

# Power BI Coding challenge Documentation

## Perfume Brand Analysis

### 1. Project Overview and Objective

This project focuses on analyzing a perfume dataset using Microsoft Power BI to uncover key business insights related to sales, pricing, stock levels, and brand performance. The dataset consists of various perfume attributes such as Type, Brand, Price, Stock Availability, Last Updated Date, and other product-level information.

Using Power BI, the data was cleaned, transformed, modeled, and visualized to build an interactive dashboard that highlights important KPIs and trends. The goal was to understand how different categories and brands perform, identify stock inconsistencies, observe pricing patterns, and evaluate product performance over time.

### 2. Data Cleaning

- 1.Removed null and inconsistent values.
- 2.Converted data types (Price → Decimal, Date → Date type).
- 3.Replaced null dates with 'Not Updated' text for visualization.
- 4.Created new calculated columns where needed.
- 5.Ensured brand/type fields had consistent formatting.

Perfume Data - CC PBI

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Choose Columns Remove Columns Keep Rows Remove Rows Split Column Group By Data Type: Text Use First Row as Headers Merge Queries Append Queries Combine Files Combine

Queries [5] Mens perfume Womens perfume Perfume Master Dim Type Dim Brand

Table.SelectRows("Replaced Value11", each true)

	Brand	Type	Price	Available	Sold	Last Update
1	Dior	Eau De Perfume	8499	10	116	
2	As Show	Eau De Perfume	10999	8	48	
3	Unbranded	Eau De Toilette	10000	10	27	
4	Giorgio Armani	Eau De Toilette	4499	2	159	
5	Lattafa	Fragrances	1691	1	156	
6	Multiple Brands	Perfume	1499	10	79	
7	Maison Alhambra	Eau De Perfume	3099	9	39	
8	Unbranded	Eau De Perfume	8500	1	6	
9	Unbranded	Does Not Apply	1589	10	17	
10	Gucci	Eau De Perfume	4999	8	68	
11	Ralph Lauren	Eau De Toilette	3499	10	615	
12	Dolce&Gabbana	Eau De Toilette	2995	7	458	
13	Secertmu	Perfume	1599	10	889	
14	As Show	Eau De Perfume	5999	9	63	
15	Versace	Eau De Toilette	3499	7	136	
16	Paco Rabanne	Perfume	6899	2	20	
17	Grandeur	Eau De Perfume	3799	10	44	
18	Armaf	Eau De Toilette	2999	5	384	
19	Carolina Herrera	Eau De Toilette	3999	10	236	
20	Dior	Eau De Toilette	8395	4	22	
21	Dolce & Gabbana	Eau De Toilette	2994	1	9208	
22	Clinique	Eau De Toilette	2199	4	86	
23	Dumont	Fragrances	4999	3	187	
24	Afhan	Eau De Perfume	3370	10	131	
25	Versace	Eau De Toilette	3599	2	43	
26						

10 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED ON SUNDAY

Query Settings

PROPERTIES

Name

Perfume Master

APPLIED STEPS

Renamed Columns1

Duplicated Column

Removed Columns1

Added Custom1

Removed Columns2

Split Column by Delimiter

Changed Type2

Removed Columns3

Renamed Columns2

Replaced Value5

Replaced Value6

Removed Errors

Replaced Errors

Replaced Value7

Replaced Value8

Replaced Value9

Capitalized Each Word

Replaced Value10

Changed Type3

Replaced Value11

Filtered Rows2

### 3. Data Model

The data model includes a single fact table (Perfume Master) supported by dimensional fields such as Type, and Brand.

