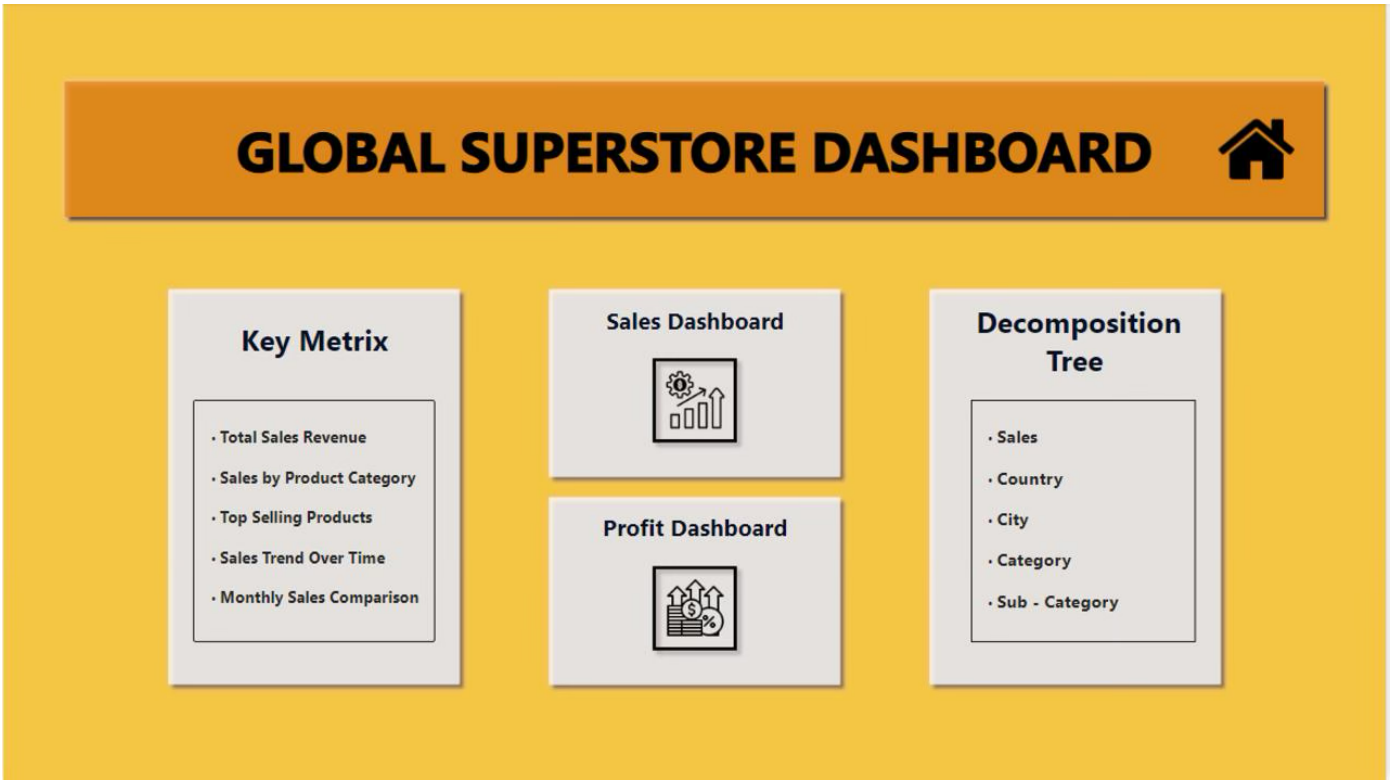
Power BI Dashboard Documentation

Project Overview

This document details the steps taken to create a Power BI dashboard for the Global Superstore dataset.

Visualisations used in the dashboard are bar charts, line charts, tables, and slicers. Interactive features include drill-through, filtering, and highlighting. The project also includes performance optimisation and thorough documentation of design choices, data sources, and additional considerations.



Step 1: Data Collection

- **Data Sources:** Collect data from spreadsheet provided.
- **Data Types:** Ensure data includes details like order date, product name, sales amount, quantity, ship mode, market region, and customer segment.

