

SQL Database Project – Northwind

This project demonstrates SQL query writing and analysis using the **Northwind database** in **DB Browser for SQLite**. The database simulates a small business with tables for customers, orders, products, employees, and suppliers. The goal is to practice querying real-world data and applying operations like filtering, aggregation, joins, and grouping.

Task 1: Display all products

```
SELECT * FROM Products;
```

Task 2: Display the total number of orders

```
SELECT COUNT(*) AS TotalOrders FROM Orders;
```

Task 3: Display the average price of all products

```
SELECT AVG(UnitPrice) AS AveragePrice FROM Products;
```

Task 4: Display the most expensive product

```
SELECT ProductName, UnitPrice FROM Products ORDER BY UnitPrice DESC LIMIT 1;
```

Task 5: Display the least expensive product

```
SELECT ProductName, UnitPrice FROM Products ORDER BY UnitPrice ASC LIMIT 1;
```

Task 6: Display the number of customers in each city

```
SELECT City, COUNT(CustomerID) AS NumberOfCustomers FROM Customers GROUP BY City;
```

Task 7: Display the number of orders placed by each customer

```
SELECT CustomerID, COUNT(OrderByID) AS OrdersCount FROM Orders GROUP BY CustomerID;
```

Task 8: Display the total revenue generated by each product

```
SELECT p.ProductName, SUM(od.Quantity * od.UnitPrice) AS TotalRevenue  
FROM [Order Details] od  
JOIN Products p ON od.ProductID = p.ProductID  
GROUP BY p.ProductName;
```

Task 9: Display the number of orders placed in each month of 1996

```
SELECT strftime('%m', OrderDate) AS Month, COUNT(OrderByID) AS OrdersCount
```

```
FROM Orders
WHERE strftime('%Y', OrderDate) = '1996'
GROUP BY Month;
```

Task 10: Display the top 5 customers who placed the most orders

```
SELECT CustomerID, COUNT(OrderID) AS OrdersCount
FROM Orders
GROUP BY CustomerID
ORDER BY OrdersCount DESC
LIMIT 5;
```

Task 11: List orders shipped to Germany with freight > 50

```
SELECT OrderID, ShipCountry, Freight
FROM Orders
WHERE ShipCountry = 'Germany' AND Freight > 50;
```

Task 12: List employees with title 'Sales Representative'

```
SELECT FirstName, LastName, Title, HireDate, City
FROM Employees
WHERE Title = 'Sales Representative'
ORDER BY HireDate;
```

Task 13: List customers who have not placed any orders

```
SELECT c.CustomerID, c.CompanyName
FROM Customers c
LEFT JOIN Orders o ON c.CustomerID = o.CustomerID
WHERE o.OrderID IS NULL
ORDER BY c.CompanyName;
```

Task 14: List employees born in 1963

```
SELECT FirstName, LastName, BirthDate
FROM Employees
WHERE strftime('%Y', BirthDate) = '1963'
ORDER BY LastName;
```

Task 15: List products ordered by USA customers

```
SELECT p.ProductName, SUM(od.Quantity) AS TotalOrdered
FROM Orders o
JOIN Customers c ON o.CustomerID = c.CustomerID
JOIN [Order Details] od ON o.OrderID = od.OrderID
JOIN Products p ON od.ProductID = p.ProductID
WHERE c.Country = 'USA'
GROUP BY p.ProductName
ORDER BY TotalOrdered DESC;
```

This project shows how SQL can be used to retrieve, analyze, and validate data in a structured way. The queries cover filtering, grouping, aggregation, and joining across multiple tables in the Northwind dataset.