

Experiment No 2.1:

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1. Aim/Overview of the practical:

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. Theory:

In organizational databases, it's common to store employee and reporting manager information in a single table. Each employee has a unique ID (eid), and if they report to a manager, their manager's ID is stored in the same table under a column like managid. This creates a self-referencing relationship, where the table references itself via a foreign key.

To retrieve both the employee's and the manager's details, we use a self-join — joining the table to itself. This allows comparing an employee's managid to the eid of another row in the same table, effectively mapping employees to their managers.

A LEFT OUTER JOIN is used to include employees who may not have a manager (e.g., top-level executives).

3. Result/Output/Writing Summary:

	employee name	department	Manager Name	Manager depart
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

Learning outcomes (What I have learnt):

1. Learned how to design and implement a self-referencing table using foreign keys.
2. Understood the concept and use of self-joins in SQL to model hierarchical relationships.
3. Applied the LEFT OUTER JOIN to include employees without managers..