Superstore Sales Power BI Report

APPROACH:
The primary objective was to create a clean, scalable, and interactive Power BI report that provides actionable insights. I began by extracting data from different data sources and combined the data. I then cleaned and transformed the data before loading it in my model. I performed some transformations like standardizing dates, handling null values, removing unused columns, merging queries to reduce model size. Also, I ensured proper data types for columns in all the tables for effective data modelling. I then connected the provided datasets and developed a star schema data model to ensure flexibility and performance. I created a DateTable and marked as a Date Table to support time intelligence calculations. Also, I ensured that I have all the measure created by me listed in a dedicated DAX Measures Table for easy access. Key metrics such as 'Total Sales', 'Total Profit', 'Profit Margin %', and 'YTD Sales' were defined through DAX measures to keep calculations dynamic and reusable across visuals. I prepared a Report with three pages that outlined Executive Summary, Product & Category Analysis, Customer & Segment Analysis. For easy navigation, I added buttons on each page and linked those buttons to these pages. Also, I used slicers for Year, Region and Segment to fetch results accordingly. In my report, I used visual cards to display the KPIs and used bar charts, line charts, pie charts, gauge chart and table to present the insights.

TRANSFORMATIONS:
Applied below mentioned transformations in Power Query:

- Standardized date formats and linked related data to the Date table.
- Removed unused or redundant columns to optimize the data model.
- Split a table with column mismatch into different tables.
- Handled missing/null values through imputation techniques and ensured column types were correctly set for numeric and text fields.
- Created calculated column 'Profit Margin % = Profit ÷ Sales'.
- Incorporated e-commerce data into the model, ensuring correct relationships with product and customer tables.

CHALLENGES:
One of the key challenges was ensuring data quality and consistency across multiple source files. Differences in naming conventions and missing values required careful cleaning and standardization. Another challenge was optimizing the data model performance, Proper relationships and cardinalities had to be defined to avoid circular references and incorrect aggregations. Lastly, designing the visuals in a way that remained both insightful and dynamic so that it can be drilled down based on year, region and segment as needed.

Overall, the final Power BI report delivers a dynamic and interactive view of sales, profit, and customer insights, enabling to identify negative-margin products, monitor sales trends, and support data-driven decision-making.