1. Find the *pname*s of parts for which there is some supplier.
2. Find the *sname*s of suppliers who supply every part.
3. Find the *sname*s of suppliers who supply every red part.
4. Find the *pname*s of parts supplied by Acme Widget Suppliers and no one else.
5. Find the *sid*s of suppliers who charge more for some part than the average cost of that part (averaged over all the suppliers who supply that part).
6. For each part, find the *sname* of the supplier who charges the most for that part.
7. Find the *sid*s of suppliers who supply only red parts.
8. Find the *sid*s of suppliers who supply a red part and a green part.
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9. Find the *sid*s of suppliers who supply a red part or a green part.
10. For every supplier that only supplies green parts, print the name of the supplier and the total number of parts that she supplies.
11. For every supplier that supplies a green part and a red part, print the name and price of the most expensive part that she supplies.

**1**. SELECT DISTINCT P.pname
FROM Parts P, Catalog C
WHERE P.pid = C.pid

**2**. SELECT S.sname
FROM Suppliers S
WHERE NOT EXISTS (( SELECT P.pid
FROM Parts P )
EXCEPT
( SELECT C.pid
FROM Catalog C
WHERE C.sid = S.sid ))

**3.** SELECT S.sname
FROM Suppliers S
WHERE NOT EXISTS (( SELECT P.pid
FROM Parts P
WHERE P.color = 'Red' )
EXCEPT
( SELECT C.pid
FROM Catalog C, Parts P
WHERE C.sid = S.sid AND
C.pid = P.pid AND P.color = 'Red' ))

**4.** 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 Suppliers'
AND NOT EXISTS ( SELECT *
FROM Catalog C1, Suppliers S1
WHERE P.pid = C1.pid AND C1.sid = S1.sid AND
S1.sname <> 'Acme Widget Suppliers' )

**5.** SELECT DISTINCT C.sid
FROM Catalog C
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WHERE C.cost > ( SELECT AVG (C1.cost)
FROM Catalog C1
WHERE C1.pid = C.pid )

**6.** 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)

**7.** SELECT DISTINCT C.sid
FROM Catalog C
WHERE NOT EXISTS ( SELECT *
FROM Parts P
WHERE P.pid = C.pid AND P.color <> 'Red' )

**8.** SELECT DISTINCT C.sid
FROM Catalog C, Parts P
WHERE C.pid = P.pid AND P.color = 'Red'
INTERSECT
SELECT DISTINCT C1.sid
FROM Catalog C1, Parts P1
WHERE C1.pid = P1.pid AND P1.color = 'Green'

**9.** SELECT DISTINCT C.sid
FROM Catalog C, Parts P
WHERE C.pid = P.pid AND P.color = ‘Red’
UNION
SELECT DISTINCT C1.sid
FROM Catalog C1, Parts P1
WHERE C1.pid = P1.pid AND P1.color = ‘Green’

**10.** SELECT S.sname, COUNT(*) as PartCount
FROM Suppliers S, Parts P, Catalog C
WHERE P.pid = C.pid AND C.sid = S.sid
GROUP BY S.sname, S.sid
HAVING EVERY (P.color=’Green’)

**11.** SELECT S.sname, MAX(C.cost) as MaxCost
FROM Suppliers S, Parts P, Catalog C
WHERE P.pid = C.pid AND C.sid = S.sid
*SQL: Queries, Constraints, Triggers* 65
GROUP BY S.sname, S.sid
HAVING ANY ( P.color=’green’ ) AND ANY ( P.color = ’red’ )