1. Find the most expensive part overall and the supplier who supplies

```
103 •   SELECT P.pid, P.pname, S.sid, S.sname, C.cost
104     FROM Catalog C
105     JOIN Parts P ON C.pid = P.pid
106     JOIN Suppliers S ON C.sid = S.sid
107     WHERE C.cost = (SELECT MAX(cost) FROM Catalog);
108
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pid	pname	sid	sname	cost
20003	Pencil	10004	Reliance	40

2. Find suppliers who do NOT supply any red parts.

```
110 •   SELECT S.sid, S.sname
111     FROM Suppliers S
112     WHERE S.sid NOT IN (
113         SELECT C.sid
114         FROM Catalog C
115         JOIN Parts P ON C.pid = P.pid
116         WHERE P.color = 'Red'
117     );
```

Result Grid | Filter Rows:

sid	sname
10003	Vimal
10004	Reliance
10005	Mahindra
NULL	NULL

3. Show each supplier and total value of all parts they supply.

```
122 •   SELECT S.sid, S.sname, SUM(C.cost) AS total_value
123     FROM Suppliers S
124     LEFT JOIN Catalog C ON S.sid = C.sid
125     GROUP BY S.sid, S.sname;
126
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sid	sname	total_value
10001	Acme Widget	70
10002	Johns	30
10003	Vimal	30
10004	Reliance	40
10005	Mahindra	NULL

4. Find suppliers who supply at least 2 parts cheaper than ₹20.

```
130 •   SELECT S.sid, S.sname
131     FROM Suppliers S
132     JOIN Catalog C ON S.sid = C.sid
133     WHERE C.cost < 20
134     GROUP BY S.sid, S.sname
135     HAVING COUNT(*) >= 2;
```

Result Grid | Filter Rows: | Exp

sid	sname
10001	Acme Widget

5. List suppliers who offer the cheapest cost for each part.

```
139
140 •   SELECT P.pid, P.pname, S.sid, S.sname, C.cost
141     FROM Catalog C
142     JOIN Parts P ON C.pid = P.pid
143     JOIN Suppliers S ON C.sid = S.sid
144     WHERE C.cost = (
145         SELECT MIN(C2.cost)
146         FROM Catalog C2
147         WHERE C2.pid = C.pid
148     );
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pid	pname	sid	sname	cost
20001	Book	10001	Acme Widget	10
20001	Book	10002	Johns	10
20002	Pen	10001	Acme Widget	10
20003	Pencil	10001	Acme Widget	30
20003	Pencil	10003	Vimal	30
20004	Mobile	10001	Acme Widget	10
20005	Charger	10001	Acme Widget	10

6. Create a view showing suppliers and the total number of parts they supply.

```
152 •   CREATE VIEW SupplierPartCount AS
153     SELECT S.sid, S.sname, COUNT(C.pid) AS total_parts
154     FROM Suppliers S
155     LEFT JOIN Catalog C ON S.sid = C.sid
156     GROUP BY S.sid, S.sname;
157
```

7. Create a view of the most expensive supplier for each part.

```
160 •  CREATE VIEW MostExpensiveSupplierPerPart AS
161    SELECT P.pid, P.pname, S.sid, S.sname, C.cost
162    FROM Catalog C
163    JOIN Parts P ON C.pid = P.pid
164    JOIN Suppliers S ON C.sid = S.sid
165    WHERE C.cost = (
166        SELECT MAX(C2.cost)
167        FROM Catalog C2
168        WHERE C2.pid = C.pid
169    );
170
```

8. Create a Trigger to prevent inserting a Catalog cost below 1.

```
174    DELIMITER $$
175 •  CREATE TRIGGER check_cost_before_insert
176    BEFORE INSERT ON Catalog
177    FOR EACH ROW
178    BEGIN
179        IF NEW.cost < 1 THEN
180            SIGNAL SQLSTATE '45000'
181                SET MESSAGE_TEXT = 'Cost cannot be below 1';
182        END IF;
183    END$$
184    DELIMITER ;
185
```

9. Create a trigger to set to default cost if not provided.

```
188    DELIMITER $$
189 •  CREATE TRIGGER set_default_cost
190    BEFORE INSERT ON Catalog
191    FOR EACH ROW
192    BEGIN
193        IF NEW.cost IS NULL THEN
194            SET NEW.cost = 10;
195        END IF;
196    END$$
197    DELIMITER ;
198
```