B. M. S. COLLEGE OF ENGINEERING, BENGALURU

Autonomous Institute, Affiliated to VTU

DEPARTMENT OF CSE

2021

Lab Report of Database Management System

Database Management System - 19CS4PCDBM

Submitted by

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Lab Program 1: Insurance Database

Code:

```
create
database
insurance;
            use insurance;


            create table person(
                   driver_id varchar(10),
                name varchar(20),
                   address varchar(30),
                   primary key(driver_id)
            );


            desc person;


            create table car(
                   reg_num varchar(10),
                   model varchar(10),
                   year int,
                   primary key(reg_num)
            );


            desc car;


            create table accident(
                   report_num int,
                   accident_date date,
                   location varchar(20),
                   primary key(report_num)
            );
```

```
create table owns(
	driver_id varchar(10),
	reg_num varchar(10),
	primary key(driver_id,reg_num),
	foreign key(driver_id) references person(driver_id),
	foreign key(reg_num) references car(reg_num)
);


desc owns;


create table participated(
	driver_id varchar(10),
	reg_num varchar(10),
	report_num int,
	damage_amount int,
	primary key(driver_id,reg_num,report_num),
	foreign key(driver_id) references person(driver_id),
	foreign key(reg_num) references car(reg_num),
	foreign key(report_num) references accident(report_num)
);


desc participated;


insert into person values('A01','Raghu','Electronic City');
insert into person values('A02','Rishab','Orange County');
insert into person values('A03','Rufus','NR Colony');
insert into person values('A04','Jamal','Lawrence Park');
insert into person values('A05','Kevin','Rosedale');


commit;


select * from person;


insert into car values('KA031111','Accord',2005);
insert into car values('KA041122','MX-5',2019);
```

```
insert into car values('KA051133','Indica',2010);
insert into car values('KA061144','Prius',2015);
insert into car values('KA071155','Camry',2020);
commit;
```

```
insert into accident values(111,'2020-01-01','NR Road');
insert into accident values(122,'2020-02-02','Dalhousie Road');
insert into accident values(133,'2020-03-03','Henry Road');
insert into accident values(144,'2020-04-04','Beehive Road');
insert into accident values(155,'2020-05-05','Orange Street');
commit;
```

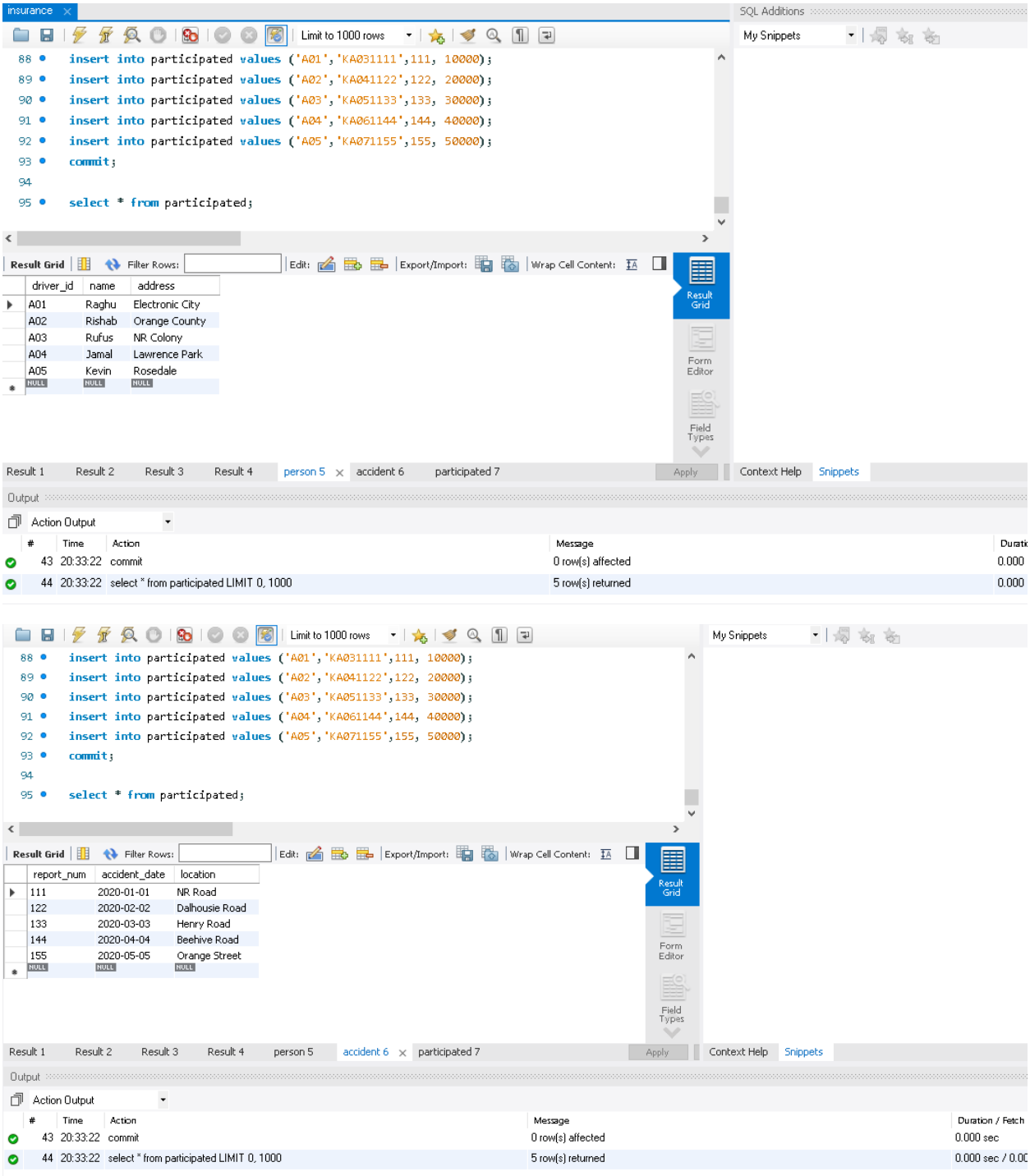
```
select * from accident;
```

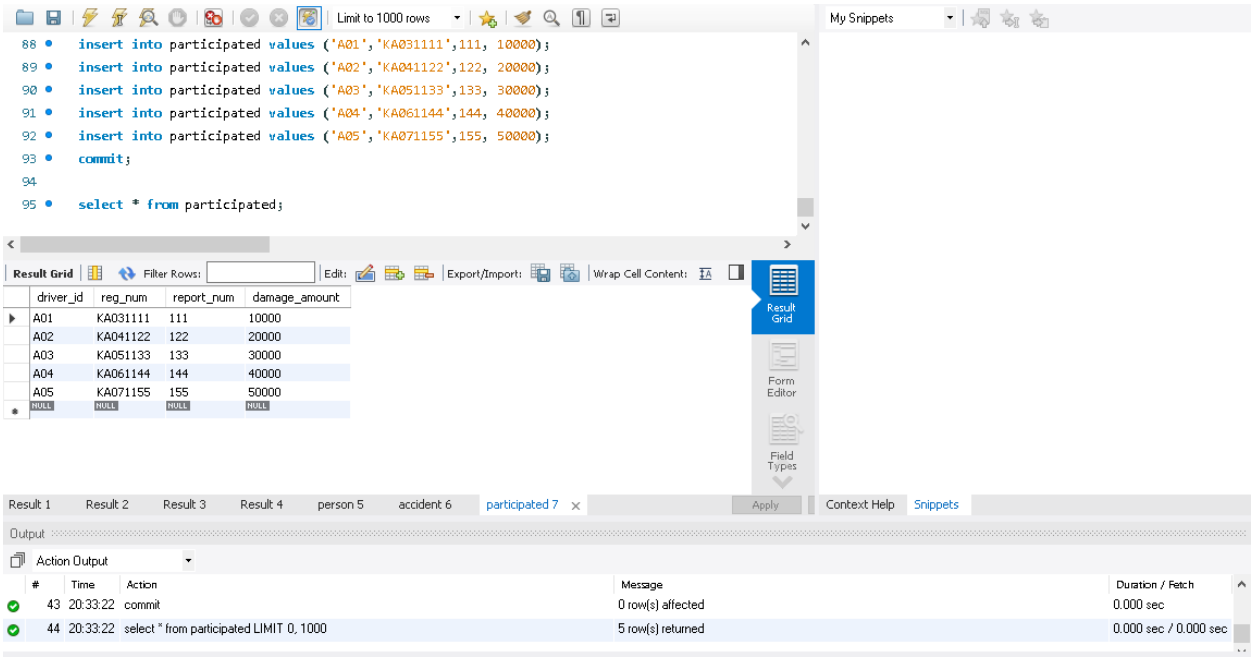
```
insert into owns values ('A01','KA031111');
insert into owns values ('A02','KA041122');
insert into owns values ('A03','KA051133');
insert into owns values ('A04','KA061144');
insert into owns values ('A05','KA071155');
commit;
```

```
insert into participated values ('A01','KA031111',111, 10000);
insert into participated values ('A02','KA041122',122, 20000);
insert into participated values ('A03','KA051133',133, 30000);
insert into participated values ('A04','KA061144',144, 40000);
insert into participated values ('A05','KA071155',155, 50000);
commit;
```

```
select * from participated;
```

