Task 3: Create a dashboard in PowerBI using sample dataset, use DAX as well.

Introduction

Microsoft PowerBI is an extemely powerful Business Intelligence software, that allows you to create interactive dashboards and reports from a wide variety of data sources. It is one of the industry standard applications as it allows you to create very detailed and insightful dashboards. It also has a built-in DAX (Data Analysis Expressions) engine that allows you to write specific queries to get detailed data based upon the dataset that is being used.

Information about the Dataset

The dataset that I used is a sample dataset of sales of products in supermarket chain. It has about 1000 entries, across three branches in three different cities.

The fields in the dataset are:

- Invoice ID
- Branch
- City
- Customer Type
- Gender
- Product Line
- Unit Price
- Quantity
- Tax 5%
- Total
- Date
- Time
- Payment Method
- COGS (Cost of Goods Sold)
- Gross Margin Percentage
- Gross Income
- Rating

DAX queries used:

PowerBI allows you to create DAX expressions in two ways: 1) As calculated measures 2) As standalone queries in the DAX query view

The calculated measures I created using DAX expressions are: - Average Gross Margin Percentage: `AVERAGE('supermarket'[Gross Margin Percentage])` - Average Unit Price: `AVERAGE('supermarket'[Unit Price])` - Customer Count by Type: `CALCULATE(DISTINCTCOUNT('supermarket'[Invoice ID]), ALLEXCEPT('supermarket', 'supermarket'[Customer Type]))` - Monthly

Sales: `CALCULATE(SUM('supermarket'[Total]), YEAR('supermarket'[Date]) = YEAR(TODAY()), MONTH('supermarket'[Date]) = MONTH(TODAY()))` - Sales per Customer: `AVERAGEX(VALUES('supermarket'[Invoice ID]), CALCULATE(SUM('supermarket'[Total])))` - Total COGS: `SUM('supermarket'[COGS])` - Total Gross Margin: `SUM('supermarket'[Gross Income])` - Total Quantity Sold: `SUM('supermarket'[Quantity])` - Total Sales: `SUM('supermarket'[Total])` - Total Tax: `SUM('supermarket'[Tax 5%])` - YoY Growth: `(SUM('supermarket'[Total]) - CALCULATE(SUM('supermarket'[Total]), SAMEPERIODLASTYEAR('supermarket'[Date])))/ CALCULATE(SUM('supermarket'[Total]), SAMEPERIODLASTYEAR('supermarket'[Date]))`

The queries I created in the DAX query view are similar to the ones listed above, but they follow a different syntax like so:

Total Sales:

```
EVALUATE
SUMMARIZE(
    'supermarket',
    "Total Sales", SUM('supermarket'[Total])
)
```

Visualisations Created

I created the following visualisations in the dashboard:

- Scorecards (KPI metrics): Sum of Quantity, Sum of Total Sales, Average of Unit Price, Highest Sales by City
- Visualisations using charts: Sum of Quantity by Product Line, Sum of Quantity by Date, Sum of Quantity by City, Average of Rating by Product Line
- Filters: By City, By Date, By Product Line

Work Done By:

Aseem Athale

athaleaseem@gmail.com