

Lab Record:

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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, FOREIGN key(report_number) REFERENCES
accident(report_number) ON UPDATE CASCADE on DELETE SET null )
```

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

OUTPUT:

Filters

Containing the word:

	Table	Action	Rows	Ty
<input type="checkbox"/>	accident	★ Browse Structure Search Insert Empty Drop	0	In
<input type="checkbox"/>	car	★ Browse Structure Search Insert Empty Drop	0	In
<input type="checkbox"/>	owns	★ Browse Structure Search Insert Empty Drop	0	In
<input type="checkbox"/>	participated	★ Browse Structure Search Insert Empty Drop	0	In
<input type="checkbox"/>	person	★ Browse Structure Search Insert Empty Drop	0	In
	5 tables	Sum	0	In

☐ Check all With selected:

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
deziro',2009), ('AZK125','etios cross',2010), ('AZK126','indigo',2008), ('AZK127','scorpio',2008)
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)



Show query box

✓ 2 rows inserted. (Query took 0.1417 seconds.)

```
INSERT INTO `owns`(`driver_id`, `regno`) VALUES ('AZK15AQ','AZK130'), ('AZK16AQ','AZK128')
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)



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

✓ 6 rows inserted. (Query took 0.1292 seconds.)

```
INSERT INTO `accident` (`report_number`, `report_date`, `location`) VALUES (1, '2010-02-18', 'Girinagar'),  
(2, '2011-05-18', 'MG road'), (3, '2010-09-08', 'Hebbal'), (4, '2010-11-12', 'JP nagar'), (5, '2010-02-  
26', 'Girinagar'), (6, '2011-01-20', 'KR market')
```

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

OUTPUT:

Insert into person

+ Options

				driver_id	name	address
<input type="checkbox"/>		Edit		Copy		Delete
				AZK12AQ	John	12th street, MG road
<input type="checkbox"/>		Edit		Copy		Delete
				AZK13AQ	Jorah	14th street, DVG road
<input type="checkbox"/>		Edit		Copy		Delete
				AZK14AQ	Catelyn	11th street, MG road
<input type="checkbox"/>		Edit		Copy		Delete
				AZK15AQ	Arya	12th street, Richmond road
<input type="checkbox"/>		Edit		Copy		Delete
				AZK16AQ	Ned	12th mail, Victoria avenue
















Insert into car

+ Options

				regno	model	year
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				AZK123	santro	2008
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				AZK124	swift dezire	2009
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				AZK125	etios cross	2010
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				AZK126	indigo	2008
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				AZK127	scorpio	2008

Insert into owns:

+ Options

<div>← T →</div>						driver_id	regno	
<input type="checkbox"/>		Edit		Copy		Delete	AZK12AQ	AZK123
<input type="checkbox"/>		Edit		Copy		Delete	AZK12AQ	AZK127
<input type="checkbox"/>		Edit		Copy		Delete	AZK13AQ	AZK124
<input type="checkbox"/>		Edit		Copy		Delete	AZK14AQ	AZK125
<input type="checkbox"/>		Edit		Copy		Delete	AZK15AQ	AZK130
<input type="checkbox"/>		Edit		Copy		Delete	AZK16AQ	AZK126
<input type="checkbox"/>		Edit		Copy		Delete	AZK16AQ	AZK128

Insert into accident:

+ Options

				report_number	report_date	location
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				1	2010-02-18	Girinagar
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				2	2011-05-18	MG road
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				3	2010-09-08	Hebbal
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				4	2010-11-12	JP nagar
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				5	2010-02-26	Girinagar
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				6	2011-01-20	KR market
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				7	2008-09-29	MG road
<input type="checkbox"/>		Edit		Copy		Delete
<input type="checkbox"/>				8	2008-11-26	Bandra

Insert into participated:

+ Options

<div>← T →</div>				driver_id	regno	report_number	damage_amount
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK12AQ	AZK123	1	20000
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK14AQ	AZK125	2	40220
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK16AQ	AZK128	3	23000
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK12AQ	AZK127	4	40000
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK13AQ	AZK123	5	30000
<div><div><div><div></div></div><div><div></div></div></div><div><div><div>Edit</div><div>Copy</div><div>Delete</div></div></div></div>				AZK15AQ	AZK130	6	30000

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

✓ 1 row affected. (Query took 0.0773 seconds.)

```
UPDATE participated SET damage_amount=25000 WHERE `report_number`=3 AND regno='AZK128'
```

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

- b. Add a new accident to the database.

Show query box

✓ 1 row inserted. (Query took 0.1074 seconds.)

```
INSERT INTO `accident`(`report_number`, `report_date`, `location`) VALUES (8, '2008-11-26', 'Bandra')
```

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

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

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available. ⓘ

✓ Showing rows 0 - 0 (1 total, Query took 0.0017 seconds.)

```
SELECT count(*) FROM accident WHERE report_date like '2008%'
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#)

☐ Show all | Number of rows: 25 ▾ Filter rows:

+ Options

count(*)

2

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

✓ Showing rows 0 - 1 (2 total, Query took 0.0028 seconds.)

```
SELECT * FROM `participated` WHERE regno in (SELECT regno from car WHERE model='santro')
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 ▾ Filter rows: Sort by key:

+ Options

← T →				driver_id	regno	report_number	damage_amount
<input type="checkbox"/>	 Edit	 Copy	 Delete	AZK12AQ	AZK123	1	20000
<input type="checkbox"/>	 Edit	 Copy	 Delete	AZK13AQ	AZK123	5	30000

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



```
MySQL returned an empty result set (i.e. zero rows). (Query took 0.2320 seconds.)

CREATE TABLE BRANCH( branch_name varchar(20), branch_city varchar(20), assets real, PRIMARY key(branch_name) )

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

MySQL returned an empty result set (i.e. zero rows). (Query took 0.2360 seconds.)

CREATE TABLE accounts( accno int, branch_name varchar(20), balance real, PRIMARY key(accno), FOREIGN key(branch_name)
REFERENCES branch(branch_name) on UPDATE CASCADE )

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

MySQL returned an empty result set (i.e. zero rows). (Query took 0.2027 seconds.)

CREATE table depositor( customer_name varchar(20), customer_street varchar(20), customer_city varchar(20) )

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

MySQL returned an empty result set (i.e. zero rows). (Query took 0.1936 seconds.)

CREATE table loan( loan_number int, branch_name varchar(20), amount real, PRIMARY KEY(loan_number), FOREIGN
KEY(branch_name) REFERENCES branch(branch_name) on UPDATE CASCADE )

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

MySQL returned an empty result set (i.e. zero rows). (Query took 0.2005 seconds.)

create table borrower( customer_name varchar(20), loan_number int, PRIMARY key(loan_number), FOREIGN key(loan_number)
REFERENCES loan(loan_number) on UPDATE CASCADE )

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

Output:

Filters

Containing the word:

	Table	Action	Rows	Type	Collation
<input type="checkbox"/>	accounts	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_g
<input type="checkbox"/>	borrower	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_g
<input type="checkbox"/>	branch	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_g
<input type="checkbox"/>	depositor	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_g
<input type="checkbox"/>	loan	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_g
	5 tables	Sum	0	InnoDB	utf8mb4_g

ii. Enter at least five tuples for each relation

Show query box

✓ 5 rows inserted. (Query took 0.1126 seconds.)

```
INSERT INTO `branch`(`branch_name`, `branch_city`, `assets`) VALUES ('MG road','Bangalore',400002000),
('Karolbagh','Delhi',5000002000), ('Bandra','Mumbai',30002000), ('Patel Chowk','Gandhinagar',10002000), ('Main
Branch','Delhi',4000000200000)
```

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

✓ 9 rows inserted. (Query took 0.1083 seconds.)