The screenshot displays the 'Manage relationships' window in Power BI. It lists two active relationships:

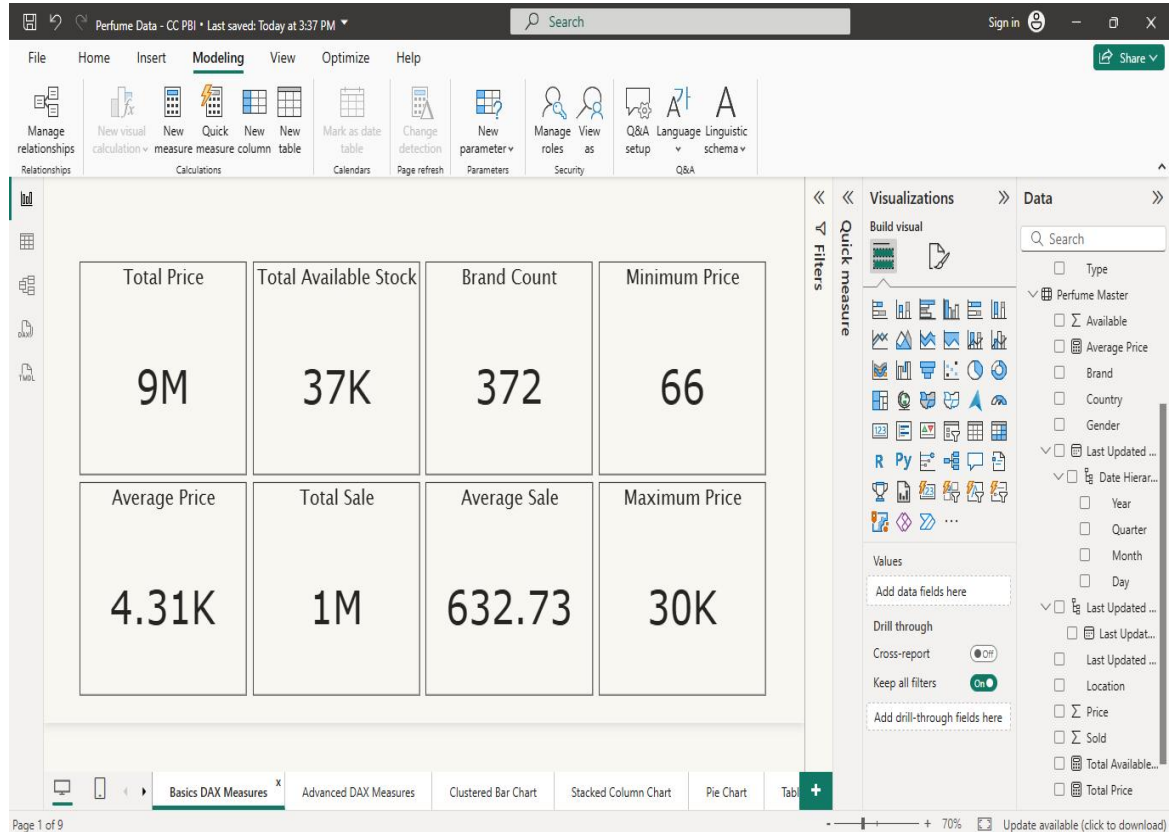
From: table (column)	Relationship	To: table (column)	Status
Perfume Master (Brand)	1:1	Dim Brand (Brand)	Active
Perfume Master (Type)	1:1	Dim Type (Type)	Active

The background shows a report with filters for Brand, Month, and Gender, and a data pane on the right.

