

```
create table SUPPLIERS(sid integer(5) primary key, sname varchar(20), city  
varchar(20));
```

```
create table PARTS(pid integer(5) primary key, pname varchar(20), color varchar(10));
```

```
create table CATALOG(sid integer(5), pid integer(5), foreign key(sid)  
references SUPPLIERS(sid), foreign key(pid) references PARTS(pid), cost  
float(6), primary key(sid, pid));
```

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

- 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");

```
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);
```

---

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

```
40 • SELECT DISTINCT P.pname
41 FROM Parts P, Catalog C
42 WHERE P.pid = C.pid;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	pname			
▶	Book			
	Pen			
	Pencil			
	Mobile			
	Charger			

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

```
45 • SELECT S.sname
46 FROM Suppliers S
47 WHERE
48 (( SELECT count(P.pid)
49 FROM Parts P ) =
50 ( SELECT count(C.pid)
51 FROM Catalog C
52 WHERE C.sid = S.sid ));
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	sname			
▶	Acme Widget			

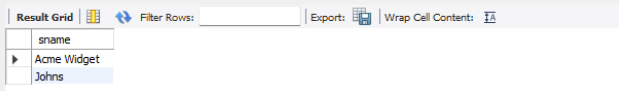
vi) For each part, find the sname of the supplier who charges the most for that part.

```
90 • SELECT P.pid, S.sname
91 FROM Parts P, Suppliers S, Catalog C
92 WHERE C.pid = P.pid
93 AND C.sid = S.sid
94 AND C.cost = (SELECT MAX(C1.cost)
95 FROM Catalog C1
96 WHERE C1.pid = P.pid);
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	pid	sname		
▶	20001	Acme Widget		
	20001	Johns		
	20002	Johns		
	20003	Reliance		
	20004	Acme Widget		
	20005	Acme Widget		

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

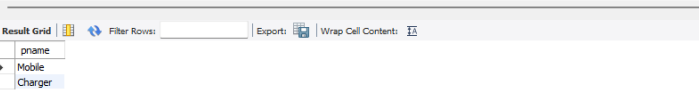
```
57 • SELECT S.sname
58 FROM Suppliers S
59 WHERE
60 (( SELECT count(P.pid)
61 FROM Parts P where color="Red" ) =
62 ( SELECT count(C.pid)
63 FROM Catalog C, Parts P
64 WHERE C.sid = S.sid AND
65 C.pid = P.pid AND P.color = "Red" ));
66
```



sname
Acme Widget
Johns

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

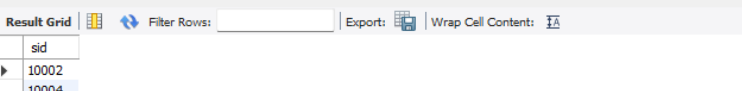
```
71 • SELECT P.pname
72 FROM Parts P, Catalog C, Suppliers S
73 WHERE P.pid = C.pid AND C.sid = S.sid
74 AND S.sname = "Acme Widget"
75 AND NOT EXISTS ( SELECT *
76 FROM Catalog C1, Suppliers S1
77 WHERE P.pid = C1.pid AND C1.sid = S1.sid AND
78 S1.sname != "Acme Widget");
79
80
81
```



pname
Mobile
Charger

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).

```
83 • SELECT DISTINCT C.sid FROM Catalog C
84 WHERE C.cost > ( SELECT AVG (C1.cost)
85 FROM Catalog C1
86 WHERE C1.pid = C.pid );
87
```



sid
10002
10004