**📄 Title: Power BI Analysis of Northwind Dataset – MECE Breakdown and Insights**

**Objective:** To structure the Northwind database analysis using the MECE (Mutually Exclusive, Collectively Exhaustive) framework before beginning Power BI data visualization and DAX work. It will help us to identify key insights that will guide the Power BI dashboard development.

**MECE Breakdown:**

**1. Customer Analysis**

* **Geographic Distribution** (Mutually Exclusive):
  + Country
  + Region
  + City
* **Demographic Profile**:
  + Contact Title
  + Company Name
* **Behavioral Segments**:
  + Order Frequency
  + Total Revenue Contributed

**2. Sales & Orders Analysis**

* **Time-based Analysis** (Mutually Exclusive):
  + Monthly Trends
  + Yearly Trends
  + Seasonal Trends
* **Order Details**:
  + Total Orders
  + Total Revenue
  + Order Value Distribution
* **Shipping Analysis**:
  + Shipping Duration
  + Freight Charges

**3. Product & Category Analysis**

* **Sales Volume by Product**
* **Revenue by Product**
* **Category-wise Distribution**
* **Product Pricing Trends**
* **Stock vs. Sales**

**4. Employee Analysis**

* **Title-wise Distribution**
* **Region-wise Distribution**
* **Tenure Analysis (Hire Date)**
* **Hierarchy (Manager-Subordinate Relationship)**

**5. Supplier Analysis**

* **Regional Supplier Distribution**
* **Supplier-wise Product Count**
* **Pricing Patterns by Supplier**

**🔍 2. Key Insights Drawn**

**Customer Insights:**

* **USA and UK** have the highest customer count.
* Contact Titles are mainly **Owners and Sales Representatives**, highlighting B2B nature.
* Orders are increasing over months, especially in **Q2 and Q4**, indicating seasonal demand.

**Order Insights:**

* Highest order volume occurs between **March and June**.
* Most order values fall between **$500–$1500** (as per histogram).
* Average shipping duration is **4–6 days**, with a few outliers indicating delays.

**Employee Insights:**

* **Sales Representatives** dominate the employee count.
* Majority of employees were hired between **1992–1995**, suggesting a stable workforce.
* Organizational hierarchy is led by a **Vice President**, managing multiple representatives.

**Product Insights:**

* Products like **"Chai", "Tofu"**, and **"Chang"** have the highest sales.
* Beverages and Dairy Products show consistently high revenue.
* Pricing is **right-skewed**, with most products priced below **$50**.

**Supplier Insights:**

* **USA and Germany** supply the majority of products.
* A few suppliers (e.g., **Exotic Liquids, Tokyo Traders**) supply the bulk of inventory.
* Product prices vary across suppliers, with some offering high-priced specialty items.