## 4. DAX Measures Created

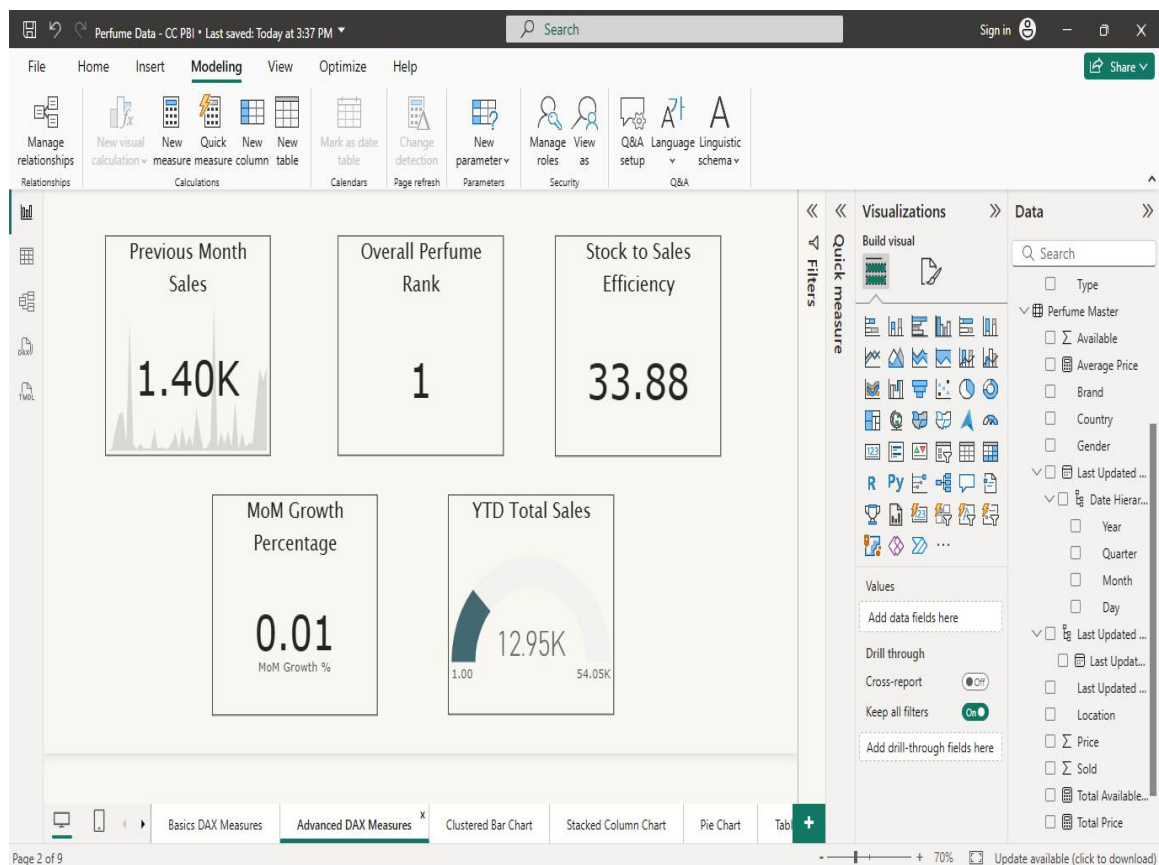
Below are the key measures created:

- Total Sales = SUM(Perfume[Price])
- Average Price = AVERAGE(Perfume[Price])
- Total Stock = SUM(Perfume[Stock])
- Max Price = MAX(Perfume[Price])
- Brand Count = DISTINCTCOUNT(Perfume[Brand])



## Advanced Measures:

1. Calculated **Previous Month Sales** to compare current performance with past trends.
2. Created **Overall Perfume Rank** to rank products based on total sales.
3. Built **Stock-to-Sales Efficiency** to measure how effectively stock is converted into sales.
4. Implemented **Month-over-Month (MoM) Growth Percentage** to track monthly sales growth.
5. Developed **YTD Total Sales** to monitor cumulative yearly performance.



