

# Practice (Suppliers, Parts, Catalog)

# Exercise – Suppliers and Parts

**Suppliers**(sid,sname,address)

**Parts**(pid,pname,color)

**Catalog**(sid, pid,price)

- a) Find the names of suppliers who supply every part.
- b) Find the names of suppliers who supply every red part.
- c) Find the part names supplied by IBM and no one else.
- d) Find the sid's of suppliers who charge more for some part than the average price of that part (averaged over all suppliers who supply that part.)
- e) For each part, find the name of the supplier who charges the least for that part.
- f) For all suppliers that supply more than three red parts find how many green parts they supply.

# Creation of Tables

```
CREATE TABLE Suppliers (  
    sid INT,  
    sname VARCHAR(20),  
    address VARCHAR(20)  
);
```

```
CREATE TABLE Parts (  
    pid INT,  
    pname VARCHAR(10),  
    color VARCHAR(10)  
);
```

```
CREATE TABLE Catalog (  
    sid INT,  
    pid INT,  
    price INT  
);
```

**Suppliers**(sid,sname,address)

**Parts**(pid,pname,color)

**Catalog**(sid, pid,price)

a) Find the names of suppliers who supply every part.

SELECT sname

FROM Suppliers X

WHERE NOT EXISTS (

*--If a supplier supplies all the parts, then this subq. should return empty result*

(SELECT pid FROM Parts)

MINUS

(SELECT pid

FROM Catalog

WHERE sid=X.sid)

);

**Suppliers**(sid,sname,address)

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**Catalog**(sid, pid,price)

b) Find the names of suppliers who supply every red part.

```
SELECT sname
FROM Suppliers X
WHERE NOT EXISTS (
    (SELECT pid FROM Parts WHERE color='red')
    MINUS
    (SELECT pid
     FROM Catalog NATURAL JOIN Parts
     WHERE sid=X.sid AND color='red')
);
```

**Suppliers**(sid,sname,address)

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**Catalog**(sid, pid,price)

c) Find the part names supplied by IBM and no one else.

CREATE VIEW SupCatPar AS

SELECT sid, sname, address, pid, pname, color, price

FROM Suppliers NATURAL JOIN Catalog NATURAL JOIN Parts;

SELECT pname

FROM SupCatPar

WHERE sname='IBM' AND pid NOT IN (

SELECT pid

FROM SupCatPar

WHERE sname<>'IBM'

);

**Suppliers**(sid,sname,address)

**Parts**(pid,pname,color)

**Catalog**(sid, pid,price)

d) Find the sid's of suppliers who charge more for some part than the average price of that part (averaged over all suppliers who supply that part.)

```
SELECT sid
FROM Catalog X
WHERE price > (
    SELECT AVG(price)
    FROM Catalog
    WHERE pid=X.pid
);
```

**Suppliers**(sid,sname,address)

**Parts**(pid,pname,color)

**Catalog**(sid, pid,price)

e) For each part, find the name of the supplier who charges the least for that part.

```
SELECT pname, sname
FROM SupCatPar X
WHERE X.price = (
    SELECT MIN(price)
    FROM Catalog
    WHERE pid=X.pid
);
```



**Suppliers**(sid,sname,address)

**Parts**(pid,pname,color)

**Catalog**(sid, pid,price)

```
CREATE VIEW SIDs_RED AS
```

```
  SELECT sid
```

```
  FROM SupCatPar
```

```
  WHERE color='red'
```

```
  GROUP BY sid
```

```
  HAVING COUNT(pid)>3;
```

```
CREATE VIEW SupCatPar_Green AS
```

```
  SELECT *
```

```
  FROM SupCatPar
```

```
  WHERE color='green';
```

```
SELECT sname, COUNT(pid) AS number_green_parts
```

```
FROM SIDs_RED NATURAL LEFT OUTER JOIN SupCatPar_Green
```

```
GROUP BY sid, sname;
```

```
DROP VIEW SIDs_RED;
```

```
DROP VIEW SupCatPar_Green;
```

f) For all suppliers that supply more than three red parts find how many green parts they supply.