```
INSERT INTO `accounts`(`accno`, `branch_name`, `balance`) VALUES (30010,'Bandra',3000000), (20011,'MG road',1000000),
(40120,'Patel Chowk',2000000), (40010,'Patel Chowk',10000000), (20010,'MG road',300000), (20009,'MG road',30000000),
(10010,'Main Branch',30000000), (50010,'Karolbagh',3000000), (10011,'Main Branch',1200000)
```

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

Show query box

✓ 5 rows inserted. (Query took 0.1144 seconds.)

```
INSERT INTO `depositor`(`customer_name`, `customer_street`, `customer_city`) VALUES ('Jon','12th street','Delhi'),
('Arjun','1st street','Bangalore'), ('Bhima','2nd street','Mumbai'), ('Nakul','15th street','Gandhinagar'),
('Bheesm','25th street','Delhi')
```

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

Show query box

✓ 5 rows inserted. (Query took 0.1114 seconds.)

```
INSERT INTO `borrower`(`customer_name`, `loan_number`) VALUES ('Karan',2), ('Arjun',3), ('Bhima',1), ('Bheesm',4), ('Jon',5)
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

Show query box

✓ 5 rows inserted. (Query took 0.1023 seconds.)
























```
INSERT INTO `loan`(`loan_number`, `branch_name`, `amount`) VALUES (1,'Karolbagh',200000), (2,'MG road',4000000), (3,'Bandra',100000), (4,'Main Branch',3000000), (5,'Main Branch',5000000)
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

Output:





















Inserting into accounts:

+ Options

<div><div><div></div><div></div><div></div></div></div>						accno	branch_name	balance	
<input type="checkbox"/>		Edit		Copy		Delete	10010	Main Branch	30000000
<input type="checkbox"/>		Edit		Copy		Delete	10011	Main Branch	1200000
<input type="checkbox"/>		Edit		Copy		Delete	20009	MG road	30000000
<input type="checkbox"/>		Edit		Copy		Delete	20010	MG road	300000
<input type="checkbox"/>		Edit		Copy		Delete	20011	MG road	1000000
<input type="checkbox"/>		Edit		Copy		Delete	30010	Bandra	3000000
<input type="checkbox"/>		Edit		Copy		Delete	40010	Patel Chowk	10000000
<input type="checkbox"/>		Edit		Copy		Delete	40120	Patel Chowk	2000000
<input type="checkbox"/>		Edit		Copy		Delete	50010	Karolbagh	3000000

Inserting into branch:

+ Options

				branch_name	branch_city	assets
<input type="checkbox"/>				Bandra	Mumbai	30002000
<input type="checkbox"/>				Chandni ckwk	Delhi	20000000
<input type="checkbox"/>				Laal chowk	Noida	5000002000
<input type="checkbox"/>				Main Branch	Delhi	40000000200000
<input type="checkbox"/>				MG road	Bangalore	400002000
<input type="checkbox"/>				Patel Chowk	Gandhinagar	10002000
<input type="checkbox"/>				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

				loan_number	branch_name	amount
<input type="checkbox"/>				1	Karolbagh	200000
<input type="checkbox"/>				2	MG road	4000000
<input type="checkbox"/>				3	Bandra	100000
<input type="checkbox"/>				4	Main Branch	3000000
<input type="checkbox"/>				5	Main Branch	5000000

- iii) Find all the customers who have at least two accounts at the *Main* branch (ex. SBI_ResidencyRoad)

✓ Showing rows 0 - 1 (2 total, Query took 0.0101 seconds.)

