DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

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Experiment-2

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Subject Code: 23CSP-333

1. Aim:
   To **create and manage a relational database** that stores information about faculties and their respective subjects, and to **retrieve faculties that offer more than two subjects**.

2. Objective:

   Create two related tables:

   TBL_FACULTY: Stores faculty information (like Engineering, Mathematics, etc.).

   TBL_SUBJECTS: Stores subjects offered under each faculty.

   Link the two tables using a foreign key:

   The FACULTY_REF column in the TBL_SUBJECTS table is a foreign key that refers to FACULTY_ID in the TBL_FACULTY table.

   Insert sample data into both tables to simulate a real-world college or university faculty-subject structure.

   Use a JOIN and GROUP BY with HAVING clause to:

   Count the number of subjects each faculty offers.

   Show only those faculties that offer more than 2 subjects.

3. Code

```sql
-- Creating the Faculty Table
CREATE TABLE TBL_FACULTY (
    FACULTY_ID INT PRIMARY KEY,
    FACULTY_NAME VARCHAR(100) NOT NULL
);

-- Creating the Subjects Table
CREATE TABLE TBL_SUBJECTS (
    SUBJECT_ID INT PRIMARY KEY,
    SUBJECT_NAME VARCHAR(100) NOT NULL,
    FACULTY_REF INT,
    FOREIGN KEY (FACULTY_REF) REFERENCES TBL_FACULTY(FACULTY_ID)
);

-- Inserting into Faculty Table
INSERT INTO TBL_FACULTY (FACULTY_ID, FACULTY_NAME) VALUES
(1, 'Engineering'),
(2, 'Mathematics'),
(3, 'Sciences'),
(4, 'Chemical Studies'),
(5, 'Languages');

-- Inserting into Subjects Table
INSERT INTO TBL_SUBJECTS (SUBJECT_ID, SUBJECT_NAME, FACULTY_REF) VALUES
(201, 'Algorithms', 1),
(202, 'Systems Programming', 1),
(203, 'Databases', 1),
(204, 'Matrix Theory', 2),
(205, 'Differential Calculus', 2),
(206, 'Quantum Physics', 3),
(207, 'Thermal Physics', 3),
(208, 'Organic Compounds', 4),
(209, 'English Classics', 5),
(210, 'Global Literature', 5);

-- Final Query to Show Faculties with More Than 2 Subjects
SELECT
    F.FACULTY_ID,
    F.FACULTY_NAME,
    COUNT(S.SUBJECT_ID) AS SUBJECT_COUNT
```

```
44. FROM TBL_FACULTY F
45. JOIN TBL_SUBJECTS S ON F.FACULTY_ID = S.FACULTY_REF
46. GROUP BY F.FACULTY_ID, F.FACULTY_NAME
47. HAVING COUNT(S.SUBJECT_ID) > 2;
```