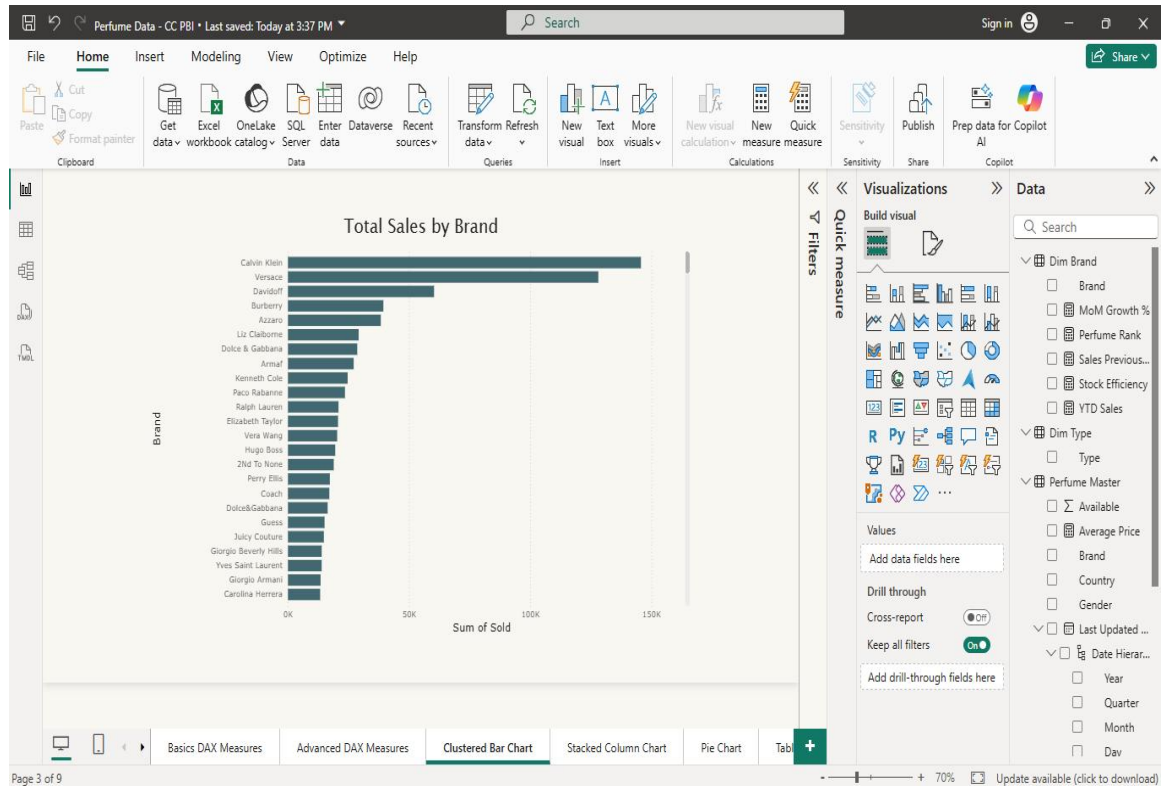
## 5.Key Visual Charts

### 1. Clustered Bar Chart – Total Sales by Brand

Displays sales performance of all perfume brands.

Helps identify top-selling brands such as Calvin Klein and Versace.

Useful for brand comparison and ranking.

