Lab 7 :

i Using Scheme diagram, Create tables by properly specifying the primary keys and the foreign keys.

```
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)
);
```

i. Insert appropriate records in each table.

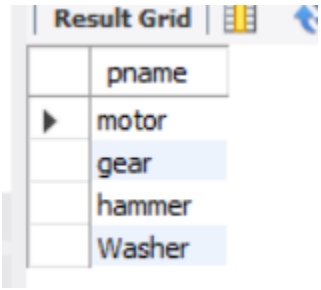
```
INSERT INTO Supplier VALUES
(1, 'Acme Widget Suppliers', 'Bengaluru'),
(2, 'Global Traders', 'Mysuru'),
(3, 'Universal Parts Co.', 'Delhi');

INSERT INTO Parts VALUES
(101, 'motor', 'Red'),
(102, 'gear', 'Blue'),
(103, 'hammer', 'Red'),
(104, 'Washer', 'Green');

INSERT INTO Catalog VALUES
(1, 101, 1115.00),
(1, 102, 3000.00),
(2, 101, 2000.00),
(2, 103, 600.00),
(3, 101, 2500.00),
(3, 102, 2200.00),
(3, 103, 4500.00),
(3, 104, 2800.00);
```

ii. Find the pnames of parts for which there is some supplier.

```
SELECT DISTINCT P.pname
FROM Parts P , Catalog C
where P.pid = C.pid;
```

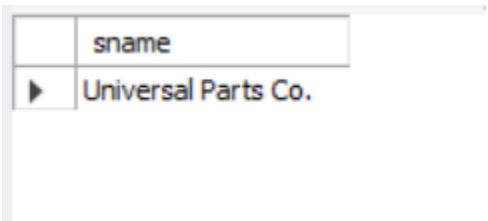


Result Grid

pname
motor
gear
hammer
Washer

iii. Find the snames of suppliers who supply every part.

```
SELECT S.sname
FROM Supplier S
JOIN Catalog C ON S.sid = C.sid
GROUP BY S.sid, S.sname
HAVING COUNT(DISTINCT C.pid) = (SELECT COUNT(*) FROM Parts);
```

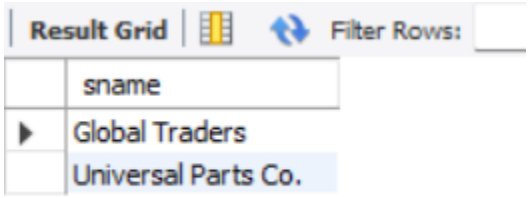


sname
Universal Parts Co.

iv. Find the snames of suppliers who supply every red part.

```
SELECT S.sname
```

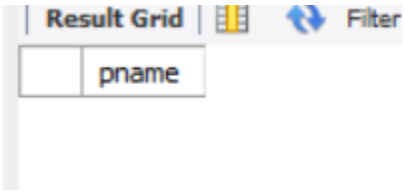
```
FROM Supplier S
JOIN Catalog C ON S.sid = C.sid
JOIN Parts P ON C.pid = P.pid
WHERE P.color = 'Red'
GROUP BY S.sid, S.sname
HAVING COUNT(DISTINCT P.pid) = (
   SELECT COUNT(*) FROM Parts WHERE color = 'Red'
);
```



vi. Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.

```
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
```

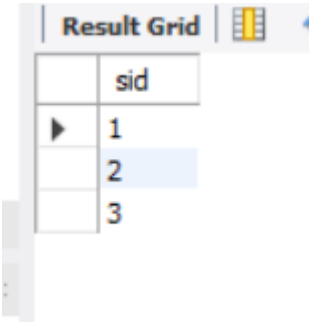
```
    JOIN Supplier S2 ON S2.sid = C2.sid
    WHERE S2.sname <> 'Acme Widget Suppliers'
);
```



vii. Find the sids of suppliers who charge more for some part than the average cost of that part

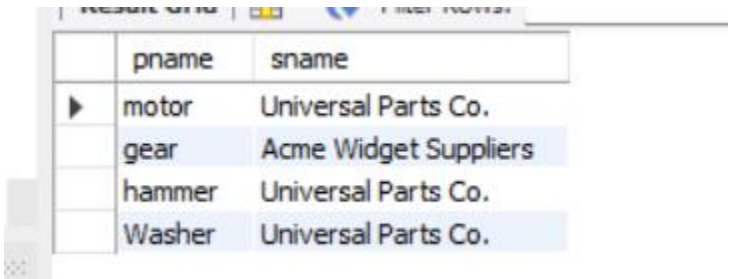
(averaged over all the suppliers who supply that part).

```
SELECT DISTINCT C1.sid
FROM Catalog C1
WHERE C1.cost > (
    SELECT AVG(C2.cost)
    FROM Catalog C2
    WHERE C2.pid = C1.pid
);
```



viii. For each part, find the sname of the supplier who charges the most for that part.

```
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
motor	Universal Parts Co.
gear	Acme Widget Suppliers
hammer	Universal Parts Co.
Washer	Universal Parts Co.