Experiment – 2

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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.

Q2) NPV Lookup Using Left Join

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)

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

```sql
    ManagerID INT
);

INSERT INTO employee (EmpID, EmpName, Department, ManagerID) VAL-
UES
(101, 'Tim Cook', 'Engineering', NULL),
(102, 'Bob Johnson', 'Engineering', 101),
(103, 'Charlie Brown', 'HR', 101),
(104, 'Gurshaan S.', 'Engineering', 102),
(105, 'Eve Davis', 'HR', 103),
(106, 'Sundar Pichai', 'Sales', 105),
(107, 'Grace Green', '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;
```

Q2)

```sql
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 * 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;

3. Output:

Q1)

```
Output:

EMPLOYEE NAME                         EMP_DEPARTMENT                     MANAGER NAME                     MANAGER_DEPARTMENT

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Tim Cook                              Engineering                       NULL                             NULL
Bob Johnson                           Engineering                       Tim Cook                         Engineering
Charlie Brown                         HR                                Tim Cook                         Engineering
Gurshaan S.                           Engineering                       Bob Johnson                      Engineering
Eve Davis                             HR                                Charlie Brown                    HR
Sundar Pichai                         Sales                             Eve Davis                        HR
Grace Green                           Sales                             Sundar Pichai                    Sales
```

Q2)

```
ID            YEAR            NPV

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        1          2019           113
        2          2008           121
        3          2009            12
        7          2018          NULL
        7          2019             0
        7          2020            30
       13          2019            40
```