**🚀 Project Title: Retail Sales Insights (Blended Analytics)**

**📊 Datasets Involved:**

1. **Retail Sales Dataset** (retail\_sales\_dataset.csv)
   * Main fields: Date, Product Category, Quantity, Price per Unit, Total Amount, Customer ID
2. **Global Superstore Dataset** (Superstore.csv)
   * Main fields: Order Date, Product Name, Category, Region, Sales, Profit, Quantity, Customer ID

**🧩 Step-by-Step Plan (Power BI)**

**✅ Step 1: Data Preparation in Power BI**

**a. Load both datasets into Power BI.**

* Use **Power Query** to:
  + Convert date columns to Date type.
  + Ensure quantity and amount fields are numeric.
  + Rename columns for clarity if needed.

**b. Sample M code to change column types:**

m

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// For retail\_sales\_dataset

= Table.TransformColumnTypes(Source, {

{"Date", type date},

{"Quantity", Int64.Type},

{"Price per Unit", type number},

{"Total Amount", type number}

})

// For Superstore dataset

= Table.TransformColumnTypes(Source, {

{"Order Date", type date},

{"Sales", type number},

{"Quantity", Int64.Type},

{"Profit", type number}

})

**✅ Step 2: Create Relationships (at least 3)**

| **Relationship** | **Field 1 (Table A)** | **Field 2 (Table B)** | **Type** |
| --- | --- | --- | --- |
| Customer ID | Retail[Customer ID] | Superstore[Customer ID] | One-to-Many |
| Category | Retail[Product Category] | Superstore[Category] | Many-to-Many |
| Date | Retail[Date] | Superstore[Order Date] | Many-to-Many (via Date Table) |

✅ **Pro Tip**: Create a separate DateTable and link both date fields to it.

dax

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DateTable = CALENDAR(MIN('Retail'[Date]), MAX('Superstore'[Order Date]))

**✅ Step 3: Add DAX Measures**

Here are **10 different DAX functions** for useful insights:

dax

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1. Total Revenue = SUM('Retail'[Total Amount])

2. Total Sales = SUM('Superstore'[Sales])

3. Units Sold = SUM('Retail'[Quantity])

4. Average Order Value = AVERAGE('Retail'[Total Amount])

5. Gross Margin = DIVIDE(SUM('Superstore'[Profit]), SUM('Superstore'[Sales]))

6. Orders Count = COUNTROWS('Retail')

7. Revenue per Unit = AVERAGE('Retail'[Price per Unit])

8. Top Region Sales = CALCULATE(SUM('Superstore'[Sales]), ALLEXCEPT('Superstore', 'Superstore'[Region]))

9. Last Month Sales = CALCULATE([Total Sales], DATEADD('DateTable'[Date], -1, MONTH))

10. Running Total Revenue = CALCULATE([Total Revenue], FILTER(ALLSELECTED('DateTable'[Date]), 'DateTable'[Date] <= MAX('DateTable'[Date])))

**✅ Step 4: Dashboard Layout Design (Visuals)**

Let me know if you'd like a mock image – I can generate a clean dashboard preview. Layout ideas:

**Top Cards:**

* Total Revenue
* Gross Margin
* Units Sold
* Avg Order Value

**Charts:**

* 📈 Line Chart: Sales Trend Over Time (DateTable → Revenue)
* 📊 Bar Chart: Product Category-wise Revenue
* 🗺️ Map/Bar: Region-wise Performance
* 📆 Pie Chart: Sales by Month
* 📂 Matrix Table: Customer vs Product Category

**Filters/Slicers:**

* Date
* Region
* Product Category
* Gender (from Retail dataset)

**✅ Step 5: GitHub Case Study Write-up**

**Title**: Retail Sales Insights with Multi-Source Data (Power BI)

**Overview**:

This project combines two retail datasets to create a unified dashboard using Power BI. The analysis focuses on customer behavior, product category performance, and regional sales trends using DAX, Power Query, and dynamic visuals.

**Skills Practiced**:

* Multi-source data blending
* Time intelligence with DAX
* Relationship modeling
* Advanced metrics with 10+ DAX formulas

**Key Relationships**:

1. Customer ID across datasets
2. Product Category ↔ Category
3. Shared Date table for consistent time filtering

**DAX Highlight**:

* Used DATEADD, DIVIDE, CALCULATE, ALLEXCEPT, and ALLSELECTED

**Screenshots**: *Coming soon* (Let me know if you want a preview now)

**✅ Step 6: Design Visuals in Power BI**

**🎯 Visual Layout Mock (Text-Based Description + I can generate a screenshot-style version if you want)**

**🔲 Top Section – KPI Cards (Horizontal)**

Use **Card Visuals** for:

| **KPI** | **DAX Measure** |
| --- | --- |
| Total Revenue | [Total Revenue] |
| Units Sold | [Units Sold] |
| Gross Margin % | [Gross Margin] |
| Avg Order Value | [Average Order Value] |

**📈 Sales Trend (Line Chart)**

| **Component** | **Configuration** |
| --- | --- |
| Axis | DateTable[Date] |
| Values | Total Revenue (Y-axis) |
| Filters | None (optional slicers apply) |

**📊 Quarterly Sales (Bar Chart)**

| **Component** | **Configuration** |
| --- | --- |
| Axis | DateTable[Quarter] |
| Values | Total Revenue |
| Legend | Optional: Region or Category for split |

**📦 Category Performance (Bar or Column Chart)**

| **Component** | **Configuration** |
| --- | --- |
| Axis | Product Category or Category |
| Values | Total Revenue |
| Filter | Slicer → Region |

**🌍 Region Comparison (Map or Bar Chart)**

| **Component** | **Configuration** |
| --- | --- |
| Axis | Region |
| Values | Total Revenue |

Optional: use a **Filled Map** or **Donut Chart** instead.

**🎛️ Slicers / Filters**

Use these slicers on the report page:

| **Slicer Field** | **Notes** |
| --- | --- |
| Region | From either dataset (linked via model) |
| Product Category | From retail or superstore |
| Date Range | From DateTable[Date] |

Bonus: Add a **Customer Gender** slicer (from retail data).

**✅ Step 7: Polish & Format**

Before publishing, follow these finishing touches:

* 🎨 **Color Theme**: Use a branded or clean professional theme (dark blue, light gray, green for profit).
* 🧠 **Tooltips**: Enable on all visuals to show detailed data.
* 💱 **KPI Formatting**:
  + Format currency fields with ₹, $, or € depending on your target region.
  + Format percentage fields like Gross Margin with one decimal.
* 📌 **Titles & Subtitles**: Add descriptive titles to every visual. Example: “Sales Trend Over Time (All Categories)”
* 🧹 **Remove clutter**: Disable unnecessary legends or borders.

**✅ Step 8: Export & Share**

Once your dashboard is polished:

1. 💻 **Publish to Power BI Service** (if you have a Pro license)
   * Create a workspace
   * Share dashboard links with stakeholders
2. 🖨️ **Export Options**:
   * **PDF Report**: Export via File → Export → PDF
   * **PPT Export**: File → Export → PowerPoint
   * **Interactive Link**: Publish to Web (limited on free accounts)
3. 📥 **GitHub Export**:
   * Save .pbix file
   * Take screenshots of dashboard pages
   * Upload to GitHub with your README.md