

```
CREATE TABLE Supplier (  
    sid INT PRIMARY KEY,  
    sname VARCHAR(50),  
    city VARCHAR(50)  
);
```

```
CREATE TABLE Parts (  
    pid INT PRIMARY KEY,  
    pname VARCHAR(50),  
    color VARCHAR(20)  
);
```

```
CREATE TABLE Catalog (  
    sid INT,  
    pid INT,  
    cost DECIMAL(10,2),  
    PRIMARY KEY (sid, pid),  
    FOREIGN KEY (sid) REFERENCES Supplier(sid),  
    FOREIGN KEY (pid) REFERENCES Parts(pid)  
);
```

```
INSERT INTO Supplier VALUES  
(1, 'Acme Widget Suppliers', 'New York'),  
(2, 'Global Parts Co', 'London'),  
(3, 'Best Supplies Ltd', 'Paris');
```

```
INSERT INTO Parts VALUES  
(101, 'Bolt', 'Red'),
```

```
(102, 'Nut', 'Blue'),  
(103, 'Screw', 'Red'),  
(104, 'Washer', 'Green');
```

```
INSERT INTO Catalog VALUES
```

```
(1, 101, 10.00),  
(1, 102, 12.00),  
(2, 101, 11.00),  
(2, 103, 14.00),  
(3, 101, 9.00),  
(3, 102, 11.00),  
(3, 103, 13.00),  
(3, 104, 8.00);
```

```
SELECT DISTINCT P.pname  
FROM Parts P  
JOIN Catalog C ON P.pid = C.pid;
```

	pname
▶	Bolt
	Nut
	Screw
	Washer

```
SELECT S.sname  
FROM Supplier S  
WHERE NOT EXISTS (
```

```

SELECT P.pid
FROM Parts P
WHERE NOT EXISTS (
    SELECT *
    FROM Catalog C
    WHERE C.sid = S.sid AND C.pid = P.pid
)
);

```

	sname
▶	Global Parts Co
	Best Supplies Ltd

```

SELECT S.sname
FROM Supplier S
WHERE NOT EXISTS (
    SELECT P.pid
    FROM Parts P
    WHERE P.color = 'Red'
    AND NOT EXISTS (
        SELECT *
        FROM Catalog C
        WHERE C.sid = S.sid AND C.pid = P.pid
    )
);

```

	sname
▶	Global Parts Co
	Best Supplies Ltd

```

SELECT P.pname
FROM Parts P
JOIN Catalog C ON P.pid = C.pid
JOIN Supplier S ON C.sid = S.sid
WHERE S.sname = 'Acme Widget Suppliers'
AND P.pid NOT IN (
    SELECT C2.pid
    FROM Catalog C2
    JOIN Supplier S2 ON C2.sid = S2.sid
    WHERE S2.sname <> 'Acme Widget Suppliers'
);

```

	pname
▶	Bolt
	Nut
	Screw
	Washer

```

SELECT DISTINCT C1.sid
FROM Catalog C1
WHERE C1.cost > (

```

```

SELECT AVG(C2.cost)
FROM Catalog C2
WHERE C2.pid = C1.pid
);

```

	sid
▶	1
	2

```

SELECT P.pname, S.sname, C.cost
FROM Parts P
JOIN Catalog C ON P.pid = C.pid
JOIN Supplier S ON S.sid = C.sid
WHERE C.cost = (
    SELECT MAX(C2.cost)
    FROM Catalog C2
    WHERE C2.pid = P.pid
);

```

	pname	sname	cost
▶	Nut	Acme Widget Suppliers	12.00
	Bolt	Global Parts Co	11.00
	Screw	Global Parts Co	14.00
	Washer	Best Supplies Ltd	8.00