✅ Task 9: SQL Data Modeling — Build a Star Schema

Tools:

- Primary: PostgreSQL / MySQL
- Alternative: SQLite
- Diagram: dbdiagram.io / draw.io

Dataset:

- Global Superstore
- Retail Sales Dataset
- E-commerce Orders Dataset

Hints / Mini Guide:

1. Identify fact table (Sales) and dimensions (Customer/Product/Date/Region).
2. Create dimension tables with primary keys.
3. Create fact table with foreign keys.
4. Insert distinct values into dimensions.
5. Insert transactions into fact table mapped to dimension IDs.
6. Create indexes on join keys.
7. Run analytics queries using star schema joins.
8. Validate record counts + missing key matches.
9. Export star schema diagram.

Deliverables:

- task9_star_schema.sql
- star_schema_diagram.png/pdf
- analysis_outputs.csv

Final Outcome:
✅ Understanding of warehouse modeling for BI reporting.

Interview Questions Related To Above Task:

- Fact vs Dimension table?
- Why Star schema is preferred in BI?
- What are surrogate keys?
- Why indexing is useful?
- How to validate data integrity in schema?

📌 **Task Submission Guidelines**

- ⏰ **Time Window:**

Youcan complete the task anytime between 10:00 AM to 10:00 PM on the given day. Submission link closes at 10:00 PM

- 🔍 **Self-Research Allowed:**

Youare free to explore, Google, or refer to tutorials to understand concepts and complete the task effectively.

- 🛠️ **Debug Yourself:**

Tryto resolve all errors by yourself. This helps you learn problem-solving and ensures you don't face the same issues in future tasks.

- 💸 **No Paid Tools:**

Ifthe task involves any paid software/tools, do not purchase anything. Just learn the process or find free alternatives.

- 📁 **GitHub Submission:**

Create a new GitHub repository for each task.
Add everything you used for the task — code, datasets, screenshots (if any), and a short README.md explaining what you did.

📤 **Submit Here:**

After completing the task, paste your GitHub repo link and submit it using the link below:

- 👉 [Submission Link]