Experiment – 1

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Semester: 5th	**Date of Performance:** 30-07-25
Subject Name: ADBMS	**Subject Code:** 23CSP-333

1. Aim:

Q1) Author-Book Relationship Using Joins and Basic SQL Operations.

- Design two tables — one for storing author details and the other for book details.
- Ensure a foreign key relationship from the book to its respective author.
- Insert at least three records in each table. Perform an INNER JOIN to link each book with its author using the common author ID.
- Select the book title, author name, and author's country.
- **Expected Output:** Each book title along with its author's name and country.

Q2) Department-Course Subquery and Access Control

- Design normalized tables for departments and the courses they offer, maintaining a foreign key relationship.
- Insert five departments and at least ten courses across those departments.
- Use a subquery to count the number of courses under each department
- Display only departments that offer more than 2 courses.

2. DBMS code:

Q1)

```
--MADE BY YASH SHARMA
USE KRG_1B;


CREATE TABLE TBL_AUTHOR(
    AUTHOR_ID INT PRIMARY KEY,
    AUTHOR_NAME VARCHAR(30)
);


CREATE TABLE TBL_BOOK(
    BOOK_ID INT PRIMARY KEY,
    BOOK_TITLE VARCHAR(30),
```

```
    AUTHOR_ID INT,
    CONSTRAINT FK_TBL_BOOK_AUTHOR FOREIGN KEY (AUTHOR_ID) REFERENCES
TBL_AUTHOR(AUTHOR_ID)
);


INSERT INTO TBL_AUTHOR (AUTHOR_ID, AUTHOR_NAME) VALUES
    (1, 'James Elroy'),
    (2, 'Lara Feldman'),
    (3, 'Vikram Patel');


INSERT INTO TBL_BOOK (BOOK_ID, BOOK_TITLE, AUTHOR_ID) VALUES
    (101, 'Shadow Detectives', 1),
    (102, 'Urban Skylines', 2),
    (103, 'Quantum Patterns', 3),
    (104, 'Echoes Unveiled', 1);


SELECT * FROM TBL_BOOK;
SELECT * FROM TBL_AUTHOR;

SELECT B.BOOK_TITLE, A.AUTHOR_NAME
FROM TBL_BOOK AS B
INNER JOIN TBL_AUTHOR AS A
    ON B.AUTHOR_ID = A.AUTHOR_ID;
--MADE BY YASH SHARMA
```

Q2)

```
--MADE BY YASH SHARMA
USE KRG_1B;

CREATE TABLE TBL_DEPARTMENT (
    DEPT_ID INT PRIMARY KEY,
    DEPT_NAME VARCHAR(30)
);


CREATE TABLE TBL_COURSE(
    COURSE_ID INT PRIMARY KEY,
    COURSE_NAME VARCHAR(30),
    DEPT_ID INT,
    CONSTRAINT FK_TBL_COURSE_DEPT FOREIGN KEY (DEPT_ID) REFERENCES
TBL_DEPARTMENT(DEPT_ID)
);


INSERT INTO TBL_DEPARTMENT (DEPT_ID, DEPT_NAME) VALUES
    (1, 'Biotechnology'),
    (2, 'Chemical Engineering'),
    (3, 'Aerospace Engineering'),
    (4, 'Environmental Science'),
    (5, 'Physics');


INSERT INTO TBL_COURSE (COURSE_ID, COURSE_NAME, DEPT_ID) VALUES
```

```
    (101, 'Genetics', 1),
    (102, 'Molecular Biology', 1),
    (103, 'Bioinformatics', 1),
    (104, 'Process Engineering', 2),
    (105, 'Organic Chemistry', 2),
    (106, 'Aerodynamics', 3),
    (107, 'Space Propulsion', 3),
    (108, 'Climate Change', 4),
    (109, 'Quantum Mechanics', 5),
    (110, 'Optics', 5),
    (111, 'Thermodynamics', 5);


SELECT DEPT_NAME
FROM TBL_DEPARTMENT
WHERE DEPT_ID IN (
    SELECT DEPT_ID
    FROM TBL_COURSE
    GROUP BY DEPT_ID
    HAVING COUNT(*) > 2
);

--MADE BY YASH SHARMA
```

3. Output:

Q1)

Results | Messages

	BOOK_ID	BOOK_TITLE	AUTHOR_ID
1	101	Shadow Detectives	1
2	102	Urban Skylines	2
3	103	Quantum Patterns	3
4	104	Echoes Unveiled	1

	AUTHOR_ID	AUTHOR_NAME
1	1	James Elroy
2	2	Lara Feldman
3	3	Vikram Patel

	BOOK_TITLE	AUTHOR_NAME
1	Shadow Detectives	James Elroy
2	Urban Skylines	Lara Feldman
3	Quantum Patterns	Vikram Patel
4	Echoes Unveiled	James Elroy

Query executed successfully.

Q2)

Results | Messages

	DEPT_NAME
1	Biotechnology
2	Physics

Query executed successfully.