

```
create database supplier;  
use supplier;
```

```
CREATE TABLE Supplier (  
    sid INT PRIMARY KEY,  
    sname VARCHAR(100),  
    city VARCHAR(100)  
);
```

```
CREATE TABLE Parts (  
    pid INT PRIMARY KEY,  
    pname VARCHAR(10),  
    color VARCHAR(50)  
);
```

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

```
INSERT INTO Supplier VALUES  
(1, 'Acme Widget Suppliers', 'Bangalore'),  
(2, 'Universal Corp', 'Mumbai'),  
(3, 'Tech Supplies', 'Delhi');
```

```
INSERT INTO Parts VALUES  
(101, 'Bolt', 'Red'),  
(102, 'Nut', 'Blue'),  
(103, 'Screw', 'Red');
```

```
INSERT INTO Catalog VALUES
```

(1, 101, 50),

(1, 102, 40),

(2, 101, 45),

(2, 103, 60),

(3, 101, 55),

(3, 102, 42);

```
SELECT DISTINCT p.pname
```

```
FROM Parts p
```

```
JOIN Catalog c ON p.pid = c.pid;
```



	pname
▶	Bolt
	Nut
	Screw

```
SELECT s.sname
```

```
FROM Supplier s
```

```
WHERE NOT EXISTS (
```

```
    SELECT *
```

```
    FROM Parts p
```

```
    WHERE NOT EXISTS (
```

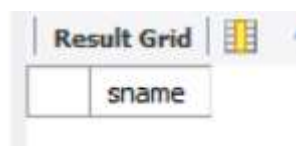
```
        SELECT *
```

```
        FROM Catalog c
```

```
        WHERE c.sid = s.sid AND c.pid = p.pid
```

```
    )
```

```
);
```

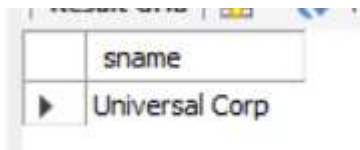


sname

```

SELECT s.sname
FROM Supplier s
WHERE NOT EXISTS (
    SELECT *
    FROM Parts p
    WHERE p.color = 'Red'
    AND NOT EXISTS (
        SELECT *
        FROM Catalog c
        WHERE c.sid = s.sid AND c.pid = p.pid
    )
);

```

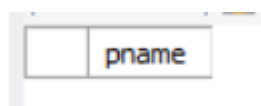


	sname
▶	Universal Corp

```

SELECT p.pname
FROM Parts p
JOIN Catalog c ON p.pid = c.pid
JOIN Supplier s ON s.sid = c.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'
);

```

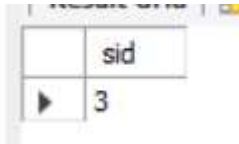


	pname
▶	Acme Widget Suppliers

```

SELECT DISTINCT c.sid
FROM Catalog c
JOIN (
    SELECT pid, AVG(cost) AS avg_cost
    FROM Catalog
    GROUP BY pid
) A ON c.pid = A.pid
WHERE c.cost > A.avg_cost;

```

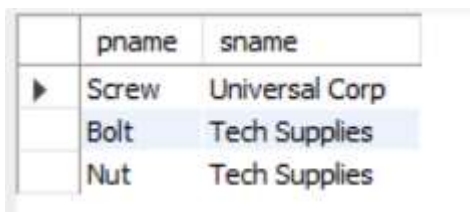


	sid
▶	3

```

SELECT p.pname, s.sname
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
▶	Screw	Universal Corp
	Bolt	Tech Supplies
	Nut	Tech Supplies