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| Star Schema Exercises (No Answers) |

Step 1: Input – Normalized Tables (30 total)

System 1: CRM (8 tables)

1. crm\_customers(customer\_id, first\_name, last\_name, email, phone, created\_date)

2. crm\_addresses(address\_id, customer\_id, street, city, state, country, postal\_code)

3. crm\_customer\_segments(segment\_id, segment\_name, description)

4. crm\_contacts(contact\_id, customer\_id, contact\_type, contact\_value)

5. crm\_interactions(interaction\_id, customer\_id, date, channel, notes)

6. crm\_accounts(account\_id, customer\_id, account\_type, opened\_date, status)

7. crm\_loyalty(loyalty\_id, customer\_id, points, tier, last\_update)

8. crm\_support\_tickets(ticket\_id, customer\_id, issue\_type, status, opened\_date, closed\_date)

System 2: ERP (9 tables)

1. erp\_products(product\_id, product\_name, category\_id, brand\_id, unit\_price, cost)

2. erp\_categories(category\_id, category\_name, parent\_id)

3. erp\_brands(brand\_id, brand\_name)

4. erp\_suppliers(supplier\_id, supplier\_name, contact\_name, phone, country)

5. erp\_purchase\_orders(po\_id, supplier\_id, order\_date, status)

6. erp\_po\_items(po\_item\_id, po\_id, product\_id, quantity, price)

7. erp\_inventories(inventory\_id, product\_id, warehouse\_id, stock\_level)

8. erp\_warehouses(warehouse\_id, warehouse\_name, location)

9. erp\_employees(employee\_id, first\_name, last\_name, department\_id, hire\_date)

System 3: Finance (6 tables)

1. fin\_transactions(transaction\_id, account\_id, date, amount, type, description)

2. fin\_accounts(account\_id, account\_number, account\_type, opened\_date, status)

3. fin\_cost\_centers(center\_id, center\_name, department)

4. fin\_budgets(budget\_id, center\_id, year, allocated\_amount)

5. fin\_expenses(expense\_id, center\_id, date, amount, description)

6. fin\_payments(payment\_id, transaction\_id, method, status, payment\_date)

System 4: HR (7 tables)

1. hr\_employees(employee\_id, first\_name, last\_name, department\_id, job\_id, hire\_date, salary)

2. hr\_departments(department\_id, department\_name, manager\_id)

3. hr\_jobs(job\_id, job\_title, min\_salary, max\_salary)

4. hr\_salaries(salary\_id, employee\_id, amount, effective\_date)

5. hr\_attendance(att\_id, employee\_id, date, status)

6. hr\_leaves(leave\_id, employee\_id, start\_date, end\_date, type, status)

7. hr\_trainings(training\_id, employee\_id, training\_name, date, result)

| Exercise 1 – Build Star Schema |
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| Instructions: - Design a star schema for analyzing business performance. - Use a single fact table for all transactional/activity data. - Identify dimension tables. - Indicate for each column if Fact (numeric/additive) or Dimension (descriptive). - Specify dimension type (conformed, slowly changing, junk, degenerate, role-playing). |

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Exercise 2 – Generate DDLs

Instructions: - Write CREATE TABLE statements for the fact table and all dimension tables in Hive/SQL style. - Do not provide the actual DDLs; leave space for learners to complete.

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