

-- Part 0: Drop Tables If They Already Exist (to avoid duplication errors)

DROP TABLE IF EXISTS Courses;

DROP TABLE IF EXISTS Departments;

-- Part A: Create Tables with Normalization (up to 3NF)

CREATE TABLE Departments (

dept_id INT PRIMARY KEY,

dept_name VARCHAR(50) UNIQUE

);

CREATE TABLE Courses (

course_id INT PRIMARY KEY,

course_name VARCHAR(100),

dept_id INT,

FOREIGN KEY (dept_id) REFERENCES Departments(dept_id)

);

-- Part B: Insert Sample Data into Department and Course Tables

INSERT INTO Departments (dept_id, dept_name) VALUES

(1, 'Computer Science'),

(2, 'Electrical'),

(3, 'Mechanical'),

(4, 'Civil'),

(5, 'Electronics');

INSERT INTO Courses (course_id, course_name, dept_id) VALUES

(101, 'DBMS', 1),

(102, 'Operating Systems', 1),

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(103, 'Power Systems', 2),  
(104, 'Digital Circuits', 2),  
(105, 'Thermodynamics', 3),  
(106, 'Fluid Mechanics', 3),  
(107, 'Structural Engineering', 4),  
(108, 'Surveying', 4),  
(109, 'Embedded Systems', 5),  
(110, 'VLSI Design', 5);
```

-- Part C: Retrieve Departments Offering More Than Two Courses Using Subquery

```
SELECT dept_name  
FROM Departments  
WHERE dept_id IN (  
  SELECT dept_id  
  FROM Courses  
  GROUP BY dept_id  
  HAVING COUNT(*) > 2  
);
```

```
SELECT * FROM Departments;  
SELECT * FROM Courses;
```