Output:


insert into participated values ('A01','KA031111',111, 10000);
insert into participated values ('A02','KA041122',122, 20000);
insert into participated values ('A03','KA051133',133, 30000);
insert into participated values ('A04','KA061144',144, 40000);
insert into participated values ('A05','KA071155',155, 50000);
commit;
select * from participated;
driver_id name address
A01 Raghu Electronic City
A02 Rishab Orange County
A03 Rufus NR Colony
A04 Jamal Lawrence Park
A05 Kevin Rosedale
report_num accident_date location
111 2020-01-01 NR Road
122 2020-02-02 Dalhousie Road
133 2020-03-03 Henry Road
144 2020-04-04 Beehive Road
155 2020-05-05 Orange Street
43 20:33:22 commit 0 row(s) affected 0.000
44 20:33:22 select * from participated LIMIT 0, 1000 5 row(s) returned 0.000



Lab Program 2: Banking Database

Code:

```
create
database
bank;
        use bank;
        create table Branch(branchname varchar(30),branchcity varchar(30),assets
        real,primary key(branchname));
        desc Branch;
        create table BankAccount(accno int,branchname varchar(30),balance real,primary
        key(accno),foreign key(branchname) references Branch(branchname));
        desc BankAccount;
        create table BankCustomer(customername varchar(30), customerstreet varchar(30),
        customercity varchar(30), primary key(customername));
        desc BankCustomer;
```

```
create table Depositer(customername varchar(30),accno integer, primary
key(customername,accno),foreign key(customername) references
BankCustomer(customername), foreign key(accno) references BankAccount (accno));
desc Depositer;
create table Loan (loannumber int, branchname varchar(30),amount real, primary
key(loannumber), foreign key (branchname) references Branch(branchname));
desc Loan;


insert into Branch values('SBI_Chamrajpet','Bangalore',50000);
insert into Branch values('SBI_ResidencyRoad','Bangalore',10000);
insert into Branch values('SBI_ShivajiRoad','Bombay',20000);
insert into Branch values('SBI_ParlimentRoad','Delhi',10000);
insert into Branch values('SBI_Jantarmantar','Delhi',20000);
commit;
select * from Branch;


insert into Loan values(1, 'SBI_Chamrajpet',1000);
insert into Loan values(2, 'SBI_ResidencyRoad',2000);
insert into Loan values(3, 'SBI_ShivajiRoad',3000);
insert into Loan values(4, 'SBI_ParlimentRoad',4000);
insert into Loan values(5, 'SBI_Jantarmantar',5000);
commit;
select * from Loan;




insert into BankAccount values(1,'SBI_Chamrajpet',2000);
insert into BankAccount values(2,'SBI_ResidencyRoad',5000);
insert into BankAccount values(3,'SBI_ShivajiRoad',6000);
insert into BankAccount values(4,'SBI_ParlimentRoad',9000);
insert into BankAccount values(5,'SBI_Jantarmantar',8000);
insert into BankAccount values(6,'SBI_ShivajiRoad',4000);
insert into BankAccount values(8,'SBI_ResidencyRoad',4000);
insert into BankAccount values(9,'SBI_ParlimentRoad',3000);
insert into BankAccount values(10,'SBI_ResidencyRoad',5000);
insert into BankAccount values(11,'SBI_Jantarmantar',2000);
commit;
select * from BankAccount;
```

```
insert into BankCustomer values("Avinash","Bull_Temple_Road","Bangalore");
insert into BankCustomer values("Dinesh","Bannergatta_Road","Bangalore");
insert into BankCustomer values("Mohan","NationalCollege_Road","Bangalore");
insert into BankCustomer values("Nikil","Akbar_Road","Delhi");
insert into BankCustomer values("Ravi","Prithiviraj_Road","Delhi");
commit;
select * from BankCustomer;


insert into Depositer values("Avinash",1);
insert into Depositer values("Dinesh",2);
insert into Depositer values("Nikil",4);
insert into Depositer values("Ravi",5);
insert into Depositer values("Avinash",8);
insert into Depositer values("Nikil",9);
insert into Depositer values("Dinesh",10);
insert into Depositer values("Nikil",11);
commit;
select * from Depositer;


SELECT c.customername FROM BankCustomer c WHERE EXISTS(SELECT
d.customername,COUNT(d.customername) FROM Depositer d, BankAccount ba WHERE
d.accno=ba.accno AND c.customername=d.customername AND
ba.branchname='SBI_ResidencyRoad' GROUP BY d.customername HAVING
COUNT(d.customername)>=2);



select BC.customername from BankCustomer BC where not exists( select branchname
from Branch where branchcity='Delhi'
and not exists (select BA.branchname from Depositer D, BankAccount BA where
D.accno=BA.accno and BC.customername=D.customername));



DELETE FROM BankAccount WHERE branchname IN (SELECT branchname FROM BRANCH
WHERE branchcity='Bombay');
select * from BankAccount;
```

Output:

```
SELECT * FROM banking.bankaccount;
```

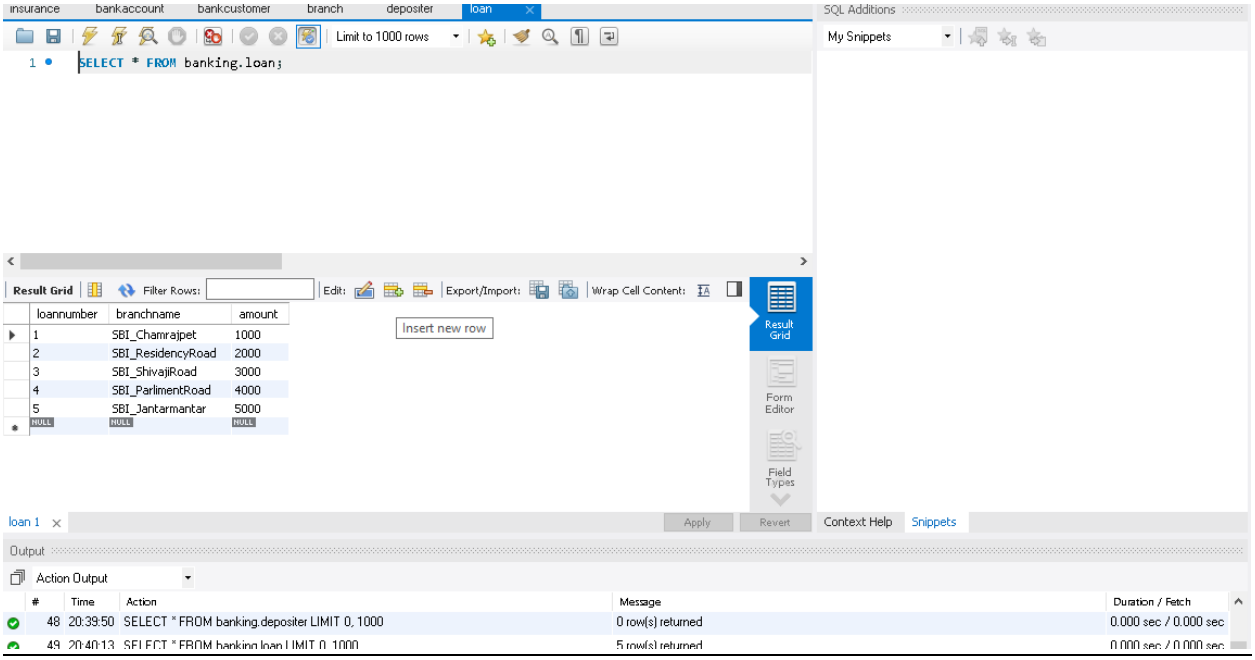
accno	branchname	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
3	SBI_ShivajiRoad	6000
4	SBI_ParlimentRoad	9000
5	SBI_Jantarmantar	8000
6	SBI_ShivajiRoad	4000
8	SBI_ResidencyRoad	4000
9	SBI_ParlimentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000

