# **Lab Record:**

Sharan S Pai

1BM19CS146

# **Insurance Database System**

Consider the Insurance database given below. The data types are specified.

PERSON (driver\_id: String, name: String, address: String)

CAR (reg\_num: String, model: String, year: int)

ACCIDENT (report\_num: int, accident\_date: date, location: String)

OWNS (driver\_id: String, reg\_num: String)

PARTICIPATED (driver\_id: String,reg\_num: String, report\_num: int, damage\_amount: int)

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

# Show query box MySQL returned an empty result set (i.e. zero rows). (Query took 0.2342 seconds.) CREATE TABLE PERSON( driver\_id varchar(10), name varchar(20), address varchar(50), PRIMARY KEY(driver\_id)) [Edit inline] [Edit] [Create PHP code] MySQL returned an empty result set (i.e. zero rows). (Query took 0.4433 seconds.) CREATE TABLE CAR( regno varchar(7), model varchar(20), year INT, PRIMARY key(regno)) [Edit inline] [Edit] [Create PHP code] MySQL returned an empty result set (i.e. zero rows). (Query took 0.1990 seconds.) CREATE table accident( report\_number int, report\_date date, location varchar(20), PRIMARY key(report\_number)) [Edit inline] [Edit] [Create PHP code]

#### Show query box

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2720 seconds.)

CREATE TABLE owns (driver\_id varchar(20), regno varchar(7), FOREIGN key(driver\_id) REFERENCES person(driver\_id) ON UPDATE CASCADE on DELETE SET null, FOREIGN key(regno) REFERENCES car(regno) ON UPDATE CASCADE on DELETE SET null)

[Edit inline] [Edit] [Create PHP code]

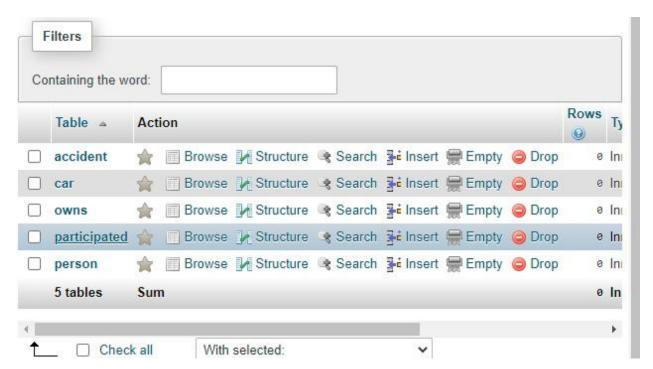
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2455 seconds.)

CREATE TABLE participated (driver\_id varchar(20), regno varchar(7), report\_number int, FOREIGN key(driver\_id) REFERENCES person(driver\_id) ON UPDATE CASCADE on DELETE SET null, FOREIGN key(regno) REFERENCES car(regno) ON UPDATE CASCADE on DELETE SET null)

[Edit inline] [Edit] [Create PHP code]

[Edit inline] [Edit] [Create PHP code]

## **OUTPUT:**



**ii)** Enter at least five tuples for each relation.

### Show query box

```
✓ 5 rows inserted. (Query took 0.1411 seconds.)

INSERT INTO `person`(`driver_id`, `name`, `address`) VALUES ('AZK12AQ','John','12th street,MG road'),
    ('AZK13AQ','Jorah','14th street,DVG road'), ('AZK14AQ','Catelyn','11th street,MG road'),
    ('AZK15AQ','Arya','12th street,Richmond road'), ('AZK16AQ','Ned','12th mail, Victoria avenue')

[Edit inline] [Edit] [ Create PHP code ]
```

#### Show query box

```
✓ 5 rows inserted. (Query took 0.1372 seconds.)

INSERT INTO `car`(`regno`, `model`, `year`) VALUES ('AZK123', 'santro', 2008), ('AZK124', 'swift dezire', 2009), ('AZK125', 'etios cross', 2010), ('AZK126', 'indigo', 2008), ('AZK127', 'scorpio', 2008)

[Edit inline] [Edit] [ Create PHP code ]
```

#### Show query box

#### Show query box

```
✓ 3 rows inserted. (Query took 0.1316 seconds.)

INSERT INTO `participated`(`driver_id`, `regno`, `report_number`, `damage_amount`) VALUES
('AZK15AQ', 'AZK130',6,30000), ('AZK14AQ', 'AZK125',2,40220), ('AZK13AQ', 'AZK123',5,30000)

[Edit inline] [Edit] [ Create PHP code ]
```