```
SELECT customer_name FROM depositor WHERE account_number in (SELECT accno from accounts where branch_name='Main Branch') GROUP by customer_name Having count(*)>=2
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾ Filter rows: Search this table Sort by key: None

+ Options

customer_name
Bheesm
Jon

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

✓ Showing rows 0 - 0 (1 total, Query took 0.0140 seconds.)

```
SELECT * FROM depositor d WHERE NOT EXISTS ((SELECT branch_name FROM branch WHERE branch_city='Gandhinagar') EXCEPT (SELECT branch_name FROM accounts a WHERE a.accno=d.account_number))
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create P

☐ Show all | Number of rows: 25 ▾ Filter rows: Search this table

+ Options

customer_name	customer_street	customer_city	account_number
Nakul	15th street	Gandhinagar	40120

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

✓ 4 rows affected. (Query took 0.0924 seconds.)

```
DELETE FROM `accounts` WHERE branch_name in (SELECT branch_name from branch WHERE branch_city='Bangalore')
```

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

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.

✓ Showing rows 0 - 7 (8 total, Query took 0.0399 seconds.)

```
SELECT distinct pname from parts WHERE pid in (SELECT pid from catalog)
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 ▼ Filter rows: Sort by key:

+ Options

		pname
<input type="checkbox"/>	Edit Copy Delete	screws
<input type="checkbox"/>	Edit Copy Delete	compressors
<input type="checkbox"/>	Edit Copy Delete	brake pad
<input type="checkbox"/>	Edit Copy Delete	wheel rims
<input type="checkbox"/>	Edit Copy Delete	bonnet
<input type="checkbox"/>	Edit Copy Delete	brake lights
<input type="checkbox"/>	Edit Copy Delete	headlights
<input type="checkbox"/>	Edit Copy Delete	outer frame

ii) Find the snames of suppliers who supply every part

Show query box

✓ Showing rows 0 - 0 (1 total, Query took 0.0033 seconds.)

```
SELECT sname FROM suppliers WHERE sid in (SELECT sid FROM catalog GROUP by sid HAVING count(pid)=(SELECT count(*) FROM parts))
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

	sname
<input type="checkbox"/> Edit Copy Delete	Acme Widget Supplier

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

Show query box

✓ Showing rows 0 - 1 (2 total, Query took 0.0031 seconds.)

```
SELECT * FROM suppliers s WHERE NOT EXISTS ((SELECT pid from parts WHERE color='red') except (SELECT pid from catalog c WHERE c.sid=s.sid))
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	sid	sname	address
<input type="checkbox"/> Edit Copy Delete	1	Acme Widget Supplier	12th street
<input type="checkbox"/> Edit Copy Delete	2	John Steel rim Suppl	14th street

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

✓ Showing rows 0 - 4 (5 total, Query took 0.0082 seconds.)

```
SELECT * FROM parts WHERE pid in (SELECT pid FROM catalog WHERE sid in (SELECT sid from suppliers WHERE sname='Acme Widget Supplier') EXCEPT (SELECT pid from catalog WHERE sid in (SELECT sid from suppliers WHERE sname<>'Acme Widget Supplier')))
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	pid	pname	color
<input type="checkbox"/> Edit Copy Delete	1	screws	black
<input type="checkbox"/> Edit Copy Delete	7	bonnet	black
<input type="checkbox"/> Edit Copy Delete	9	headlights	silver
<input type="checkbox"/> Edit Copy Delete	10	outer frame	blue
<input type="checkbox"/> Edit Copy Delete	13	Radio	Green

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).

Showing rows 0 - 14 (15 total, Query took 0.0062 seconds.)

```
SELECT pname,sid,cost from parts,catalog c1 WHERE parts.pid=c1.pid AND cost>=(SELECT avg(cost) from catalog c2 WHERE c1.pid=c2.pid)
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

pname	sid	cost
screws	1	5
compressors	1	25000
brake pad	3	8000
wheel rims	1	8000
wheel rims	3	8000
wheel rims	1	5000
wheel rims	1	9000
bonnet	1	3000
brake lights	2	4000
headlights	1	750
outer frame	1	10000
outer frame	1	11000
outer frame	3	12000
outer frame	1	15000
Radio	1	10000

