

## Comprehensive Database Creation Report Using SQL

I have designed and created a comprehensive database consisting of a set of interconnected tables using SQL, aiming to improve data organization, management, and retrieval. The data has been divided into separate entities (tables), with relationships defined based on primary keys and foreign keys. Below is an explanation of the database details and the tables created:

### Entities and Tables:

#### 1. Suppliers Table (Supplier):

- Contains information about suppliers, such as name, location, lead time, and production volume.
- Primary key: Supplier name.

#### 2. \*Manufacturing Quality Table (Manufacturing Quality):

- Stores manufacturing quality data for each product, including manufacturing time, costs, inspection results, and defect rates.
- Linked to the Suppliers table via the foreign key Supplier name.
- Primary key: SKU (Product Code).

#### 3. \*Products Table (Products):

- Contains product details such as type, price, availability, number of units sold, revenue, and inventory levels.
- Primary key: SKU.

#### 4. Sales Table (Sales):

- Includes sales data such as the number of units sold, revenue, customer demographics, and order volumes.
- Linked to the Products table via the foreign key SKU.
- Primary key: Sales\_ID.

#### 5. \*Shipping and Transportation Table (Shipping Transportation):

- Stores shipping and transportation information for each product, such as shipping times, carriers, costs, and transportation methods.
- Linked to the Products table via the foreign key SKU.
- Primary key: Shipping.id

#### Relationships Between Tables:

- The \*Suppliers Table (Supplier)\* is linked to the \*Manufacturing Quality Table (Manufacturing Quality)\* via the foreign key Supplier name, allowing the association of each product with its respective supplier.
- The \*Products Table (Products)\* serves as the central point for relationships:
  - It is linked to the \*Sales Table (Sales)\* via SKU, enabling multiple sales records for a single product.
  - It is linked to the \*Manufacturing Quality Table (Manufacturing\_Quality) \* via SKU, storing quality data associated with each product.
  - It is linked to the \*Shipping and Transportation Table (Shipping\_Transportation) \* via SKU, storing shipping information for each product.

#### Achievements:

- Data has been organized into separate tables to store different types of information, such as suppliers, manufacturing, sales, and shipping.
- Foreign keys have been used to enhance the relationships between tables and simplify data access.
- Ensured each product is linked to supplier, quality, sales, and shipping information in an integrated system.

#### Benefits:

This design allows for efficient data organization and easy querying, as users can retrieve any product-related information via the primary key SKU, which links all tables together. This approach enhances data management efficiency and enables deep analysis of information