#### Show query box

# **OUTPUT:**

# Insert into person



#### Insert into car



# Insert into owns:

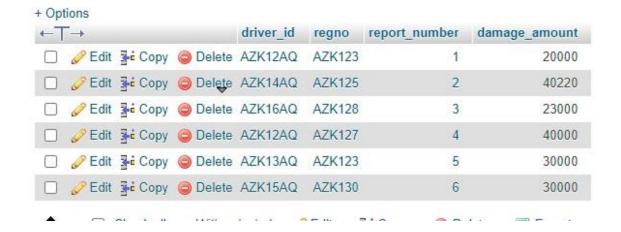


# Insert into accident:

#### + Options

<del>←</del> T→	report_number	report_date	location
☐	1	2010-02-18	Girinagar
☐ Ø Edit ♣ Copy   □ Delete	2	2011-05-18	MG road
☐	3	2010-09-08	Hebbal
☐ Ø Edit ♣ Copy   □ Delete	4	2010-11-12	JP nagar
☐ Ø Edit ♣ Copy   □ Delete	5	2010-02-26	Girinagar
☐ Ø Edit ♣ Copy   □ Delete	6	2011-01-20	KR market
☐ Ø Edit ♣ Copy   □ Delete	7	2008-09-29	MG road
☐	8	2008-11-26	Bandra

# Insert into participated:



iii)

a. Update the damage amount to 25000 for the car with a specific reg-num(example 'K A053408') for which the accident report number was 12.

#### Show query box

b. Add a new accident to the database.

Show query box

iv) Find the total number of people who owned cars that involved in accidents in 2008



v) Find the number of accidents in which cars belonging to a specific model (example )were involved.



# **Banking Database Software**

Consider the following database for a banking enterprise.

**Branch** (branch-name: String, branch-city: String, assets: real)

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

**BankCustomer** (customer-name: String, customer-street: String, customer-city: String)

**Depositer**(customer-name: String, accno: int)

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

i. Create the above tables by properly specifying the primary keys and the foreign keys



#### **Output:**

Сс	ntaining the	word	i:								
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	branch	*	Browse	M Structure	R Search	₃ insert	<b>⊞</b> Empty	Drop	0	InnoDB	utf8mb4_ger
	depositor		Browse	Structure	Rearch 3	∄ insert	<b>⊞</b> Empty	Drop	0	InnoDB	utf8mb4_ger
	Ioan	会	Browse	Structure	Search	<b>}-i</b> Insert	<b>⊞</b> Empty	Drop	0	InnoDB	utf8mb4_ger
	5 tables	Sun	n						0	InnoDB	utf8mb4_ge

#### ii. Enter at least five tuples for each relation

Show query box

Show query box

#### **Output:**

#### **Inserting into accounts:**



#### **Inserting into branch:**

#### + Options

←]	$\rightarrow$		~	branch_name	branch_city	assets
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		<b>≩</b> ċ Copy	Delete	Chandni ckowk	Delhi	20000000
	Edit	<b>≩</b> Copy	Delete	Laal chowk	Noida	5000002000
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	Edit	<b>≩</b> сору	Delete	MG road	Bangalore	400002000
	@ Edit	<b>≩</b> сору	Delete	Patel Chowk	Gandhinagar	10002000
	Edit	<b>≩</b>	Delete	Vijaynagar	Bangalore	400000000

## **Inserting into depositor:**

# + Options

customer_name	customer_street	customer_city	account_number
Jon	12th street	Delhi	10010
Arjun	1st street	Bangalore	20011
Bhima	2nd street	Mumbai	30010
Nakul	15th street	Gandhinagar	40120
Bheesm	25th street	Delhi	10011
Bheesm	25th street	Delhi	10012
Jon	12th street	Delhi	10051
Karan	10th street	Gurugram	10021

# **Inserting into loan:**

## + Options



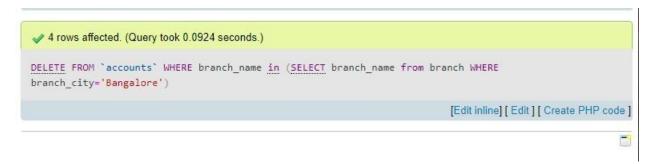
Find all the customers who have at least two accounts at the *Main* branch (ex. SBI\_ResidencyRoad)



**iV)** Find all the customers who have an account at *all* the branches located in a specific city (Ex. Delhi).



V) Demonstrate how you delete all account tuples at every branch located in a specific city



