Worksheet 2

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Subject Name: ADBMS **Subject Code:23CSP-333**

1. Aim:

A). Author-Book Relationship Using Joins and Basic SQL Operations
B). Department-Course Subquery and Access Control

2. Objective:

A)

- 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.

B)

- 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.
- Filter and retrieve only those departments that offer more than two courses.
- Grant SELECT-only access on the courses table to a specific user.

3. DBMS script

A)

```
--MEDIUM LEVEL PROBLEM
CREATE TABLE Employee(
        EmpID int,
        Ename varchar(100),
        Department varchar(100),
        ManagerID int
)

INSERT INTO Employee VALUES
        (1, 'Alice', 'HR', NULL),
        (2, 'Bob', 'Finance', 1),
        (3, 'Charlie', 'IT', 1),
        (4, 'David', 'Finance', 2),
        (5, 'Eve', 'IT', 3),
        (6, 'Frank', 'HR', 1)

SELECT
 E1.Ename AS [Employee Name],
E2.Ename AS [Manager Name],
E1.Department AS [Employee Department],
E2.Department AS [Manager Department]
FROM Employee AS E1
LEFT OUTER JOIN
Employee AS E2
```

```
ON
E1.ManagerID = E2.EmpID
```

B)

```
-- HARD LEVEL PROBLEM
CREATE TABLE Year_tbl (
   ID INT,
   YEAR INT,
   NPV INT
);
CREATE TABLE Queries (
   ID INT,
   YEAR INT
);

INSERT INTO Year_tbl (ID, YEAR, NPV)
VALUES
(1, 2018, 100),
(7, 2020, 30),
(13, 2019, 40),
(1, 2019, 113),
(2, 2008, 121),
(3, 2009, 12),
(11, 2020, 99),
(7, 2019, 0);
```

```
INSERT INTO Queries (ID, YEAR)
VALUES
(1, 2019),
(2, 2008),
(3, 2009),
(7, 2018),
(7, 2019),
(7, 2020),
(13, 2019)

SELECT
    Q.ID,
    Q.YEAR,
    ISNULL(Y.NPV, 0) AS NPV
FROM
    Queries AS Q
LEFT JOIN
    Year_tbl AS Y
ON
    Q.ID = Y.ID AND Q.YEAR = Y.YEAR;
```

4.Output:

A)

Results | Messages

	Employee Name	Manager Name	Employee Department	Manager Department
1	Alice	NULL	HR	NULL
2	Bob	Alice	Finance	HR
3	Charlie	Alice	IT	HR
4	David	Bob	Finance	Finance
5	Eve	Charlie	IT	IT
6	Frank	Alice	HR	HR

B)

Results | Messages

	ID	YEAR	NPV
1	1	2019	113
2	2	2008	121
3	3	2009	12
4	7	2018	0
5	7	2019	0
6	7	2020	30
7	13	2019	40