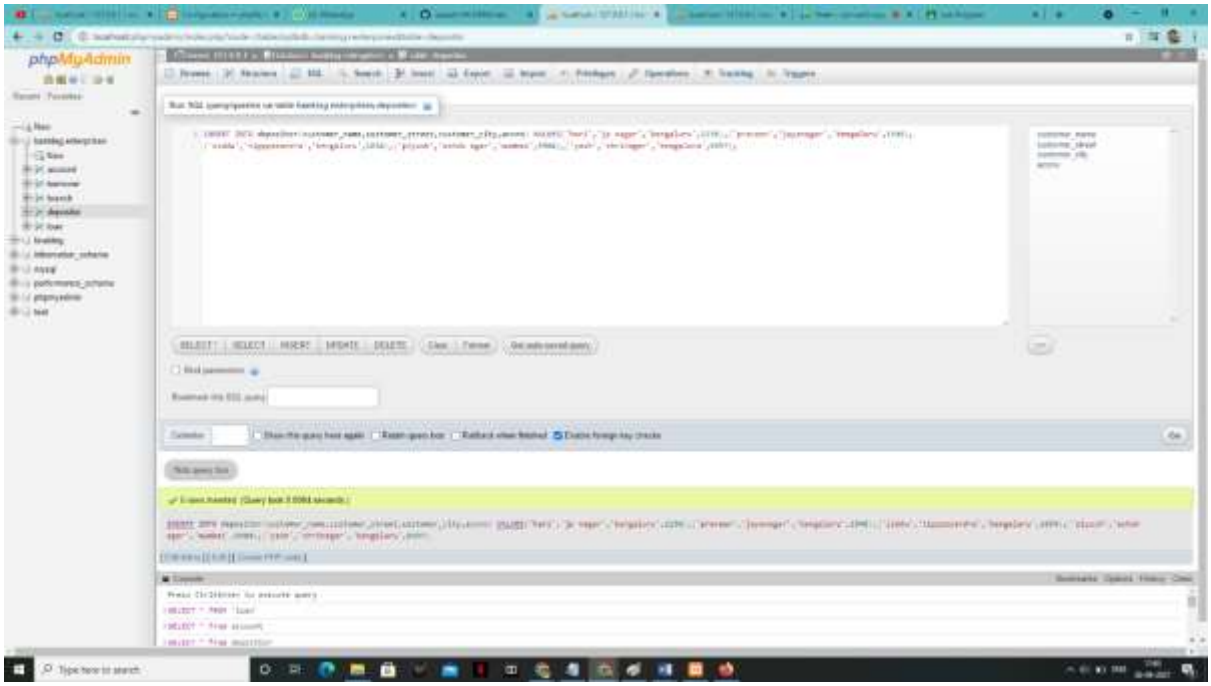


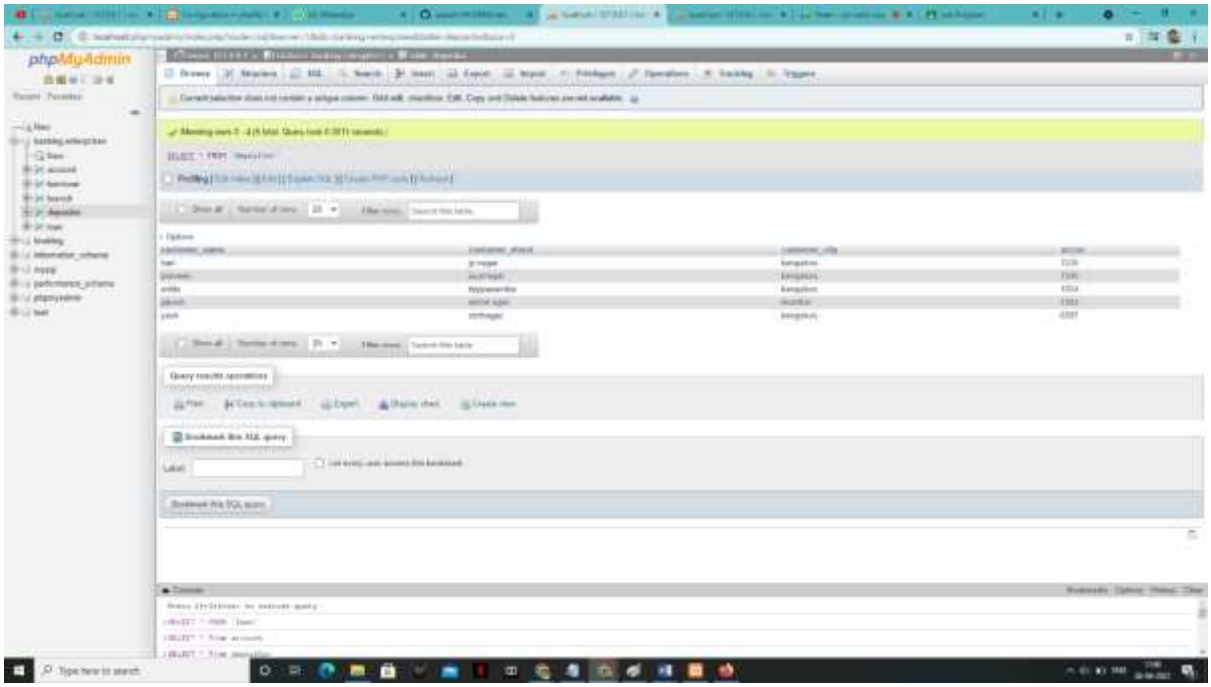
‘ACCOUNTS’ table:



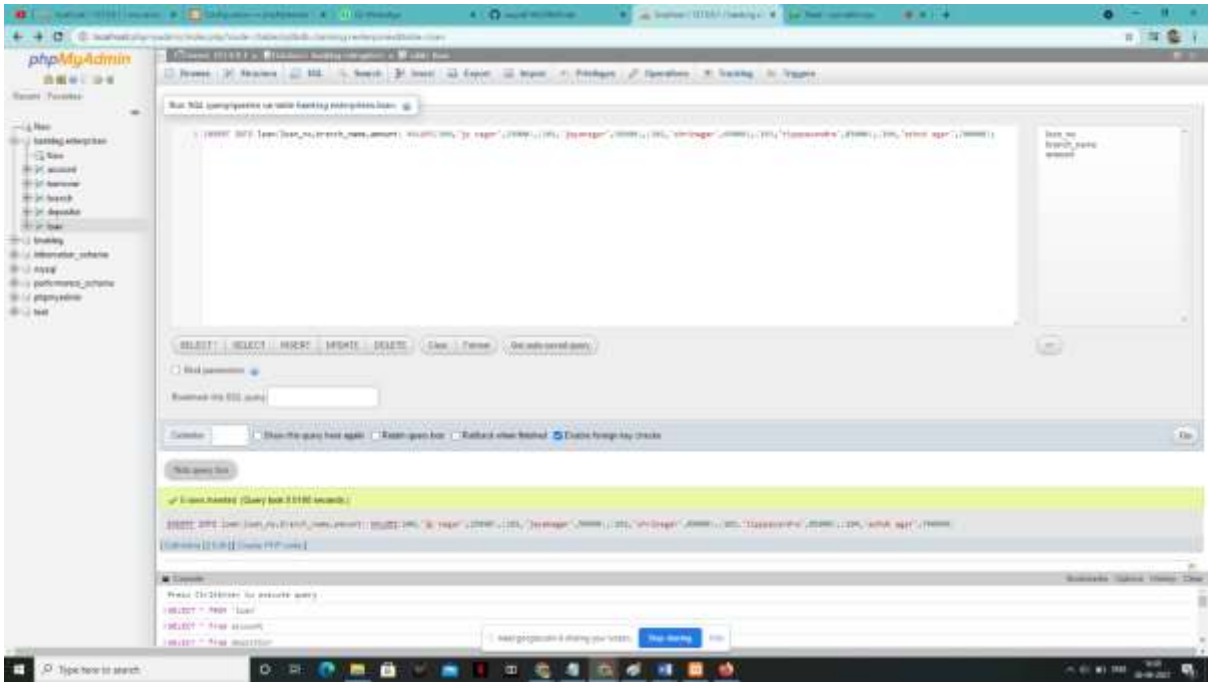


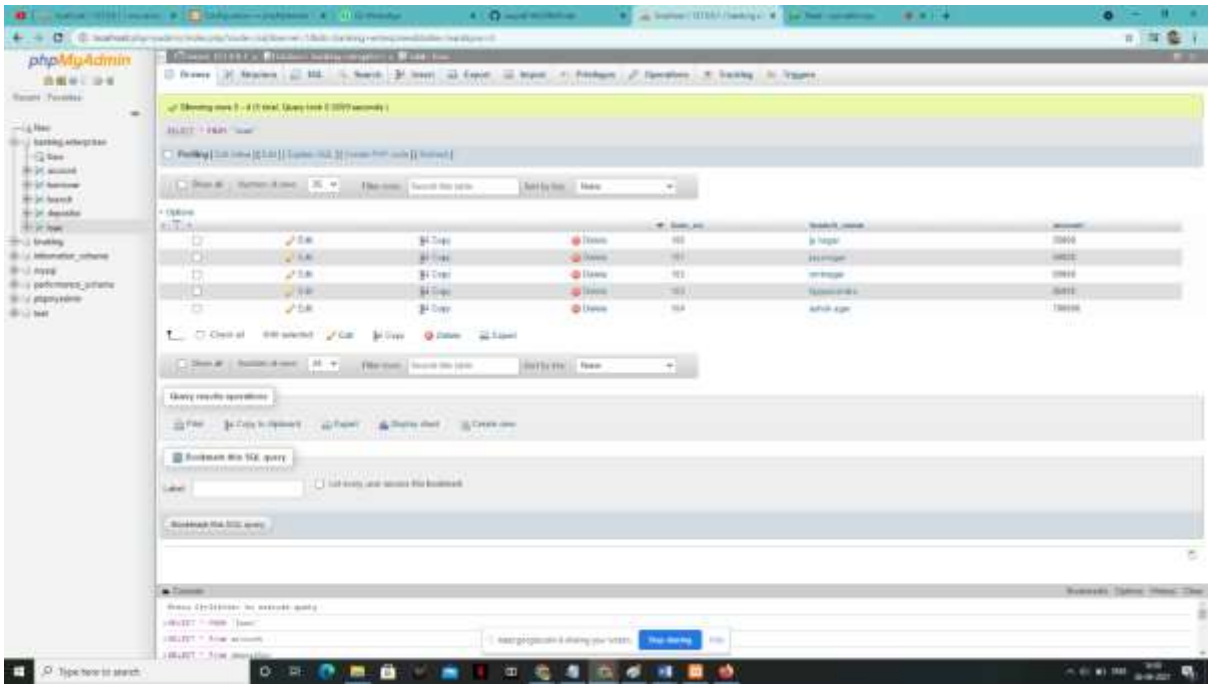
‘DEPOSITOR’ table:



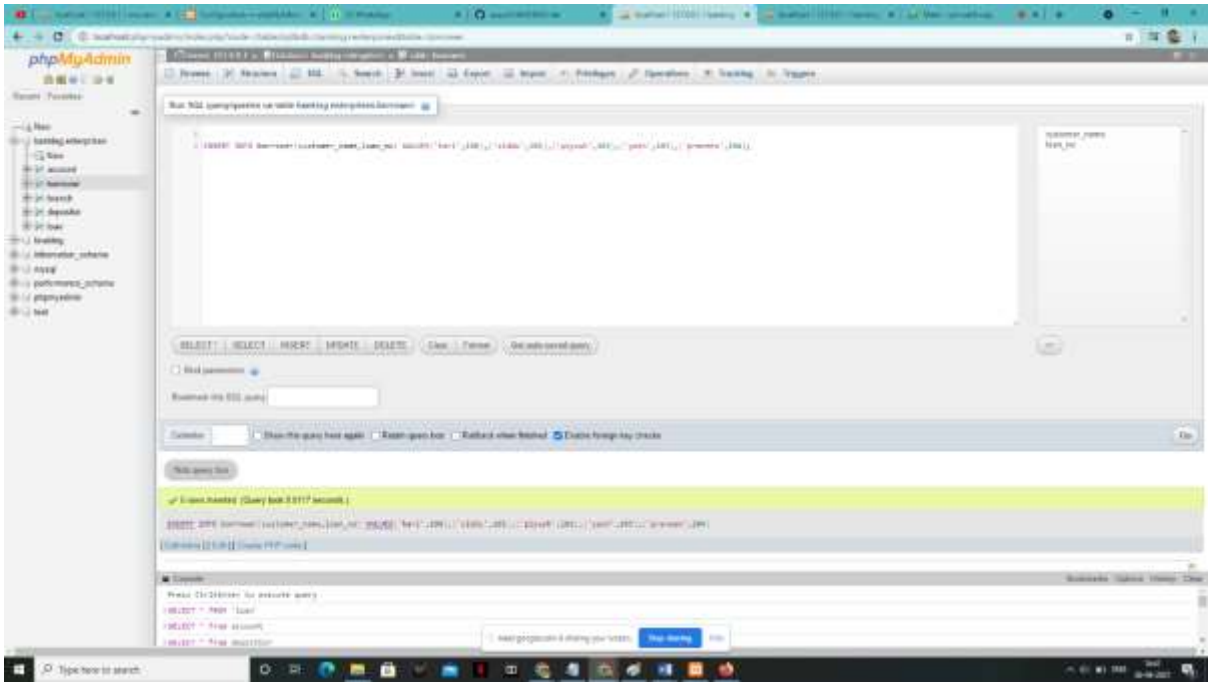


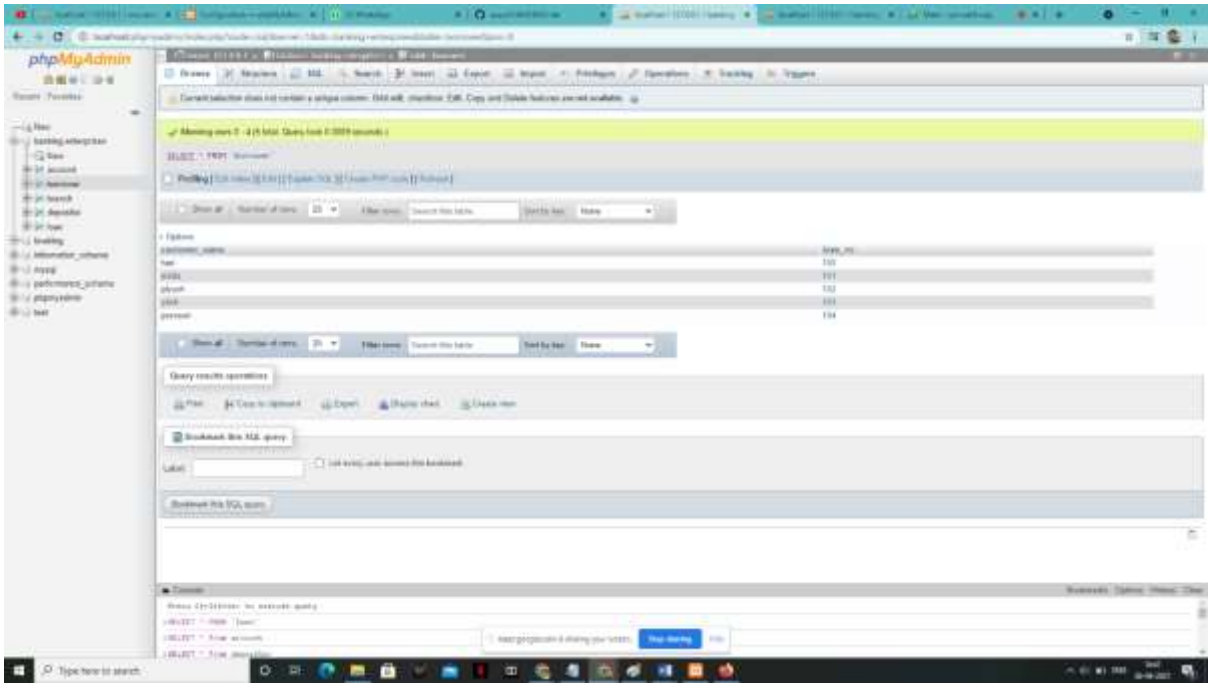
‘LOAN’ table:



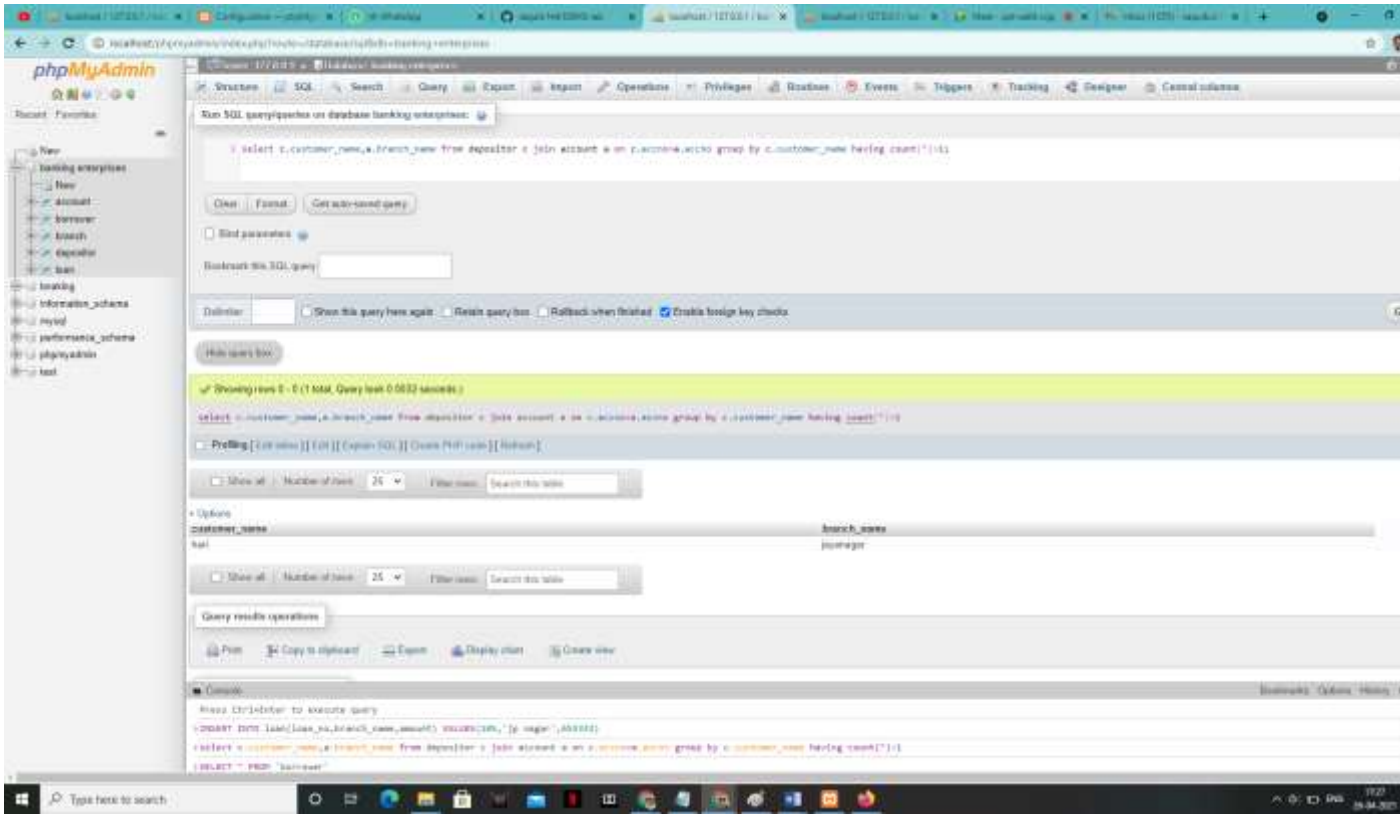


‘BORROWER’ table:

