**Task 5: Writing Join Queries, equivalent, and/or recursive queries**

Perform the advanced query processing and test its heuristics using the designing of optimizing complex queries and their equivalence queries.

**Use Employee Database**

**Employees**

* EmpID (INT, PK)
* FirstName (VARCHAR)
* LastName (VARCHAR)
* ManagerID (INT) — references EmpID (self-join)
* DepartmentID (INT)
* Salary (DECIMAL)

**Departments**

* DepartmentID (INT, PK)
* DepartmentName (VARCHAR)

**Questions:**

1. Write a SQL query to retrieve each employee’s full name along with their manager’s full name.
2. Write two equivalent queries to find all employees who work in the 'Sales' department:  
   a) One using an INNER JOIN  
   b) One using a WHERE clause with a subquery
3. Write a recursive SQL query to find the entire management chain (all managers) for a given employee specified by their EmpID.
4. Rewrite the recursive query from Question 3 to improve its performance. Explain the heuristics or strategies you used in optimization.
5. a) Describe how you would test if two queries are equivalent.  
   b) List and explain heuristics you can apply to optimize complex join and recursive queries.