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PROGRAM 3: SUPPLIER DATABASE

Consider the following schema:

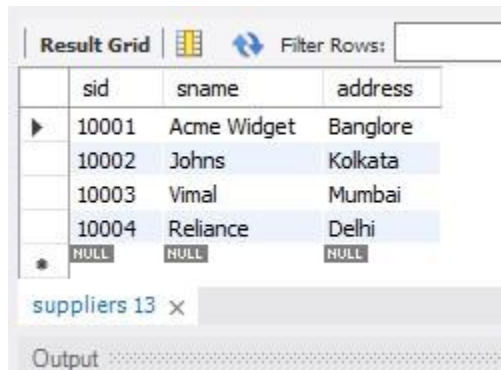
SUPPLIERS(sid: integer, sname: string, address: string)

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.

SUPPLIERS

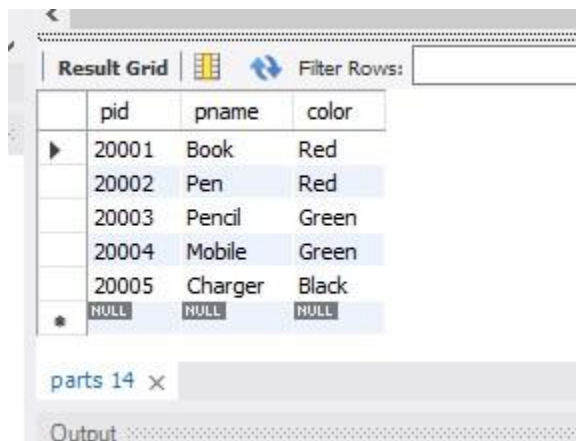


	sid	sname	address
▶	10001	Acme Widget	Banglore
	10002	Johns	Kolkata
	10003	Vimal	Mumbai
	10004	Reliance	Delhi
*	NULL	NULL	NULL

suppliers 13 ×

Output

PARTS

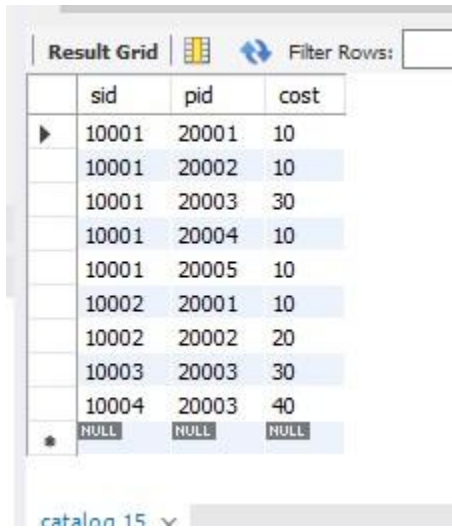


	pid	pname	color
▶	20001	Book	Red
	20002	Pen	Red
	20003	Pencil	Green
	20004	Mobile	Green
	20005	Charger	Black
*	NULL	NULL	NULL

parts 14 ×

Output

CATALOG

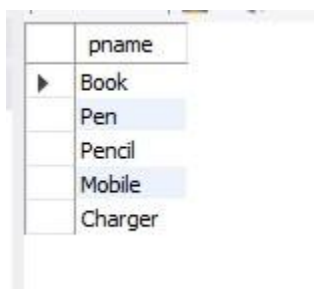


	sid	pid	cost
▶	10001	20001	10
	10001	20002	10
	10001	20003	30
	10001	20004	10
	10001	20005	10
	10002	20001	10
	10002	20002	20
	10003	20003	30
	10004	20003	40
*	NULL	NULL	NULL

