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Mercedes - Benz Database Setup Guide

1 message

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Mercedes-Benz Dealership Database Setup Guide

Step 1: Setting Up the Database in SQL Server

1. Open **Microsoft SQL Server Management Studio (SSMS)**.
2. Connect to your SQL Server instance.
3. Run the following SQL command to create a new database:

```
CREATE DATABASE MercedesDealership;
GO
```

4. Select the new database to work within it:

```
USE MercedesDealership;
GO
```

Step 2: Creating Tables for Dealership Data

2.1. Creating Inventory Table

```
CREATE TABLE Inventory (
    VehicleID INT PRIMARY KEY IDENTITY(1,1),
    Make VARCHAR(50) NOT NULL,
    Model VARCHAR(50) NOT NULL,
    Year INT NOT NULL,
    Price DECIMAL(10,2) NOT NULL,
    Status VARCHAR(20) CHECK (Status IN ('Available', 'Sold', 'Reserved')),
    Mileage INT,
    Color VARCHAR(30),
    VIN VARCHAR(17) UNIQUE NOT NULL,
    DateAdded DATETIME DEFAULT GETDATE()
);
```

2.2. Creating Customers Table

```
CREATE TABLE Customers (
    CustomerID INT PRIMARY KEY IDENTITY(1,1),
    FirstName VARCHAR(50),
    LastName VARCHAR(50),
    Email VARCHAR(100) UNIQUE,
    Phone VARCHAR(15),
    Address VARCHAR(255),
    City VARCHAR(50),
    State VARCHAR(50),
    ZipCode VARCHAR(10),
    DateJoined DATETIME DEFAULT GETDATE()
);
```

2.3. Creating Sales Table

```
CREATE TABLE Sales (
    SaleID INT PRIMARY KEY IDENTITY(1,1),
    VehicleID INT FOREIGN KEY REFERENCES Inventory(VehicleID),
    CustomerID INT FOREIGN KEY REFERENCES Customers(CustomerID),
    SalePrice DECIMAL(10,2) NOT NULL,
    SalespersonID INT FOREIGN KEY REFERENCES Employees(EmployeeID),
    SaleDate DATETIME DEFAULT GETDATE()
);
```

2.4. Creating Employees Table

```
CREATE TABLE Employees (
    EmployeeID INT PRIMARY KEY IDENTITY(1,1),
    FirstName VARCHAR(50),
    LastName VARCHAR(50),
    Role VARCHAR(50) CHECK (Role IN ('Salesperson', 'Manager', 'Service Advisor')),
    HireDate DATETIME DEFAULT GETDATE(),
    Email VARCHAR(100) UNIQUE,
    Phone VARCHAR(15)
);
```

2.5. Creating Service Records Table

```
CREATE TABLE ServiceRecords (
    ServiceID INT PRIMARY KEY IDENTITY(1,1),
    VehicleID INT FOREIGN KEY REFERENCES Inventory(VehicleID),
    CustomerID INT FOREIGN KEY REFERENCES Customers(CustomerID),
    ServiceDate DATETIME DEFAULT GETDATE(),
    ServiceType VARCHAR(100),
    Cost DECIMAL(10,2)
);
```

Step 3: Inserting Sample Data

```
-- Insert into Inventory
INSERT INTO Inventory (Make, Model, Year, Price, Status, Mileage, Color, VIN)
VALUES
('Mercedes-Benz', 'C-Class', 2023, 45000.00, 'Available', 0, 'Black', 'W1KWF8EB0MR123456'),
('Mercedes-Benz', 'E-Class', 2022, 55000.00, 'Sold', 5000, 'White', 'W1KBF8EB1MR234567'),
('Mercedes-Benz', 'GLC', 2021, 50000.00, 'Available', 10000, 'Silver', 'W1KPF8EB2MR345678');

-- Insert into Customers
INSERT INTO Customers (FirstName, LastName, Email, Phone, Address, City, State, ZipCode)
VALUES
('John', 'Doe', 'johndoe@email.com', '555-1234', '123 Main St', 'Los Angeles', 'CA', '90001'),
('Jane', 'Smith', 'janesmith@email.com', '555-5678', '456 Elm St', 'New York', 'NY', '10001');

-- Insert into Employees
INSERT INTO Employees (FirstName, LastName, Role, Email, Phone)
VALUES
('Alice', 'Johnson', 'Salesperson', 'alice.johnson@email.com', '555-9999'),
('Bob', 'Williams', 'Manager', 'bob.williams@email.com', '555-8888');

-- Insert into Sales
INSERT INTO Sales (VehicleID, CustomerID, SalePrice, SalespersonID)
VALUES
(2, 1, 54000.00, 1);

-- Insert into Service Records
INSERT INTO ServiceRecords (VehicleID, CustomerID, ServiceDate, ServiceType, Cost)
VALUES
(1, 2, '2025-03-01', 'Oil Change', 150.00);
```

Step 4: Retrieving Data with SQL Queries

4.1. Retrieve All Available Cars for Sale

```
SELECT * FROM Inventory WHERE Status = 'Available';
```

4.2. Get All Customers Who Have Purchased a Car

```
SELECT C.CustomerID, C.FirstName, C.LastName, C.Email, C.Phone,
       S.SaleDate, I.Make, I.Model, I.Year, S.SalePrice
FROM Sales S
JOIN Customers C ON S.CustomerID = C.CustomerID
JOIN Inventory I ON S.VehicleID = I.VehicleID;
```

4.3. Find the Top-Selling Salesperson

```
SELECT E.FirstName, E.LastName, COUNT(S.SaleID) AS TotalSales
FROM Sales S
JOIN Employees E ON S.SalespersonID = E.EmployeeID
GROUP BY E.FirstName, E.LastName
ORDER BY TotalSales DESC;
```

4.4. Get Total Revenue from Car Sales

```
SELECT SUM(SalePrice) AS TotalRevenue FROM Sales;
```

4.5. Find All Services Done on a Specific Car

```
SELECT I.Make, I.Model, I.Year, S.ServiceDate, S.ServiceType, S.Cost
FROM ServiceRecords S
JOIN Inventory I ON S.VehicleID = I.VehicleID
WHERE I.VIN = 'W1KWF8EB0MR123456';
```

Step 5: Fixing SaleDate Error

Check If SaleDate Exists

```
SELECT COLUMN_NAME
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME = 'Sales';
```

If SaleDate is Missing, Add It

```
ALTER TABLE Sales ADD SaleDate DATETIME DEFAULT GETDATE();
```

Update NULL SaleDate Values

```
UPDATE Sales SET SaleDate = GETDATE() WHERE SaleDate IS NULL;
```

This guide provides a full setup for a **Mercedes-Benz Dealership Database** in **Microsoft SQL Server**! 🚀