Step 2: Data Cleaning and Transformation

- Remove duplicates.
- Handle missing values by either filling them with appropriate values or removing incomplete records.
- Standardise date formats and ensure consistency in categorical data (e.g., ship modes, markets).

Step 3: Custom Calculations

- **Total Sales:** Sum of all sales amounts.
- **Total Quantity:** Sum of all quantities sold.
- **Total Ship Modes:** Sum of all shipment modes.
- **Maximum Sales by Product Name:** Identify the product with the highest sales amount.
- **Sales by Category:** Aggregate sales data by product categories (Technology, Furniture, Office Supplies).
- **Sales by Ship Mode:** Aggregate sales data by different shipping modes.
- **Sales by Market:** Aggregate sales data by different market regions.

Step 4: Data Visualisation

- **Dashboard Layout:**
  - **KPI Tiles:** Display key metrics such as number of markets, ship modes, total orders, total quantity, and total sales.
  - **Sales by Order Date:** Use a stacked bar chart to show sales trends over time, segmented by year.
  - **Maximum Sales by Product Name:** Use a horizontal bar chart to display top-selling products.
  - **Sales by Category:** Use a horizontal bar chart to show sales by product categories.
  - **Sales by Ship Mode:** Use a horizontal bar chart to show sales by shipping modes.
  - **Sales in the World:** Use a map visualisation to display sales distribution globally.
  - **Sales by Market:** Use a pie chart to show the percentage of sales by different market regions.

Step 5: Custom Calculations

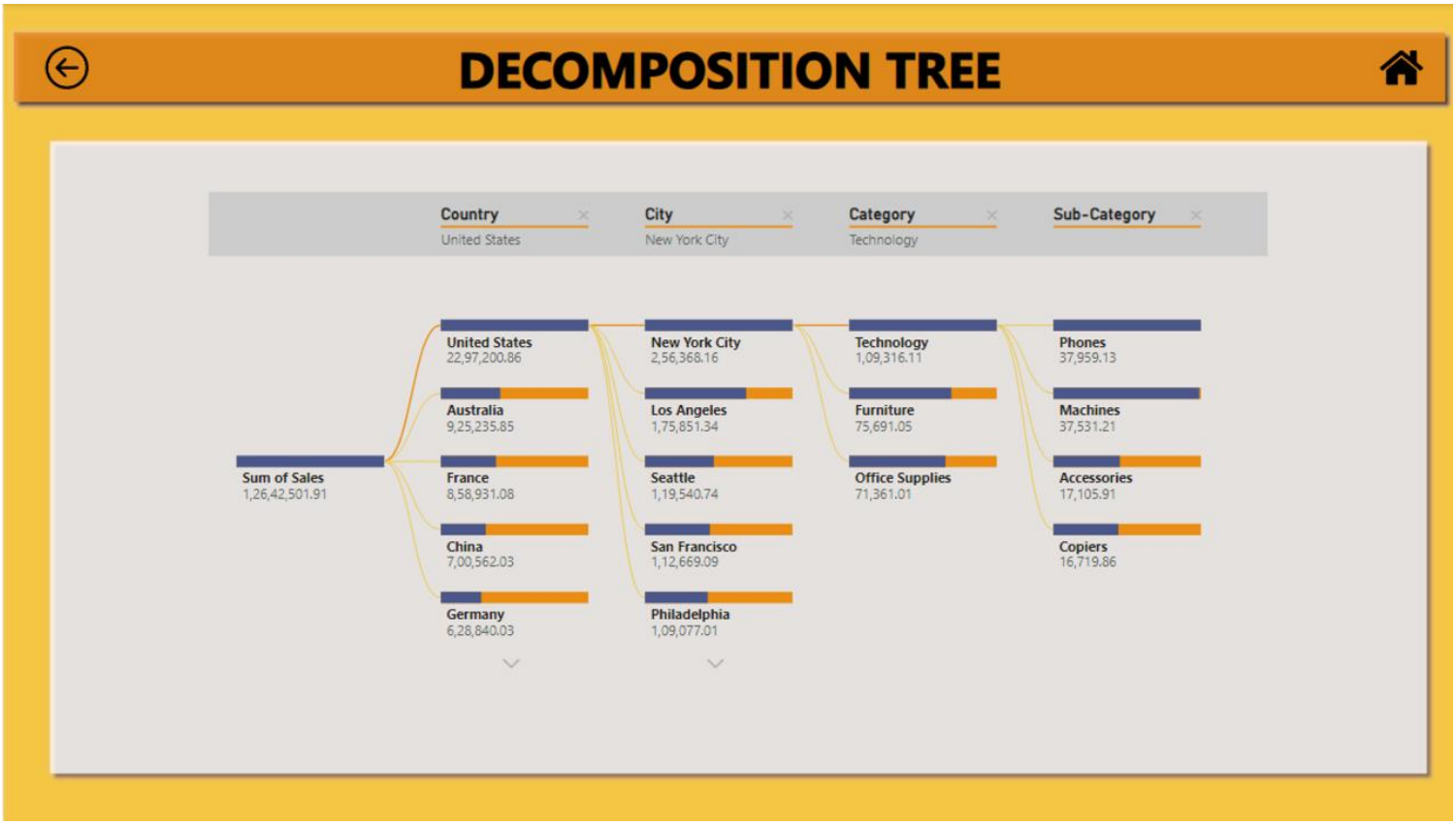
- **Total Profit:** Sum of all profit amounts.
- **Total Discount:** Sum of all discount amounts.
- **Shipping Cost:** Sum of all shipping costs.
- **Average Profit Margin:** Average profit margin calculated as `(Total Profit / (Total Sales - Total Discount))`.
- **Profit by Product Name:** Sum of profit grouped by product names.
- **Profit by Ship Mode:** Sum of profit grouped by different shipping modes.
- **Profit by Year:** Sum of profit grouped by year.
- **Profit by Category:** Sum of profit grouped by product categories.
- **Average Profit by Customer ID:** Average profit grouped by customer IDs.