#	Time	Action	Message	Duration / Fetch
48	20:39:50	SELECT * FROM banking.depositer LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
49	20:40:13	SELECT * FROM banking.loan LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

```
SELECT * FROM banking.branch;
```

branchname	branchcity	assests
SBI_Chamrajpet	Bangalore	50000
SBI_Jantarmantar	Delhi	20000
SBI_ParlimentRoad	Delhi	10000
SBI_ResidencyRoad	Bangalore	10000
SBI_ShivajiRoad	Bombay	20000
NULL	NULL	NULL

#	Time	Action	Message	Duration / Fetch
48	20:39:50	SELECT * FROM banking.depositer LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
49	20:40:13	SELECT * FROM banking.loan LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec



Lab Program 3: Supplier Database

Code:

```
create
database
Supplier;
            use Supplier;


            create table SUPPLIERS (
            sid integer
            primary key,
            sname varchar(20),
            city varchar(20)
            );


            desc SUPPLIERS;
```

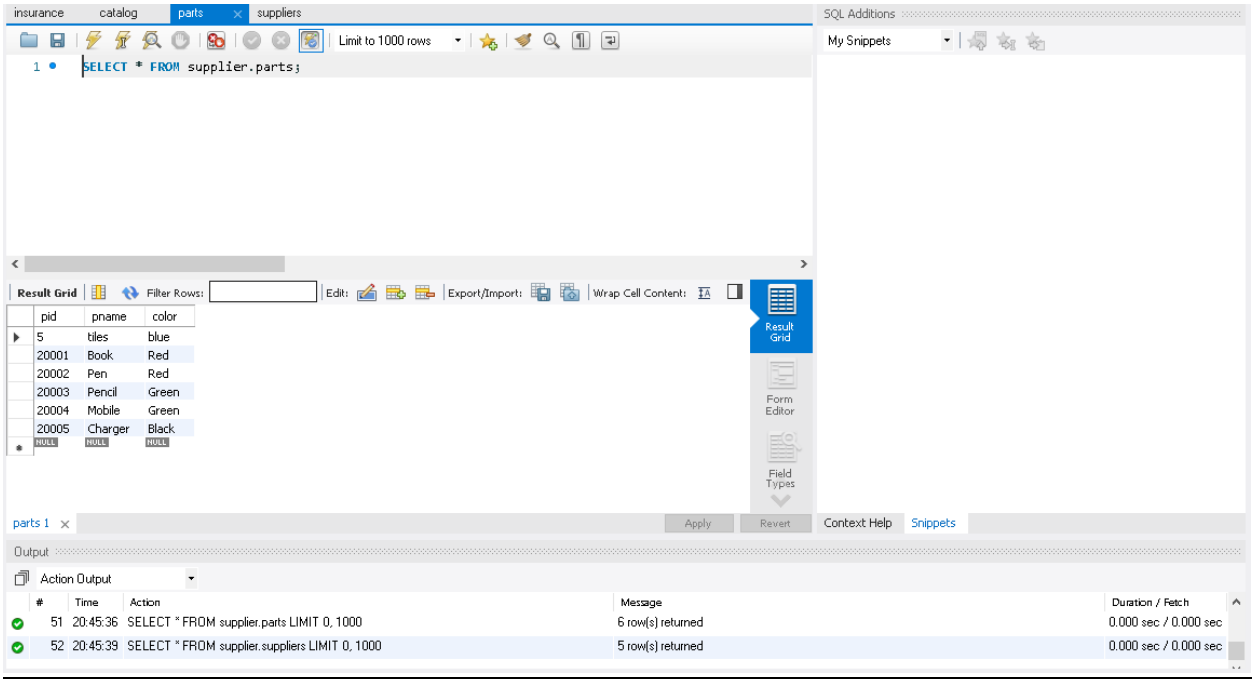
```
create table PARTS(
pid integer primary key,
pname varchar(20),
color varchar(10)
);


desc PARTS;


create table CATALOG (
sid integer,
pid integer,
foreign key(sid) references SUPPLIERS(sid),
foreign key(pid) references PARTS(pid),
cost float(6),
primary key(sid,pid)
);


desc CATALOG;




insert into suppliers value (10001,'Acme Widget','Bangalore');
insert into suppliers value (10002,'Johns','Kolkata');
insert into suppliers value (10003,'Vimal','Mumbai');
insert into suppliers value (10004,'Reliance','Delhi');
insert into suppliers value(10005,'Mahindra','Mumbai');


select * from SUPPLIERS;


commit;


insert into PARTS values(20001,'Book','Red');
insert into PARTS values(20002,'Pen','Red');
insert into PARTS values(20003,'Pencil','Green');
```

