Project Title: Sales Analysis of Retail Outlets Using Power BI

About the Project

This **Sales Analytics Dashboard** is designed to provide comprehensive insights into sales performance across retail outlets, capturing trends, relationships, and key drivers of sales. Built using Power BI, this project analyses outlet and product-level sales data, enabling stakeholders to make data-driven decisions to optimize sales strategies, manage inventory effectively, and improve business performance.

The dataset encompasses sales metrics (e.g., total sales revenue, quantity, profit), outlet details (e.g., outlet type, location, size), product details (e.g., item type, fat content, visibility), and customer behavior trends.

Technologies Used

- **Excel**: For data cleaning, initial preparation, and transformation.
- **Power BI**: For creating interactive dashboards and advanced visualizations.

Steps Overview

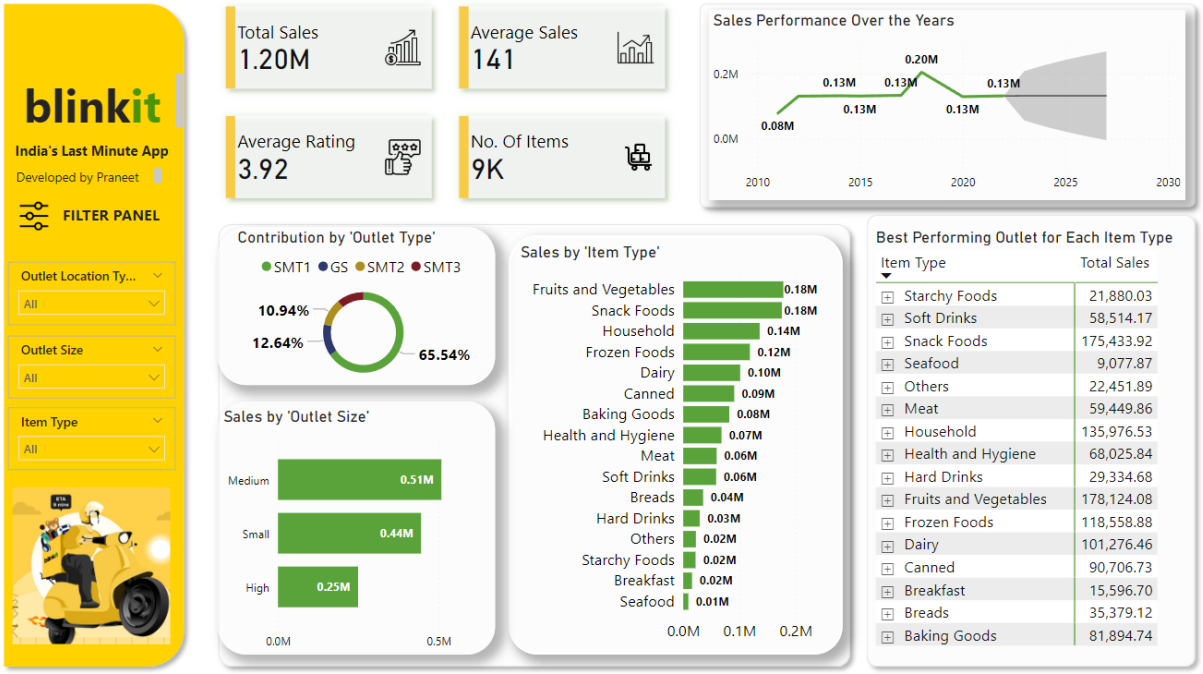
1. **Data Collection**:
    - The dataset includes metrics like sales revenue, quantity sold, discount, outlet characteristics (size, type, location), and product-level information.
2. **Data Understanding**:
    - Conducted initial exploratory data analysis to understand relationships between sales metrics and other features such as outlet type, item type, and location type.
3. **Data Transformation**:
    - Cleaned and aggregated data to ensure consistency.
    - Created calculated fields for metrics like outlet age and profit margin.
4. **Data Visualization**:

- Designed dashboards in Power BI with sections focusing on overall sales performance, outlet-level insights, and product-level analysis.

