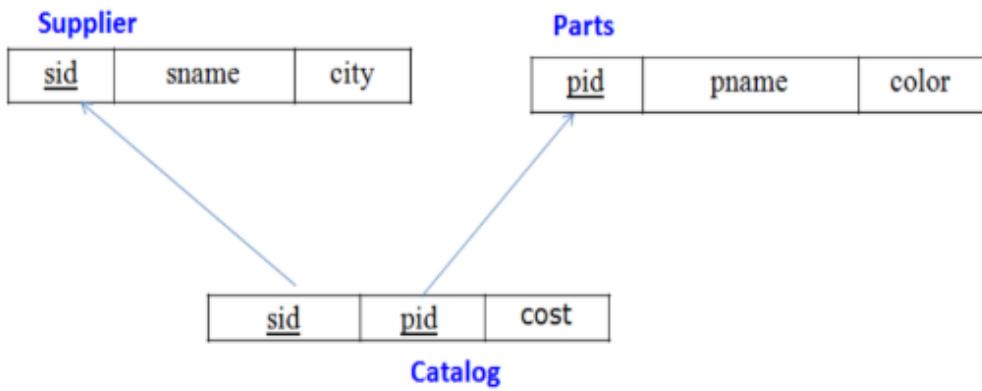


PROGRAM 7: Supplier Database



Using Scheme diagram, Create tables by properly specifying the primary keys and the foreign keys.

```
4 • CREATE TABLE Supplier (
5     sid INT PRIMARY KEY,
6     sname VARCHAR(50),
7     city VARCHAR(50)
8 );
9
10 • CREATE TABLE Parts (
11     pid INT PRIMARY KEY,
12     pname VARCHAR(50),
13     color VARCHAR(20)
14 );
15
16 • CREATE TABLE Catalog (
17     sid INT,
18     pid INT,
19     cost DECIMAL(10,2),
20     PRIMARY KEY (sid, pid),
21     FOREIGN KEY (sid) REFERENCES Supplier(sid),
22     FOREIGN KEY (pid) REFERENCES Parts(pid)
23 );
```

Insert appropriate records in each table.

```
25
26 • INSERT INTO Supplier VALUES
27     (1, 'Acme Widget Suppliers', 'New York'),
28     (2, 'Global Parts Co', 'London'),
29     (3, 'Fasteners Ltd', 'Delhi');
30
31 • INSERT INTO Parts VALUES
32     (101, 'Bolt', 'Red'),
33     (102, 'Nut', 'Blue'),
34     (103, 'Screw', 'Red'),
35     (104, 'Washer', 'Green');
36
37 • INSERT INTO Catalog VALUES
38     (1, 101, 12.00),
39     (1, 102, 15.00),
40     (2, 101, 10.00),
41     (2, 103, 20.00),
42     (3, 103, 25.00),
43     (3, 104, 18.00);
```

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

```
45 • SELECT DISTINCT P.pname
46     FROM Parts P
47     JOIN Catalog C ON P.pid = C.pid;
48
49
```

Result Grid | Filter Rows: Export: Wrap Ce

	pname
▶	Bolt
	Nut
	Screw
	Washer

Find the snames of suppliers who supply every red part.

```
50 •   SELECT S.sname
51     FROM Supplier S
52     WHERE NOT EXISTS (
53         SELECT P.pid
54         FROM Parts P
55         WHERE P.color = 'Red'
56         AND P.pid NOT IN (
57             SELECT C.pid
58             FROM Catalog C
59             WHERE C.sid = S.sid
60         )
61     );
62
63 •   SELECT P.pname
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	sname			
	Global Parts Co			

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

```
63 •   SELECT P.pname
64     FROM Parts P
65     JOIN Catalog C ON P.pid = C.pid
66     JOIN Supplier S ON S.sid = C.sid
67     WHERE S.sname = 'Acme Widget Suppliers'
68     AND P.pid NOT IN (
69         SELECT C2.pid
70         FROM Catalog C2
71         JOIN Supplier S2 ON C2.sid = S2.sid
72         WHERE S2.sname <> 'Acme Widget Suppliers'
73     );
74
75
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	pname			
	Nut			

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).

```
76 •   SELECT DISTINCT C.sid
77     FROM Catalog C
78     WHERE C.cost > (
79         SELECT AVG(C2.cost)
80         FROM Catalog C2
81         WHERE C2.pid = C.pid
82     );
83
84
```

Result Grid	
	sid
▶	1
	3

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

```
85 •   SELECT P.pname, S.sname
86     FROM Parts P
87     JOIN Catalog C ON P.pid = C.pid
88     JOIN Supplier S ON S.sid = C.sid
89     WHERE C.cost = (
90         SELECT MAX(C2.cost)
91         FROM Catalog C2
92         WHERE C2.pid = P.pid
93     );
94
```

Result Grid		
	pname	sname
▶	Bolt	Acme Widget Suppliers
	Nut	Acme Widget Suppliers
	Screw	Fasteners Ltd
	Washer	Fasteners Ltd