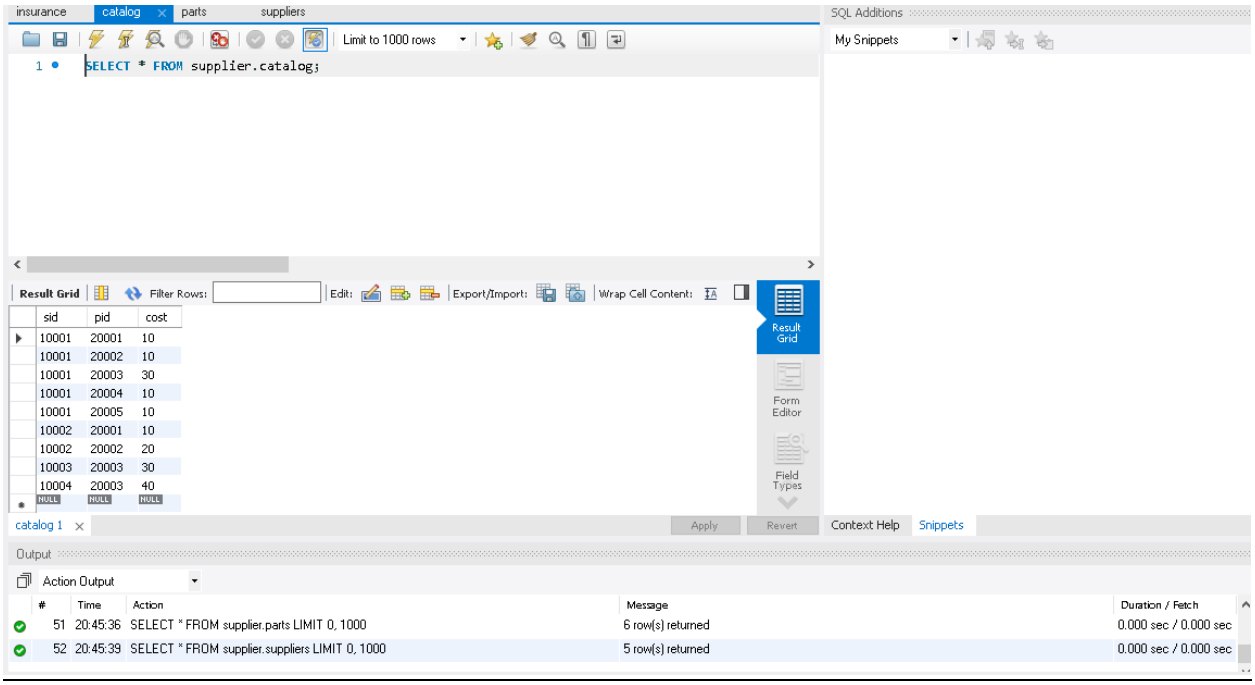
```
insert into PARTS values(20004,'Mobile','Green');
insert into PARTS values(20005,'Charger','Black');


select * from PARTS;


commit;


insert into CATALOG values(10001,'20001','10');
insert into CATALOG values(10001,'20002','10');
insert into CATALOG values(10001,'20003','30');
insert into CATALOG values(10001,'20004','10');
insert into CATALOG values(10001,'20005','10');


insert into CATALOG values(10002,'20001','10');
insert into CATALOG values(10002,'20002','20');


insert into CATALOG values(10003,'20003','30');


insert into CATALOG values(10004,'20003','40');


select * from CATALOG;

 commit;


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


insert into parts values(5,'tiles','blue');
select p.pname from parts p where p.pid in
 (select pid from catalog c group by c.pid having count(c.sid)>0);
insert into catalog values(1,5,140);
select p.pname from parts p where p.pid in
 (select pid from catalog c group by c.pid having count(c.sid)>0);
delete from catalog where pid=5;
delete from parts where pid=5;
```

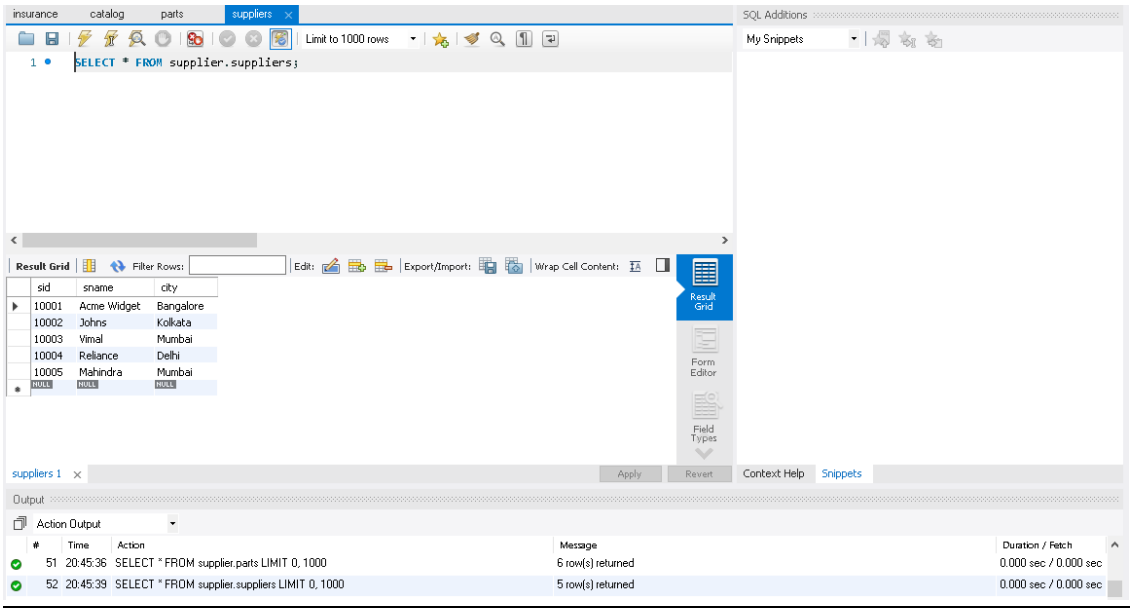
```
-- ii. Find the snames of suppliers who supply every part.


select s.sname from suppliers s where s.sid in
(select c.sid from catalog c
group by c.sid having count(distinct (c.pid))=(select count(p.pid) from parts
p));




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


select s.sname from suppliers s where s.sid in
 (select ca.sid  from catalog ca,
 parts p where ca.pid=p.pid and p.color='red'
 group by ca.sid having count(ca.pid)=(select count(*) from parts p where
p.color='red'));






-- iv. Find the pnames of parts supplied by Acme Widget Suppliers and by no one
else.


select ca.pid from catalog ca
 where ca.sid=(select s.sid from suppliers s where s.sname ='Acme Widget')
 having (select count(c.pid) from catalog c where c.pid=ca.pid)=1;
```

```
-- 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).


select distinct c.sid,
c.pid from catalog c where c.cost > (select avg(ca.cost)
 from catalog ca where ca.pid=c.pid);







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


select s.sname from suppliers s where s.sid in
(select c.sid from catalog c where c.cost=(select max(cost) from catalog ca
where ca.pid=c.pid));









-- vii. select supplier who sell only red parts


select s.sname from suppliers s where s.sid in(select c.sid from catalog c
where c.sid not in (select distinct(ca.sid) from catalog ca,parts p where
ca.pid=p.pid and p.color!='red'));
insert into catalog values(5,1,140);
select s.sname from suppliers s where s.sid in(select c.sid from catalog c
where c.sid not in (select distinct(ca.sid) from catalog ca,parts p where
ca.pid=p.pid and p.color!='red'));
delete from catalog where sid=5;
```

Output:


insurance
catalog
parts
suppliers
Limit to 1000 rows
SQL Additions
My Snippets
1 SELECT * FROM supplier.parts;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
pid pname color
5 tiles blue
20001 Book Red
20002 Pen Red
20003 Pencil Green
20004 Mobile Green
20005 Charger Black
Result Grid
Form Editor
Field Types
parts 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
51 20:45:36 SELECT * FROM supplier.parts LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec
52 20:45:39 SELECT * FROM supplier.suppliers LIMIT 0, 1000 5 row(s) returned 0.000 sec / 0.000 sec


insurance
catalog
parts
suppliers
Limit to 1000 rows
SELECT * FROM supplier.catalog;
SQL Additions
My Snippets
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
sid pid cost
10001 20001 10
10001 20002 10
10001 20003 30
10001 20004 10
10001 20005 10
10002 20001 10
10002 20002 20
10003 20003 30
10004 20003 40
Result Grid
Form Editor
Field Types
catalog 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
51 20:45:36 SELECT * FROM supplier.parts LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec
52 20:45:39 SELECT * FROM supplier.suppliers LIMIT 0, 1000 5 row(s) returned 0.000 sec / 0.000 sec


insurance
catalog
parts
suppliers
Limit to 1000 rows
SELECT * FROM supplier.suppliers;
SQL Additions
My Snippets
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
sid sname city
10001 Acme Widget Bangalore
10002 Johns Kolkata
10003 Vimal Mumbai
10004 Reliance Delhi
10005 Mahindra Mumbai
Result Grid
Form Editor
Field Types
suppliers 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
51 20:45:36 SELECT * FROM supplier.parts LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec
52 20:45:39 SELECT * FROM supplier.suppliers LIMIT 0, 1000 5 row(s) returned 0.000 sec / 0.000 sec

