

1. Minimal RDBMS Schema (MySQL)

```
-- Create tables
CREATE TABLE Customers (
    customer_id INT PRIMARY KEY,
    name VARCHAR(50),
    city VARCHAR(50)
);

CREATE TABLE Orders (
    order_id INT PRIMARY KEY,
    customer_id INT,
    product VARCHAR(50),
    FOREIGN KEY (customer_id) REFERENCES Customers(customer_id)
);

-- Insert minimal data
INSERT INTO Customers (customer_id, name, city) VALUES
(1, 'Alice', 'New York'),
(2, 'Bob', 'Los Angeles'),
(3, 'Charlie', 'Chicago');

INSERT INTO Orders (order_id, customer_id, product) VALUES
(101, 1, 'Laptop'),
(102, 1, 'Mouse'),
(103, 2, 'Keyboard');
```

2. Join Types & Scenarios

a) INNER JOIN

Scenario: Find customers who have placed at least one order.

b) LEFT JOIN (LEFT OUTER JOIN)

Scenario: List all customers and their orders, even if they haven't ordered yet.

c) RIGHT JOIN (RIGHT OUTER JOIN)

Scenario: List all orders and include customer names if available.

d) FULL OUTER JOIN (Not directly in MySQL — simulate with UNION)

Scenario: Show all customers and all orders, matching where possible.

e) CROSS JOIN

Scenario: Generate all possible combinations of customers and orders (like a marketing “who could buy what” scenario).

f) SELF JOIN

Scenario: Show customers in the same city.