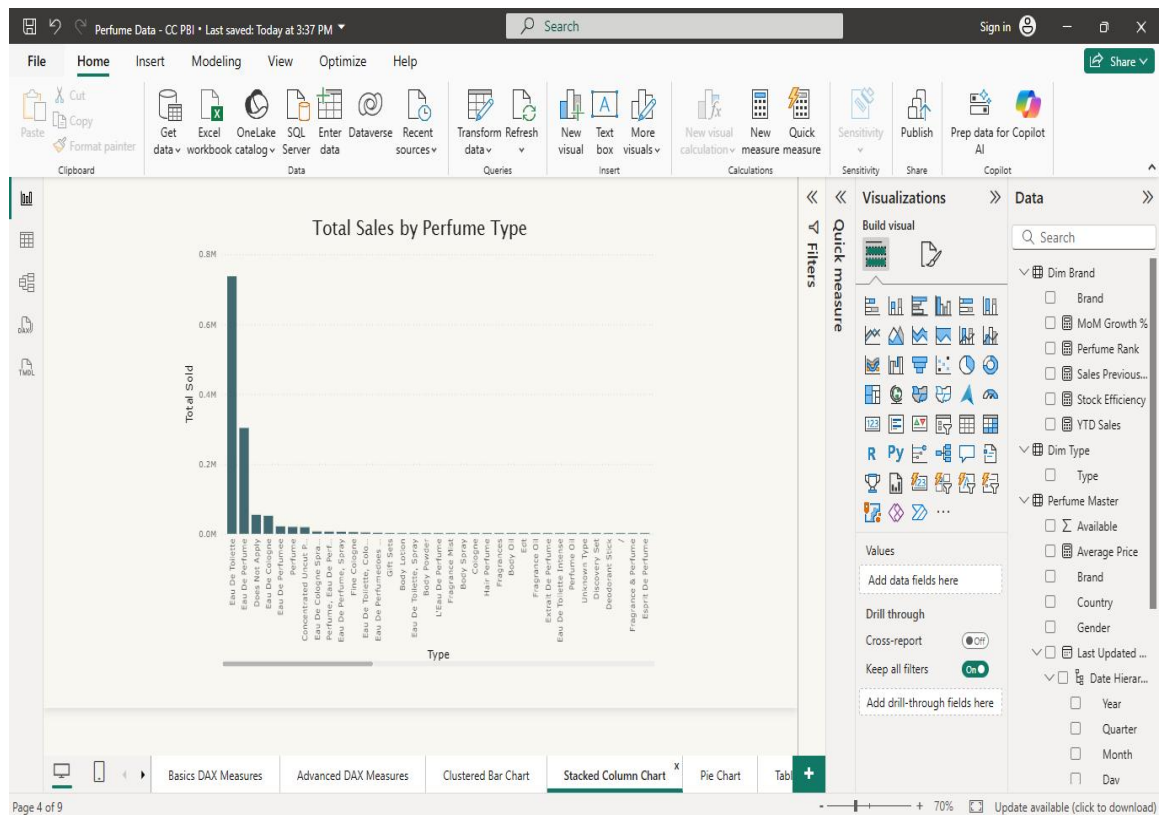


## 2. Stacked Column Chart – Total Sales by Perfume Type

Shows total sales across different perfume types.

Highlights top-selling categories, with Eau De Toilette performing the best.

Useful for understanding consumer preference by product type.