Lab Program 4: Student Faculty Database

Code:

```
create database
student_faculty;
                    use student_faculty;


                    create table student(
                    snum INT,
                     sname VARCHAR(10),
                     major VARCHAR(2),
                     lvl VARCHAR(2),
                     age INT,
                     primary key(snum));


                    desc student;
```

```
create table faculty(
fid INT,
fname VARCHAR(20),
deptid INT,
PRIMARY KEY(fid));


desc faculty;


CREATE TABLE class(
cname VARCHAR(20),
metts_at TIMESTAMP,
room VARCHAR(10),
fid INT,
PRIMARY KEY(cname),
FOREIGN KEY(fid) REFERENCES faculty(fid));


desc class;


CREATE TABLE enrolled(
snum INT,
cname VARCHAR(20),
PRIMARY KEY(snum,cname),
FOREIGN KEY(snum) REFERENCES student(snum),
FOREIGN KEY(cname) REFERENCES class(cname));


desc enrolled;


INSERT INTO STUDENT VALUES(1, 'John', 'CS', 'Sr', 19);
INSERT INTO STUDENT VALUES(2, 'Smith', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(3 , 'Jacob', 'CV', 'Sr', 20);
INSERT INTO STUDENT VALUES(4, 'Tom ', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(5, 'Rahul', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(6, 'Rita', 'CS', 'Sr', 21);
commit;


select * from student;
```

```
INSERT INTO FACULTY VALUES(11, 'Harish', 1000);
INSERT INTO FACULTY VALUES(12, 'MV', 1000);
INSERT INTO FACULTY VALUES(13 , 'Mira', 1001);
INSERT INTO FACULTY VALUES(14, 'Shiva', 1002);
INSERT INTO FACULTY VALUES(15, 'Nupur', 1000);
commit;


select * from faculty;


insert into class values('class1', '12/11/15 10:15:16', 'R1', 14);
insert into class values('class10', '12/11/15 10:15:16', 'R128', 14);
insert into class values('class2', '12/11/15 10:15:20', 'R2', 12);
insert into class values('class3', '12/11/15 10:15:25', 'R3', 11);
insert into class values('class4', '12/11/15 20:15:20', 'R4', 14);
insert into class values('class5', '12/11/15 20:15:20', 'R3', 15);
 insert into class values('class6', '12/11/15 13:20:20', 'R2', 14);
insert into class values('class7', '12/11/15 10:10:10', 'R3', 14);
commit;


select * from class;


insert into enrolled values(1, 'class1');
insert into enrolled values(2, 'class1');
insert into enrolled values(3, 'class3');
insert into enrolled values(4, 'class3');
insert into enrolled values(5, 'class4');
 insert into enrolled values(1, 'class5');
 insert into enrolled values(2, 'class5');
 insert into enrolled values(3, 'class5');
 insert into enrolled values(4, 'class5');
insert into enrolled values(5, 'class5');
commit;


select * from enrolled;
```

```
SELECT DISTINCT S.Sname
FROM Student S, Class C, Enrolled E, Faculty F
WHERE S.snum = E.snum AND E.cname = C.cname AND C.fid = F.fid AND
F.fname = 'Harish' AND S.lvl = 'Jr';
```

```
SELECT C.cname
FROM class C
WHERE C.room = 'R128'
OR C.cname IN (SELECT E.cname
               FROM enrolled E
               GROUP BY E.cname
               HAVING COUNT(*) >= 5);
```

```
SELECT DISTINCT S.sname
FROM student S
WHERE S.snum IN (SELECT E1.snum
FROM enrolled E1, enrolled E2, class C1, class C2
WHERE E1.snum = E2.snum AND E1.cname <> E2.cname
AND E1.cname = C1.cname
AND E2.cname = C2.cname AND C1.metts_at = C2.metts_at);
```

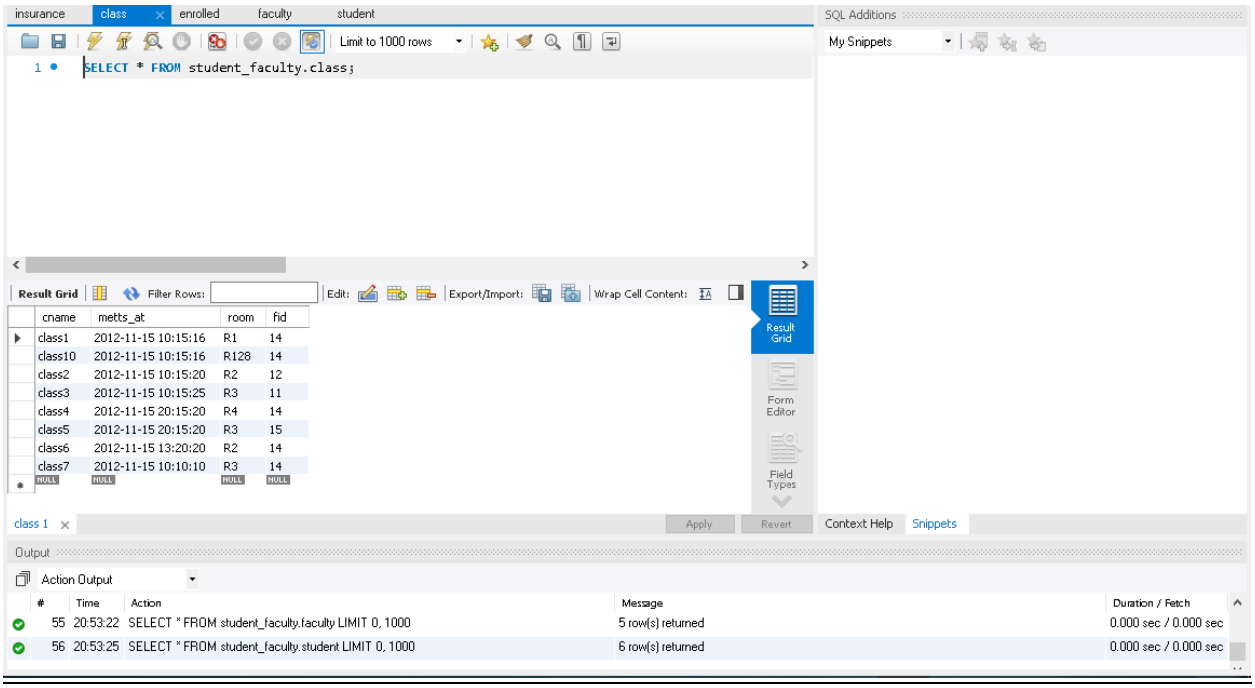
```
SELECT f.fname,f.fid
FROM faculty f
WHERE f.fid in ( SELECT fid FROM class
GROUP BY fid HAVING COUNT(*)=(SELECT COUNT(DISTINCT room) FROM class) );
```

