

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.

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.
- 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.

Schema Diagram

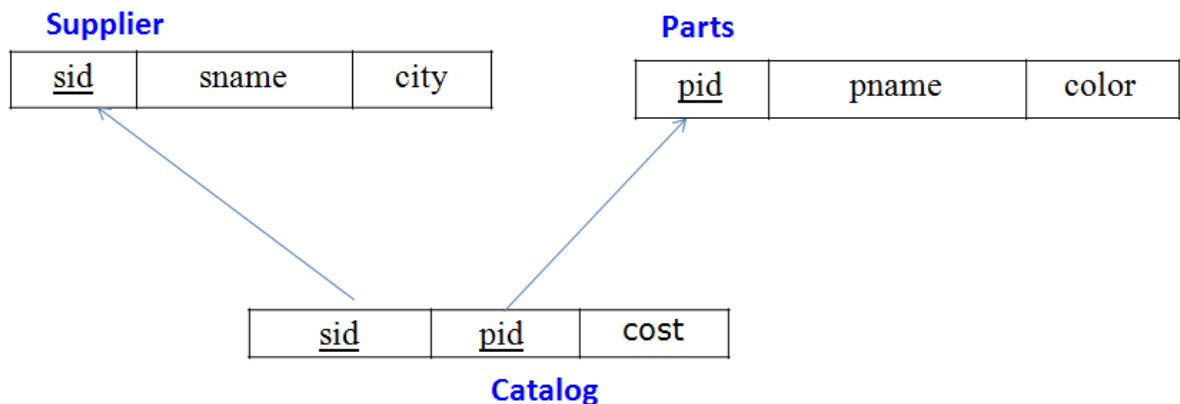


Table Data

SUPPLIERS		
SID	SNAME	CITY

10001	Acme Widget	Bangalore
10002	Johns	Kolkata
10003	Vimal	Mumbai
10004	Reliance	Delhi

PARTS		
PID	PNAME	COLOR

20001	Book	Red
20002	Pen	Red
20003	Pencil	Green
20004	Mobile	Green
20005	Charger	Black

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

```

create database supplier;
use supplier;
CREATE TABLE suppliers(
    sid INT,
    sname VARCHAR(20),
    address VARCHAR(50),
    PRIMARY KEY (sid)
);
CREATE TABLE parts(
    pid INT,
    pname VARCHAR(20),
    color VARCHAR(10),
    PRIMARY KEY (pid)
);
CREATE TABLE catalog(
    sid INT,
    pid INT,
    cost REAL,
    PRIMARY KEY(sid,pid),

```

```

FOREIGN KEY(sid) REFERENCES suppliers(sid)
ON delete CASCADE ON update CASCADE,
FOREIGN KEY(pid) REFERENCES parts(pid)
ON delete CASCADE ON update CASCADE
);

```

```

insert into suppliers values (10001,'Acme Widget','Bangalore'), (10002,'Johns','Kolkata'),
(10003,'Vimal','Mumbai'),(10004,'Reliance','Delhi');
insert into parts values
(20001,'Book','Red'),(20002,'Pen','Red'),(20003,'Pencil','Green'),(20004,'Mobile','Green'),(20005,
'Charger','Black');
insert into catalog
values(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);

```

```

SELECT * FROM suppliers;

```

Result Grid			
Filter Rows: <input type="text"/>			
	sid	sname	address
▶	10001	Acme Widget	Bangalore
	10002	Johns	Kolkata
	10003	Vimal	Mumbai
	10004	Reliance	Delhi
✱	NULL	NULL	NULL

```

SELECT * FROM parts;

```

Result Grid			
Filter Rows: <input type="text"/>			
	pid	pname	color
▶	20001	Book	Red
	20002	Pen	Red
	20003	Pencil	Green
	20004	Mobile	Green
	20005	Charger	Black
✱	NULL	NULL	NULL

SELECT * FROM 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

SELECT DISTINCT p.pname FROM parts p, catalog c WHERE p.pid = c.pid;

	pname
▶	Book
	Pen
	Pencil
	Mobile
	Charger

select suppliers.sname from suppliers where suppliers.sid in(select catalog.sid from catalog
inner join
parts on catalog.pid=parts.pid group by catalog.sid having count(*)=(select count(parts.pid) from
parts));

	sname
▶	Acme Widget

```
select suppliers.sname from suppliers where suppliers.sid in (select catalog.sid from catalog
inner join
parts on catalog.pid=parts.pid where catalog.pid in (select parts.pid from parts where
parts.color='Red') group by catalog.sid having count(*)=(select count(parts.color) from parts
where
parts.color='Red'));
```

Result Grid			Filter Rows:	<input type="text"/>	Export:	
	sname					
▶	Acme Widget					
	Johns					




```
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');
```

Result Grid			Filter Rows:	<input type="text"/>	Export:	
	pname					
▶	Mobile					
	Charger					

```
SELECT DISTINCT c.sid FROM catalog c WHERE c.cost > (SELECT AVG(C1.cost) FROM
catalog c1 WHERE c1.pid = c.pid) ;
```

Result Grid			Filter Rows:	<input type="text"/>	Export:	
	sid					
▶	10002					
	10004					

```
SELECT 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:	<input type="text"/>	Export:	
	pid	sname						
▶	20001	Acme Widget						
	20004	Acme Widget						
	20005	Acme Widget						
	20001	Johns						
	20002	Johns						
	20003	Reliance						