Exercise 3 – Power BI Full Report Creation

Objective

Explore a real world example of loading data and creating a dashboard in PowerBI.

Briefing

A new PowerBI report should be created, the required data will then be imported into this report.

The data is split across two files, one containing store information and one containing regularly updated sales information:

- RetailStores.xlsx
- sales.csv

A number of visualisations will then be added to the PowerBI report. For most of these visualisations, one or more measures will be created to display the required data. All of the visualisations described below should be added to the same page of the report.

Step 1 – Import the Data

- Create a new empty PowerBI report.
- Import the “CIRA Palette.json” theme (Home → Switch Themes → Import Theme)
- Import the RetailStores Excel file into PowerBI. Import all 4 sheets from the Excel file.
- Look at the model view to verify that 4 tables have been created.
- Import the RetailSales csv file into PowerBI, This will import a single table.
- Now check the model view and verify the new table is present and that a number of relationships have been autodetected (e.g. store[‘LocationID’] ↔ sales[‘LocationID’]

Step 2 – Add A Map

- Rename the report page as “Sales Overview”
- Create a new measure in the Sales table:
  - `TotalSales = sum(sales[Regular_Sales_Dollars]) + sum(sales[Markdown_Sales_Dollars])`
- Add a “map” visual to your page
- Set the following fields on the visual:
  - Location => store[PostalCode]
  - Legend => store[Store Type]
  - Size => sales[TotalSales]
- Format the map “Data Colors” e.g. give greater contrast between the colors for the two store types

- Format the map “Bubbles” increase the “Size” field. Experiment to find a reasonable value.

Step 3 – Add A Vertical Clustered Column Chart

- The sales table has a ScenarioID column which indicates which year the sale was in.
- Add 3 new measures to the sales table: sales for this year, sales for last year, sales variance:
  - `TotalSalesTY = CALCULATE([TotalSales], Sales[ScenarioID]=1)`
  - `TotalSalesLY = CALCULATE([TotalSales], Sales[ScenarioID]=2)`
  - `TotalSalesVar = [TotalSalesTY] – [TotalSalesLY]`
- Add a vertical clustered column chart to the same page as the map
- Set the following fields on the visual:
  - Axis => time[FiscalMonth]
  - Legend => district[DM]
  - Values => sales[TotalSalesVar]
- On the visual, click the ellipsis (…) and “Sort by” FiscalMonth and “sort ascending”
  - You will notice that the sorting is still not in sequence.
  - On the “data” tab, select time and the FiscalMonth column
  - Select Modeling in the ribbon, and click “Sort by column”
  - Choose the column “MonthNum”
  - The Fiscal Month column should now be sorted by the MonthNum column.
  - Verify that the visual is now sorted in monthly order (Jan, Feb, Mar…)

Step 4 – Add a Pie Chart

- Add a pie chart, set the following fields:
  - Legend => store[Chain]
  - Values => sales[TotalSalesTY]
- Experiment with formatting the pie chart e.g. Legend, Data Colors, Detail Labels

Step 5 – Add 2 Cards

- Add two new measures to the store table:
  - `New Stores = CALCULATE(COUNTA([Store Type]), FILTER(ALL(Store), [Store Type]="New Store"))`
  - `Total Stores = COUNTA([StoreNumberName])`
- Add a card visual, set:
  - Fields => New Stores
- Add another card visual, set:
  - Fields => Total Stores

Step 5 – Add a Scatter Chart

- Add a new measure to the sales table indicated the percentage sales variance since last year:
  - `TotalSalesVar% = IF([TotalSalesLY]<>0, [TotalSalesVar]/[TotalSalesLY], BLANK())`
- Add a new measure to the sales table indicating the sales per square footage of a store:
  - `SalesPerSqFt = ([TotalSalesTY]/(DISTINCTCOUNT([MonthID])*SUM(Store[SellingAreaSize])))*12`
- Add a scatter chart visual to the page, set the following fields:
  - Details => district[District]
  - Details => store[StoreNumber]
  - Legend => district[District]
  - X Axis => sales[TotalSalesVar%]
  - Y Axis => sales[SalesPerSqFt]
  - Size => sales[TotalSalesTY]
- Note that the Details field should now have 2 fields in it, and therefore drill through is available on the visual.
- Experiment with the drill through features on the chart.
- Experiment with formatting the chart (e.g. turn off the legend)

Step 6 – Formatting and Static elements

- Add a text box as a heading to the page (e.g. “Sales Overview”)
- Experiment with formatting visuals for a clean look, e.g setting headings and axes labels in the formatting tab.