**About** **AdventureWorks2022:**

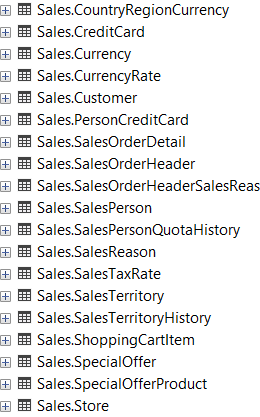
**AdventureWorks2022** is a sample database provided by Microsoft, widely used for learning and testing purposes, especially in SQL Server environments. It represents a fictional company called Adventure Works Cycles, which manufactures and sells bicycles, parts, and accessories.

This database includes a wide variety of tables, views, stored procedures, and functions that represent different parts of the business such as sales, purchasing, production, human resources, and more.

**AdventureWorks2022 Schemas**

The **AdventureWorks2022** database organizes its tables and objects into multiple schemas. Schemas are used to logically group database objects, such as tables and views.Below is an overview of the main schemas typically found in AdventureWorks2022:

1. **dbo** (Database Owner)
   * Contains general tables and objects that don’t fit into other specific schemas.
   * Tables include core data such as ErrorLog, DatabaseLog, etc.
2. **Person**
   * Manages data related to people, including employees, customers, and contacts.
   * Key tables: Person, Address, Contact, EmailAddress, etc.
3. **Production**
   * Represents the manufacturing and product information for the Adventure Works Cycles company.
   * Key tables: Product, ProductModel, WorkOrder, BillOfMaterials, TransactionHistory, etc.
4. **Sales**
   * Focuses on sales data, including customer orders, invoices, and sales-related transactions.
   * Key tables: SalesOrderHeader, SalesOrderDetail, SalesTerritory, Customer, etc.
5. **Purchasing**
   * Contains data on vendor transactions, including purchase orders and product supplies.
   * Key tables: Vendor, PurchaseOrderHeader, PurchaseOrderDetail, etc.
6. **HumanResources**
   * Manages employee data such as department details, employee records, and job information.
   * Key tables: Employee, Department, Shift, JobCandidate, etc.

**🡺 Business requirements:**

**Sales Schema**

* **Best for sales-related business requirements.**
* **If your business needs focus on managing customer orders, invoices, sales territories, or customer data.**
* **Key tables:**
  + **SalesOrderHeader: Represents the sales order header information.**
  + **SalesOrderDetail: Stores details of each sales order line.**
  + **Customer: Holds customer information.**
  + **SalesTerritory: Tracks sales territories.**

**Business Requirements for the Sales Schema in AdventureWorks2022 Database**

**Objective:  
The business requirements focus on utilizing the Sales schema within the AdventureWorks2022 database to optimize sales operations, customer management, and order processing. The goal is to enhance the efficiency and accuracy of the sales process while providing actionable insights through data analysis.**

**Key Business Requirements**

1. **Sales Order Management**
   * **Requirement: The system must accurately manage and store sales order information, including order creation, modification, and tracking.**
   * **Details:**
     + **Use the SalesOrderHeader and SalesOrderDetail tables to capture all relevant details of a customer’s order (e.g., order dates, shipping method, total amount).**
     + **Ensure proper linking between customer details in the Customer table and their respective orders.**
     + **Support for managing orders in various states (e.g., pending, fulfilled, cancelled).**
2. **Customer Data Management**
   * **Requirement: Store and update customer information.**
   * **Details:**
     + **The Customer table should store all customer-related information, including name, address, account number, and sales territory.**
     + **Ensure that customer records are unique, up-to-date, and linked to related orders and sales data.**
     + **Use SalesTerritory to organize customers by geographic regions for targeted sales strategies.**
3. **Sales Reporting and Analytics**
   * **Requirement: Enable the generation of sales reports for performance tracking and decision-making.**
   * **Details:**
     + **Leverage data from SalesOrderHeader, SalesOrderDetail, SalesTerritory, and Customer to generate insights into sales performance, top-selling products, and regional sales trends.**
     + **Support monthly, quarterly, and yearly reports for sales revenue, order volume, and customer retention.**
     + **Track and analyze sales performance by territory using the SalesTerritory table.**
4. **Sales Territory Management**
   * **Requirement: Efficiently manage and analyze sales territories (المناطق) to optimize sales operations.**
   * **Details:**
     + **The SalesTerritory table must be used to categorize customers and sales orders by geographic region.**
     + **Enable territory-based sales performance tracking, ensuring that each sales territory’s contribution is easily measurable.**
     + **Provide insights on regional demand and sales opportunities.**
5. **Sales Commission and Performance Tracking**
   * **Requirement: Track sales commissions for employees based on their sales performance.**
   * **Details:**
     + **Use the SalesPerson table to associate sales representatives with their sales orders.**
     + **Track the total value of sales generated by each sales representative and calculate commissions accordingly.**
     + **Ensure accurate recording of commission percentages based on performance, using the SalesPerson and SalesOrderHeader tables.**
6. **Product and Pricing Information**
   * **Requirement: Ensure accurate product and pricing details are associated with each sales order.**
   * **Details:**
     + **Link Product and SpecialOffer data with sales orders in SalesOrderDetail to ensure accurate product descriptions, quantities, and pricing.**
     + **Support for promotions or special offers and their impact on pricing in sales transactions.**
7. **Invoice Generation**
   * **Requirement: Generate invoices for customer orders.**
   * **Details:**
     + **Use SalesOrderHeader and SalesOrderDetail tables to generate detailed invoices, including product descriptions, quantities, and total amounts.**
     + **Ensure invoices reflect discounts, taxes, and shipping costs.**
     + **Provide invoice history for each customer order.**
8. **Returns and Refunds Management**
   * **Requirement: Handle product returns and refunds efficiently.**
   * **How to implement:**

* **Track returns by linking to the original order in SalesOrderHeader and SalesOrderDetail.**
  + **Details:**
    - **Maintain a process for tracking returned products, linking returns to the original sales orders using SalesOrderHeader and SalesOrderDetail.**
    - **Capture reasons for returns, and automate the process for issuing refunds or replacements.**

1. **Customer Satisfaction and Feedback**
   * **Requirement: Capture and analyze customer feedback linked to sales orders.**
   * **Details:**
     + **Provide a method for storing customer feedback related to their purchases, linked to Customer and SalesOrderHeader.**
     + **Enable the analysis of feedback to assess customer satisfaction and improve future sales efforts.**

**Key Tables and Relationships:**

* **SalesOrderHeader: Stores summary details of each sales order.**
* **SalesOrderDetail: Contains line-by-line details for products in each sales order.**
* **Customer: Stores customer details and links to orders.**
* **SalesTerritory: Manages and categorizes orders by region.**
* **SalesPerson: Tracks sales representatives and their commission data.**
* **Product: Stores product details used in sales orders.**
* **SpecialOffer: Handles promotions and special pricing linked to products.**

**By implementing these business requirements, the Sales schema in AdventureWorks2022 can help streamline sales operations, improve data accuracy, and provide valuable insights for strategic decision-making**