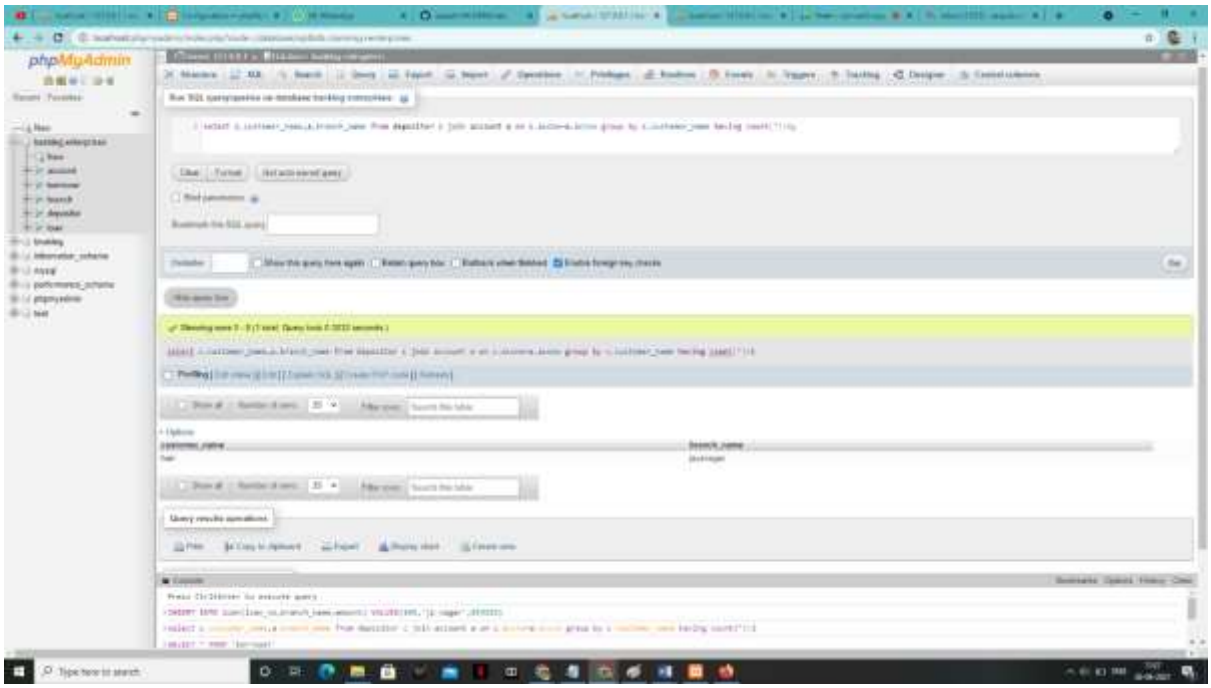




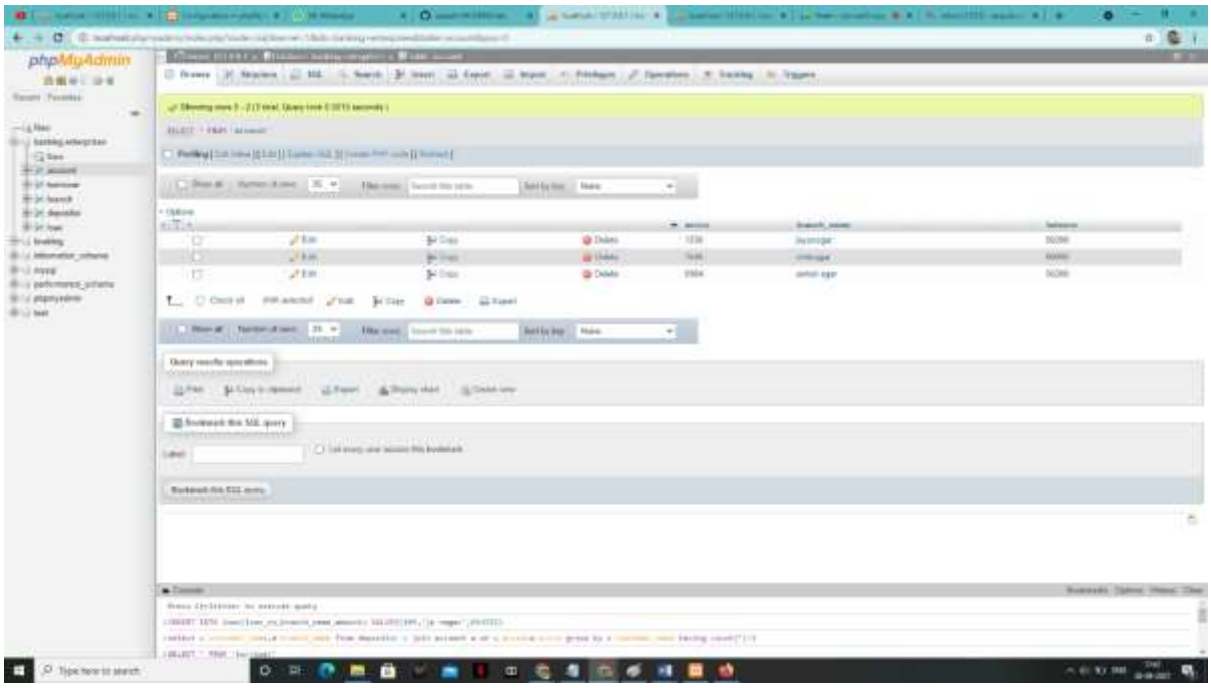
iii. Find all the customers who have at least two accounts at the Main branch.



iv. Find all the customers who have an account at all the branches located in a specific city.



v. Demonstrate how you delete all account tuples at every branch located in a specific city.



LAB PROGRAM 3:-

PROGRAM 3

Consider the following schema:

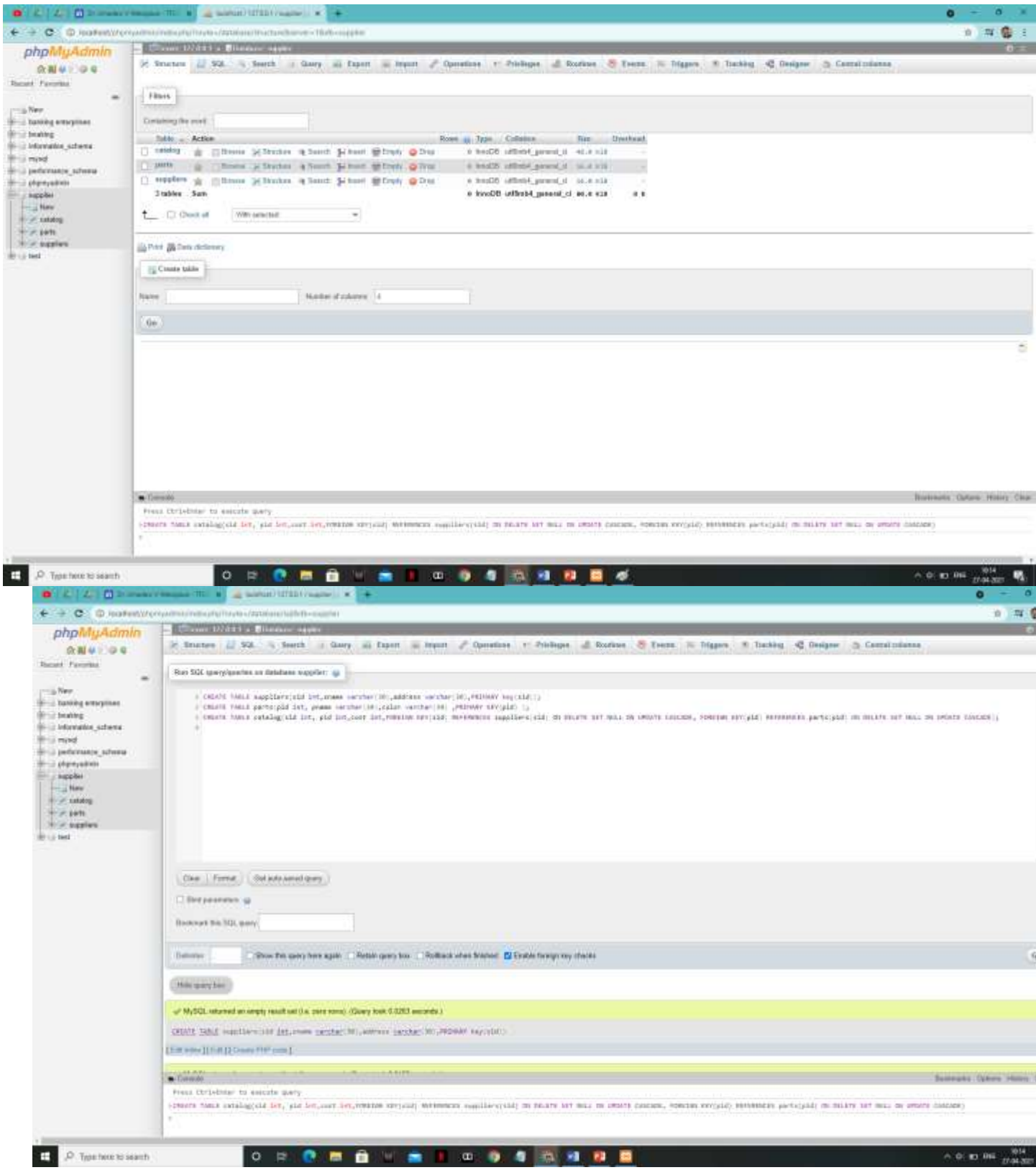
SUPPLIERS (sid: integer, sname: string, address: string)

PARTS (pid: integer, pname: string, color: string)

CATALOG (sid: integer, pid: integer, cost: real)

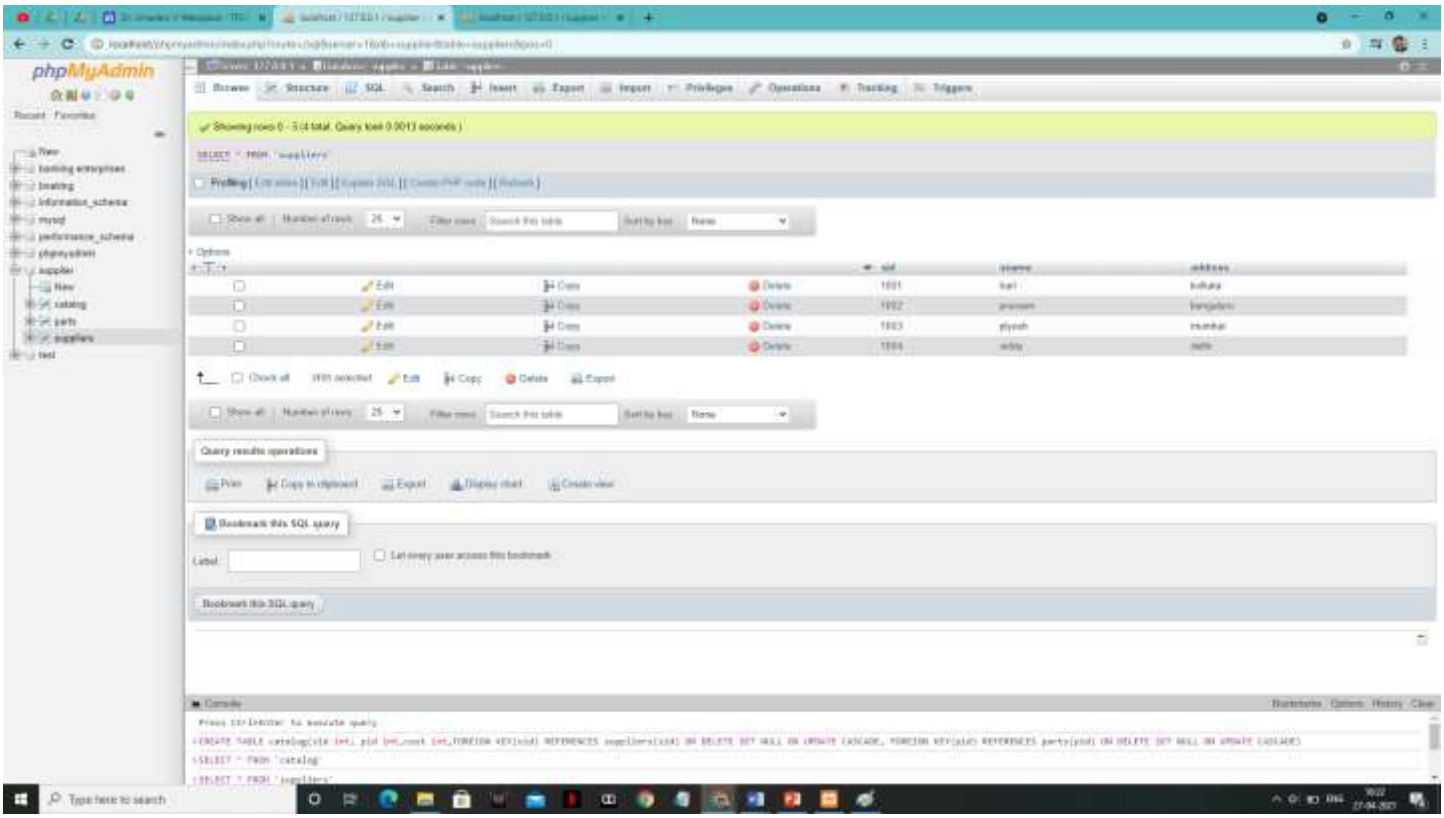
The Catalog relation lists the prices charged for parts by Suppliers. Write the following queries in SQL:

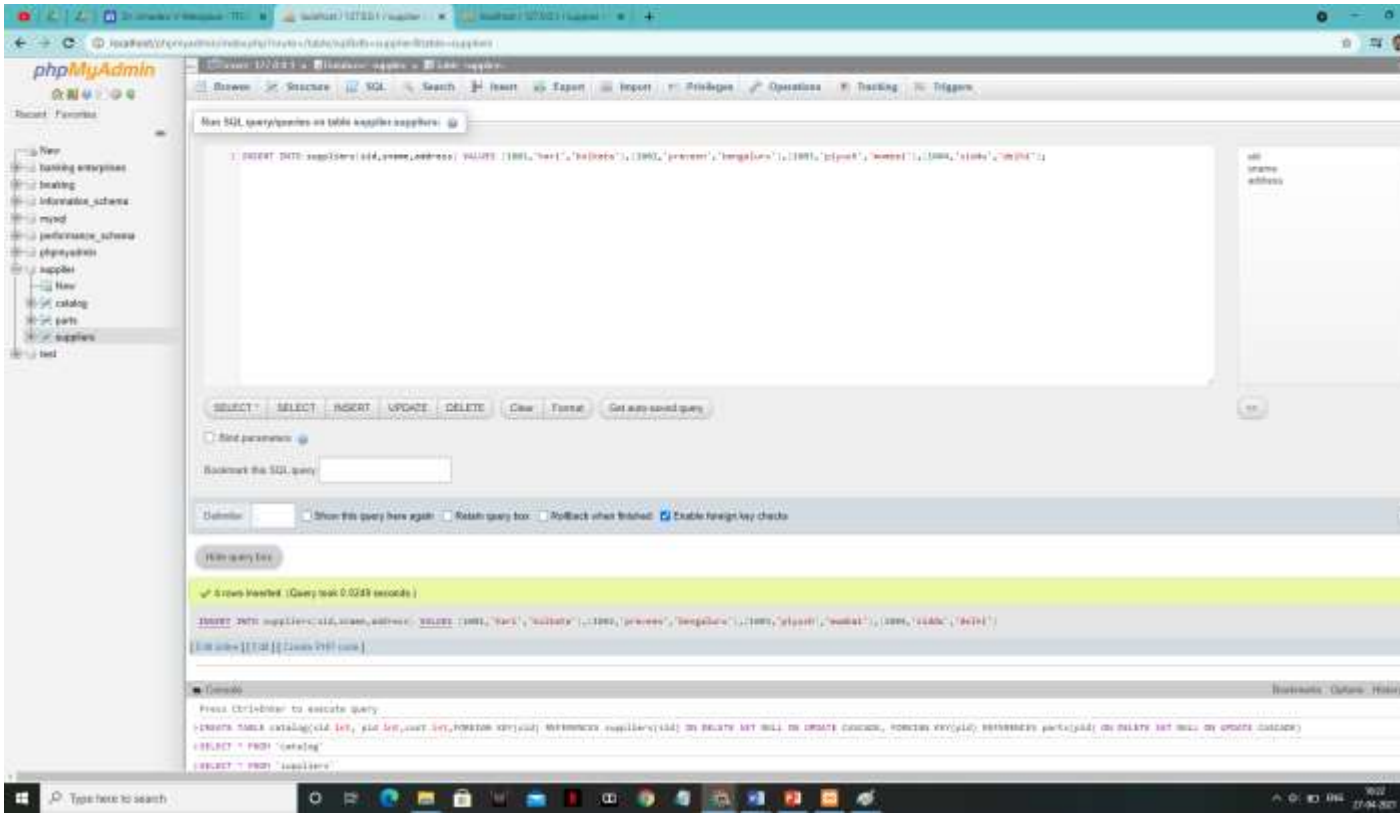
2) **Create the above tables by properly specifying the primary keys and the foreign keys.**



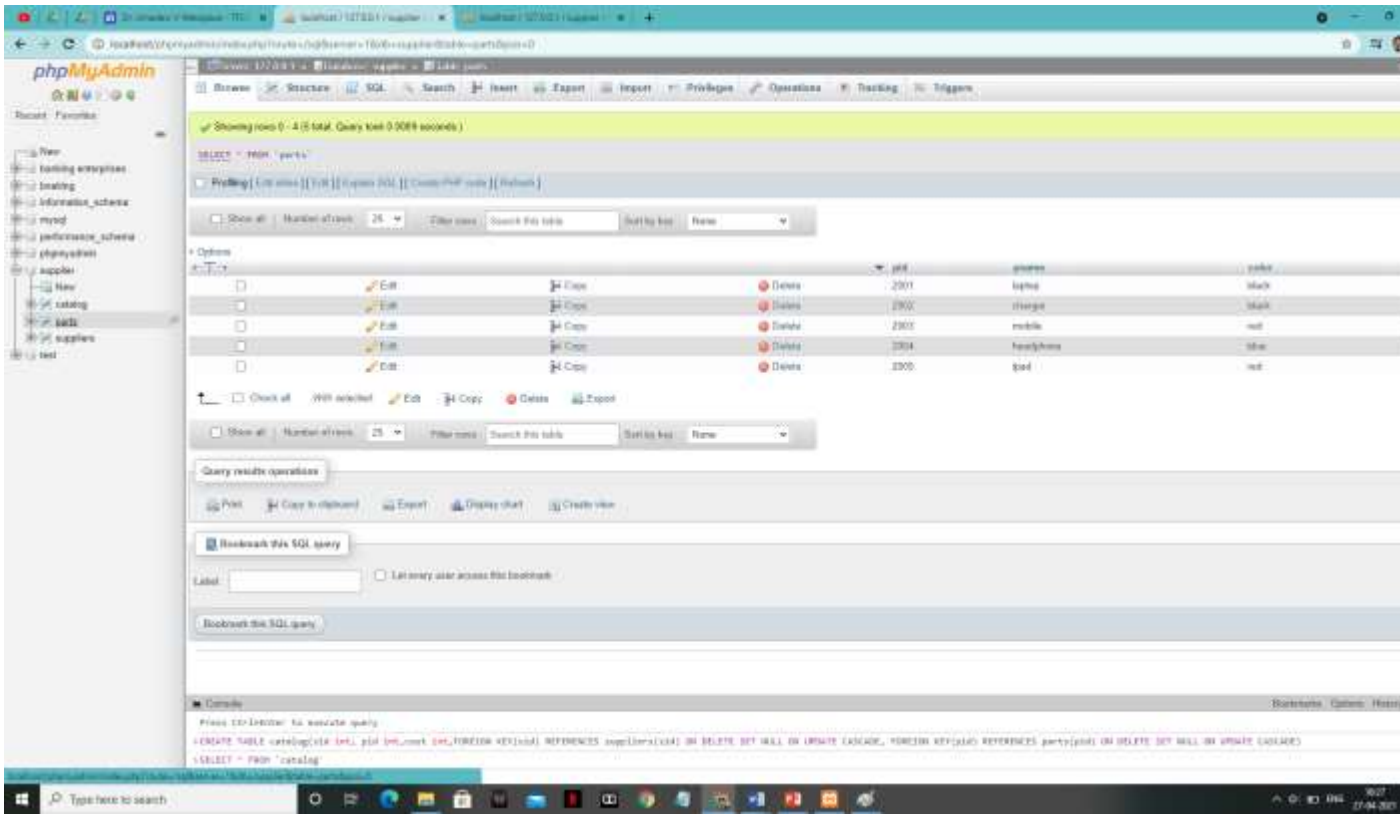
3) **Enter tuples for each relation.**

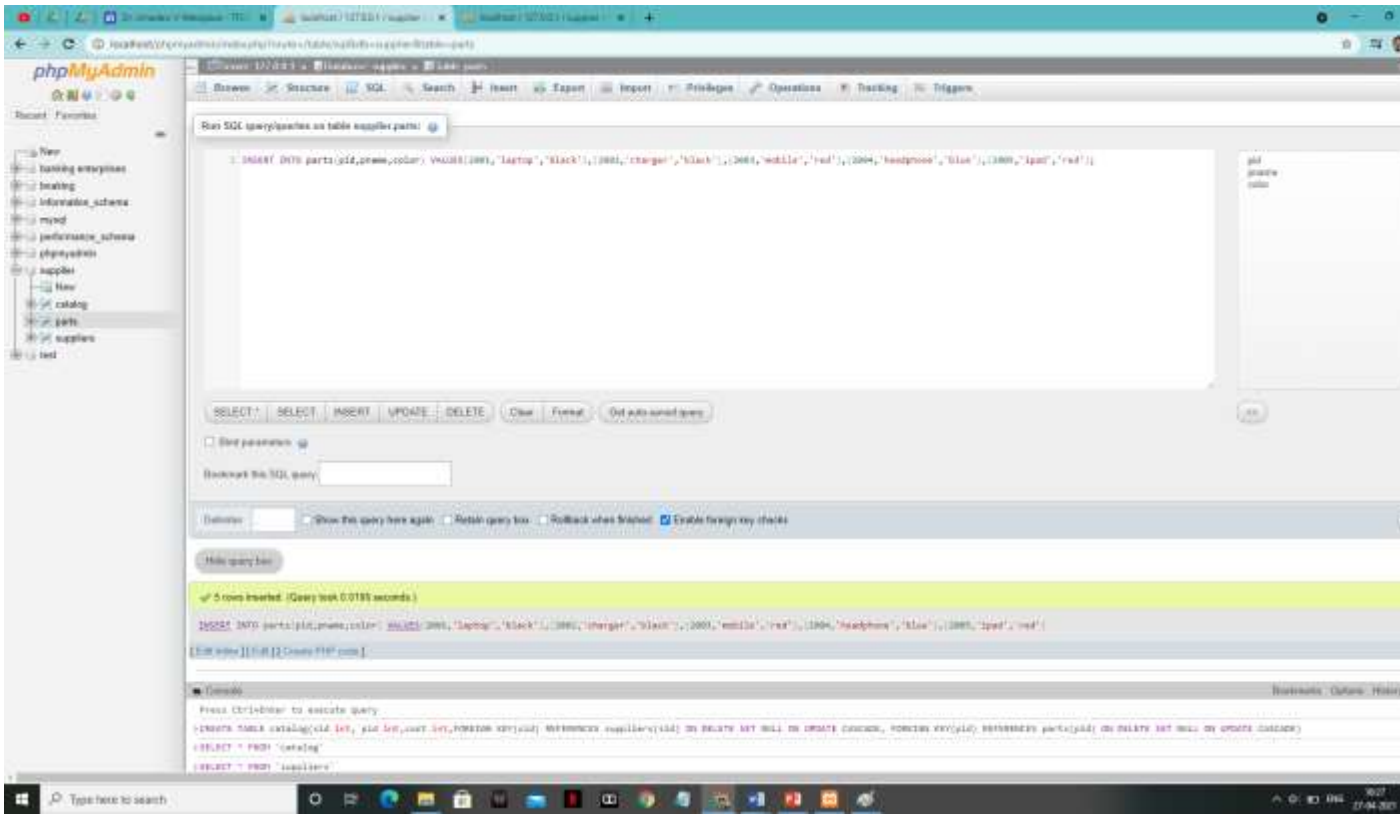
‘suppliers’ table:



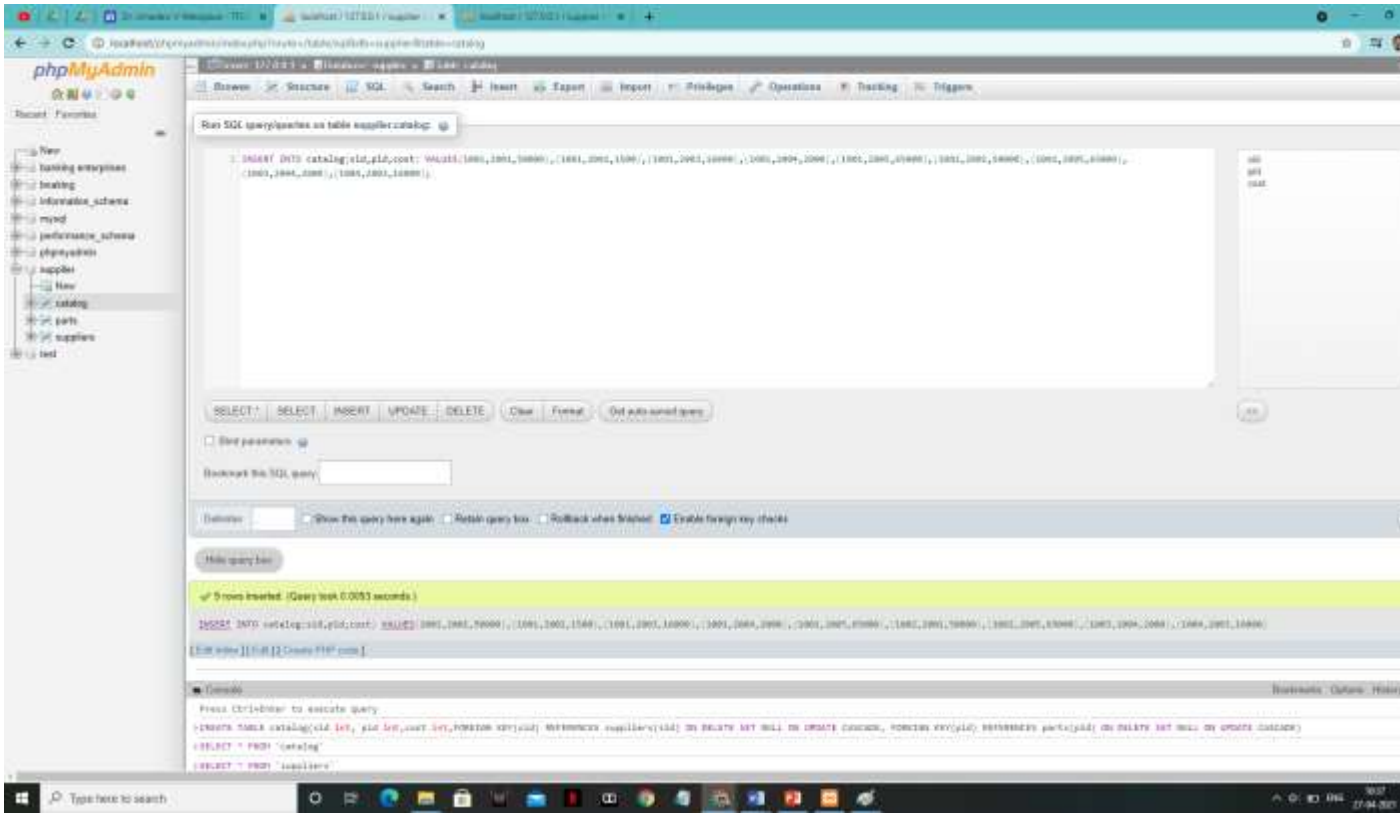


‘PARTS’ table:

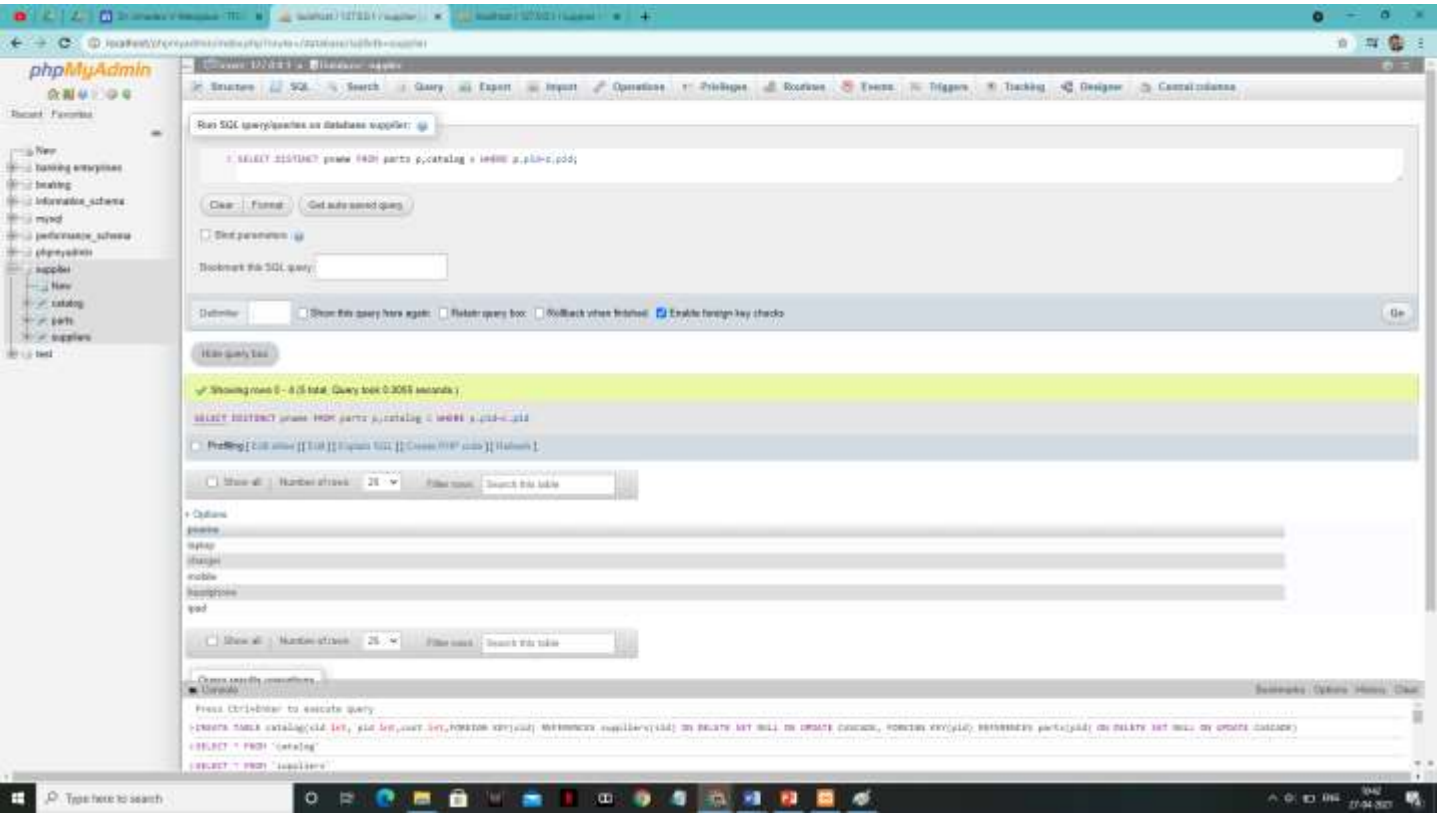




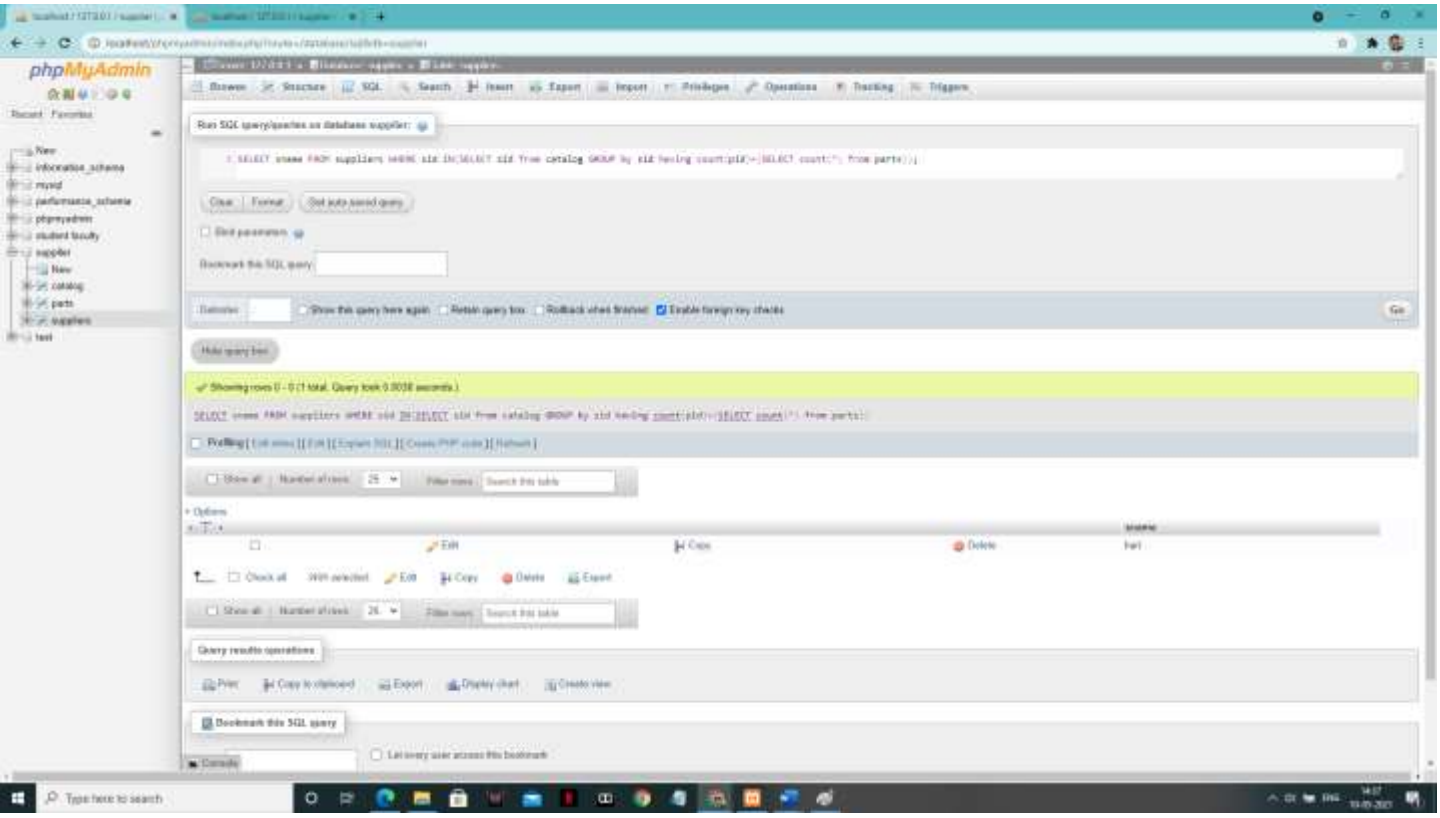
‘CATALOG’ table:



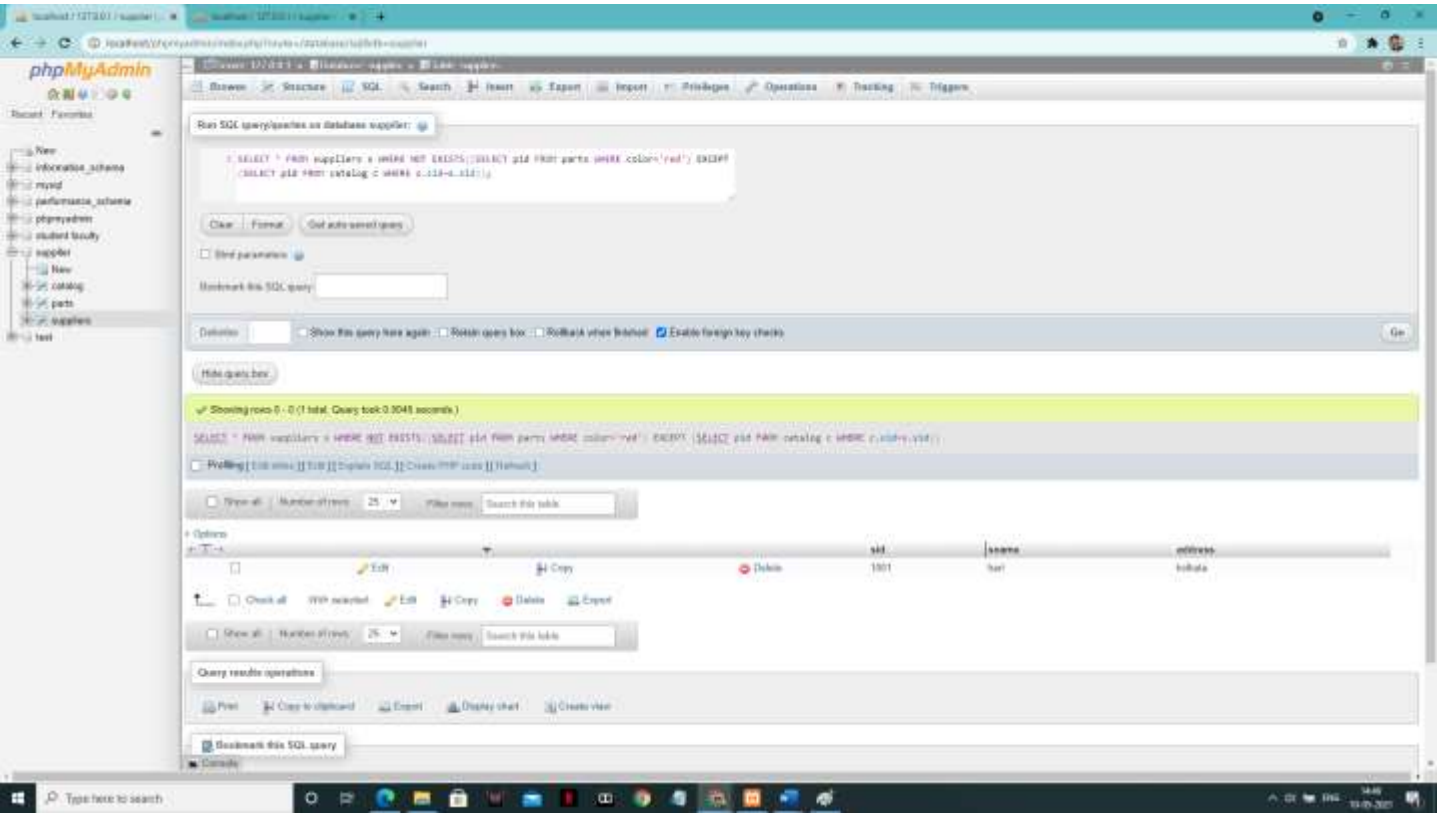
i. **Find the pnames of parts for which there is some supplier.**



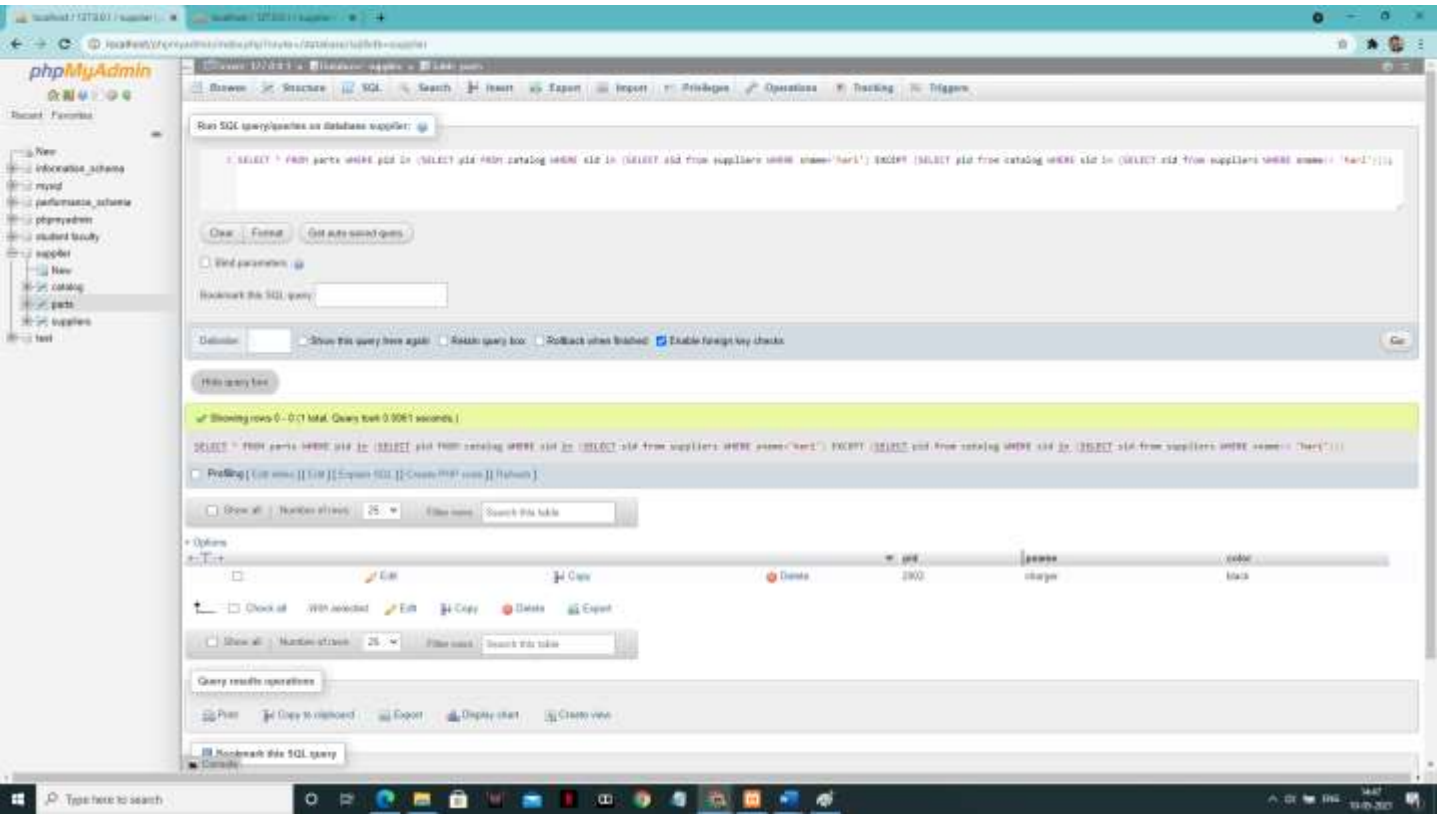
ii. Find the snames of suppliers who supply every part.



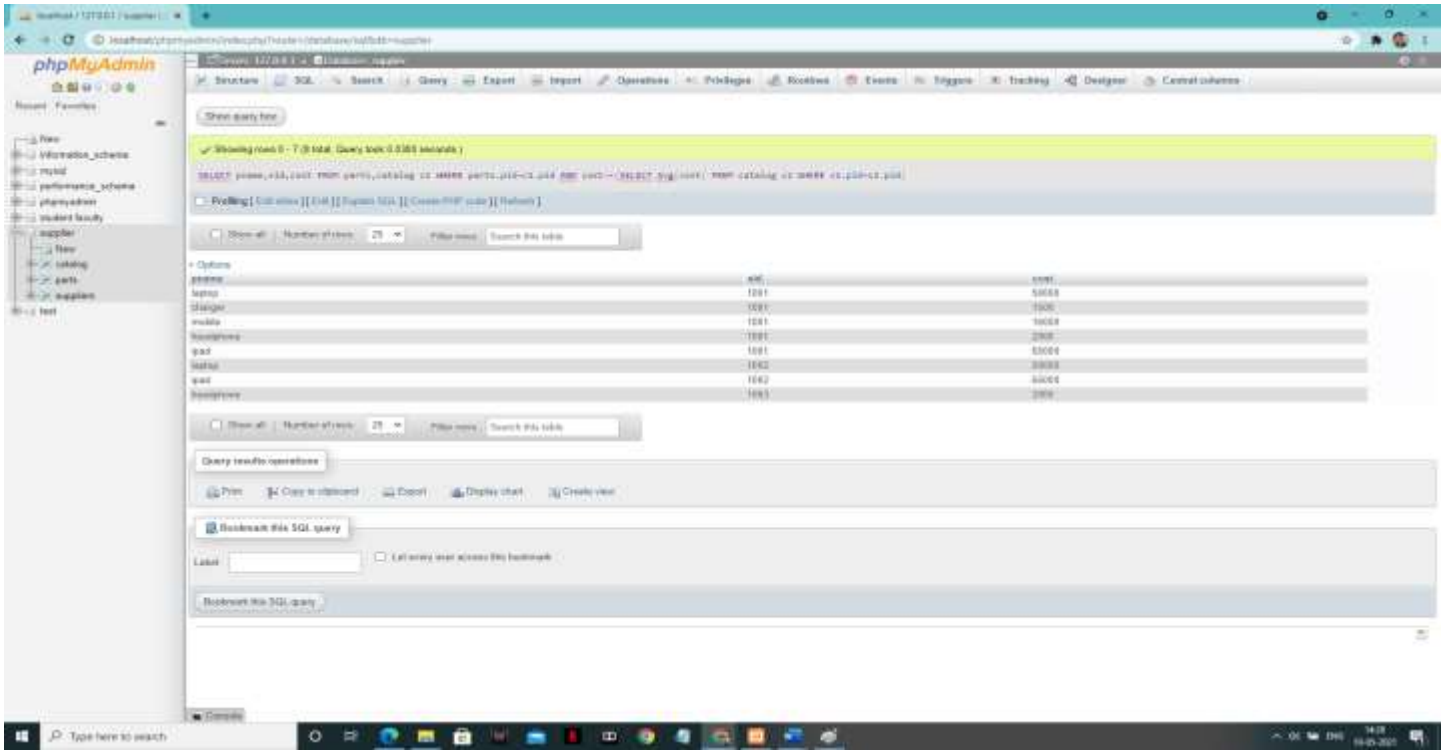
iii. Find the snames of suppliers who supply every red part.