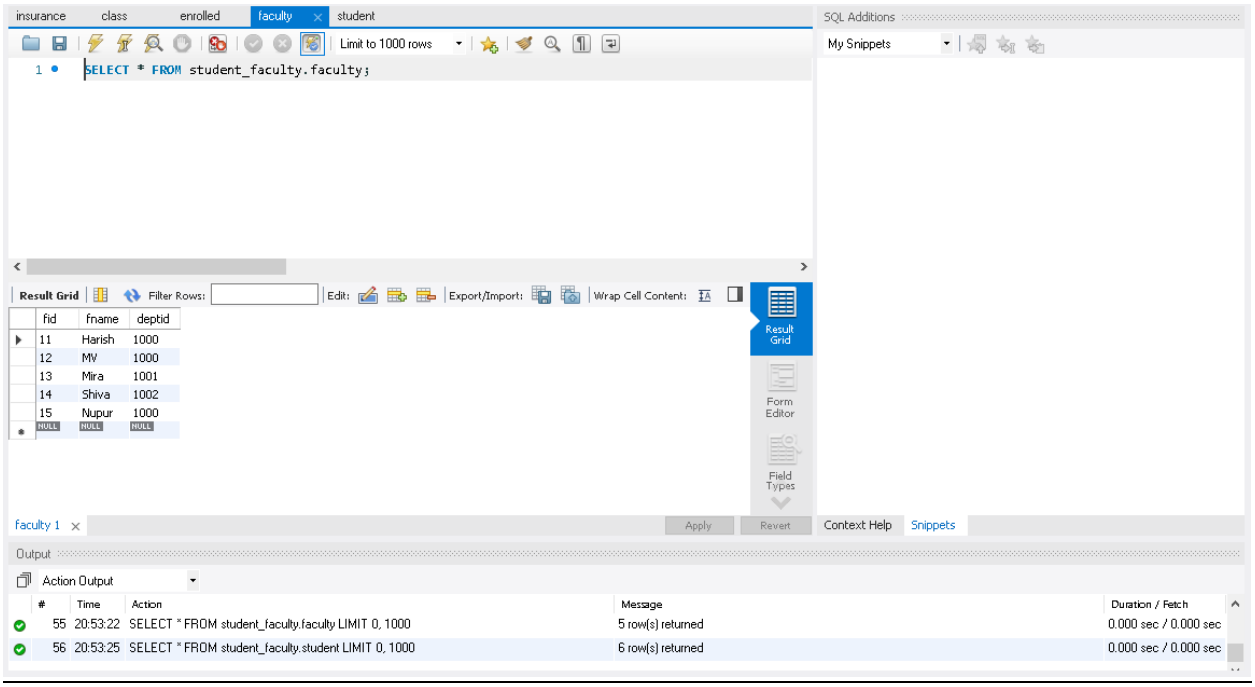
```
SELECT DISTINCT F.fname
FROM faculty F
WHERE 5 > (SELECT COUNT(E.snum)
FROM class C, enrolled E
WHERE C.cname = E.cname
AND C.fid = F.fid);
```

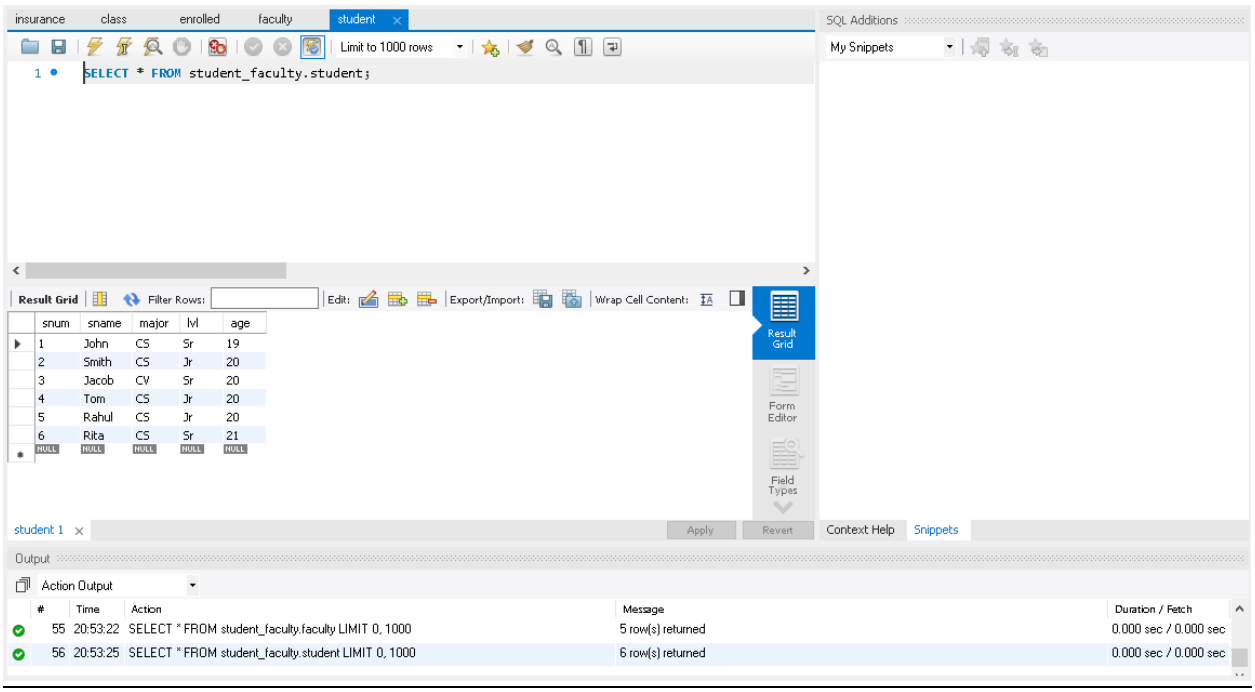
```
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum NOT IN (SELECT E.snum
FROM Enrolled E );
```

```
select distinct(st.age),st.lvl from student st
where st.lvl = (select s.lvl from student s
where s.age=st.age  group by s.lvl order by count(s.lvl) desc limit 1);
```

Output:


insurance
class
enrolled
faculty
student
SQL Additions
My Snippets
Limit to 1000 rows
1 SELECT * FROM student_faculty.class;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
cname | metts_at | room | fid
class1 | 2012-11-15 10:15:16 | R1 | 14
class10 | 2012-11-15 10:15:16 | R128 | 14
class2 | 2012-11-15 10:15:20 | R2 | 12
class3 | 2012-11-15 10:15:25 | R3 | 11
class4 | 2012-11-15 20:15:20 | R4 | 14
class5 | 2012-11-15 20:15:20 | R3 | 15
class6 | 2012-11-15 13:20:20 | R2 | 14
class7 | 2012-11-15 10:10:10 | R3 | 14
Result Grid
Form Editor
Field Types
class 1
Apply
Revert
Context Help
Snippets
Output
Action Output
| Time | Action | Message | Duration / Fetch
55 20:53:22 SELECT * FROM student_faculty.faculty LIMIT 0, 1000 5 row(s) returned 0.000 sec / 0.000 sec
56 20:53:25 SELECT * FROM student_faculty.student LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec


insurance
class
enrolled
faculty
student
SQL Additions
My Snippets
Limit to 1000 rows
1 SELECT * FROM student_faculty.faculty;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
fid | fname | deptid
11 | Harish | 1000
12 | MV | 1000
13 | Mira | 1001
14 | Shiva | 1002
15 | Nupur | 1000
Result Grid
Form Editor
Field Types
faculty 1
Apply
Revert
Context Help
Snippets
Output
Action Output
| Time | Action | Message | Duration / Fetch
55 20:53:22 SELECT * FROM student_faculty.faculty LIMIT 0, 1000 5 row(s) returned 0.000 sec / 0.000 sec
56 20:53:25 SELECT * FROM student_faculty.student LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec



Lab Program 5: Airline Database

Code:

```
create
database
airlineflight;
                use airlineflight;

                 CREATE TABLE FLIGHTS (
                 FLNO INTEGER PRIMARY KEY,
                  FFROM VARCHAR(15),
                  TTO VARCHAR(15),
                  DISTANCE INTEGER,
                  DEPARTS TIMESTAMP,
                  ARRIVES TIME,
                  PRICE INTEGER
                  );
```

```
DESC FLIGHTS;


CREATE TABLE AIRCRAFT
  (AID INTEGER PRIMARY KEY,
  ANAME VARCHAR(10),
  CRUISINGRANGE INTEGER);

 DESC AIRCRAFT;


 CREATE TABLE EMPLOYEES
  (EID INTEGER PRIMARY KEY,
  ENAME VARCHAR(15),
  SALARY INTEGER );


DESC EMPLOYEES;


CREATE TABLE CERTIFIED
  (EID INTEGER NOT NULL,
  AID INTEGER NOT NULL,
  PRIMARY KEY (EID, AID),
  FOREIGN KEY (EID) REFERENCES EMPLOYEES (EID),
  FOREIGN KEY (AID) REFERENCES AIRCRAFT (AID));

 DESC CERTIFIED;
COMMIT;


insert into aircraft values(101,'747',3000);
insert into aircraft values(102,'Boeing',900);
insert into aircraft values(103,'647',800);
insert into aircraft values(104,'Dreamliner',10000);
insert into aircraft values(105,'Boeing',3500);
insert into aircraft values(106,'707',1500);
insert into aircraft values(107,'Dream', 120000);


select * from aircraft;
```

```
insert into employees values(701,'A',50000);
insert into employees values(702,'B',100000);
insert into employees values(703,'C',150000);
insert into employees values(704,'D',90000);
insert into employees values(705,'E',40000);
insert into employees values(706,'F',60000);
insert into employees values(707,'G',90000);


select * from employees;


insert into certified values(701,101);
insert into certified values(701,102);
insert into certified values(701,106);
insert into certified values(701,105);
insert into certified values(702,104);
insert into certified values(703,104);
insert into certified values(704,104);
insert into certified values(702,107);
insert into certified values(703,107);
insert into certified values(704,107);
insert into certified values(702,101);
insert into certified values(703,105);
insert into certified values(704,105);
insert into certified values(705,103);


select * from certified;


insert into flights values(101,'Bangalore','Delhi',2500,TIMESTAMP '2005-
05-13 07:15:31',TIMESTAMP '2005-05-13 17:15:31',5000);
insert into flights values(102,'Bangalore','Lucknow',3000,TIMESTAMP '2005-
05-13 07:15:31',TIMESTAMP '2005-05-13 11:15:31',6000);
insert into flights values(103,'Lucknow','Delhi',500,TIMESTAMP '2005-05-13
12:15:31',TIMESTAMP ' 2005-05-13 17:15:31',3000);
insert into flights values(107,'Bangalore','Frankfurt',8000,TIMESTAMP
'2005-05-13  07:15:31',TIMESTAMP '2005-05-13 22:15:31',60000);
insert into flights values(104,'Bangalore','Frankfurt',8500,TIMESTAMP
'2005-05-13 07:15:31',TIMESTAMP '2005-05-13 23:15:31',75000);
```

```
insert into flights values(105,'Kolkata','Delhi',3400,TIMESTAMP '2005-05-
13 07:15:31',TIMESTAMP  '2005-05-13 09:15:31',7000);


select * from Flights;




SELECT DISTINCT A.aname
FROM Aircraft A
WHERE A.Aid IN (SELECT C.aid
 FROM Certified C, Employees E
 WHERE C.eid = E.eid AND
 NOT EXISTS ( SELECT *
 FROM Employees E1
 WHERE E1.eid = E.eid AND E1.salary <80000 ));









SELECT C.eid, MAX(A.cruisingrange)
FROM Certified C, Aircraft A
WHERE C.aid = A.aid
GROUP BY C.eid
HAVING COUNT(*) > 3;




SELECT DISTINCT E.ename
FROM Employees E
WHERE E.salary <( SELECT MIN(F.price)
                     FROM Flights F
                     WHERE F.ffrom = 'Bangalore' AND F.tto = 'Frankfurt'
);
```

```
SELECT Temp.name, Temp.AvgSalary
FROM ( SELECT A.aid, A.aname AS name, AVG (E.salary) AS AvgSalary
 FROM Aircraft A, Certified C, Employees E
 WHERE A.aid = C.aid AND C.eid = E.eid AND A.cruisingrange > 1000
 GROUP BY A.aid, A.aname )  Temp;
```

```
SELECT DISTINCT E.ename
FROM Employees E, Certified C, Aircraft A
WHERE E.eid = C.eid AND C.aid = A.aid AND A.aname LIKE 'Boeing%';
```

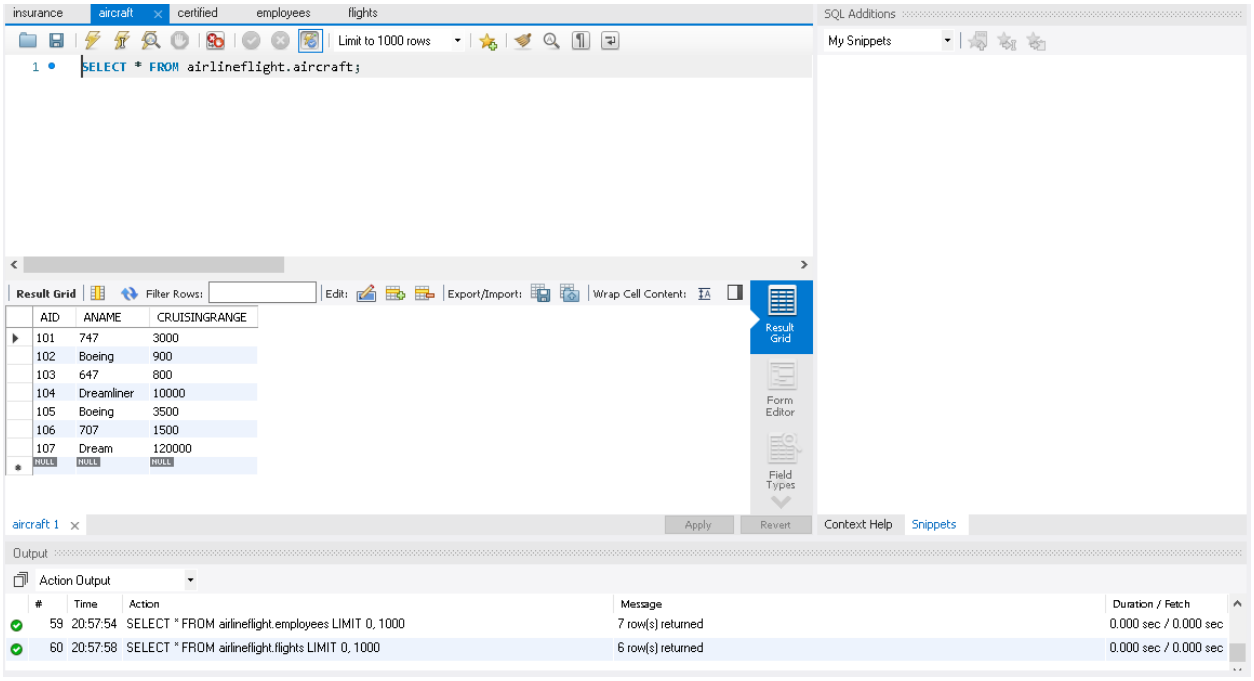
```
SELECT A.aid
FROM Aircraft A
WHERE A.cruisingrange >( SELECT MIN(F.distance)
                     FROM Flights F
                     WHERE F.ffrom = 'Bangalore' AND F.tto = 'Frankfurt'
);
```