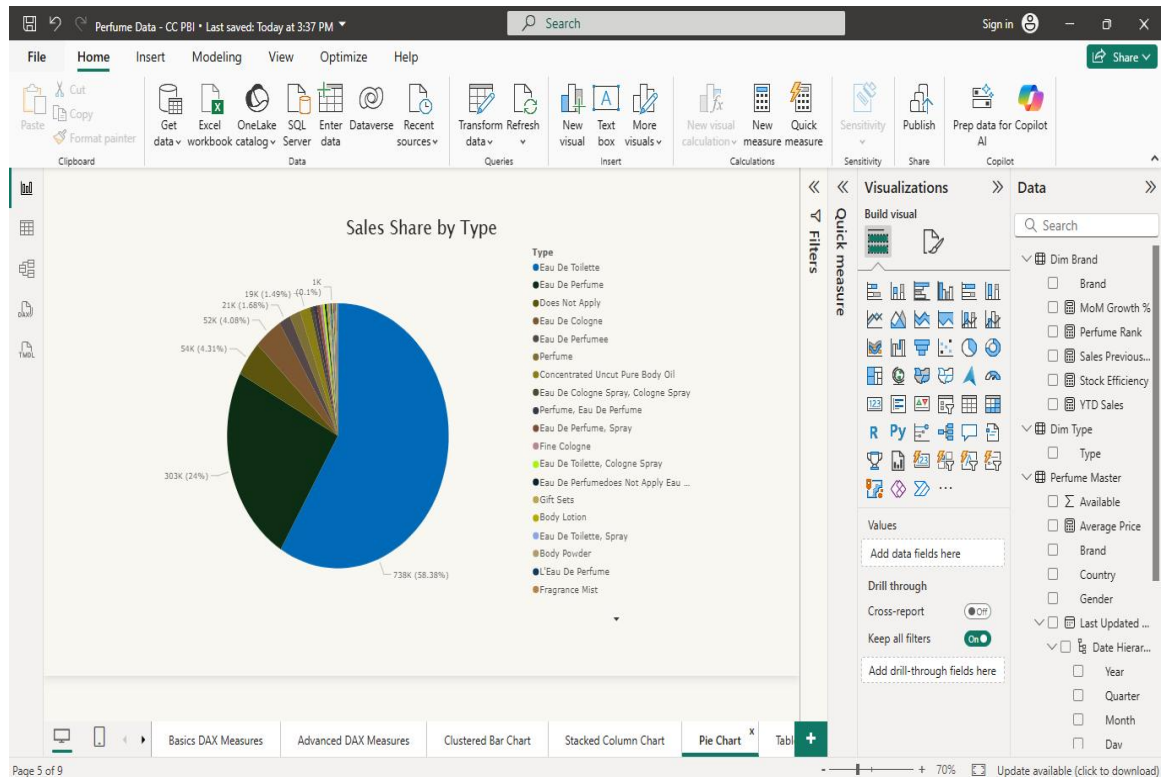


### 3. Pie Chart – Sales Share by Type

Represents each perfume type's share in total sales.

Allows quick visualization of dominant and low-performing categories.

Helps in identifying product mix distribution.