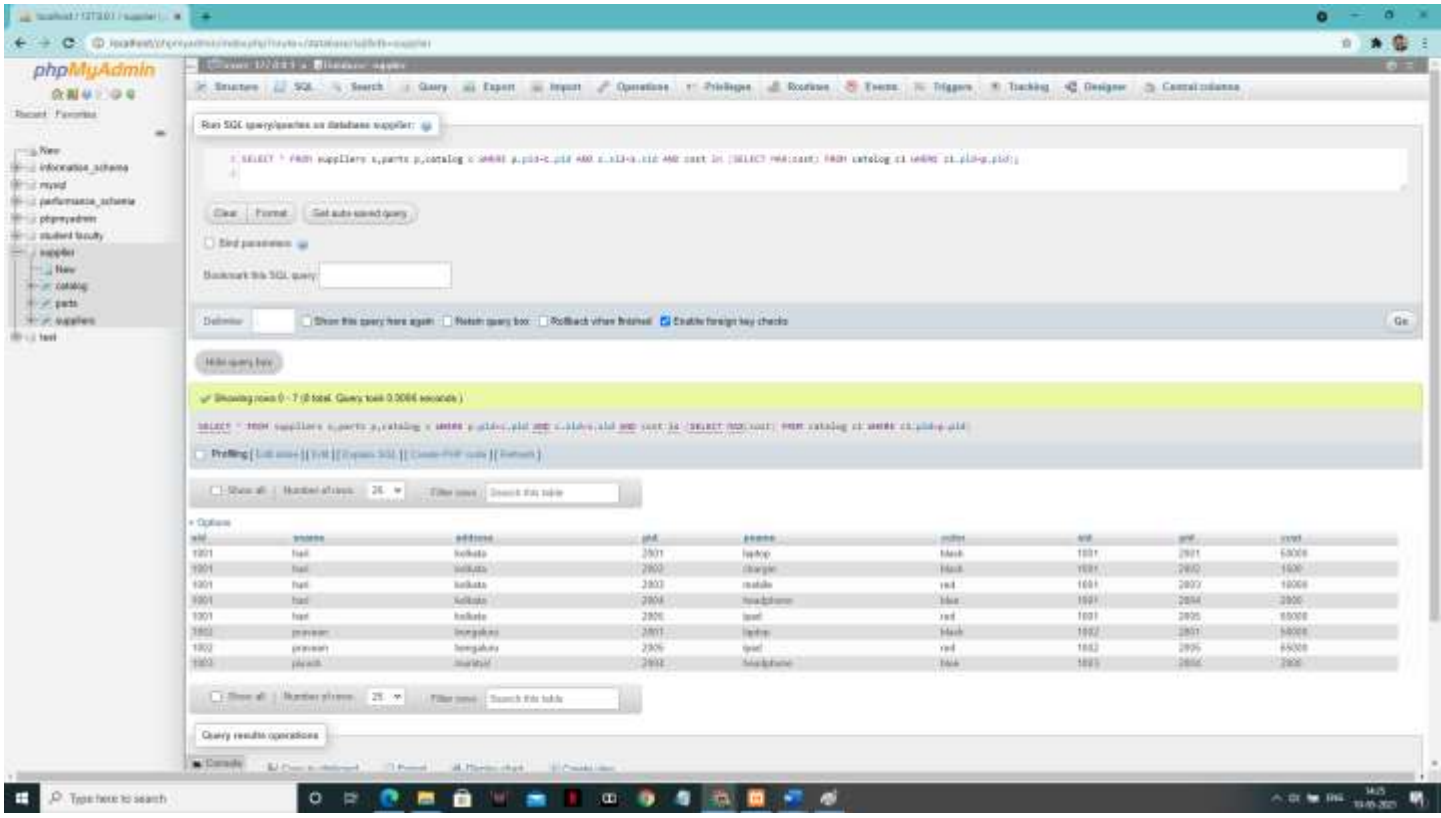
iv. Find the pnames of parts supplied by hari Suppliers and by no one else.



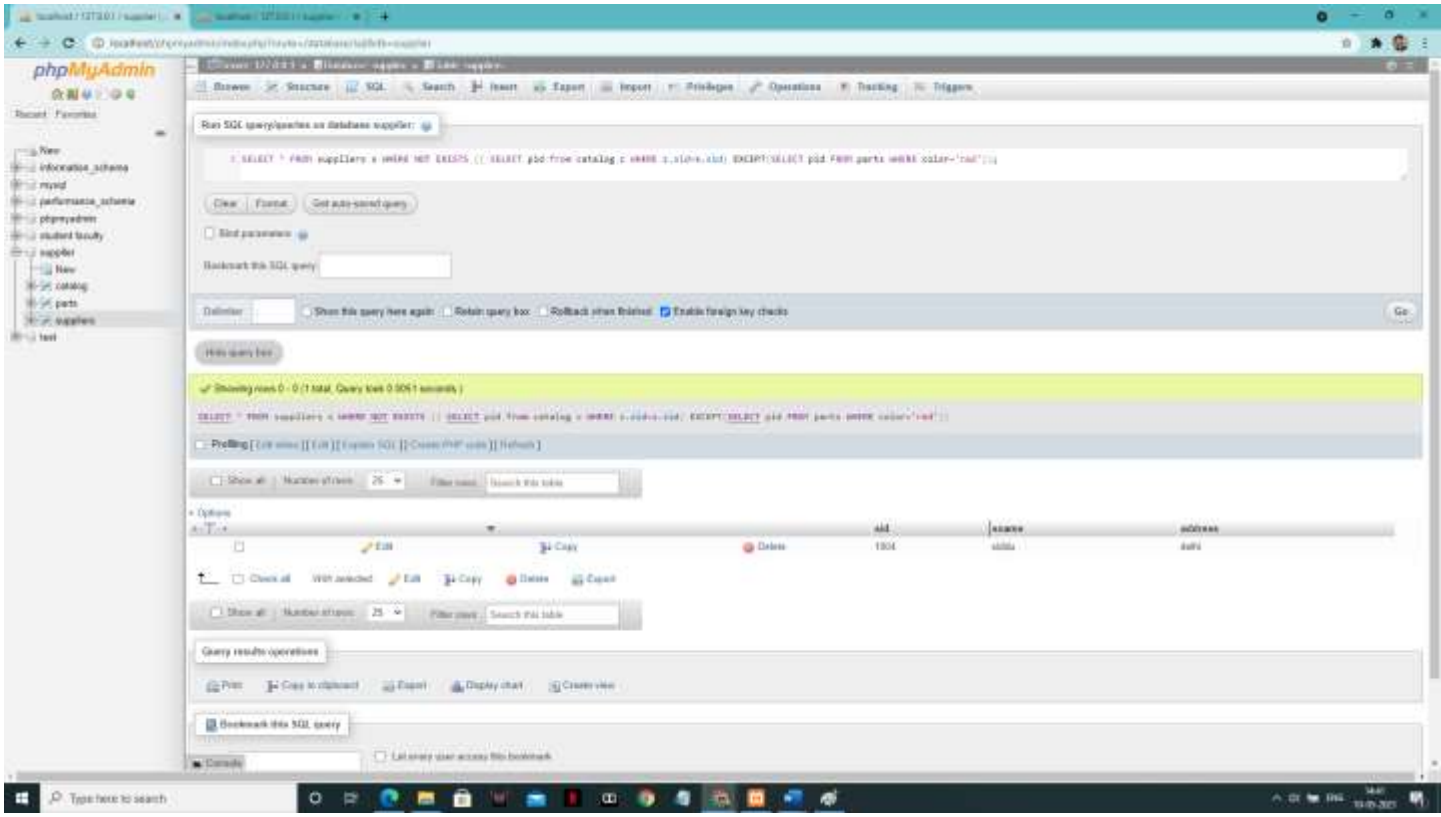
v. Find the sids of suppliers who charge more for some part than the average cost of that part (averaged over all the suppliers who supply that part)



vi. **For each part, find the sname of the supplier who charges the most for that part.**



vii. Find the sids of suppliers who supply only red parts.



LAB PROGRAM 4:-

LAB-4 (program)

PROGRAM 4: STUDENT FACULTY DATABASE

Consider the following database for student enrollment for course :

STUDENT (snum: integer, sname: string, major: string, lvl: string, age: integer)

CLASS (cname: string, meets at: time, room: string, fid: integer)

ENROLLED (snum: integer, cname: string)

FACULTY (fid: integer, fname: string, deptid: integer)

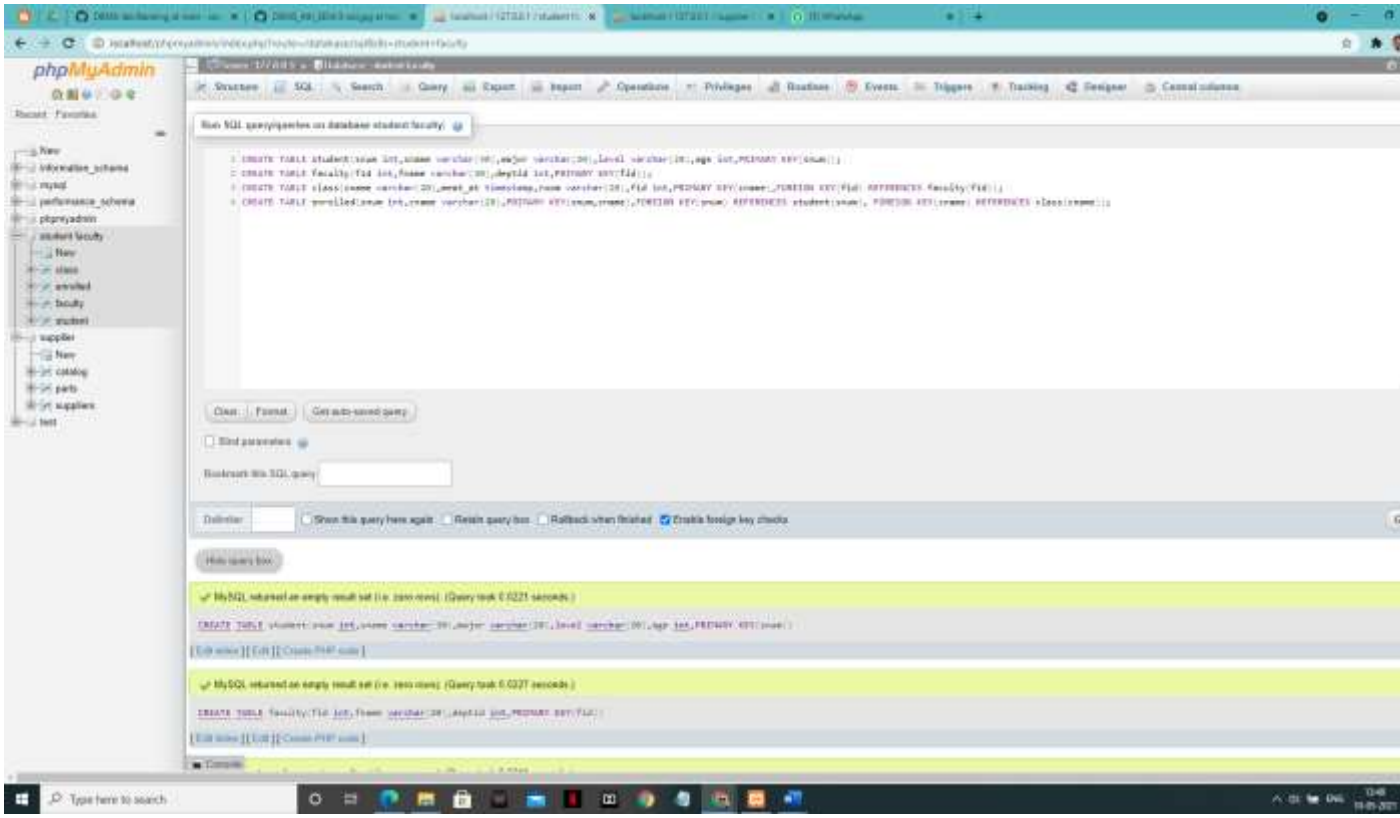
Write the following queries in SQL. No duplicates should be printed in any of the answers.

i. Create above mentioned tables

ii. insert records into each of the tables

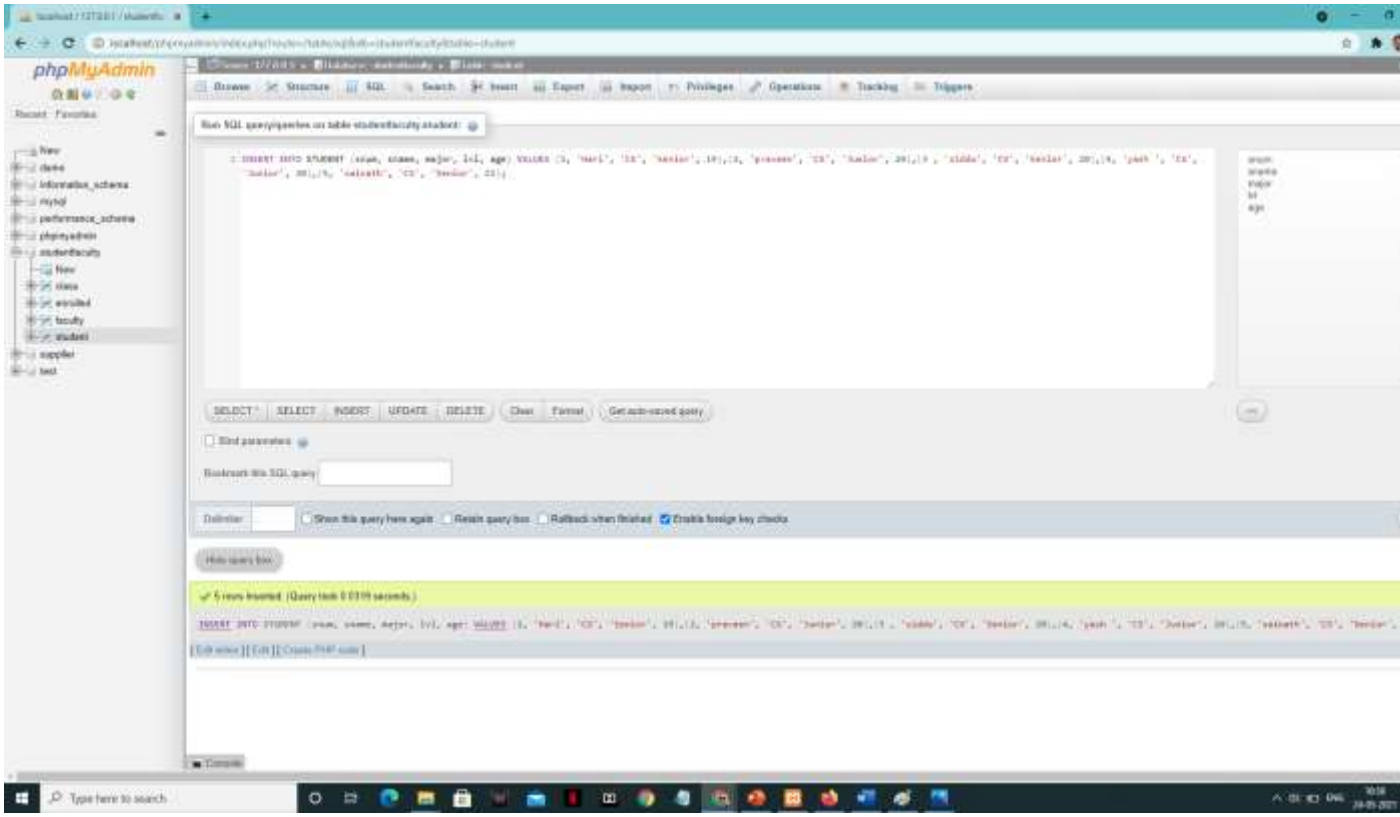
3) Find the names of all Juniors (level = JR) who are enrolled in a class taught by
4) Find the names of all classes that either meet in room R128 or have five or more Students enrolled.
5) Find the names of all students who are enrolled in two classes that meet at the same time.
6) Find the names of faculty members who teach in every room in which some class is taught.
7) Find the names of faculty members for whom the combined enrollment of the courses that they teach is less than five.
8) Find the names of students who are not enrolled in any class.
9) For each age value that appears in Students, find the level value that appears most often. For example, if there are more FR level students aged 18 than SR, JR, or SO students aged 18, you should print the pair (18, FR).
10) **Create the above tables by properly specifying the primary keys and the foreign keys.**