Step 6: Data Visualisation

- **Dashboard Layout:**
  - **KPI Tiles:** Display key metrics such as total profit, total discount, shipping cost, and average profit margin.
  - **Profit by Product Name:** Use a horizontal bar chart to display top profitable products.
  - **Profit by Ship Mode:** Use a horizontal bar chart to show profit by shipping modes.
  - **Profit Margin:** Use a map visualisation to display profit margins globally.
  - **Average Profit by Customer ID:** Use a horizontal bar chart to display average profit by customer ID.
  - **Profit by Year:** Use a line chart to show profit trends over time.
  - **Profit and Quantity by Sub-Category:** Use a combination bar and line chart to display profit and quantity by sub-category.
  - **Profit by Category:** Use a pie chart to show the percentage of profit by different product categories.

Step 7: Dashboard Interactivity

- **Filters:**
  - **Segment Priority:** Allow users to filter data by Consumer, Corporate, and Home Office segments.
  - **Country:** Allow users to filter data by specific countries.
- **Interactive Elements:**
  - Enable drill-down capabilities on charts.
  - Implement tooltips to show detailed information on hover.



Step 8: Custom Calculations

- **Sum of Sales:** Total sales amount aggregated at various levels of decomposition (country, city, category, sub-category).

Step 9: Data Visualisation

- **Decomposition Tree Layout:**
  - **Root Node:** Display the sum of sales.
  - **First Level:** Decompose by country.
  - **Second Level:** Further decompose by city within each country.
  - **Third Level:** Decompose by product category within each city.
  - **Fourth Level:** Decompose by product sub-category within each category.

Step 10: Dashboard Interactivity

- **Filters:**
  - **Country Filter:** Allow users to select specific countries to focus on.
  - **City Filter:** Allow users to select specific cities to focus on.
  - **Category Filter:** Allow users to select specific categories to focus on.
  - **Sub-Category Filter:** Allow users to select specific sub-categories to focus on.
- **Interactive Elements:**
  - Enable drill-down capabilities within the decomposition tree.
  - Implement tooltips to show detailed information on hover.