# Supplier Database System

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.

```
Show query box

### 3 rows inserted. (Query took 0.1469 seconds.)

INSERT INTO `suppliers` VALUES (1, 'Acme Widget Suppliers', '12th street'), (2, 'John Steel rim Suppliers', '14th street'), (3, 'Acme Car Lights Suppliers', '13th street')

[Edit inline] [Edit] [ Create PHP code]

Show query box

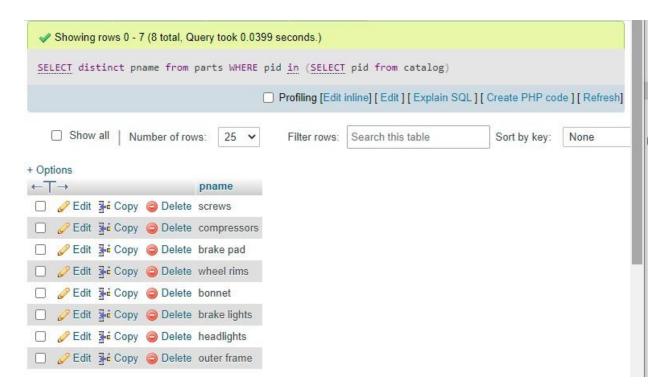
### 12 rows inserted. (Query took 0.1504 seconds.)

INSERT INTO `parts` VALUES (1, 'screws', 'black'), (2, 'compressors', 'red'), (3, 'brake pad', 'gray'), (4, 'wheel rims', 'blue'), (5, 'wheel rims', 'red'), (6, 'wheel rims', 'black'), (7, 'bonnet', 'black'), (8, 'brake lights', 'red'), (9, 'headlights', 'silver'), (10, 'outer frame', 'blue'), (11, 'outer frame', 'red'), (12, 'outer frame', 'black')

[Edit inline] [Edit] [ Create PHP code]
```

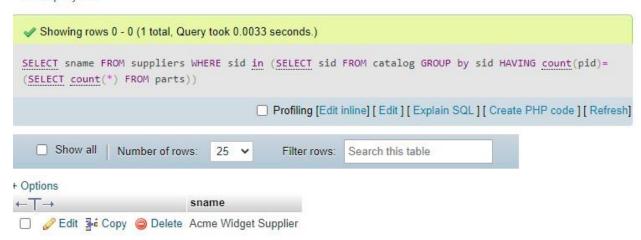
## Write the following queries in SQL:

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

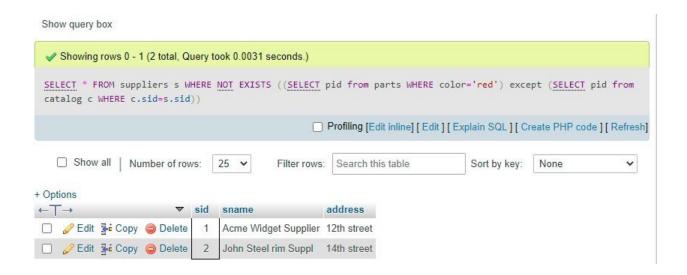


ii) Find the snames of suppliers who supply every part

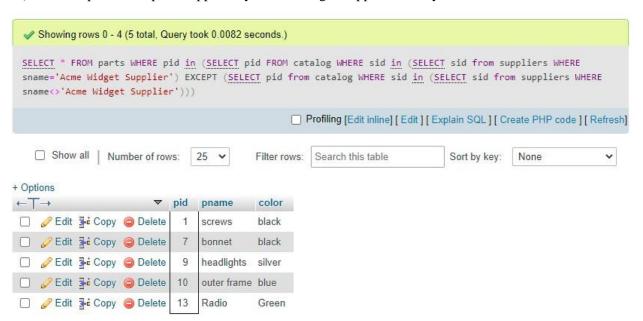
Show query box



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



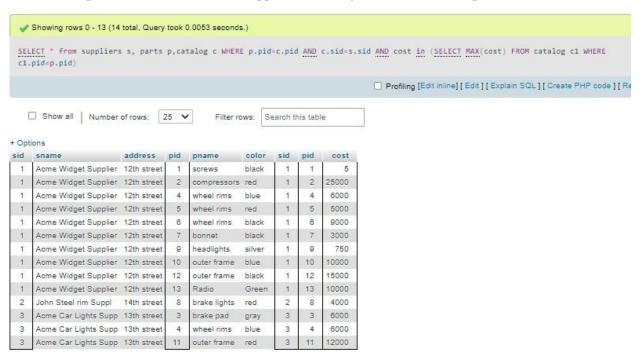
iv) Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.



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.