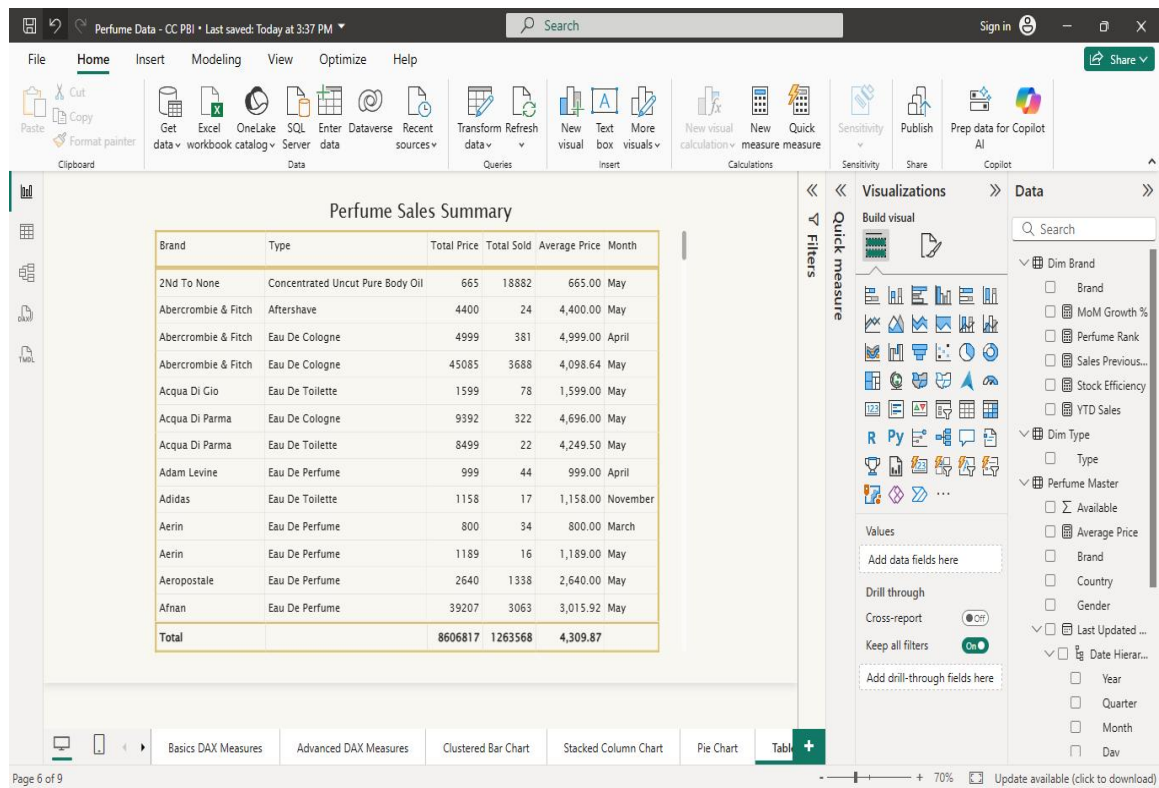


## 4. Table Visual – Perfume Sales Summary

Provides a structured summary listing each brand along with its perfume type.

Useful for detailed product-level analysis.

Helps users view brand–type combinations at a glance.



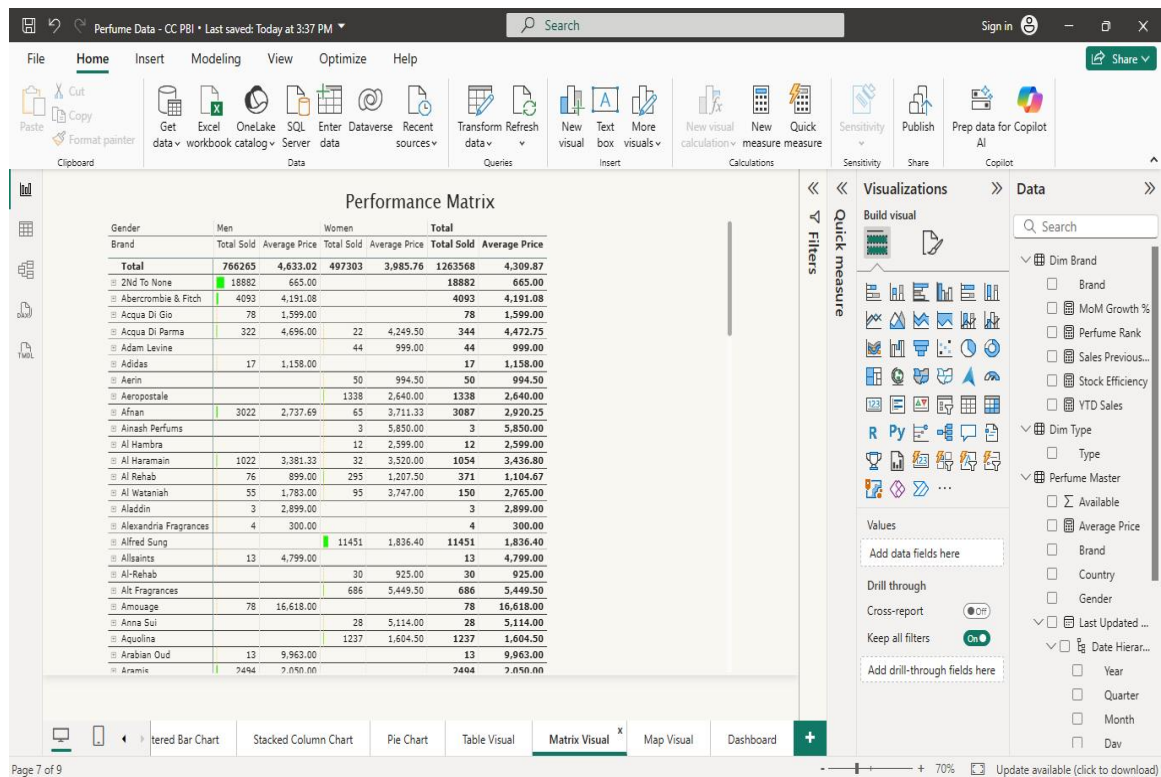


## 5. Matrix Visual – Performance Matrix

Allows cross-analysis of multiple fields (e.g., brand, type, monthly sales).