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

Showing rows 0 - 13 (14 total, Query took 0.0053 seconds.)

```
SELECT * from suppliers s, parts p,catalog c WHERE p.pid=c.pid AND c.sid=s.sid AND cost in (SELECT MAX(cost) FROM catalog c1 WHERE c1.pid=p.pid)
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

sid	sname	address	pid	pname	color	sid	pid	cost
1	Acme Widget Supplier	12th street	1	screws	black	1	1	5
1	Acme Widget Supplier	12th street	2	compressors	red	1	2	25000
1	Acme Widget Supplier	12th street	4	wheel rims	blue	1	4	8000
1	Acme Widget Supplier	12th street	5	wheel rims	red	1	5	5000
1	Acme Widget Supplier	12th street	6	wheel rims	black	1	6	9000
1	Acme Widget Supplier	12th street	7	bonnet	black	1	7	3000
1	Acme Widget Supplier	12th street	9	headlights	silver	1	9	750
1	Acme Widget Supplier	12th street	10	outer frame	blue	1	10	10000
1	Acme Widget Supplier	12th street	12	outer frame	black	1	12	15000
1	Acme Widget Supplier	12th street	13	Radio	Green	1	13	10000
2	John Steel rim Suppl	14th street	8	brake lights	red	2	8	4000
3	Acme Car Lights Supp	13th street	3	brake pad	gray	3	3	8000
3	Acme Car Lights Supp	13th street	4	wheel rims	blue	3	4	8000
3	Acme Car Lights Supp	13th street	11	outer frame	red	3	11	12000

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

✓ Showing rows 0 - 0 (1 total, Query took 0.0081 seconds.)

```
SELECT * from suppliers s WHERE NOT EXISTS ((SELECT pid FROM catalog c WHERE c.sid=s.sid)EXCEPT(SELECT pid FROM parts WHERE color='red'))
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 Filter rows:

+ Options



☐ Edit ☐ Copy ☐ Delete

sid	sname	address
2	John Steel rim Suppl	14th street

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)

The meaning of these relations is straightforward; for example, Enrolled has one record per student-class 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)



The image displays three screenshots of SQL query execution results, likely from a database management system interface. Each screenshot shows a successful query execution with a green checkmark and a message indicating the number of rows inserted and the query execution time.

Query 1: Insert into STUDENT

6 rows inserted. (Query took 0.1834 seconds.)

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

Query 2: Insert into FACULTY

5 rows inserted. (Query took 0.1058 seconds.)

```
INSERT INTO FACULTY VALUES (11, 'Cersei', 1000), (12, 'Robert', 1000), (13, 'Ned', 1001), (14, 'Catlyn', 1002), (15, 'Lyanna', 1000)
```

Query 3: Insert into CLASS

7 rows inserted. (Query took 0.1584 seconds.)

```
insert into class values ('c1', '2021/05/10 10:15:16', 'R12', 14), ('c10', '2021/05/10 12:15:00', 'R128', 14), ('c2', '2021/05/10 10:15:16', 'R2', 12), ('c3', '2021/05/10 10:15:16', 'R3', 11), ('c5', '2021/05/10 09:15:00', 'R128', 15), ('c6', '2021/05/10 11:30:12', 'R3', 15), ('c7', '2021/05/10 15:15:10', 'R12', 14)
```

```

✓ 10 rows inserted. (Query took 0.1463 seconds.)

insert into enrolled values (1, 'c1'), (2, 'c1'), (3, 'c3'), (4, 'c6'), (5, 'c7'), (4, 'c7'), (2, 'c7'), (1, 'c7'),
(3, 'c10'), (2, 'c10')

```

[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.

