Experiment 2

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Branch: BE-CSE **Section/Group: 803-A**
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Subject Name: Database management systems **Subject Code: 23CSP-333**

1. Aim:

To demonstrate the application of various SQL JOIN operations.

2. Objective:

1) 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.

2) **Problem Title: 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.

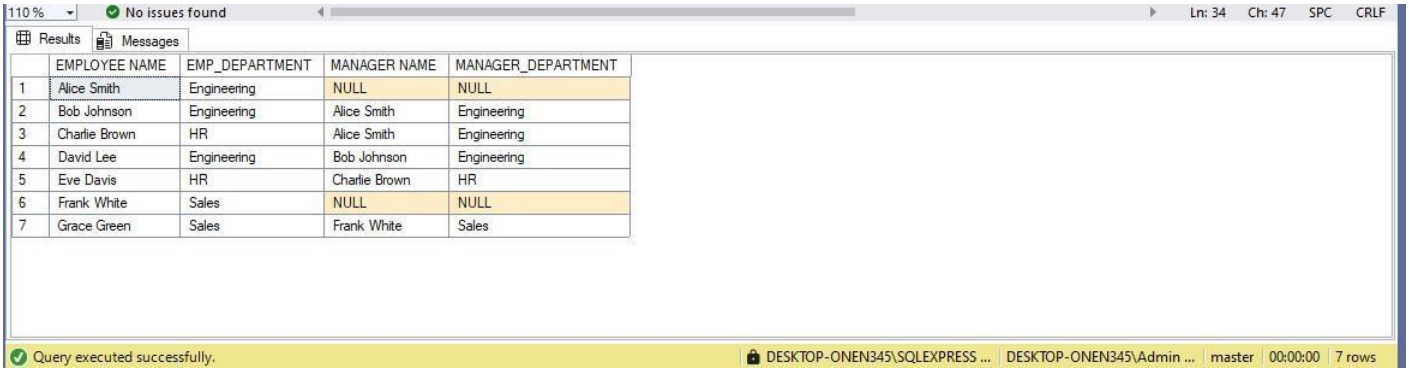
1. DBMS script and output:

1)
```
CREATE TABLE employee (
    EmpID INT flRIMARY KEY,
    EmpName VARCHAR(50) NOT NULL,
    Department VARCHAR(50) NOT NULL,
    ManagerID INT
);

INSERT INTO employee (EmpID, EmpName, Department, ManagerID) VALUES
(101, 'Alice Smith', 'Engineering', NULL),
(102, 'Bob Johnson', 'Engineering', 101),
(103, 'Charlie Brown', 'HR', 101),
(104, 'David Lee', 'Engineering', 102),
(105, 'Eve Davis', 'HR', 103),
(106, 'Frank White', 'Sales', NULL),
(107, 'Grace Green', 'Sales', 106);

SELECT
    E1.EmpName AS [EMflLOYEE NAME],
    E1.Department AS [EMfl_DEflARTMENT],
```

```
        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;
```



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Results | Messages

	EMPLOYEE NAME	EMP_DEPARTMENT	MANAGER NAME	MANAGER_DEPARTMENT
1	Alice Smith	Engineering	NULL	NULL
2	Bob Johnson	Engineering	Alice Smith	Engineering
3	Charlie Brown	HR	Alice Smith	Engineering
4	David Lee	Engineering	Bob Johnson	Engineering
5	Eve Davis	HR	Charlie Brown	HR
6	Frank White	Sales	NULL	NULL
7	Grace Green	Sales	Frank White	Sales

Query executed successfully. | DESKTOP-ONEN345\SQLEXPRESS ... | DESKTOP-ONEN345\Admin ... | master | 00:00:00 | 7 rows

2.

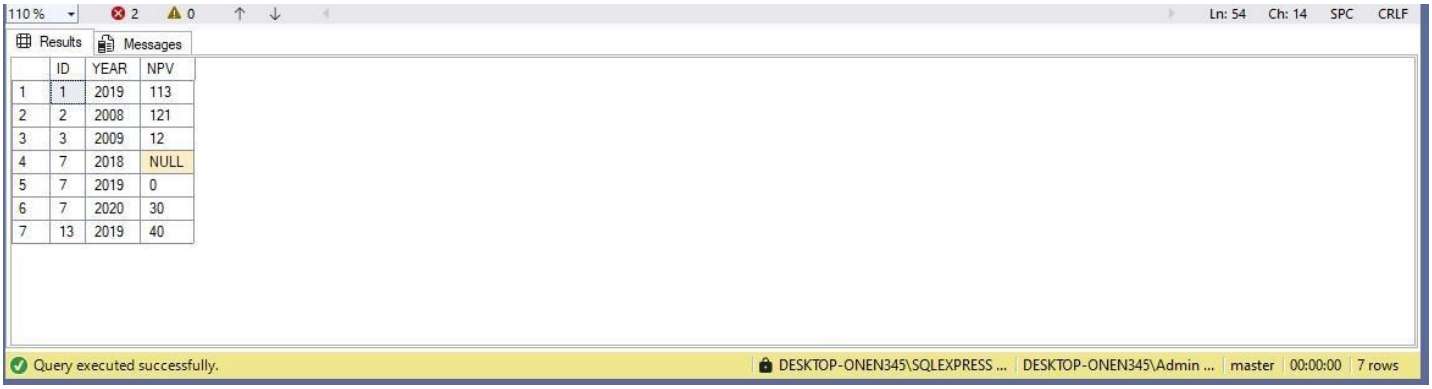
```
CREATE TABLE Year_tbl (
ID INT,
YEAR INT,
NflV INT
);
CREATE TABLE Queries (
ID INT,
YEAR INT
);
INSERT INTO Year_tbl (ID, YEAR, NflV)
VALUES
(1, 2018, 100),
(7, 2020, 30),
(13, 2019, 40),
(1, 2019, 113),
(2, 2008, 121),
(3, 2009, 12),
(11, 2020, 99),
(7, 2019, 0);

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.NflV
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;
```



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Results | Messages

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

Query executed successfully. | DESKTOP-ONEN345\SQLEXPRESS ... | DESKTOP-ONEN345\Admin ... | master | 00:00:00 | 7 rows