

# CS 631: DATA MANAGEMENT SYSTEMS DESIGN

## ASSIGNMENT 2

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1.

```
(SELECT DISTINCT C.SID
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID AND P.COLOR = 'RED')
INTERSECT
(SELECT DISTINCT C.SID
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID AND P.COLOR = 'GREEN');
```

2.

```
SELECT DISTINCT C.SID
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID AND (P.COLOR = 'RED' OR P.COLOR = 'GREEN');
```

3.

```
SELECT S.SNAME
FROM SUPPLIERS S
WHERE NOT EXISTS
    ((SELECT PID
    FROM PARTS
    WHERE COLOR = 'RED' OR COLOR = 'GREEN')
    EXCEPT
    (SELECT C.PID
    FROM CATALOG C
    WHERE C.SID = S.SID));
```

4.

```
SELECT S.SNAME
FROM SUPPLIERS S
WHERE EXISTS
    ((SELECT PID
    FROM PARTS
    WHERE COLOR = 'RED')
    EXCEPT
    (SELECT C.PID
    FROM CATALOG C
    WHERE C.SID = S.SID));
```

5.

```
SELECT S.SID, S.SNAME, AVE(P.COST)
FROM SUPPLIERS S, CATALOG C, PARTS P
WHERE C.PID = P.PID AND C.SID = S.SID AND C.SID NOT IN
      (SELECT C.SID
       FROM CATALOG CC, PARTS PP
        WHERE PP.PID = CC.PID AND PP.COLOR <> 'RED');
GROUP BY S.SID, S.SNAME
```

6.

```
SELECT C.PID, S.SNAME
FROM CATALOG C, SUPPLIERS S
WHERE C.SID = S.SID AND
      COST < ( SELECT MAX(COST)
              FROM CATALOG CC
               WHERE CC.PID = C.PID);
```

7.

```
SELECT C.PID, S.SID, MAX(C.COST)
FROM SUPPLIERS S, CATALOG C
WHERE S.SID = C.SID AND ADDRESS LIKE '%NEWARK%'
GROUP BY C.PID, S.SID;
```

8.

```
SELECT P.PID, P.PNAME, COUNT(*)
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID AND
      C.PID IN (SELECT CC.PID
               FROM CATALOG CC
                GROUP BY CC.PID
                 HAVING COUNT(*) >= 2)
GROUP BY P.PID;
```

9.

```
(SELECT C.PID
FROM CATALOG C
WHERE NOT EXISTS
    ((SELECT S.SID
    FROM SUPPLIERS S
    WHERE ADDRESS LIKE '%NEWARK%')
    EXCEPT
    (SELECT SS.SID
    FROM SUPPLIERS SS
    WHERE SS.SID = C.SID)))

UNION

(SELECT C.PID
FROM CATALOG C
WHERE NOT EXISTS
    ((SELECT S.SID
    FROM SUPPLIERS S
    WHERE ADDRESS LIKE '%TRENTON%')
    EXCEPT
    (SELECT SS.SID
    FROM SUPPLIERS SS
    WHERE SS.SID = C.SID)));
```

10.

```
(SELECT C.PID
FROM CATALOG C
WHERE NOT EXISTS
    ((SELECT S.SID
    FROM SUPPLIERS S
    WHERE ADDRESS LIKE '%NEWARK%')
    EXCEPT
    (SELECT SS.SID
    FROM SUPPLIERS SS
    WHERE SS.SID = C.SID)))

INTERSECT

(SELECT C.PID
FROM CATALOG C
WHERE NOT EXISTS
    ((SELECT S.SID
    FROM SUPPLIERS S
    WHERE ADDRESS LIKE '%TRENTON%')
    EXCEPT
    (SELECT SS.SID
    FROM SUPPLIERS SS
    WHERE SS.SID = C.SID)));
```

11.

```
(SELECT S.SID
FROM SUPPLIERS S, PARTS P, CATALOG C
WHERE S.SID = C.SID AND P.PID = C.PID AND P.COLOR = 'RED')
EXCEPT
(SELECT S.SID
FROM SUPPLIERS S, PARTS P, CATALOG C
WHERE S.SID = C.SID AND P.PID = C.PID AND P.COLOR = 'BLUE');
```

12.

```
SELECT S.SID, S.SNAME, C.PID, MAX(C.COST)
FROM SUPPLIERS S, CATALOG C
WHERE S.SID = C.SID AND
      S.SID IN (SELECT CC.SID
                FROM CATALOG CC
                GROUP BY CC.SID
                HAVING COUNT(*) >=4)
GROUP BY S.SID;
```

13.

```
SELECT P.PID, P.COLOR, COUNT(*)
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID
GROUP BY P.PID, P.COLOR;
```

14.

```
SELECT DISTINCT S.SID
FROM SUPPLIERS R, PARTS P, CATALOG C
WHERE S.SID = C.SID AND P.PID = C.PID
GROUP BY S.SID, P.COLOR
HAVING COUNT(*) >= 2;
```

15.

```
SELECT P.PID, P.NAME, AVE(C.COST), MAX(C.COST), MIN(C.COST)
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID
GROUP BY P.PID, P.PNAME;
```