Create table:-

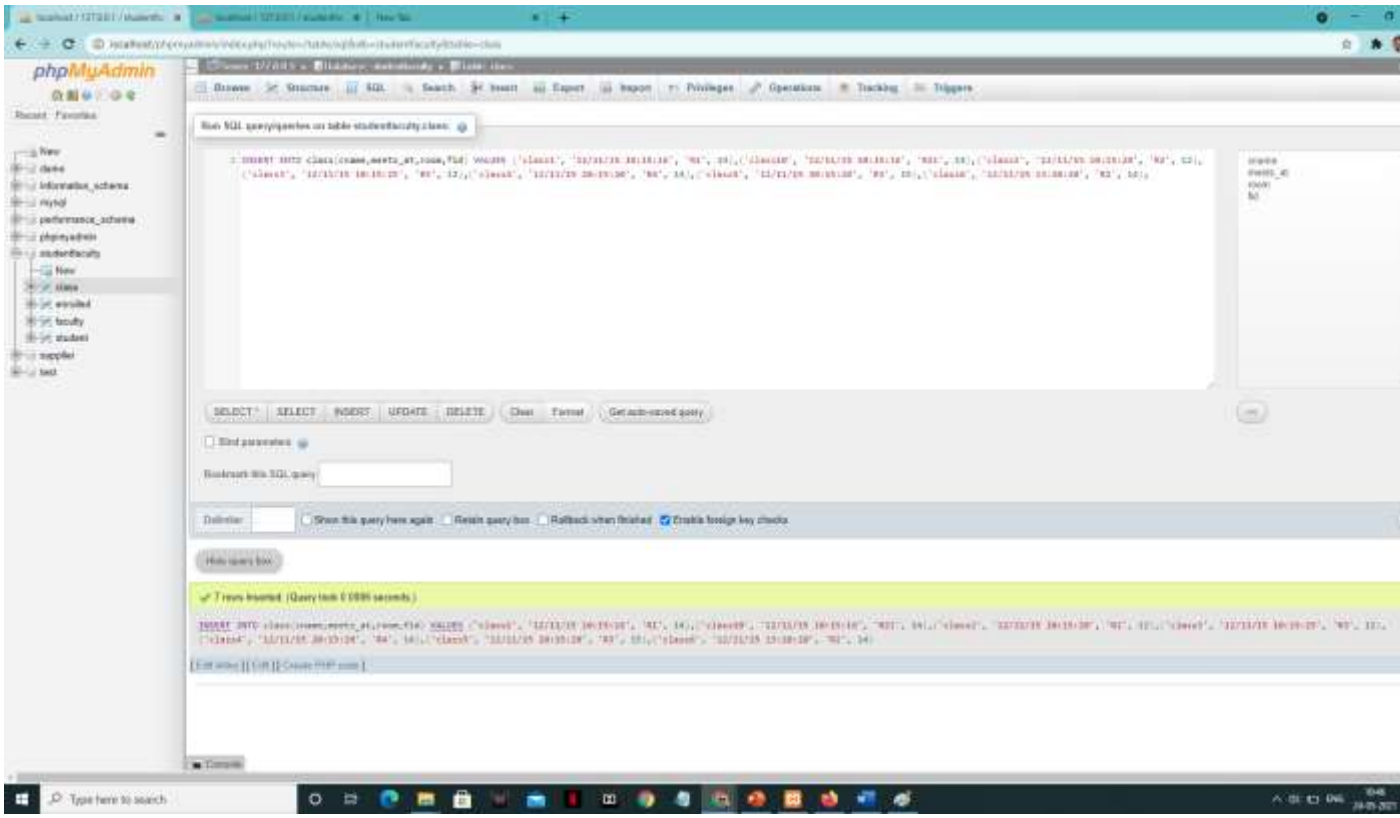


4) **Enter tuples for each relation.**

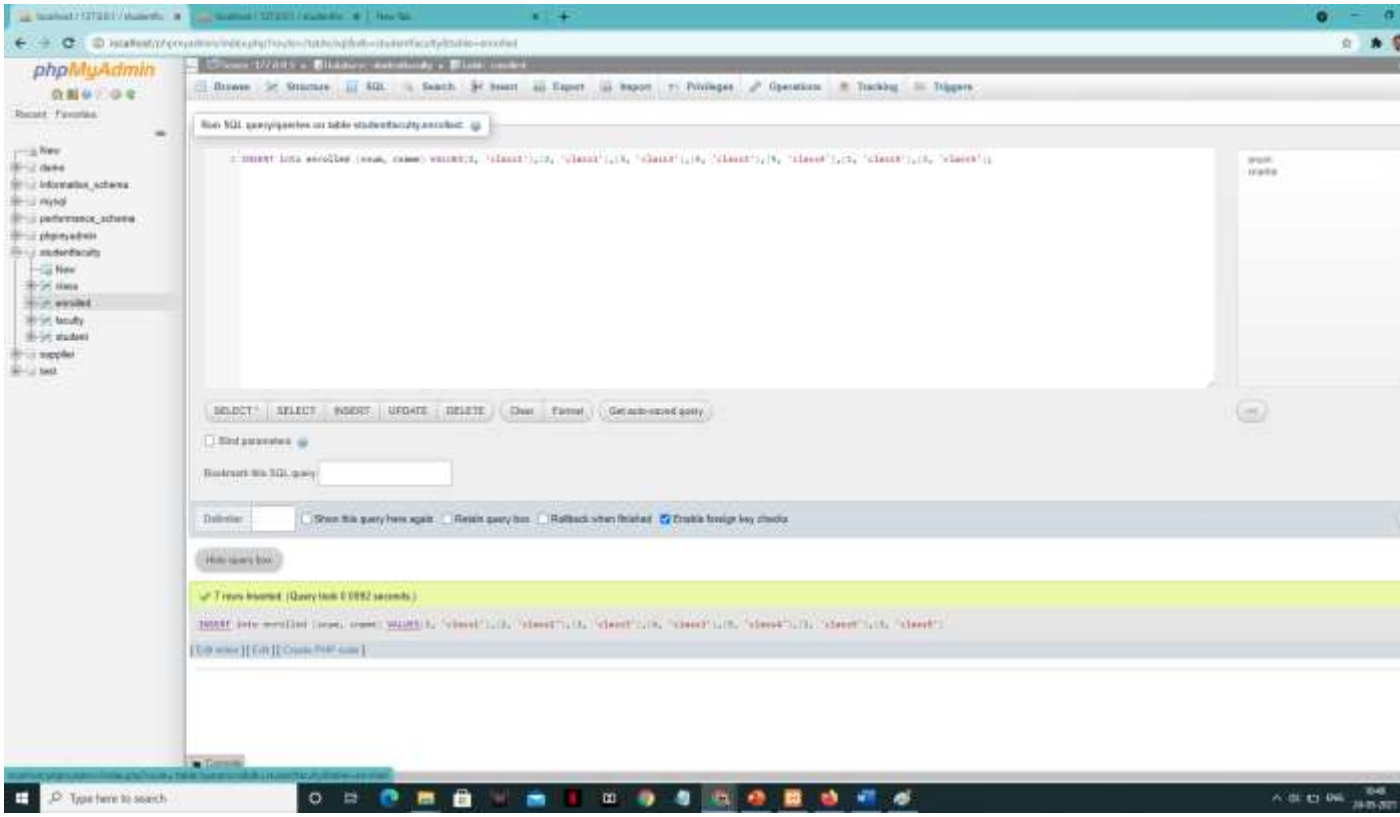
‘student’ table:



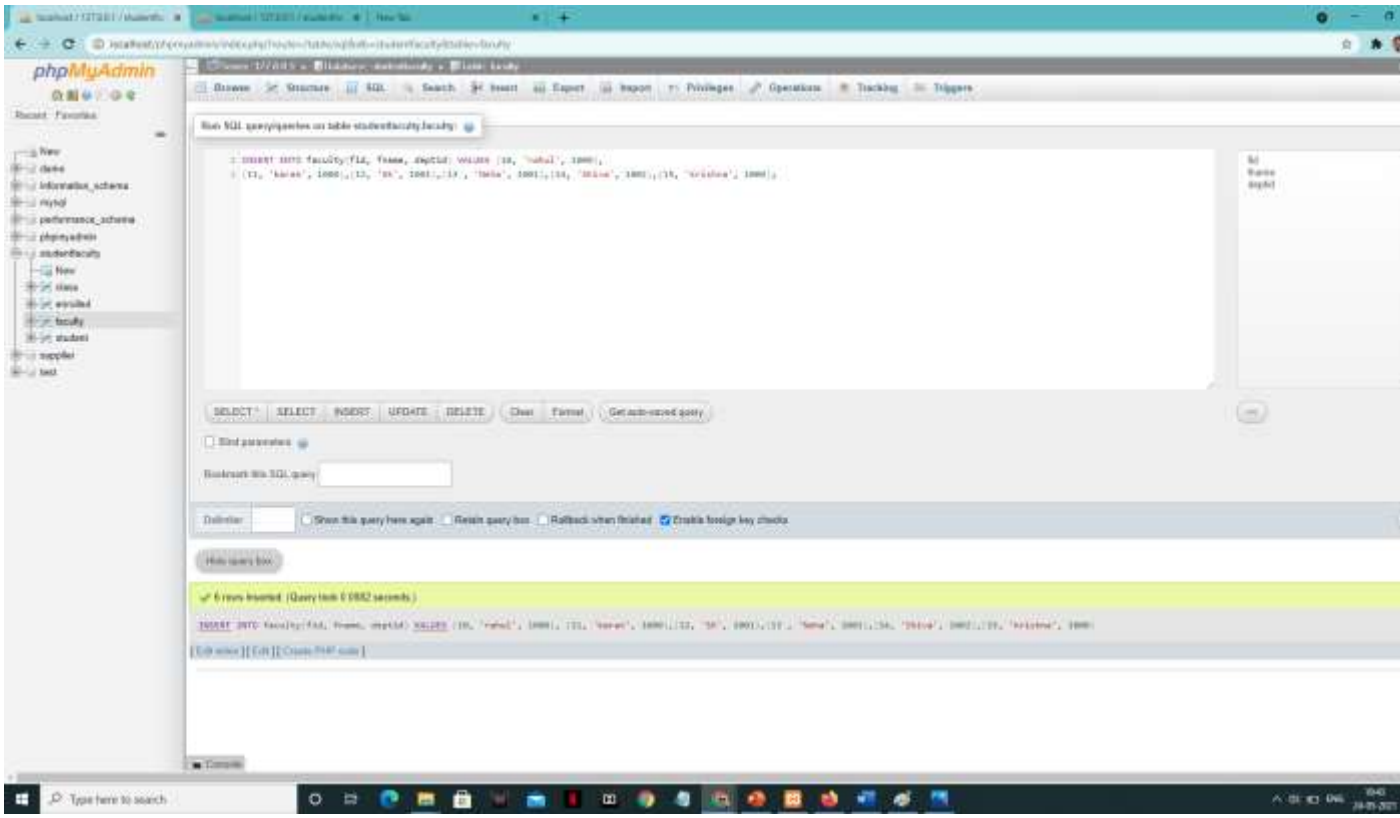
‘class’ table:



‘enrolled’ table:



Faculty value:-



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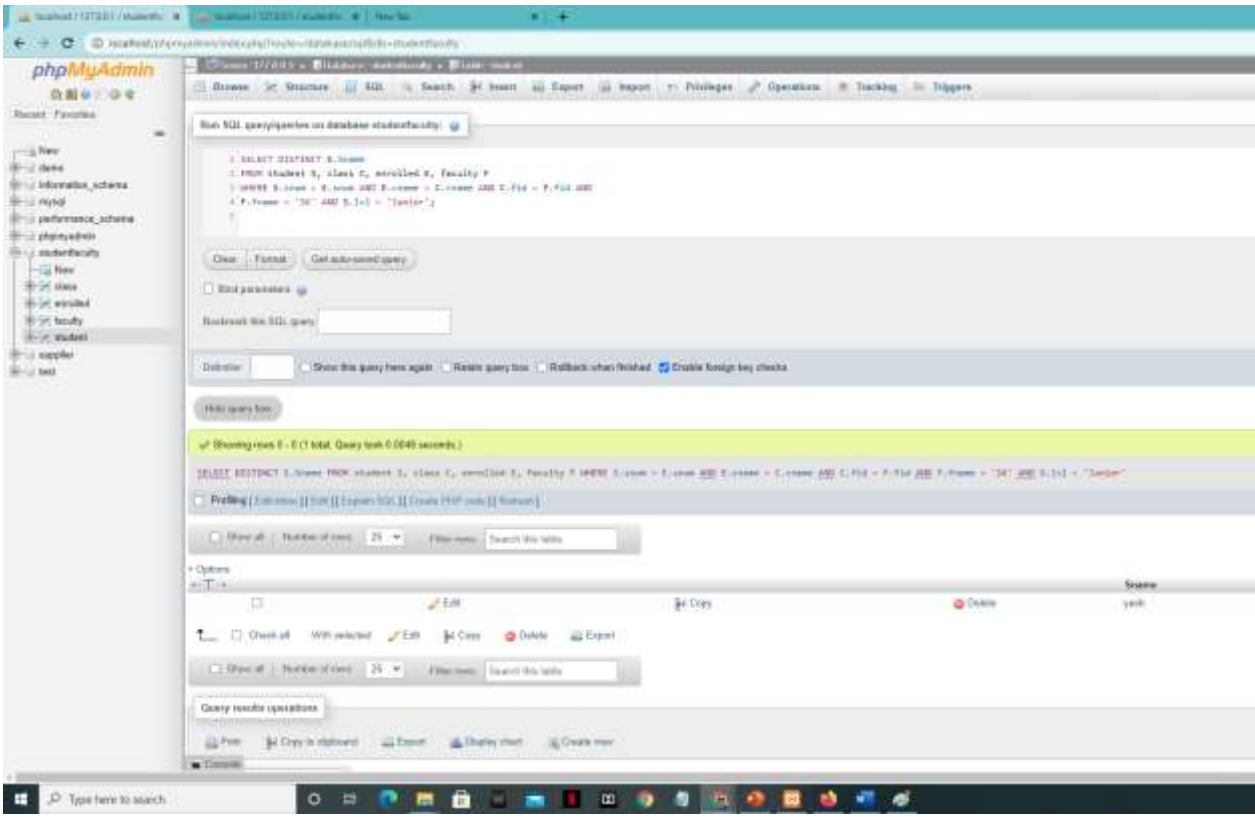

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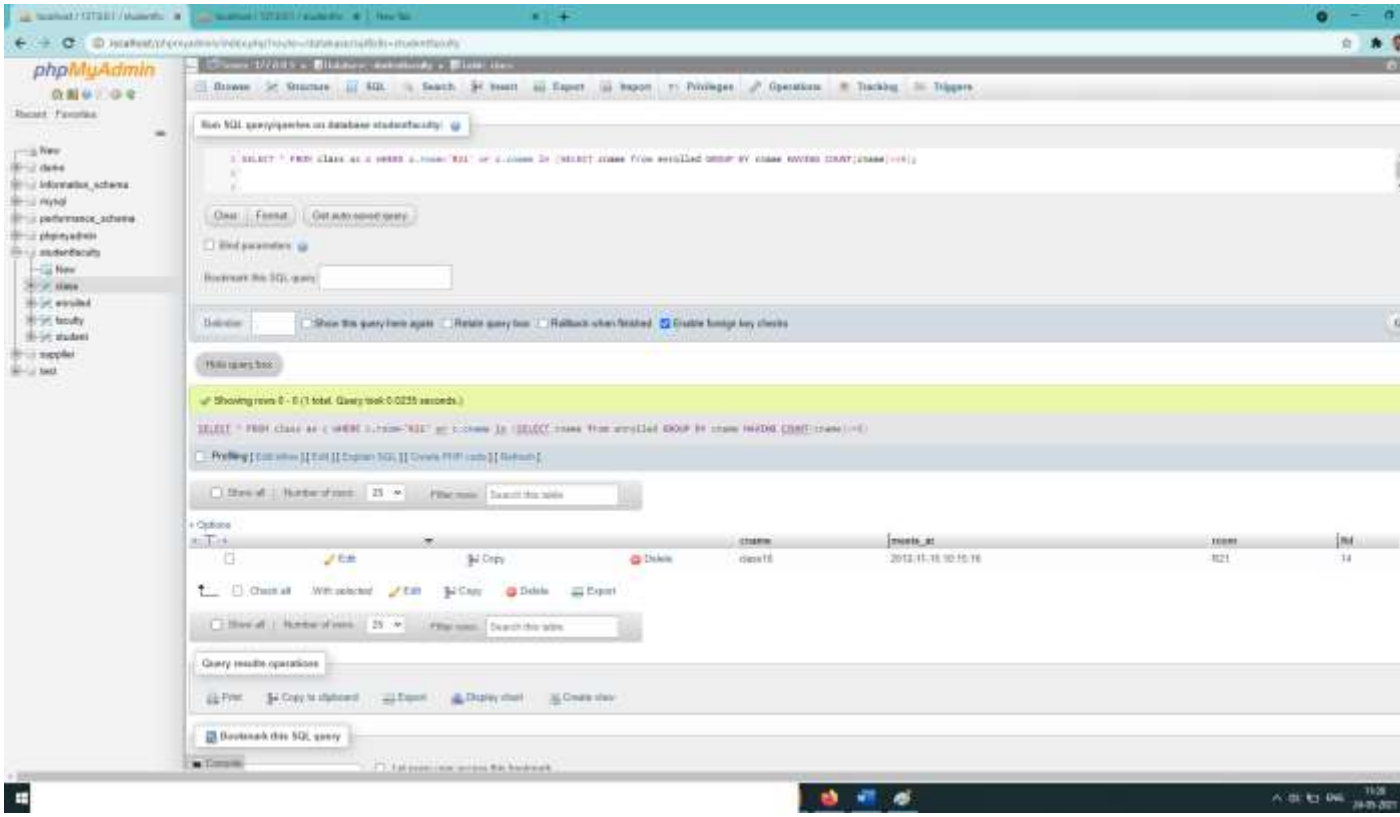
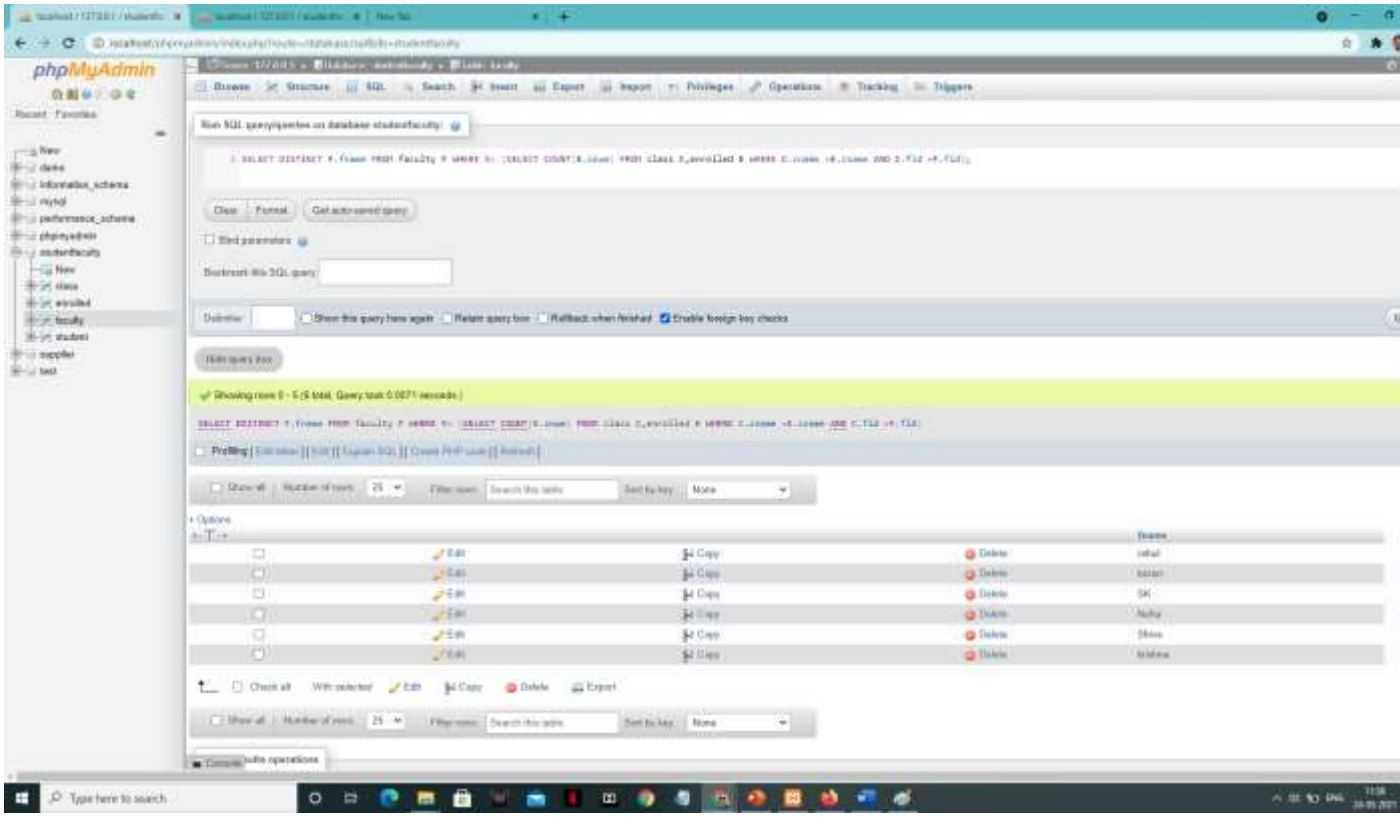

phpMyAdmin
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Tracking
Triggers
Clear
Format
Get auto-saved query
Bind parameters
Bookmark this SQL query
Show this query here again
Retain query box
Rollback when finished
Enable foreign key checks
Profiling
Edit
Copy
Delete
Check all
With selected:
Export
Query results operations
Print
Copy to clipboard
Export
Display chart
Create view
Bookmark this SQL query

3:-

4:-

5:-



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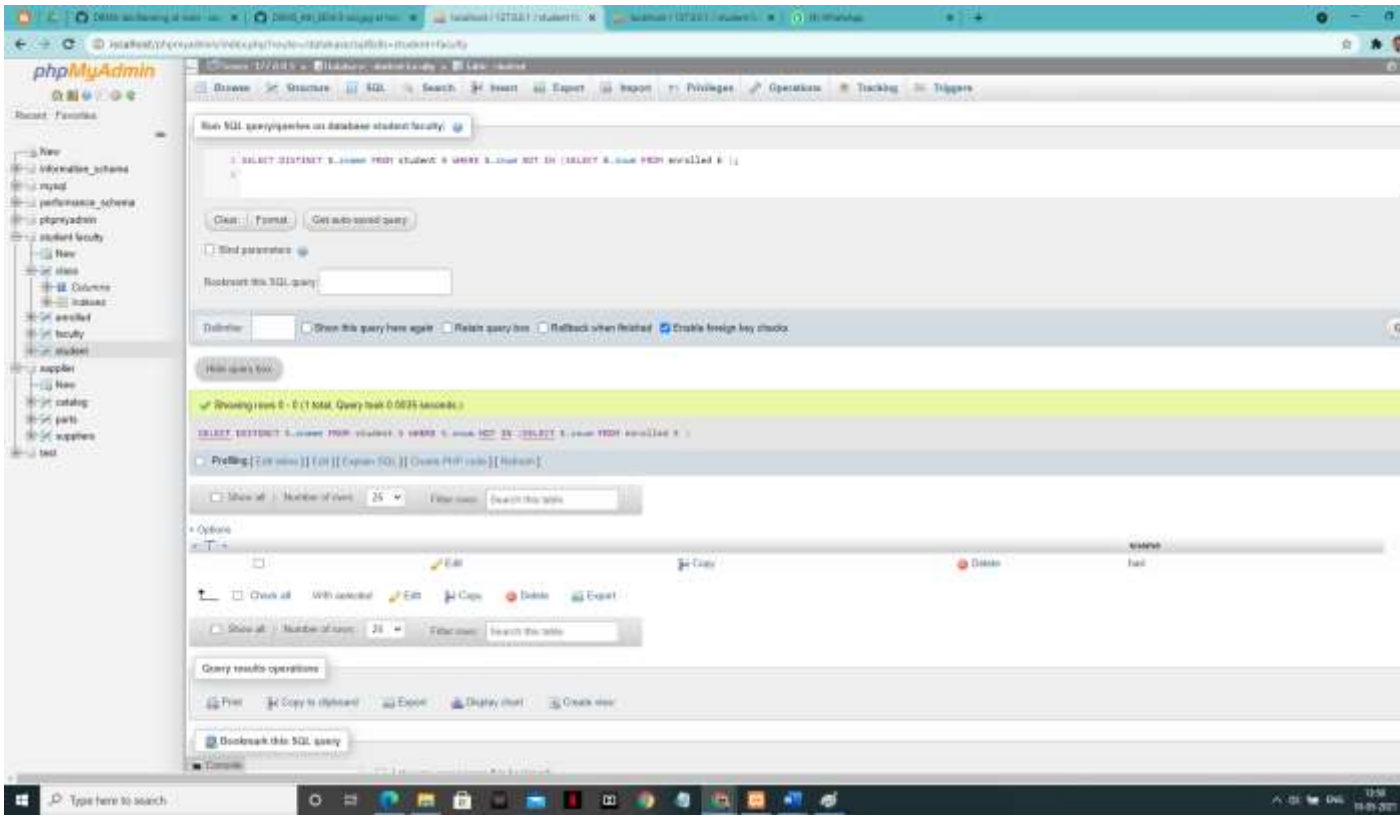
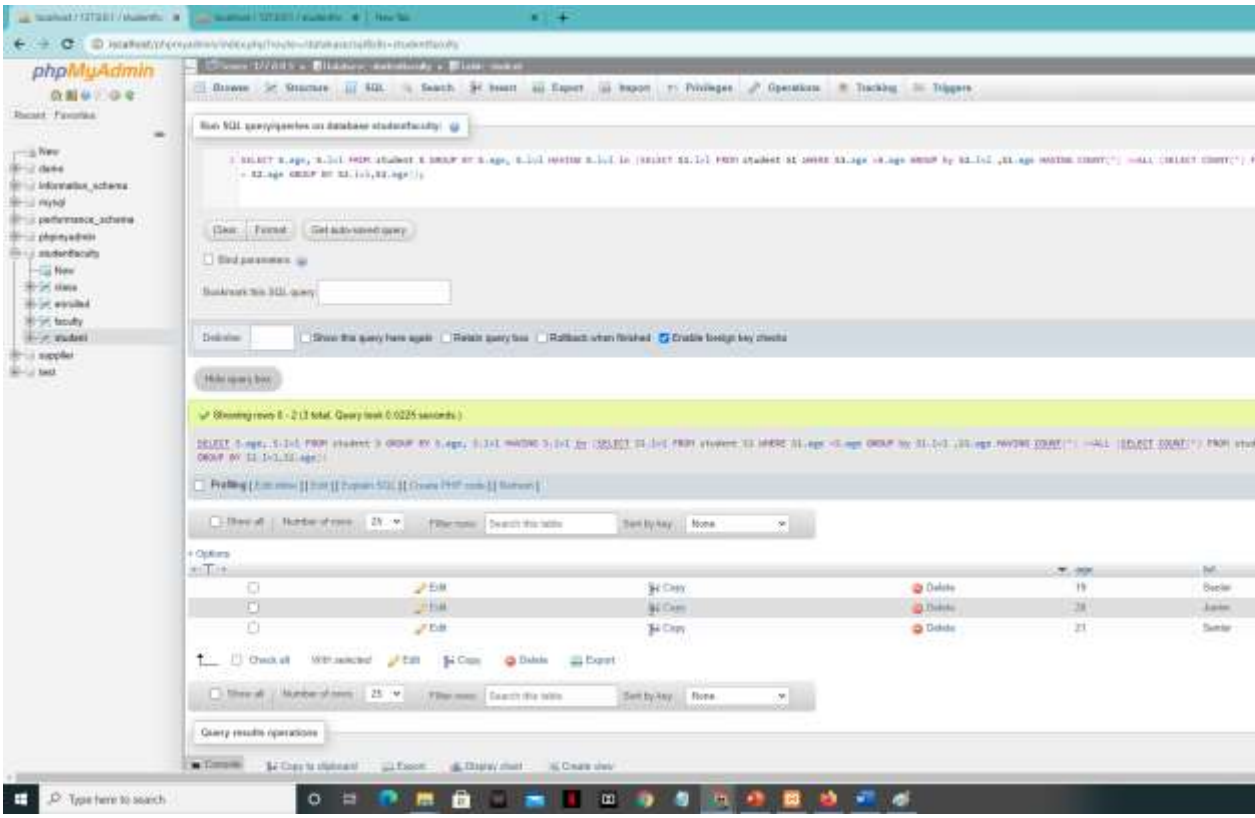


