



## Experiment 2

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**Subject Name:** ADBMS

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### 1. Aim:

- To generate an employee-manager reporting hierarchy by performing a self-join on the Employee table, enabling the HR department to visualize internal organizational structure.
- To retrieve Net Present Value (NPV) data for requested financial instrument-year pairs using SQL joins, substituting missing values with zero to ensure a complete and consistent financial report.

### 2. Objective:

- To design and query relational tables for modeling employee-manager hierarchies and financial instrument data.
- To apply self-joins for mapping internal reporting relationships within a single table.
- To use LEFT JOINS function to handle missing data gracefully in financial queries.
- To generate accurate, ordered reports that support organizational insights and stakeholder decision-making.

### 3. DBMS script and output:

#### Q1:


```
CREATE TABLE Employee (  
    EmpID INT PRIMARY KEY,  
    Ename VARCHAR(100),  
    Department VARCHAR(100),  
    ManagerID INT  
);
```


```
INSERT INTO Employee (EmpID, Ename, Department, ManagerID) 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  
    E.Ename AS EmployeeName,  
    E.Department AS EmployeeDept,
```

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```
M.Ename AS ManagerName,  
  M.Department AS ManagerDept  
FROM  
  Employee E  
LEFT JOIN  
  Employee M ON E.ManagerID = M.EmpID;
```

100 %  No issues found

 Results

 Messages

	EmployeeName	EmployeeDept	ManagerName	ManagerDept
1	Alice	HR	NULL	NULL
2	Bob	Finance	Alice	HR
3	Charlie	IT	Alice	HR
4	David	Finance	Bob	Finance
5	Eve	IT	Charlie	IT
6	Frank	HR	Alice	HR







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**Q2:**

```
CREATE TABLE Year_tbl (  
    ID INT,  
    YEAR INT,  
    NPV 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);  
  
CREATE TABLE Queries_tbl (  
    ID INT,  
    YEAR INT  
);  
  
INSERT INTO Queries_tbl (ID, YEAR) VALUES  
(1, 2019),  
(2, 2008),  
(3, 2009),  
(7, 2018),  
(7, 2019),  
(7, 2020),  
(13, 2019);  
  
SELECT  
    q.ID,  
    q.YEAR,  
    COALESCE(y.NPV, 0) AS NPV  
FROM  
    Queries_tbl q  
LEFT JOIN  
    Year_tbl y  
ON  
    q.ID = y.ID AND q.YEAR = y.YEAR  
ORDER BY  
    q.ID, q.YEAR;
```

100 %  1  0

 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

#### 4. Learning Outcomes:

- Understand how to model hierarchical and financial relationships using relational database concepts.
- Learn to perform self-joins and outer joins for advanced data retrieval across and within tables.
- Gain proficiency in handling missing data using functions to ensure data completeness.
- Develop the ability to generate structured, sorted reports to support business and organizational analysis.