USN NUMBER: 1RVU23CSE264
NAME: Meghana G

Ex No: 9 Date: 10/11/2025	Transforming a Normalized Model into a Star Schema

Objective:

To transform a normalized relational data model into a Star Schema structure that enhances query performance, simplifies data retrieval, and supports efficient analytical processing by organizing data into fact and dimension tables suitable for data warehousing and business intelligence applications.

Outcomes:

- Created and configured the **SALES_DB** database and **SALES_SCHEMA** schema.
- Implemented **7 normalized tables**: Customers, Employees, Offices, Orders, OrderDetails, Products, and ProductLines.
- Loaded **sample data** into each table for testing and validation.
- Verified relationships between customers, orders, and products.

Materials:

- **Platform:** Snowflake (Web UI or SnowSQL)
- **SQL Objects:** Database, Schema, Tables, Sample Inserts
- **Tools:** DBeaver / Snowflake Console

Lab Procedure:

Step 1: Create Database and Schema

```
CREATE DATABASE IF NOT EXISTS SALES_DB;

USE DATABASE SALES_DB;

CREATE SCHEMA IF NOT EXISTS SALES_SCHEMA;

USE SCHEMA SALES_SCHEMA;
```

Step 2: Create Normalized Tables

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Define the main entities following the **ClassicModels** structure:
Customers, Employees, Offices, Orders, OrderDetails, Products, and ProductLines — each with proper **primary keys** and **foreign key references** for relational integrity.

Step 3: Load Sample Data

Insert sample records manually for quick testing using `INSERT INTO` statements for all tables, or use the **COPY INTO** command for CSV bulk uploads.

Step 4: Validate Data Relationships

Run validation queries such as:

```
SELECT c.customerName, o.orderNumber, p.productName,
od.quantityOrdered
FROM CUSTOMERS c
JOIN ORDERS o ON c.customerNumber = o.customerNumber
JOIN ORDERDETAILS od ON o.orderNumber = od.orderNumber
JOIN PRODUCTS p ON od.productCode = p.productCode;
```

Confirm that all tables are properly linked and data retrieval works correctly.

GitHub Link: https://github.com/meghana1653/Data-Engineering/blob/main/Lab_9.zip