7:-



LAB PROGRAM 5:-

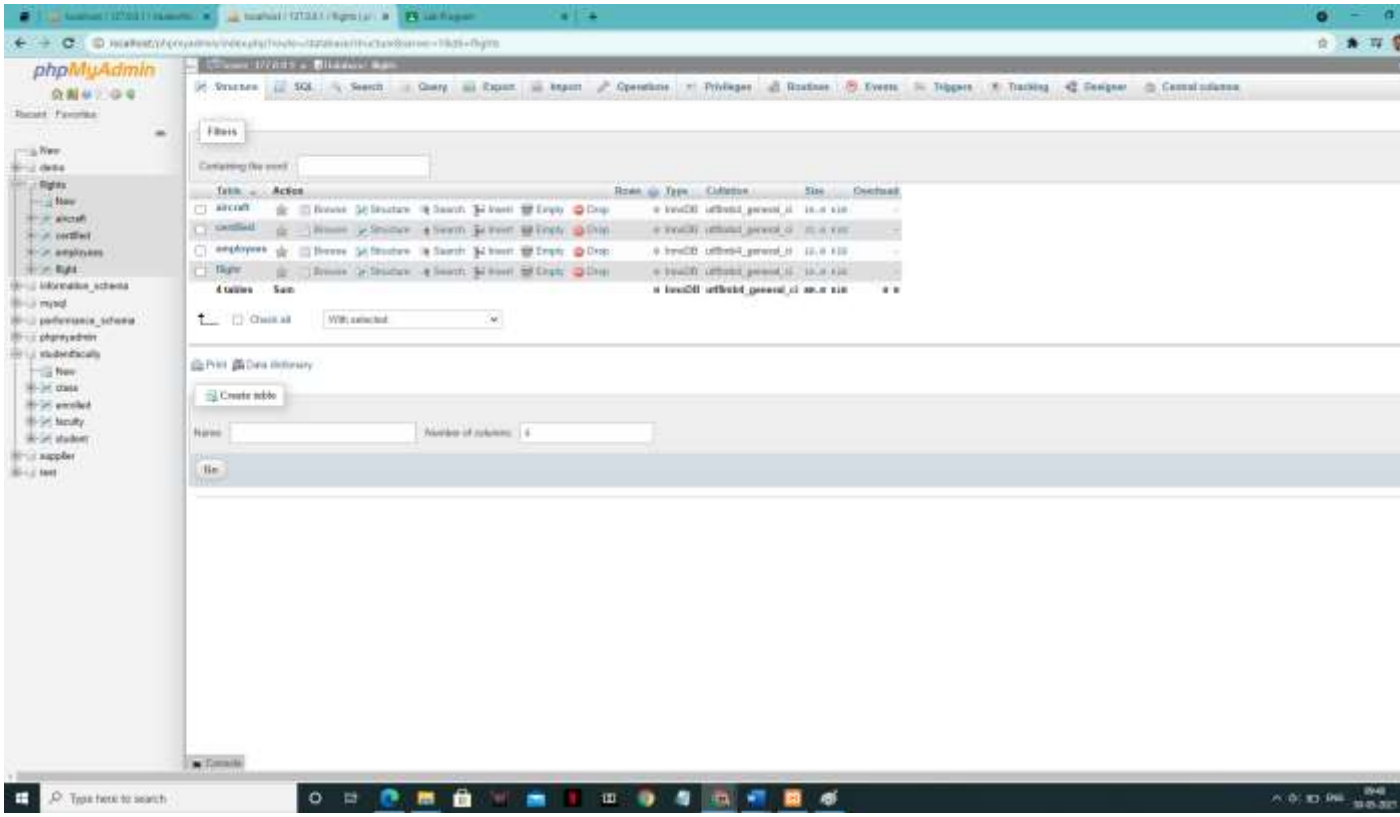
LAB-5 (program)

PROGRAM 5: AIRLINE FLIGHTS DATABASE

Consider the following database that keeps track of airline flight information:
FLIGHTS (flno: integer, from: string, to: string, distance: integer, departs: time, arrives: time, price: integer)

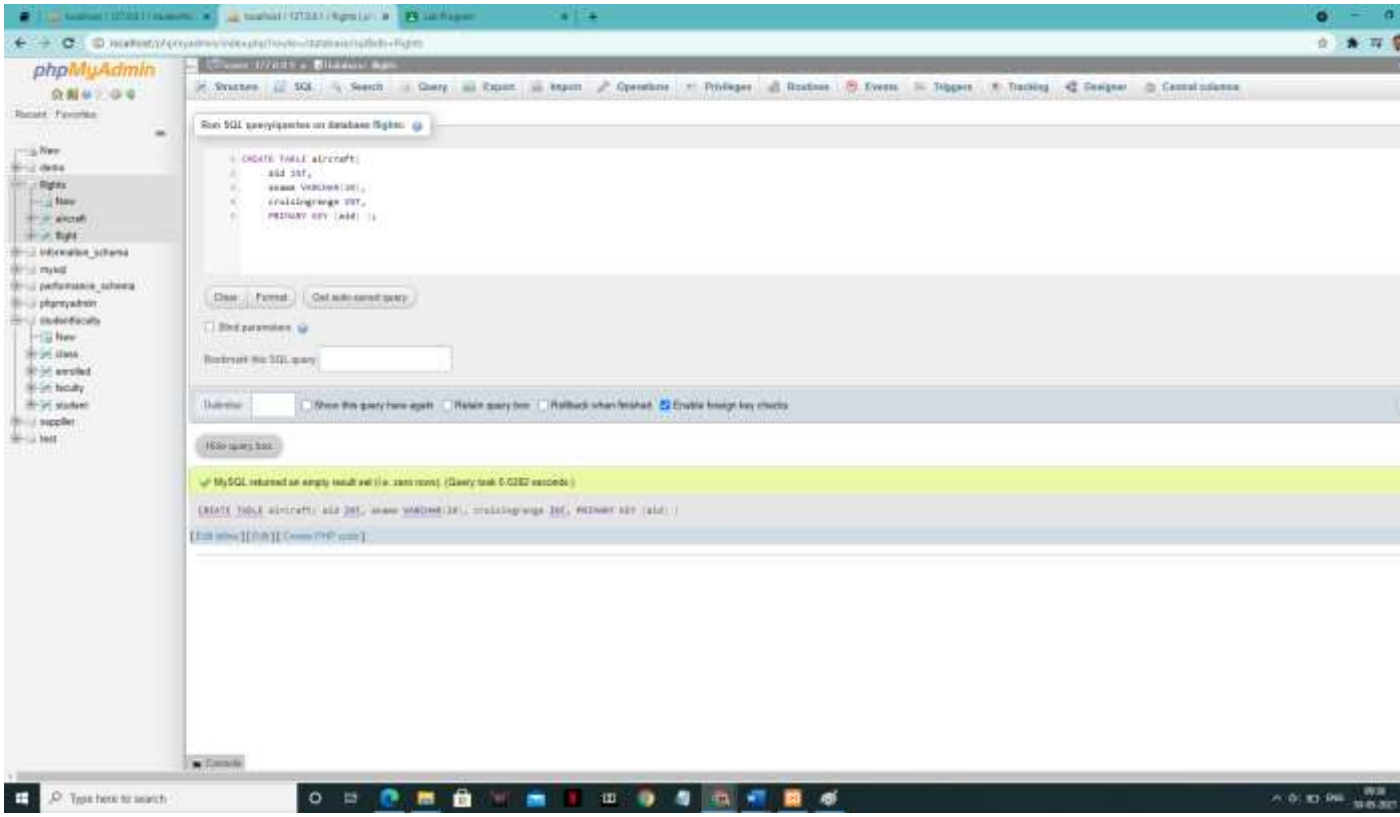
AIRCRAFT (aid: integer, aname: string, cruisingrange: integer)
CERTIFIED (eid: integer, aid: integer)
EMPLOYEE (eid: integer, ename: string, salary: integer)
Note that the Employees relation describes pilots and other kinds of employees as well; Every pilot is certified
for some aircraft, and only pilots are certified to fly.
Write each of the following queries in SQL.
i. Find the names of aircraft such that all pilots certified to operate them have salaries more than Rs.80,000.
ii. For each pilot who is certified for more than three aircrafts, find the eid and the maximum cruising range of
the aircraft for which she or he is certified.
iii. Find the names of pilots whose salary is less than the price of the cheapest route from Bengaluru to
Frankfurt.
iv. For all aircraft with cruising range over 1000 Kms, find the name of the aircraft and the average salary of
all pilots certified for this aircraft.
v. Find the names of pilots certified for some Boeing aircraft.
vi. Find the aids of all aircraft that can be used on routes from Bengaluru to New Delhi.
vii. A customer wants to travel from Madison to New York with no more than two changes of flight. List the
choice of departure times from Madison if the customer wants to arrive in New York by 6 p.m.
viii. Print the name and salary of every non-pilot whose salary is more than the average salary for pilots.

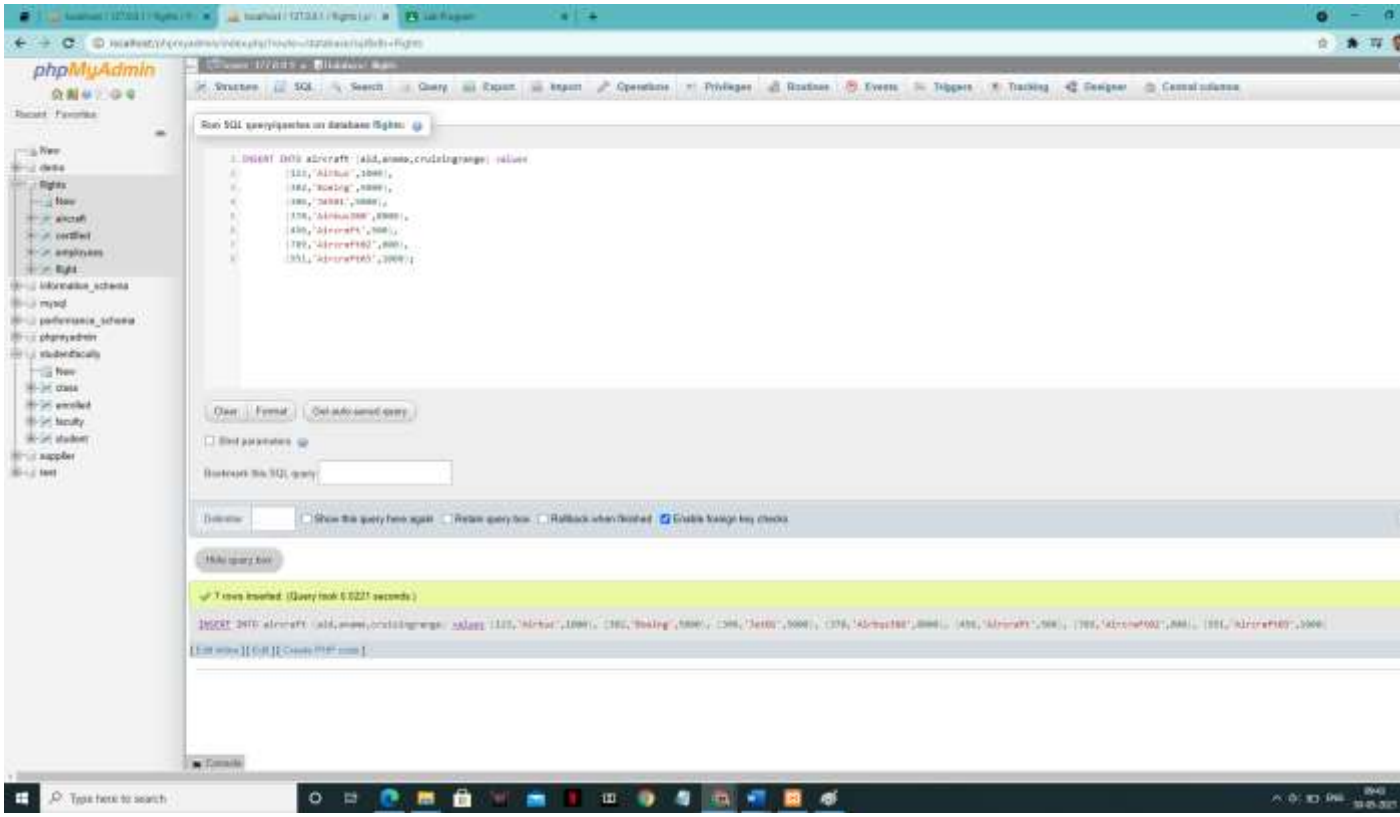
Create table:-



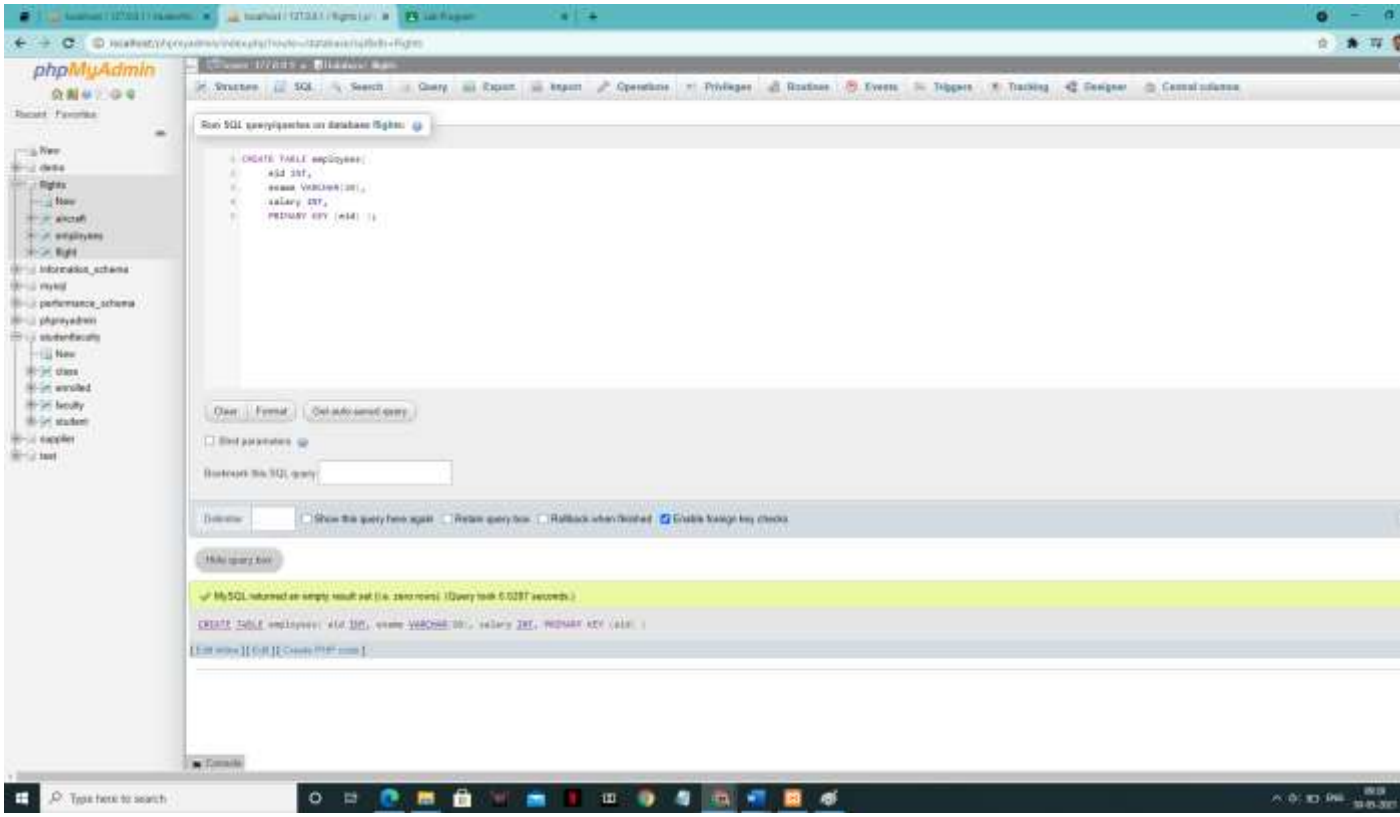
2) Enter tuples for each relation.