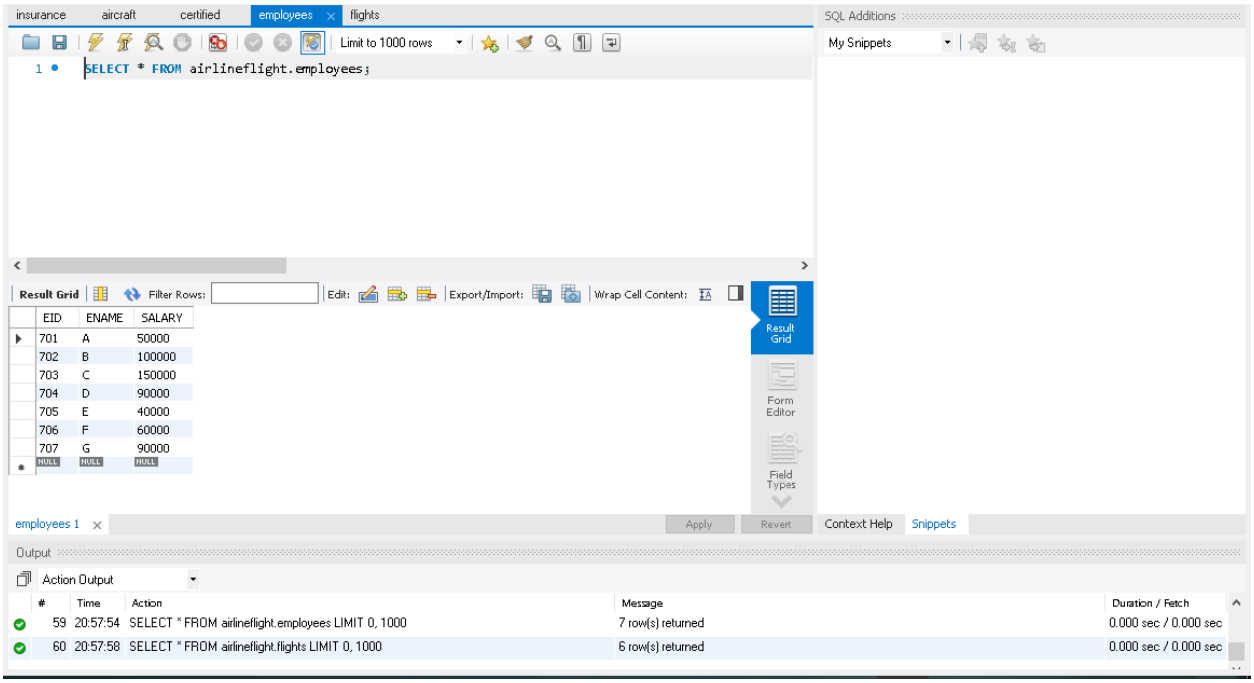
```
SELECT F.departs
FROM Flights F
WHERE F.flno IN ( ( SELECT F0.flno
 FROM Flights F0
 WHERE F0.ffrom = 'Bangalore' AND F0.tto = 'Delhi'
 AND extract(hour from F0.arrives) < 18 )
 UNION
( SELECT F0.flno
 FROM Flights F0, Flights F1
 WHERE F0.ffrom = 'Bangalore' AND F0.tto <> 'Delhi'
```

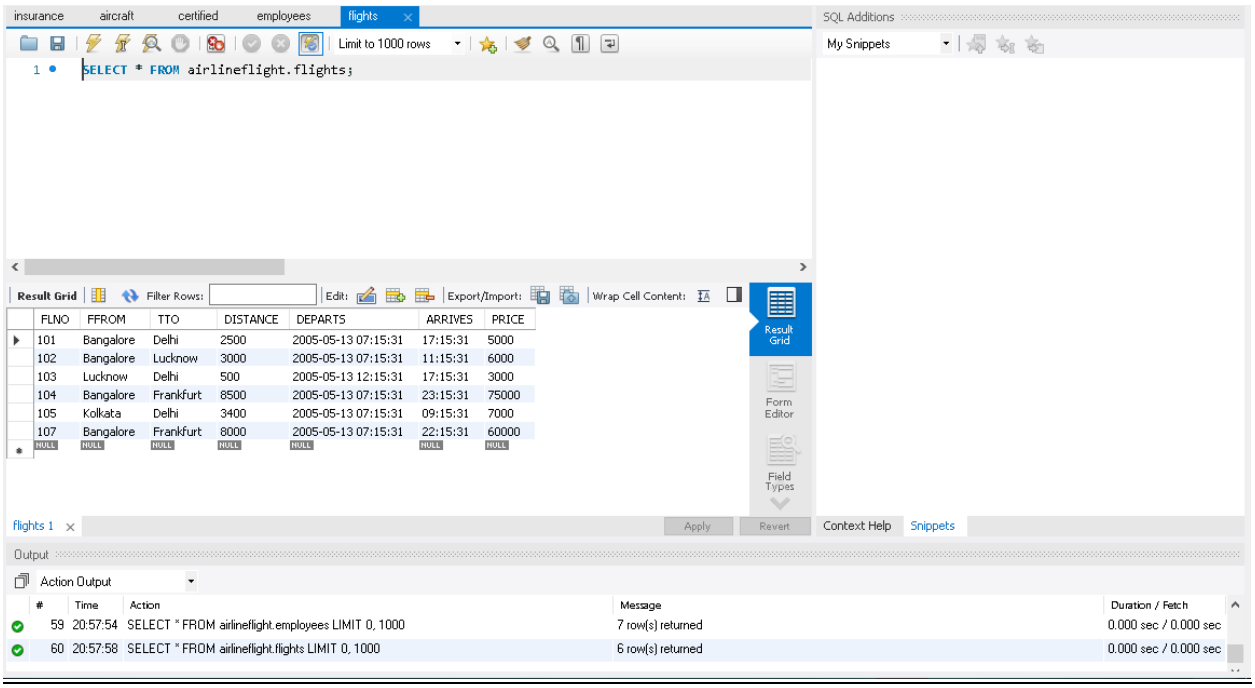
```
 AND F0.tto = F1.ffrom AND F1.tto = 'Delhi'
 AND F1.departs > F0.arrives
 AND extract(hour from F1.arrives) < 18)
 UNION
( SELECT F0.flno
 FROM Flights F0, Flights F1, Flights F2
 WHERE F0.ffrom = 'Bangalore'
 AND F0.tto = F1.ffrom
 AND F1.tto = F2.ffrom
 AND F2.tto = 'Delhi'
 AND F0.tto <> 'Delhi'
 AND F1.tto <> 'Delhi'
 AND F1.departs > F0.arrives
 AND F2.departs > F1.arrives
 AND extract(hour from F2.arrives) < 18));
```

```
SELECT E.ename, E.salary
FROM Employees E
WHERE E.eid NOT IN ( SELECT DISTINCT C.eid
 FROM Certified C )
AND E.salary >( SELECT AVG (E1.salary)
 FROM Employees E1
 WHERE E1.eid IN
( SELECT DISTINCT C1.eid
 FROM Certified C1 ) );
```

Output:


insurance
aircraft
certified
employees
flights
Limit to 1000 rows
SELECT * FROM airlineflight.aircraft;
SQL Additions
My Snippets
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
AID ANAME CRUISINGRANGE
101 747 3000
102 Boeing 900
103 647 800
104 Dreamliner 10000
105 Boeing 3500
106 707 1500
107 Dream 120000
Form Editor
Field Types
aircraft 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
59 20:57:54 SELECT * FROM airlineflight.employees LIMIT 0, 1000 7 row(s) returned 0.000 sec / 0.000 sec
60 20:57:58 SELECT * FROM airlineflight.flights LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec


insurance
aircraft
certified
employees
flights
Limit to 1000 rows
SELECT * FROM airlineflight.employees;
SQL Additions
My Snippets
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
EID ENAME SALARY
701 A 50000
702 B 100000
703 C 150000
704 D 90000
705 E 40000
706 F 60000
707 G 90000
Form Editor
Field Types
employees 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
59 20:57:54 SELECT * FROM airlineflight.employees LIMIT 0, 1000 7 row(s) returned 0.000 sec / 0.000 sec
60 20:57:58 SELECT * FROM airlineflight.flights LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec


insurance
aircraft
certified
employees
flights
SQL Additions
Limit to 1000 rows
My Snippets
1 SELECT * FROM airlineflight.flights;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
FLNO FFROM TTO DISTANCE DEPARTS ARRIVES PRICE
101 Bangalore Delhi 2500 2005-05-13 07:15:31 17:15:31 5000
102 Bangalore Lucknow 3000 2005-05-13 07:15:31 11:15:31 6000
103 Lucknow Delhi 500 2005-05-13 12:15:31 17:15:31 3000
104 Bangalore Frankfurt 8500 2005-05-13 07:15:31 23:15:31 75000
105 Kolkata Delhi 3400 2005-05-13 07:15:31 09:15:31 7000
107 Bangalore Frankfurt 8000 2005-05-13 07:15:31 22:15:31 60000
NULL
Result Grid
Form Editor
Field Types
flights 1
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
59 20:57:54 SELECT * FROM airlineflight.employees LIMIT 0, 1000 7 row(s) returned 0.000 sec / 0.000 sec
60 20:57:58 SELECT * FROM airlineflight.flights LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec