Experiment 2

Student Name: Aniket Chugh
UID: 23BCS12407
Branch: BE-CSE
Section/Group: KRG-3B
Semester: 5
Date of performance: 28-07-2025
Subject name: ADBMS
Subject code: 23CSP-333

Problem Statement:

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)

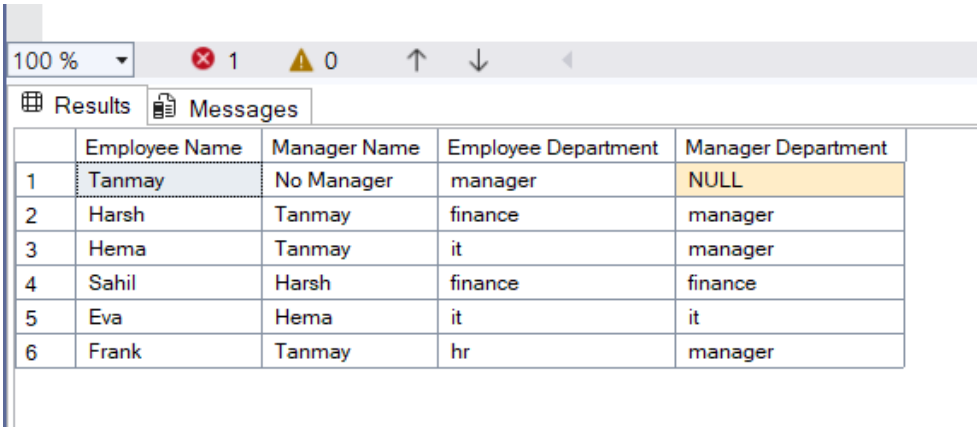
This will help the HR department visualize the internal reporting hierarchy.

However, not all ID-YEAR combinations in the Queries table are present in the Year_tbl. If an NPV is missing for a requested combination, assume it to be 0 to maintain a consistent financial report.

Code:

```
CREATE TABLE EMPLOYEE (
    EMP_ID INT PRIMARY KEY,
    EMP_NAME VARCHAR(25),
    DEPARTMENT VARCHAR(25),
    MANAGER_ID INT
```

```
);
INSERT INTO EMPLOYEE (EMP_ID, EMP_NAME, DEPARTMENT, MANAGER_ID)
VALUES
   (1, 'Tanmay', 'manager', NULL),
   (2, 'Harsh', 'finance', 1),
   (3, 'Hema', 'it', 1),
   (4, 'Sahil', 'finance', 2),
   (5, 'Eva', 'it', 3),
   (6, 'Frank', 'hr', 1);
SELECT
   E.EMP_NAME AS [Employee Name],
   COALESCE(M.EMP_NAME, 'No Manager') AS [Manager Name],
   E.DEPARTMENT AS [Employee Department],
   M.DEPARTMENT AS [Manager Department]
FROM
   EMPLOYEE E
LEFT JOIN
   EMPLOYEE M
ON
   E.MANAGER_ID = M.EMP_ID;
```



	Employee Name	Manager Name	Employee Department	Manager Department
1	Tanmay	No Manager	manager	NULL
2	Harsh	Tanmay	finance	manager
3	Hema	Tanmay	it	manager
4	Sahil	Harsh	finance	finance
5	Eva	Hema	it	it
6	Frank	Tanmay	hr	manager

Problem Statement:

You are a Data Engineer at FinSight Corp, a company that models Net Present Value (NPV) projections for investment decisions. Your system maintains two key datasets:

Year_tbl: Actual recorded NPV's of various financial instruments over different years:

ID: Unique Financial instrument identifier.

YEAR: Year of record

NPV: Net Present Value in that year

Queries_tbl: A list of instrument-year pairs for which stakeholders are requesting NPV values:

ID: Financial instrument identifier

YEAR: Year of interest.

Find the NPV of each query from the Queries table. Return the output order by ID and Year in the sorted form.

However, not all ID-YEAR combinations in the Queries table are present in the Year_tbl. If an NPV is missing for a requested combination, assume it to be 0 to maintain a consistent financial report.

Code

```
-- Actual NPV Values Table
CREATE TABLE Year_tbl (
  ID INT,
  YEAR INT,
  NPV INT
)
-- Queries Table
CREATE TABLE Queries (
  ID INT,
  YEAR INT
)
-- Insert data into Year_tbl
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 data into Queries
INSERT INTO Queries (ID, YEAR) VALUES
(1, 2019),
(2, 2008),
(3, 2009),
```

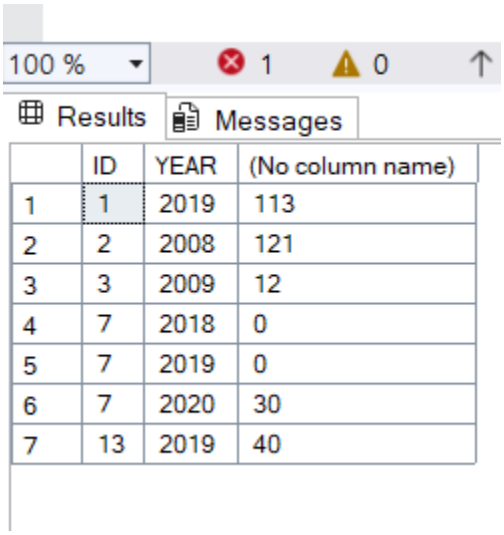
(7, 2018),

(7, 2019),

(7, 2020),

(13, 2019)

```
-- LEFT JOIN to fetch NPV for given ID and YEAR
SELECT
  y1.ID,
  y1.YEAR,
  ISNULL(y2.NPV, 0)
FROM Queries AS y1
LEFT OUTER JOIN Year_tbl AS y2
ON y1.ID = y2.ID AND y1.YEAR = y2.YEAR
```



	ID	YEAR	(No column name)
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