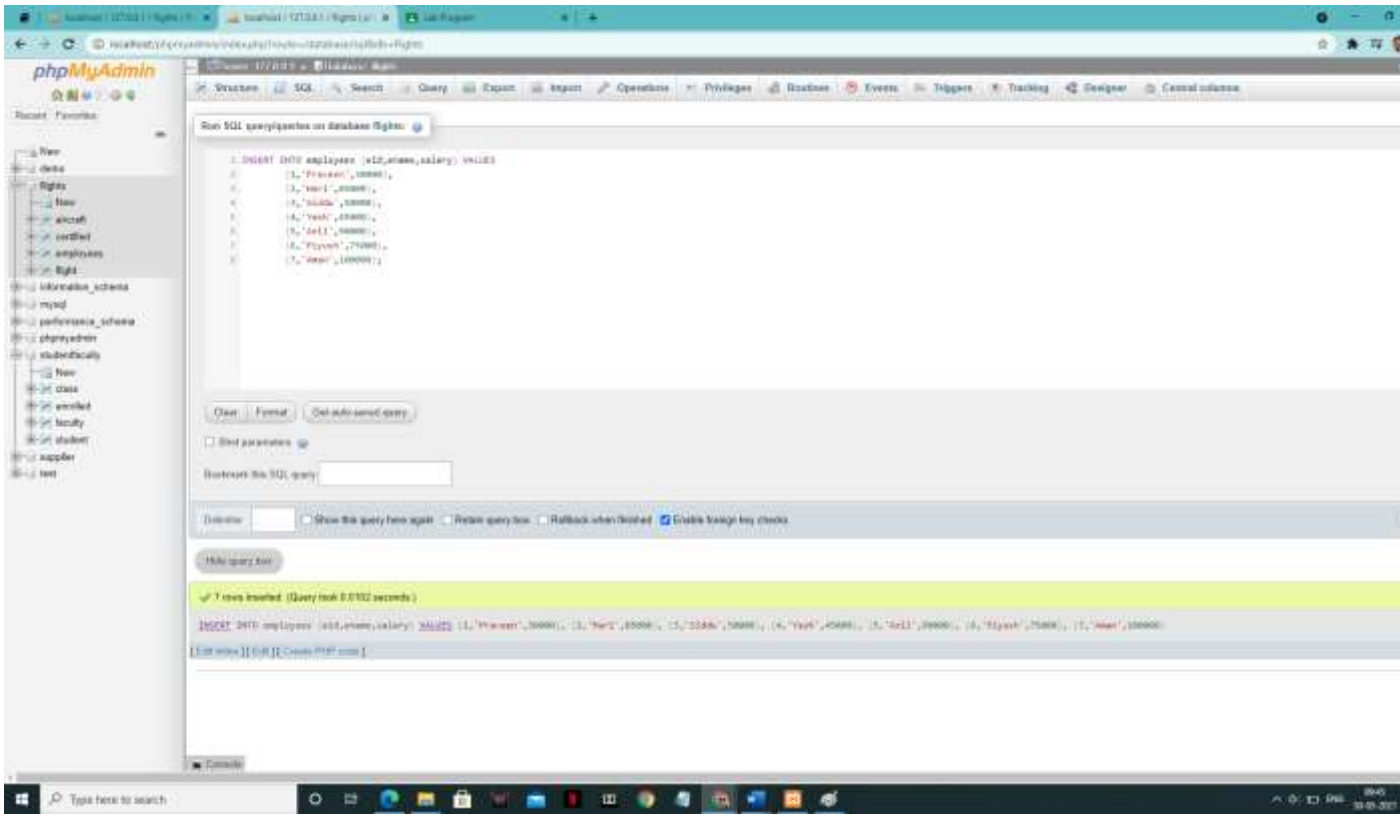
'AIRCRAFT' table:


phpMyAdmin
Structure
SQL
Search
Query
Export
Import
Operations
Privileges
Routines
Events
Triggers
Tracking
Designer
Central columns
Run SQL query/queries on database flights:
CREATE TABLE aircraft(
aid INT,
aname VARCHAR(30),
cruisingrange INT,
PRIMARY KEY (aid));
Clear
Format
Get auto-saved query
Bind parameters
Bookmark this SQL query
Delimiter
Show this query here again
Retain query box
Rollback when finished
Enable foreign key checks
Hide query box
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0282 seconds.)
CREATE TABLE aircraft(aid INT, aname VARCHAR(30), cruisingrange INT, PRIMARY KEY (aid))
Console
Type here to search

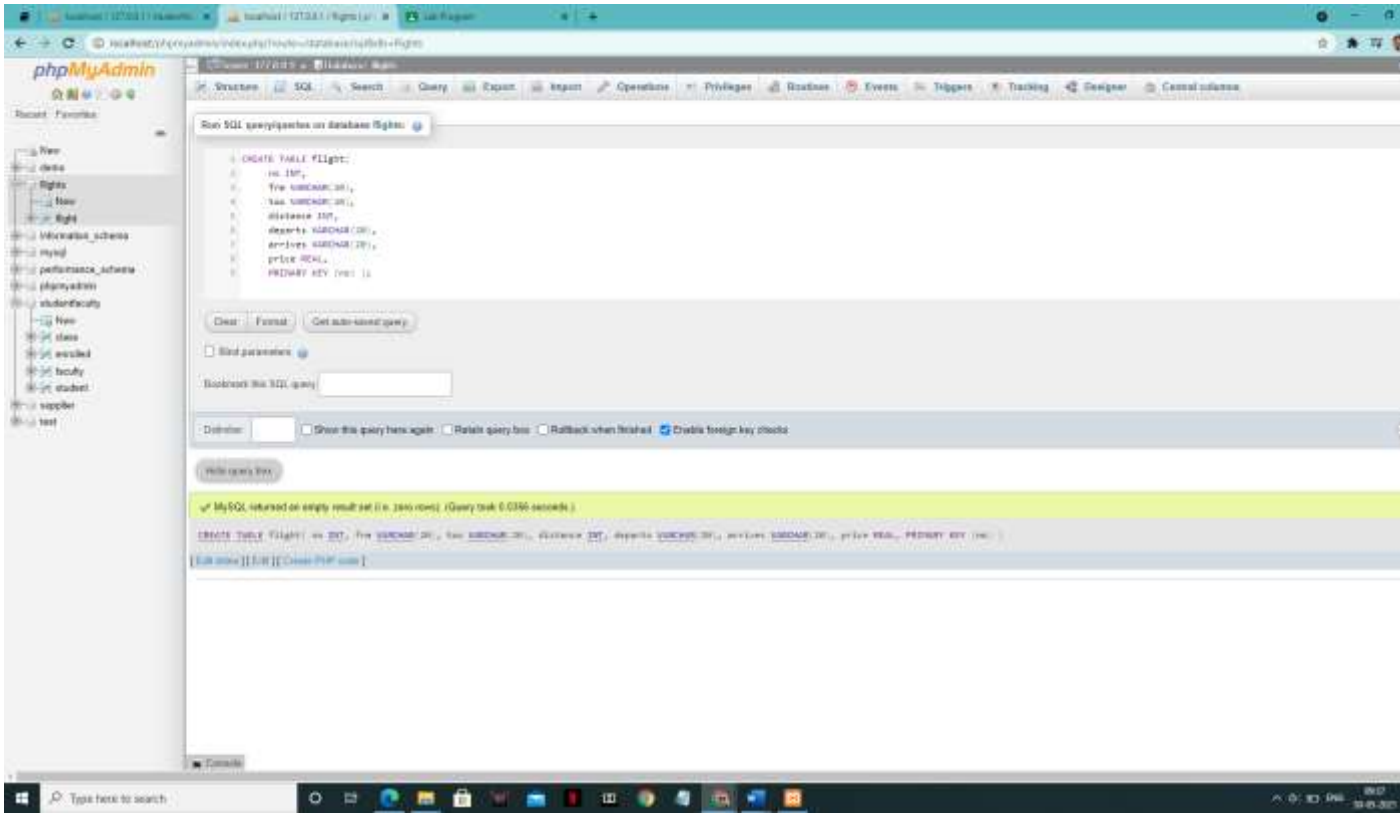


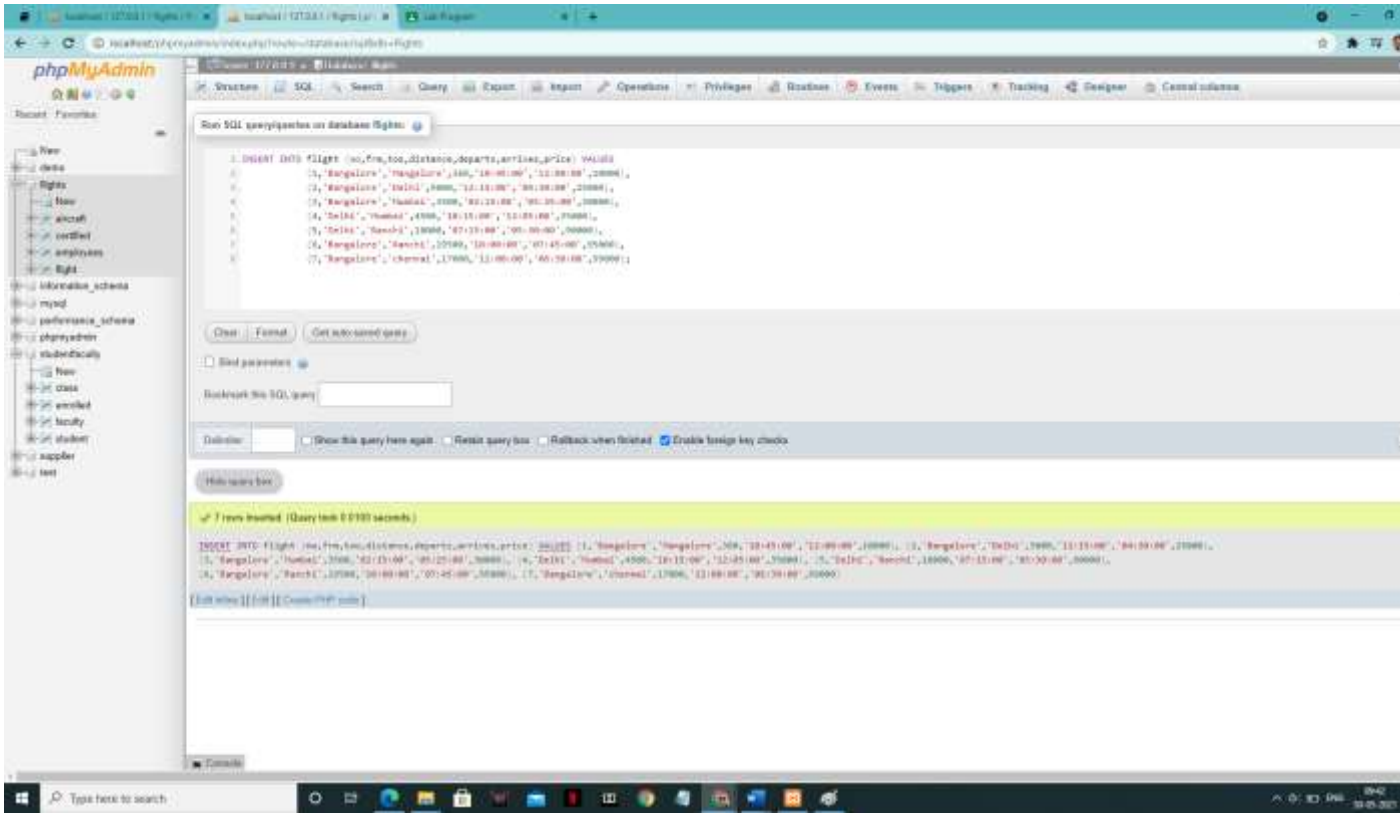
‘EMPLOYEES’ table:


phpMyAdmin
Run SQL query/queries on database flights:
CREATE TABLE employees(
aid INT,
ename VARCHAR(20),
salary INT,
PRIMARY KEY (aid));
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0287 seconds.)
CREATE TABLE employees(aid INT, ename VARCHAR(20), salary INT, PRIMARY KEY (aid))

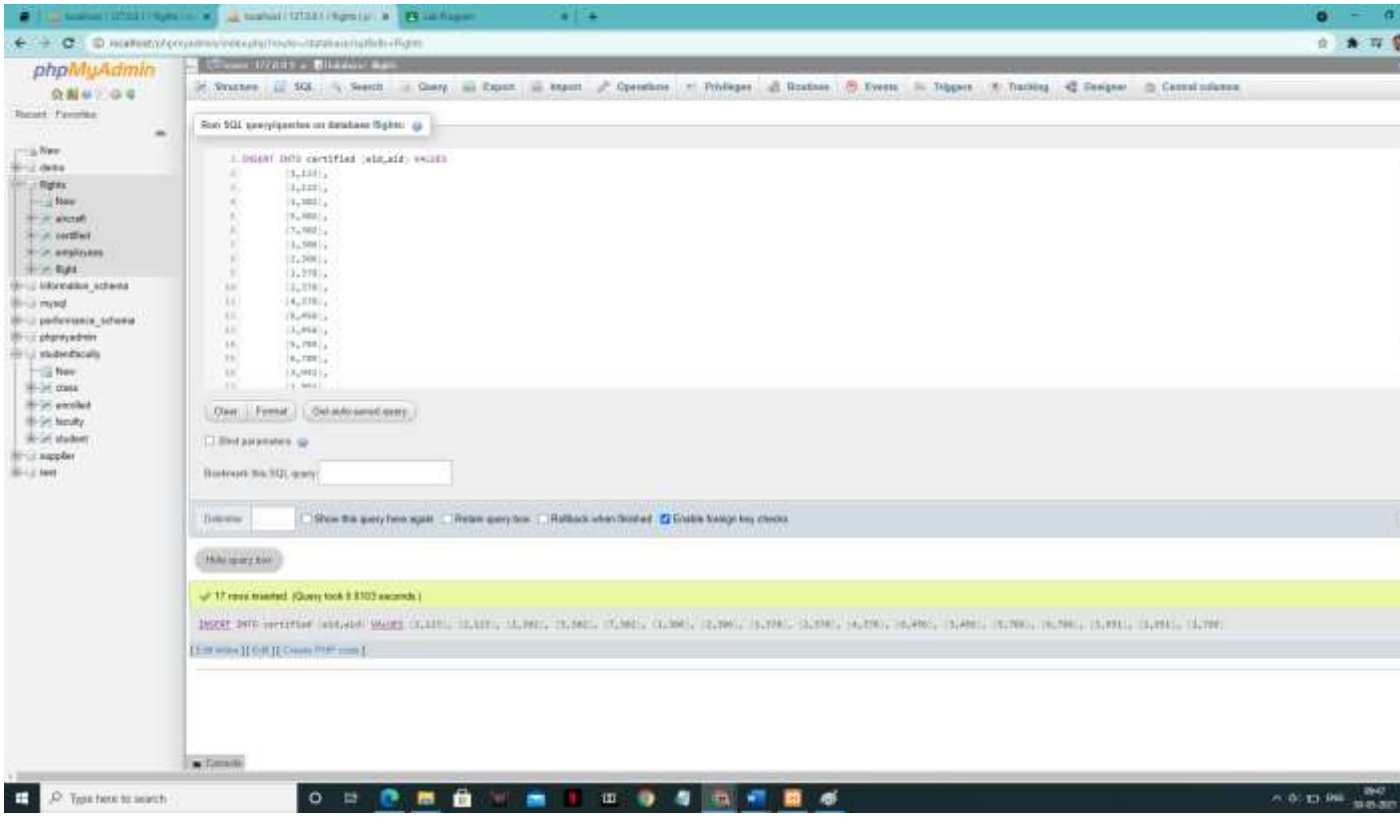

phpMyAdmin
Run SQL query/queries on database flights:
INSERT INTO employees (aid,ename,salary) VALUES
(1,'Praveen',50000),
(2,'Hari',45000),
(3,'Sidda',58000),
(4,'Yash',45000),
(5,'Anil',39000),
(6,'Vijay',75000),
(7,'Amar',100000);
7 rows inserted. (Query took 0.0102 seconds.)
INSERT INTO employees (aid,ename,salary) VALUES (1,'Praveen',50000), (2,'Hari',45000), (3,'Sidda',58000), (4,'Yash',45000), (5,'Anil',39000), (6,'Vijay',75000), (7,'Amar',100000)

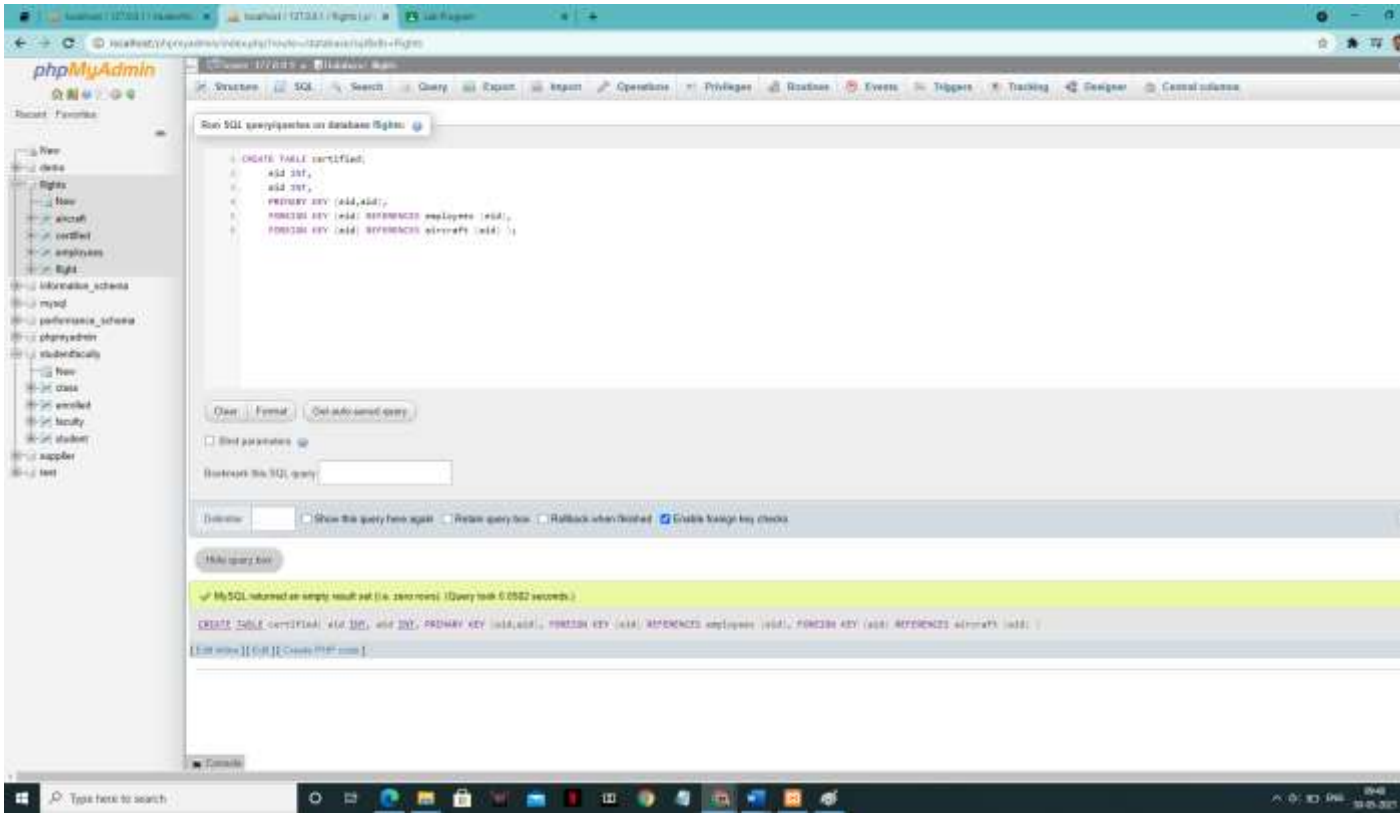
‘FLIGHT’ table:



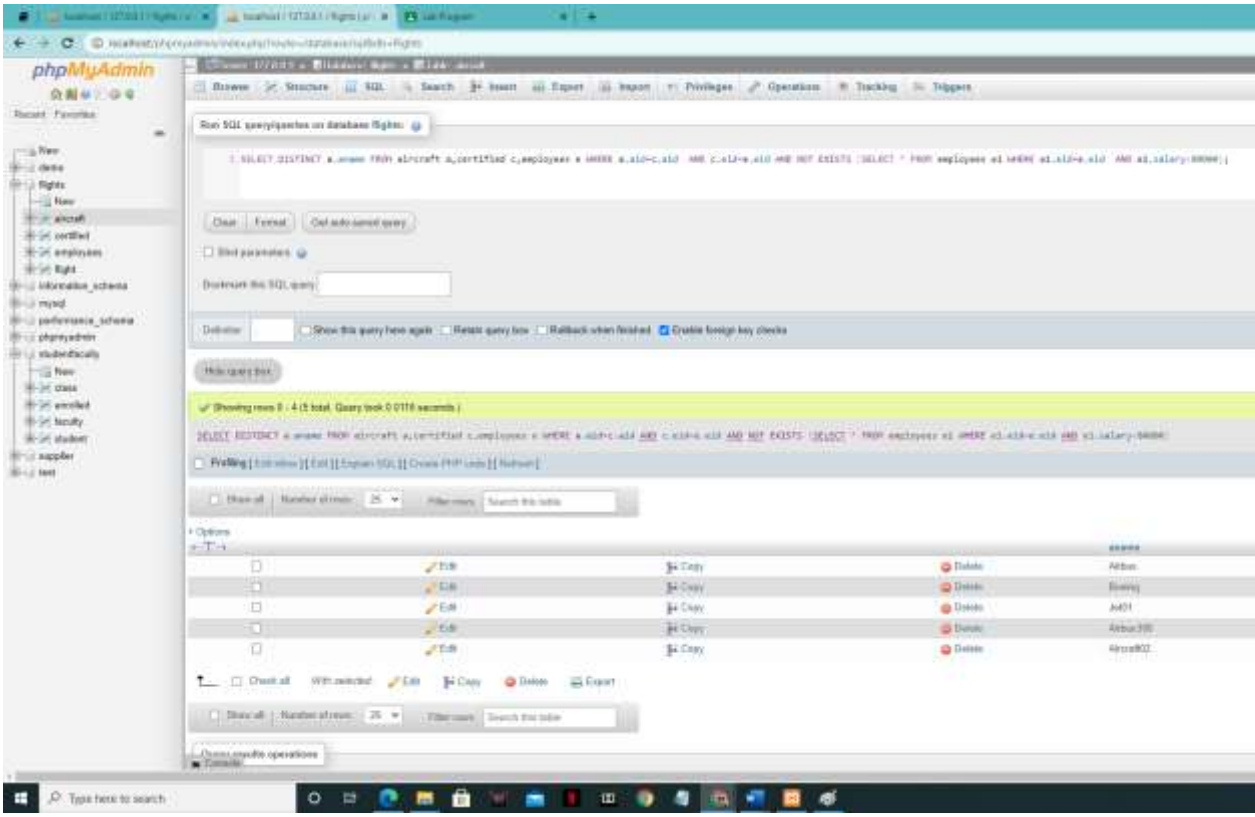


CERTIFIED value: -

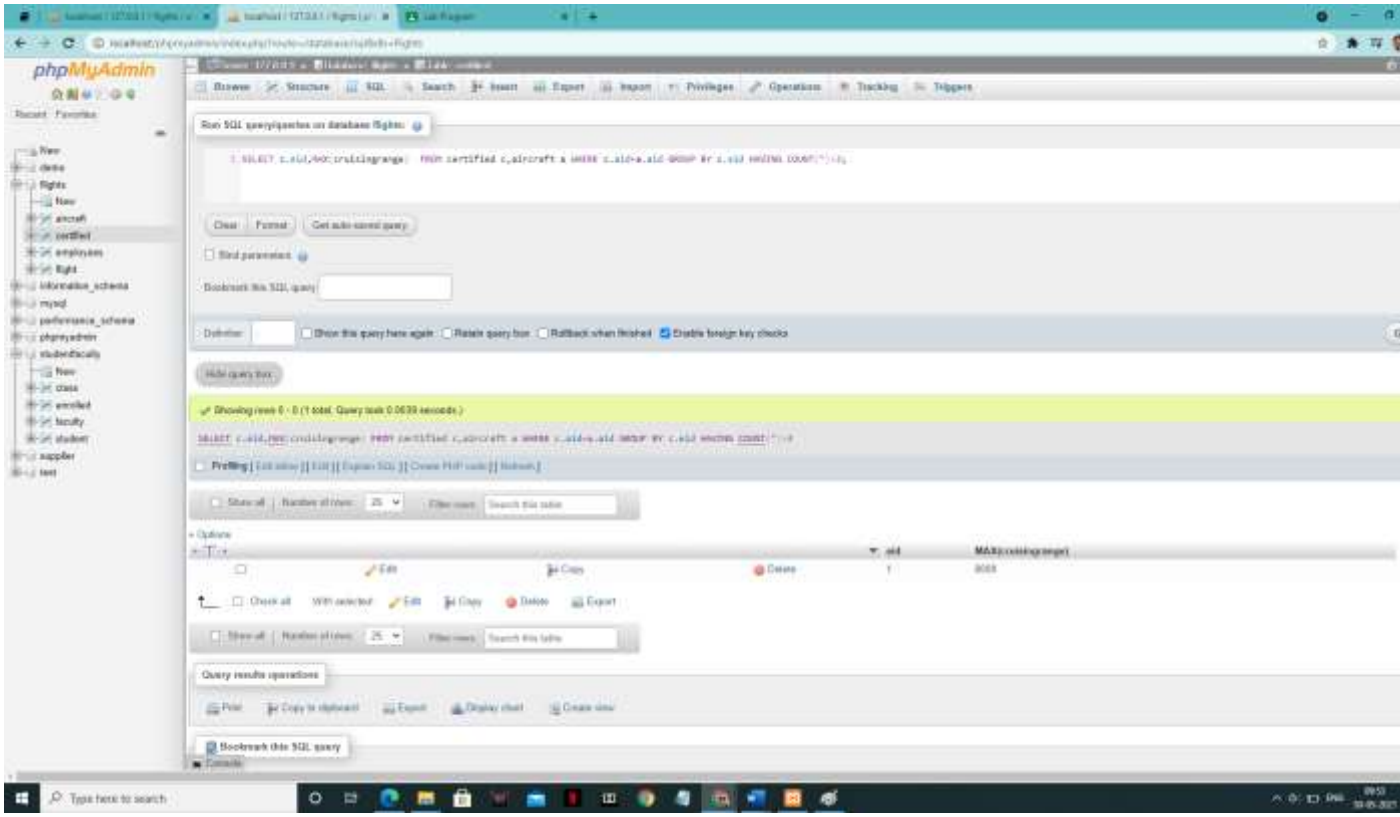



phpMyAdmin
Structure
SQL
Search
Query
Export
Import
Operations
Privileges
Routines
Events
Triggers
Tracking
Designer
Central columns
Run SQL query/queries on database flights:
CREATE TABLE certified(
aid INT,
sid INT,
PRIMARY KEY (sid,aid),
FOREIGN KEY (sid) REFERENCES employees (sid),
FOREIGN KEY (aid) REFERENCES aircraft (aid));
Clear
Format
Get auto-saved query
Bind parameters
Bookmark this SQL query
Delimiter
Show this query here again
Retain query box
Rollback when finished
Enable foreign key checks
Go
Hide query box
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0582 seconds.)
CREATE TABLE certified(aid INT, sid INT, PRIMARY KEY (sid,aid), FOREIGN KEY (sid) REFERENCES employees (sid), FOREIGN KEY (aid) REFERENCES aircraft (aid))
[Edit inline] [Edit] [Create PHP code]
Console
Type here to search

1:-


phpMyAdmin
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Tracking
Triggers
Run SQL query/queries on database flights:
Clear
Format
Get auto-saved query
Bind parameters
Bookmark this SQL query:
Delimiter
Show this query here again
Retain query box
Rollback when finished
Enable foreign key checks
Hide query box
Edit
Copy
Delete
Check all
With selected:
Export
Query results operations
Type here to search

2:-



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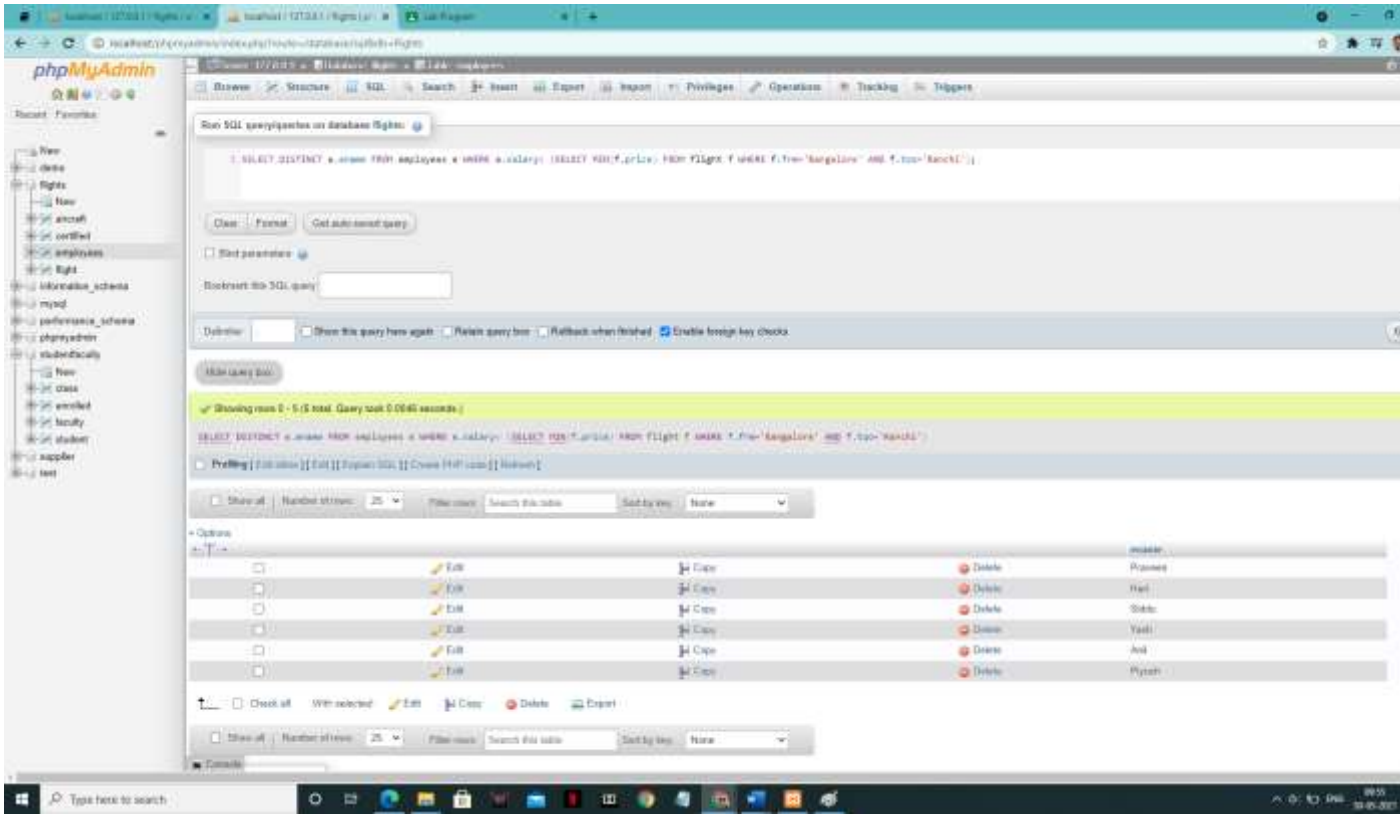

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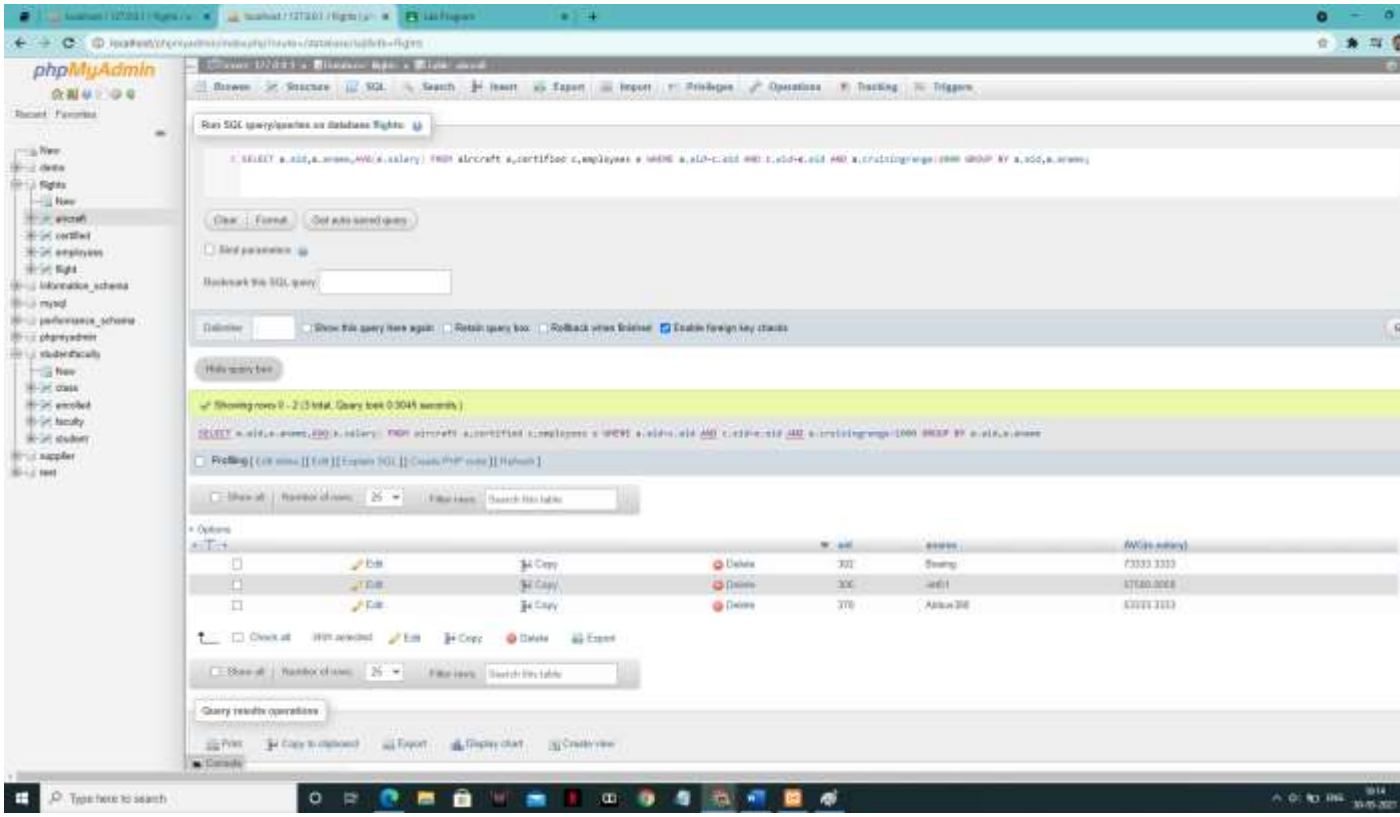

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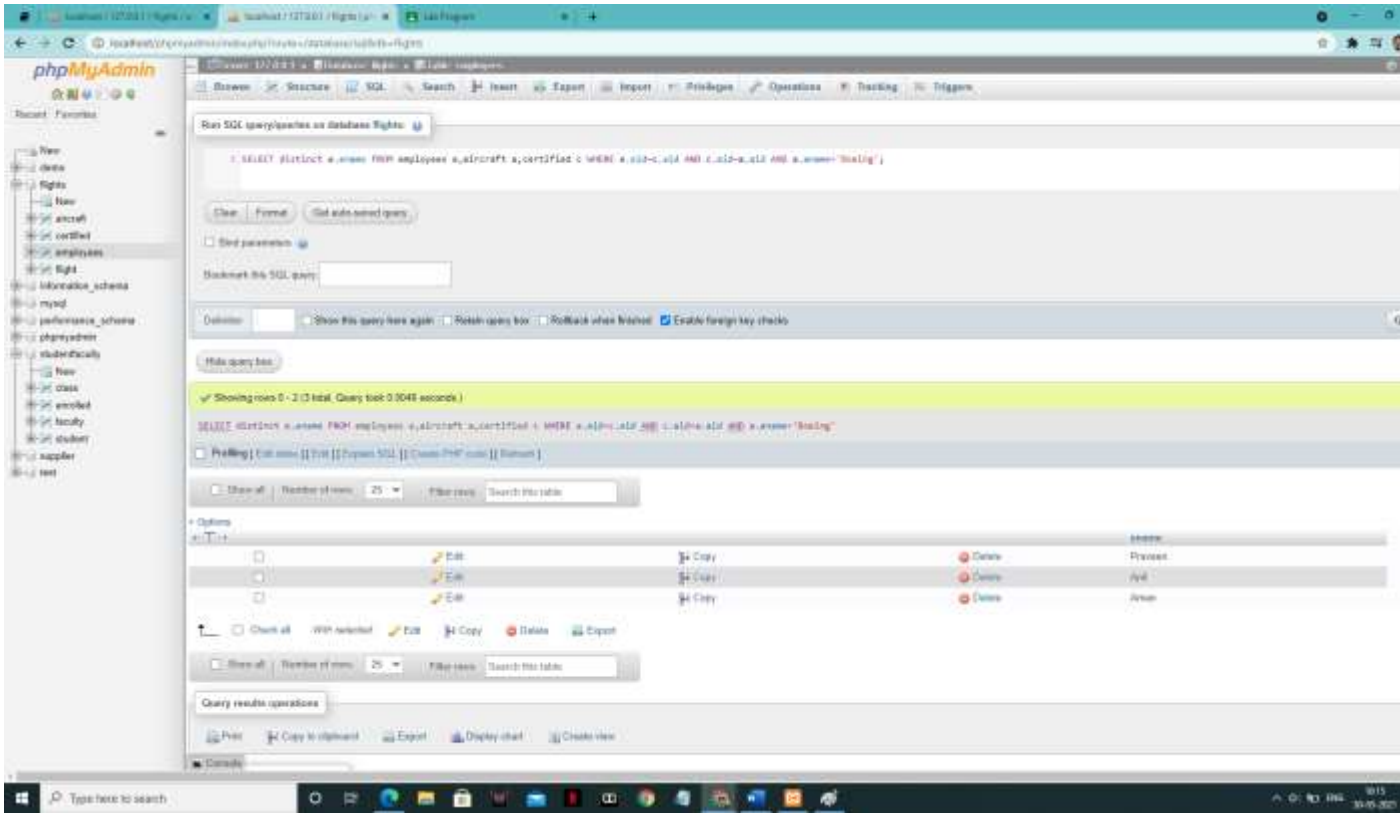

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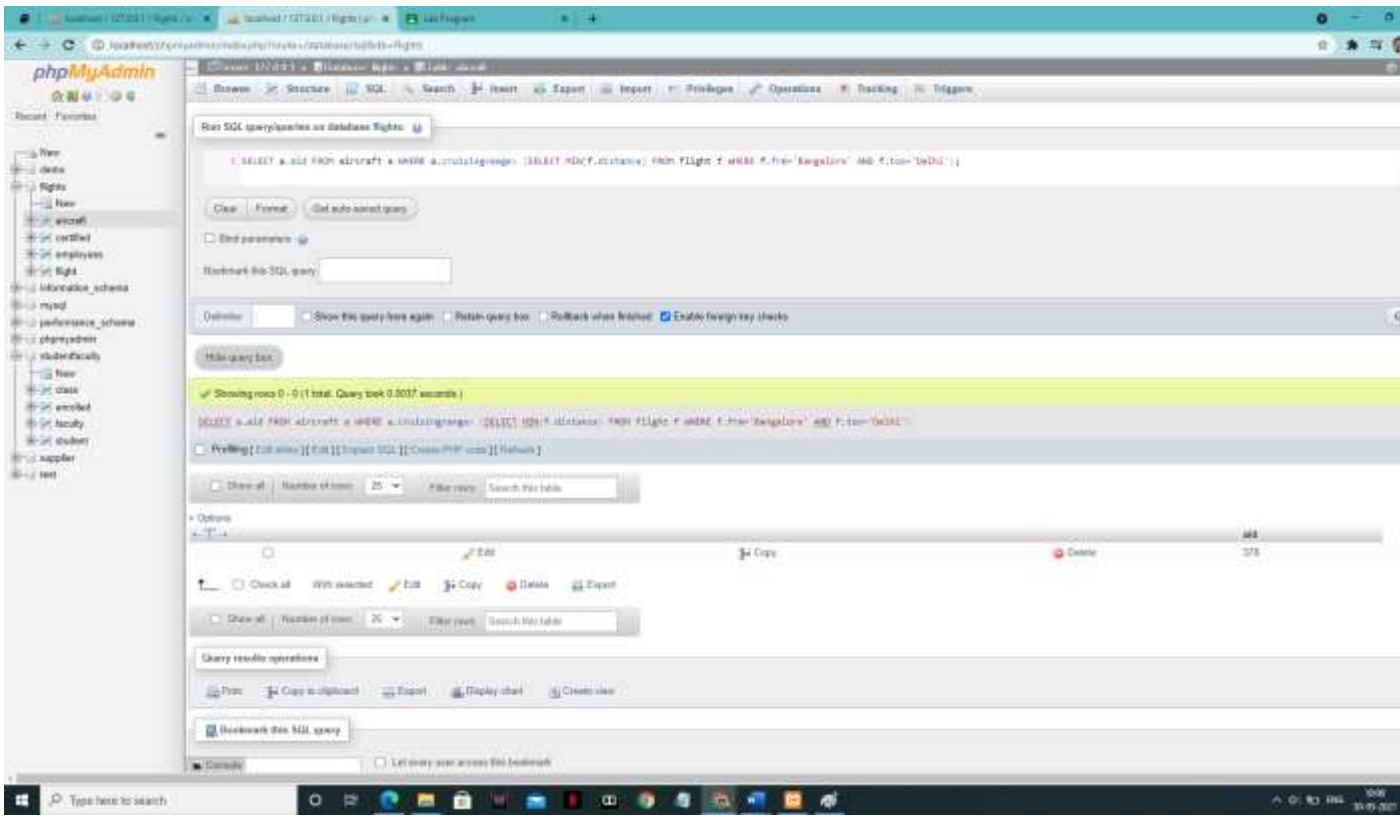

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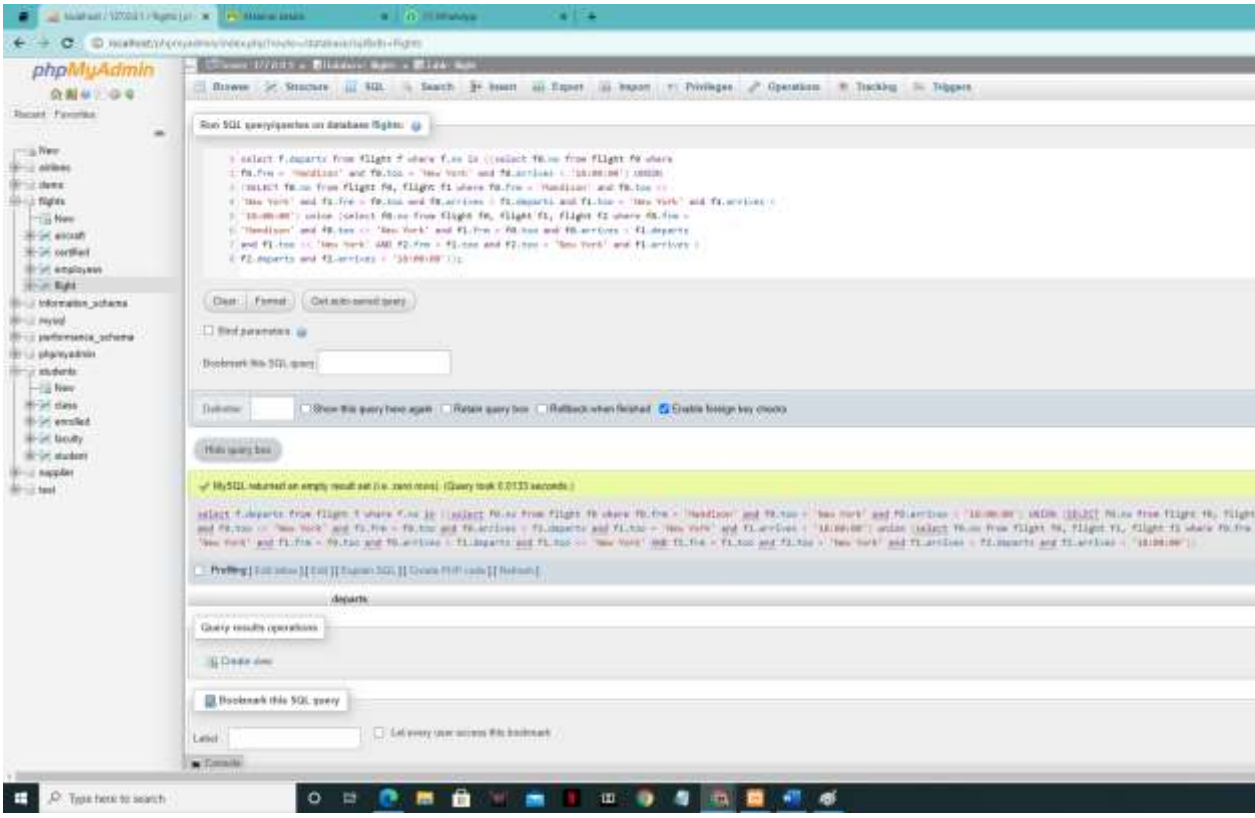

8:-