Experiment – 1

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1. Aim:

Q1) Organizational Hierarchy Explorer

You are a Database Engineer at TalentTree Inc., an enterprise HR analytics platform that stores employee data, including their reporting relationships. The company maintains a centralized Employee relation that holds each employee's ID, name, department, and manager ID (who is also an employee in the same table). Your task is to generate a report that maps employees to their respective managers, showing: The employee's name and department Their manager's name and department (if applicable) This will help the HR department visualize the internal reporting hierarchy.Ensure a foreign key relationship from the book to its respective author.

Q2) Department-Course Subquery and Access Control

You have two tables: 1. Year tbl: contains actual NPV (Net Present Value) for different years and IDs. 2. Queries: contains (ID, YEAR) pairs for which you want to find the NPV. Goal: Return the queried (ID, YEAR) pairs along with the corresponding NPV value. If NPV doesn't exist for that (ID, YEAR), show 0.

2. DBMS code:

Q1)

```
--MADE BY YASH SHARMA

CREATE TABLE employee (
    EmpID INT PRIMARY KEY,
    EmpName VARCHAR(50) NOT NULL,
    Department VARCHAR(50) NOT NULL,
    ManagerID INT
);

INSERT INTO employee (EmpID, EmpName, Department, ManagerID) VALUES
    (101, 'Rajesh Kumar', 'Engineering', NULL),
    (102, 'Anita Sharma', 'Engineering', 101),
    (103, 'Sunil Mehta', 'HR', 101),
```

```
    (104, 'Neha Joshi', 'Engineering', 102),
    (105, 'Rahul Singh', 'HR', 103),
    (106, 'Kiran Reddy', 'Sales', 105),
    (107, 'Pooja Verma', 'Sales', 106);

SELECT
    E1.EmpName AS [EMPLOYEE NAME],
    E1.Department AS [EMP_DEPARTMENT],
    E2.EmpName AS [MANAGER NAME],
    E2.Department AS [MANAGER_DEPARTMENT]
FROM
    employee AS E1
LEFT OUTER JOIN
    employee AS E2 ON E1.ManagerID = E2.EmpID;
--MADE BY YASH SHARMA
```

Q2)

```
--MADE BY YASH SHARMA
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
    (10, 2021, 150),
    (20, 2023, 75),
    (30, 2022, 90),
    (10, 2022, 160),
    (40, 2015, 200),
    (50, 2016, 85),
    (60, 2023, 120),
    (20, 2022, 60);


INSERT INTO Queries (ID, YEAR)
VALUES
    (10, 2022),
    (40, 2015),
    (50, 2016),
    (20, 2021),
    (20, 2022),
    (20, 2023),
    (30, 2022);

SELECT * FROM Year_tbl;
SELECT * FROM Queries;
```

```
SELECT q.ID, q.YEAR, y.NPV
FROM
    Queries AS q
LEFT JOIN
    Year_tbl AS y ON q.ID = y.ID AND q.YEAR = y.YEAR
ORDER BY
    q.ID ASC;
--MADE BY YASH SHARMA
```

3. Output:

Q1)

Results | Messages

	EMPLOYEE NAME	EMP_DEPARTMENT	MANAGER NAME	MANAGER_DEPARTMENT
1	Rajesh Kumar	Engineering	NULL	NULL
2	Anita Sharma	Engineering	Rajesh Kumar	Engineering
3	Sunil Mehta	HR	Rajesh Kumar	Engineering
4	Neha Joshi	Engineering	Anita Sharma	Engineering
5	Rahul Singh	HR	Sunil Mehta	HR
6	Kiran Reddy	Sales	Rahul Singh	HR
7	Pooja Verma	Sales	Kiran Reddy	Sales

Query executed successfully.

Q2)

100 % No issues found

Results Messages

	ID	YEAR	NPV
1	10	2021	150
2	20	2023	75
3	30	2022	90
4	10	2022	160
5	40	2015	200
6	50	2016	85
7	60	2023	120
8	20	2022	60

	ID	YEAR
1	10	2022
2	40	2015
3	50	2016
4	20	2021
5	20	2022
6	20	2023
7	30	2022

	ID	YEAR	NPV
1	10	2022	160
2	20	2021	NULL
3	20	2022	60
4	20	2023	75
5	30	2022	90
6	40	2015	200
7	50	2016	85

Query executed successfully.