catalog 15 ▼

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

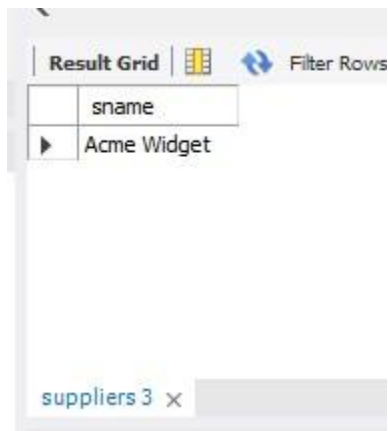
`select distinct P.pname from Parts P,Catalog C where P.pid=C.pid;`



	pname
▶	Book
	Pen
	Pencil
	Mobile
	Charger

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 where not  
exists (select P.pid from parts P where not exists(select C1.sid from catalog C1 where  
C1.sid=C.sid and C1.pid=P.pid)));
```

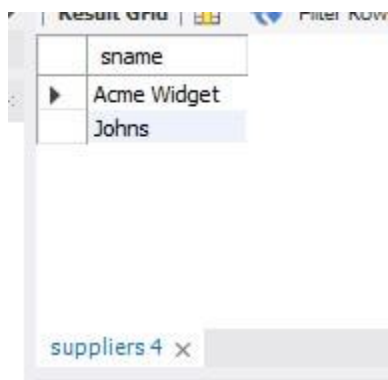


The screenshot shows a 'Result Grid' window with a 'Filter Rows' button. The grid contains one row with the value 'Acme Widget' under the column 'sname'. At the bottom, a tab labeled 'suppliers 3' is visible.

sname
Acme Widget

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

```
select S.sname from suppliers S where S.sid IN (select C.sid from catalog c where not exists  
(select P.pid from parts P where P.color="red" and( not exists(select C1.sid from catalog C1  
where C1.sid=C.sid and C1.pid=P.pid))));
```

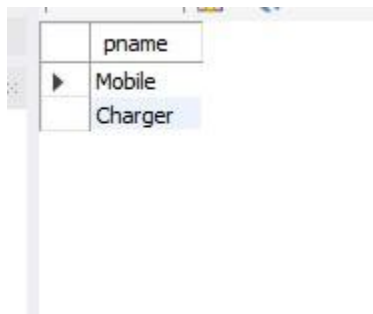


The screenshot shows a 'Result Grid' window with a 'Filter Rows' button. The grid contains two rows: 'Acme Widget' and 'Johns' under the column 'sname'. At the bottom, a tab labeled 'suppliers 4' is visible.

sname
Acme Widget
Johns

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

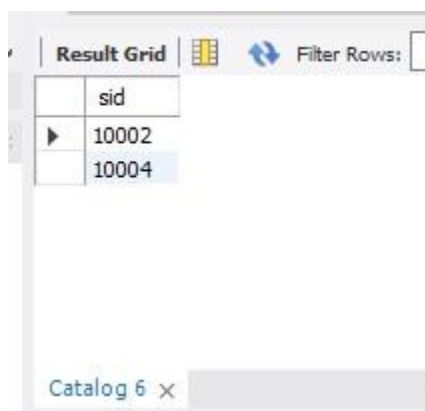
```
select P.pname from parts P, catalog C, suppliers S where P.pid=C.pid and C.sid=S.sid and  
S.sname="Acme Widget" and not exists(select * from catalog c1, Suppliers s1 where  
P.pid=C1.pid and C1.sid=S1.sid and S1.sname<>"Acme Widget");
```



	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)

```
select distinct C.sid from Catalog C where C.cost>(select avg(C1.cost) from catalog C1 where  
C1.pid=C.pid);
```



sid
▶ 10002
10004

Catalog 6 x

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

Select P.pname, P.pid ,S.sname from parts p,Suppliers S,catalog C where C.pid=P.pid and C.sid=S.sid and C.cost = (select max(C1.cost) from catalog C1 where C1.pid=P.pid);

Result Grid			
Filter Rows:			
	pname	pid	sname
▶	Book	20001	Acme Widget
	Book	20001	Johns
	Pen	20002	Johns
	Pencil	20003	Reliance
	Mobile	20004	Acme Widget
	Charger	20005	Acme Widget

Result 8 ×