✓ Showing rows 0 - 4 (5 total, Query took 0.0046 seconds.)

```

SELECT * FROM student as s,faculty as f,class as c,enrolled as e WHERE s.snum=e.snum AND c.fid=f.fid AND
e.cname=c.name AND s.level='JR' AND f.fname='Catlyn'

```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

snum	sname	major	level	age	fid	fname	deptid	name	meetat	room	fid	snum	cname
2	Robert	CS	Jr	20	14	Catlyn	1002	c1	2021-05-10 10:15:16	R12	14	2	c1
5	Arya	EC	Jr	21	14	Catlyn	1002	c7	2021-05-10 15:15:10	R12	14	5	c7
4	Sansa	CS	Jr	20	14	Catlyn	1002	c7	2021-05-10 15:15:10	R12	14	4	c7
2	Robert	CS	Jr	20	14	Catlyn	1002	c7	2021-05-10 15:15:10	R12	14	2	c7
2	Robert	CS	Jr	20	14	Catlyn	1002	c10	2021-05-10 12:15:00	R128	14	2	c10

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

✓ Showing rows 0 - 2 (3 total, Query took 0.0031 seconds.)

```

SELECT * from class as c WHERE c.room='R128' OR c.name in (SELECT cname from enrolled GROUP by cname having
count(cname)>=5)

```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	name	meetat	room	fid
<input type="checkbox"/> Edit Copy Delete	c10	2021-05-10 12:15:00	R128	14
<input type="checkbox"/> Edit Copy Delete	c5	2021-05-10 09:15:00	R128	15
<input type="checkbox"/> Edit Copy Delete	c7	2021-05-10 15:15:10	R12	14

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

✓ Showing rows 0 - 1 (2 total, Query took 0.0152 seconds.)

```
SELECT * 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.name AND e2.cname=c2.name AND c1.meetat=c2.meetat)
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	snum	sname	major	level	age
<input type="checkbox"/> Edit Copy Delete	1	jon	CS	Sr	19
<input type="checkbox"/> Edit Copy Delete	3	Bran	EC	Sr	20

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

✓ Showing rows 0 - 3 (4 total, Query took 0.0038 seconds.)

```
SELECT DISTINCT F.fname FROM Faculty F WHERE 5 > (SELECT COUNT(E.snum) FROM Class C, Enrolled E WHERE C.name = E.cname AND C.fid = F.fid)
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	fname
<input type="checkbox"/> Edit Copy Delete	Cersei
<input type="checkbox"/> Edit Copy Delete	Robert
<input type="checkbox"/> Edit Copy Delete	Ned
<input type="checkbox"/> Edit Copy Delete	Lyanna

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

✓ Showing rows 0 - 0 (1 total, Query took 0.0386 seconds.)

```
SELECT * FROM student s WHERE NOT EXISTS (SELECT * FROM enrolled e WHERE e.snum=s.snum)
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

	snum	sname	major	level	age
<input type="checkbox"/> Edit Copy Delete	6	Rickon	CS	Sr	21

- 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).

Showing rows 0 - 3 (4 total. Query took 0.0056 seconds.)

```
SELECT s.age, s.level FROM Student s GROUP BY s.age, s.level HAVING s.level IN (SELECT s1.level FROM Student s1 WHERE s1.age = s.age GROUP BY s1.level, s1.age HAVING COUNT(*) >= ALL (SELECT COUNT(*) FROM Student s2 WHERE s1.age = s2.age GROUP BY s2.level, s2.age))
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

				age	level
<input type="checkbox"/>	Edit	Copy	Delete	19	Sr
<input type="checkbox"/>	Edit	Copy	Delete	20	Jr
<input type="checkbox"/>	Edit	Copy	Delete	21	Jr
<input type="checkbox"/>	Edit	Copy	Delete	21	Sr

Airline Database System

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

FLIGHTS(fno: 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(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.