# 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(<u>snum</u>: integer, <u>cname</u>: string)

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

The meaning of these relations is straightforward; for example, Enrolled has one record per studentclass pair such that the student is enrolled in the class. Level(lvl) is a two character code with 4 different values (example: Junior: JR etc)

```
# 6 rows inserted. (Query took 0.1834 seconds.)

INSERT INTO STUDENT WALUES (1, 'jon', 'CS', 'Sr', 19), (2, 'Robert', 'CS', 'Jr', 28), (3, 'Bran', 'EC', 'Sr', 28), (4, 'Sansa', 'CS', 'Jr', 20), (5, 'Arya', 'EC', 'Jr', 21), (6, 'Rickon', 'CS', 'Sr', 21)

[Edit inline] [Edit] [ Create PHP code]

# 5 rows inserted. (Query took 0.1958 seconds.)

INSERT INTO FACULTY WALUES (11, 'Cersei', 1888), (12, 'Robert', 1888), (13, 'Ned', 1881), (14, 'Catlyn', 1882), (15, 'Lyanna', 1888)

[Edit inline] [Edit] [ Create PHP code]

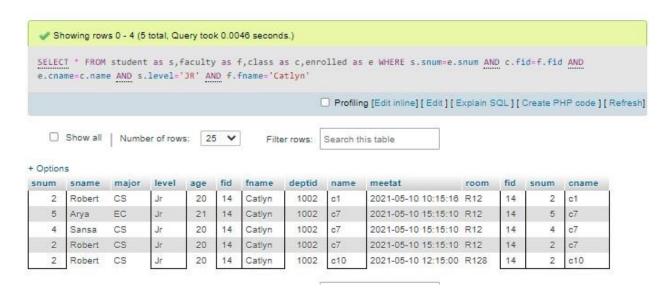
# 7 rows inserted. (Query took 0.1584 seconds.)

insert into class values ('c1', '2821/85/18 18:15:16', 'R12', 14), ('c18', '2821/85/18 12:15:88', 'R128', 14), ('c2', '2821/85/18 18:15:16', 'R2', 12), ('c3', '2821/85/18 18:15:16', 'R3', 11), ('c5', '2821/85/18 18:15:89', 'R128', 15), ('c6', '2821/85/18 11:38:12', 'R3', 15), ('c7', '2821/85/18 15:15:18', 'R12', 14)

[Edit inline] [Edit] [ Create PHP code]
```

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

i) Find the names of all Juniors (level = JR) who are enrolled in a class taught by a specific person.



ii) Find the names of all classes that either meet in room R128 or have five or more Students enrolled



iii) Find the names of all students who are enrolled in two classes that meet at the same time



**V)** Find the names of faculty members for whom the combined enrollment of the courses that they teach is less than five.



**vi)** Find the names of students who are not enrolled in any class



**Vii)** 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).



# Airline Database System

Consider the following database that keeps track of airline flight information:

 $FLIGHTS(\underline{flno}: integer, from: string, to: string, distance: integer, departs: time, arrives: time, price: integer)$ 

AIRCRAFT(aid: integer, aname: string, cruisingrange: integer)

**CERTIFIED**(eid: integer, aid: integer)

**EMPLOYEES**(<u>eid</u>: 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.



√7 rows inserted. (Query took 0.1537 seconds.)

insert into aircraft values(101, '747', 3000), (102, 'Boeing-737', 900), (103, 'Airbus-647', 800), (104, 'Dreamliner', 10000), (105, 'Boeing-737', 850), (106, 'Dassault-707', 1500), (107, 'TAS-122', 120000)

[Edit inline] [Edit] [Create PHP code]

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```
✓ 14 rows inserted. (Query took 0.1500 seconds.)

INSERT INTO certified VALUES (701,101), (701,102), (701,106), (701,105), (702,104), (703,104), (704,104), (702,107), (703,107), (704,107), (702,101), (703,105), (704,105), (705,103)

[Edit inline] [Edit] [Create PHP code]
```

```
✓ 7 rows inserted. (Query took 0.1491 seconds.)

INSERT INTO employee VALUES (701, 'A',50000), (702, 'B',100000), (703, 'C',150000), (704, 'D',90000), (705, 'E',40000), (706, 'F',60000), (707, 'G',90000)

[Edit inline] [Edit] [Create PHP code]

—
```

## 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 cruisingrange of the aircraft for which she or he is certified



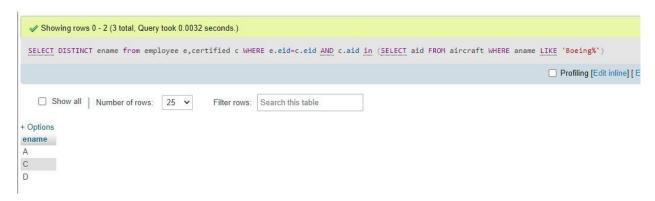
**iii)** Find the names of pilots whose salary is less than the price of the cheapest route from Bengaluru to Frankfurt



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



**viii)** Print the name and salary of every non-pilot whose salary is more than the average salary for pilots.