Supports drill-down and comparison across categories.

Useful for multi-dimensional analysis.

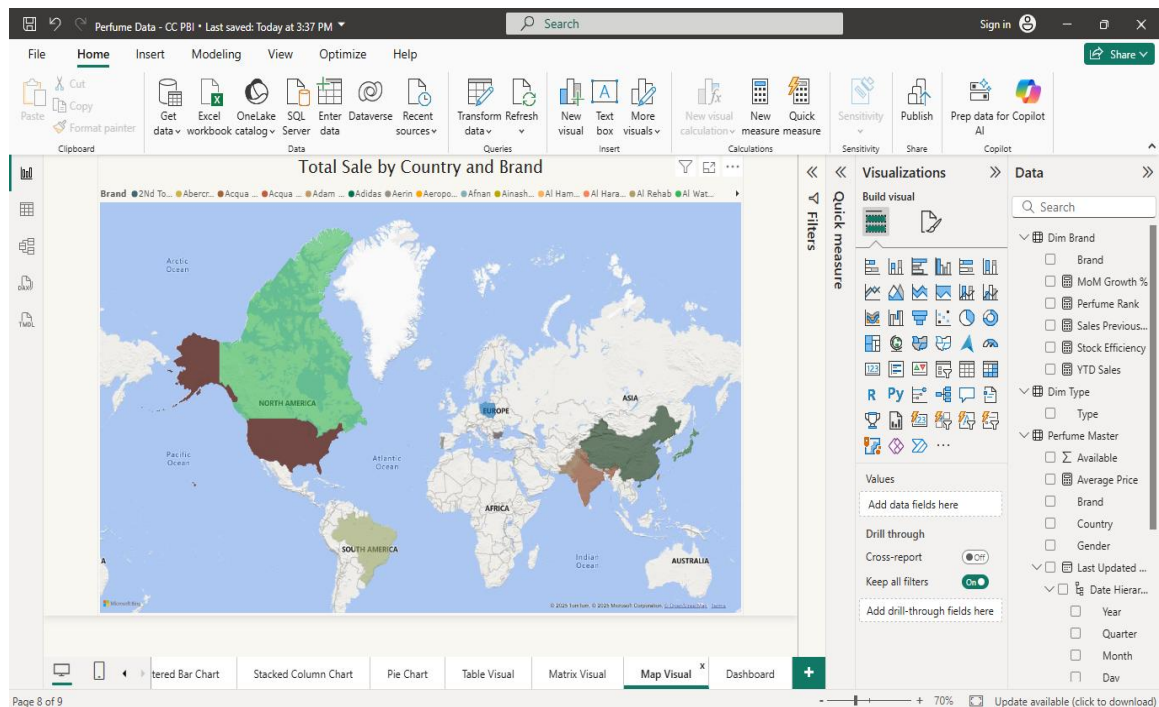


## 6. Map Visual – Total Sales by Country and Brand

Shows geographical distribution of sales across countries.

Highlights regional performance and brand presence globally.

Helps identify strong and emerging markets.



## Dashboard Visualization

The *Perfume Brand Analysis Dashboard* presents a comprehensive view of sales performance using interactive visuals and filters. This dashboard helps users quickly understand key trends, top-performing brands, and regional sales distribution.

- Key Visual Components
- Previous Month Sales Card
- YTD Total Sales Gauge
- Perfume Sales Summary (Table Visual)
- Total Sales by Brand (Bar Chart)
- Total Sales by Perfume Type (Column Chart)
- Total Sales by Country and Brand (Map Visual)

## Slicers / Filters Used

**Brand Filter** – Allows selection and comparison of specific perfume brands.

**Month Filter** – Supports month-wise analysis of sales trends.

**Gender Filter** – Enables segmentation of products targeted toward different genders.