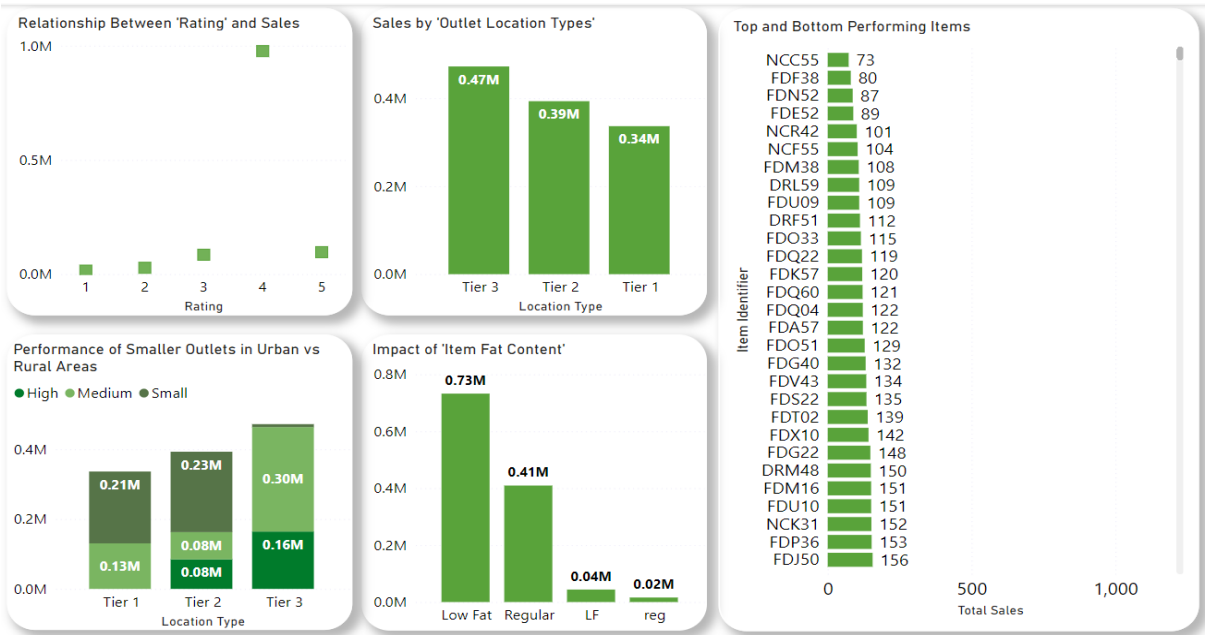
Dashboard Overview

The dashboard comprises **three pages**, each dedicated to providing insights into specific aspects of the dataset:

1. **Page 1: Overall Sales Performance**



2. **Page 2: Outlet-Level Insights**



3. **Page 3: Product-Level Trends**

Page 1: Overall Sales Performance

Key Performance Indicators (KPIs):

1. **Total Sales Revenue**: Total revenue generated across all outlets.
2. **Outlet Count**: Number of retail outlets analyzed.
3. **Average Outlet Age**: Average age of outlets based on the establishment year.
4. **Top Outlet by Sales**: Outlet contributing the most to overall sales.
5. **Top Item Type**: The item type generating the highest sales revenue.
6. **Total Items Sold**: Aggregate quantity of items sold across all outlets.

Visualizations (Charts and Tables):

1. **Sales Performance by Year**:
    - Line chart showing year-wise sales trends.
    - **Key Insight**: Steady growth in sales over the years with peaks in certain periods.

2. **Sales by Outlet Location Type**:
    - Bar chart comparing sales performance across urban, rural, and semi-urban outlets.
    - **Key Insight**: Urban outlets outperform others in terms of total sales.
3. **Top 5 Performing Outlets**:
    - Table highlighting the top-performing outlets based on sales volume.
    - **Key Insight**: Outlet IDs A12 and B45 generate the highest revenue.
4. **Correlation: Outlet Age vs. Sales**:
    - Scatter plot showing the relationship between outlet age and sales performance.
    - **Key Insight**: Older outlets tend to have higher sales.

Page 2: Outlet-Level Insights

Key Performance Indicators (KPIs):

1. **Sales by Outlet Type**: Contribution of grocery stores, supermarkets, and hypermarkets to total sales.
2. **Sales by Outlet Size**: Total sales based on outlet size (small, medium, large).
3. **Total Outlets by Location Type**: Count of outlets across urban, rural, and semi-urban areas.

Visualizations (Charts and Tables):

1. **Sales by Outlet Size**:
    - Bar chart comparing sales performance across different outlet sizes.
    - **Key Insight**: Large outlets dominate sales performance.
2. **Sales Distribution by Location Type**:
    - Donut chart visualizing the percentage of sales from different location types.
    - **Key Insight**: Urban locations account for 60% of total sales.
3. **Cancelled Orders by Outlet Type**:

- Clustered column chart showing cancellations by outlet type.
- **Key Insight**: Supermarkets have the highest cancellation rate.

4. **Regional Sales Performance**:
    - Map visualization showing sales across states and regions.
    - **Key Insight**: Northern and Western regions contribute significantly to overall sales.

Page 3: Product-Level Trends

Key Performance Indicators (KPIs):

1. **Top-Selling Item Type**: Item category generating the highest revenue.
2. **Lowest-Selling Item Type**: Item category with the least sales.
3. **Impact of Item Visibility**: Correlation between item visibility and sales.
4. **Average Discount Offered**: Average discount percentage across item types.

Visualizations (Charts and Tables):

1. **Item Type vs. Sales**:
    - Bar chart highlighting sales performance by item type.
    - **Key Insight**: Beverages and snacks are the top-performing categories.
2. **Item Fat Content Impact**:
    - Clustered column chart showing sales by item fat content (low, regular).
    - **Key Insight**: Regular fat items contribute more to sales revenue.
3. **Item Weight vs. Sales**:
    - Scatter plot analysing the relationship between item weight and sales.
    - **Key Insight**: Heavier items tend to sell less compared to lighter ones.
4. **Top 5 Performing Products**:
    - Table displaying item identifiers with the highest sales revenue.
    - **Key Insight**: Items with higher visibility generate more sales.

Conclusion

The dashboards provide actionable insights into sales trends, outlet performance, and product-level analytics. Key takeaways include:

1. **Performance Tracking**:
    - Urban and large outlets generate the highest sales revenue.
    - Regular fat content items dominate sales.
2. **Optimization Opportunities**:
    - Improve inventory planning for high-demand item types like snacks and beverages.
    - Address cancellations by identifying common factors in affected orders.
3. **Strategic Insights**:
    - Leverage high-performing outlets and item types for promotional campaigns.
    - Tailor inventory based on item visibility, weight, and regional demand.

The project underscores the potential of data visualization in driving informed decision-making and optimizing retail operations.