+ Options

				fno	src	dest	dist	departs	arrives	price			
<input type="checkbox"/>		Edit		Copy		Delete	101	Bangalore	Delhi	2500	07:15:31	17:15:31	5000
<input type="checkbox"/>		Edit		Copy		Delete	102	Bangalore	Lucknow	3000	07:15:31	11:15:31	25000
<input type="checkbox"/>		Edit		Copy		Delete	103	Lucknow	Delhi	500	12:15:31	17:15:31	8000
<input type="checkbox"/>		Edit		Copy		Delete	104	Bangalore	Frankfurt	8500	07:15:31	23:15:31	75000
<input type="checkbox"/>		Edit		Copy		Delete	105	Kolkata	Delhi	3400	07:15:31	09:15:31	15000
<input type="checkbox"/>		Edit		Copy		Delete	107	Bangalore	Frankfurt	8000	07:15:31	22:15:31	60000

✓ 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)
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✓ 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

```

✓ Showing rows 0 - 3 (4 total, Query took 0.0067 seconds.)

SELECT DISTINCT a.aname FROM aircraft a,certified c WHERE a.aid=c.aid AND c.eid in (SELECT eid FROM employee AS e WHERE e.salary>80000)

[Profiling] [Edit inline] [ Edit ]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options
aname
☐ Edit ☐ Copy ☐ Delete 747
☐ Edit ☐ Copy ☐ Delete Dreamliner
☐ Edit ☐ Copy ☐ Delete Boeing-737
☐ Edit ☐ Copy ☐ Delete TAS-122

```

- 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

```

✓ Showing rows 0 - 0 (1 total, Query took 0.0056 seconds.)

SELECT eid,MAX(a.cruiserange) FROM aircraft a,certified c WHERE a.aid=c.aid GROUP by eid HAVING count(c.aid)>3

[Profiling] [Edit inline] [ Edit ]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options
eid MAX(a.cruiserange)
701 3000

```

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

Showing rows 0 - 1 (2 total, Query took 0.0063 seconds.)

```
SELECT DISTINCT ename ,salary FROM employee e,certified c WHERE c.eid=e.eid AND e.salary< (SELECT MIN("price") FROM flight WHERE `src`='Bangalore' AND dest='Frankfurt')
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

ename	salary
A	50000
E	40000

- iv) For all aircraft with cruisingrange over 1000 Kms, find the name of the aircraft and the average salary of all pilots certified for this aircraft

Showing rows 0 - 3 (4 total, Query took 0.0066 seconds.)

```
SELECT a.aname,AVG(salary) from aircraft a,employee e,certified c WHERE a.aid=c.aid AND e.eid=c.eid AND cruiserange>1000 GROUP BY a.aname
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

aname	AVG(salary)
747	75000.0000
Dassault-707	50000.0000
Dreamliner	113333.3333
TAS-122	113333.3333

- v) Find the names of pilots certified for some Boeing aircraft

Showing rows 0 - 2 (3 total, Query took 0.0032 seconds.)

```
SELECT DISTINCT ename from employee e,certified c WHERE e.eid=c.eid AND c.aid in (SELECT aid FROM aircraft WHERE aname LIKE 'Boeing%')
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

ename
A
C
D

- vi) Find the aids of all aircraft that can be used on routes from Bengaluru to New Delhi

✓ Showing rows 0 - 2 (3 total, Query took 0.0046 seconds.)

```
SELECT * FROM aircraft WHERE cruiserange >= (SELECT dist from flight f WHERE f.src='Bangalore' AND f.dest='Delhi')
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	aid	aname	cruiserange
<input type="checkbox"/> Edit Copy Delete	101	747	3000
<input type="checkbox"/> Edit Copy Delete	104	Dreamliner	10000
<input type="checkbox"/> Edit Copy Delete	107	TAS-122	120000

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

✓ Showing rows 0 - 0 (1 total, Query took 0.0126 seconds.)

```
SELECT ename,salary from employee e WHERE eid NOT IN (SELECT DISTINCT eid from certified) AND salary>= (SELECT AVG(salary) FROM employee e,certified c WHERE e.eid=c.eid)
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

	ename	salary
<input type="checkbox"/> Edit Copy Delete	G	90000