📘 Blinkit Sales & Performance Analysis — Detailed Project Summary

This project presents an in-depth **Exploratory Data Analysis (EDA)** on Blinkit's sales and operational performance using Python in Jupyter Notebook. The primary objective of this analysis is to uncover **key business insights**, identify patterns in customer purchasing behavior, and evaluate store-level performance across various dimensions such as item categories, outlet types, and customer ratings.

🔍 1. Project Overview

The dataset used in this analysis contains **8,523 records and 12 columns**, covering Blinkit's product features, outlet attributes, sales performance, and customer ratings. Essential steps such as **data inspection, cleaning, transformation, and descriptive statistics** were conducted to ensure the analysis is accurate and reliable.

Business requirements were mapped into measurable KPIs and visualized through multiple charts to derive actionable insights.

📊 2. Key Business KPIs Analyzed

✔ Total Sales

The analysis computes and visualizes Blinkit's overall revenue contribution across products and outlets.

✔ Average Sales

This provides an understanding of the typical sales value per item, helping identify product categories that perform above or below average.

✔ Number of Items Sold

An important metric to assess demand patterns and product movement.

✔ Average Customer Ratings

Rating distributions offer insights into customer satisfaction across products and outlets.

📈 3. Detailed EDA Insights

1️⃣ Total Sales by Fat Content

This chart displays how product *fat content* (e.g., low-fat, regular) impacts total revenue.
It helps identify which nutritional segment contributes most to sales.

Possible interpretation:
Regular-fat items typically generate higher sales volume, indicating stronger customer preference toward taste rather than low-calorie options.

2️⃣ Total Sales by Item Type

Sales are broken down by item category (e.g., snacks, beverages, household supplies).

Common trends include:

- Certain categories consistently outperform others.
- Highly consumable goods (snacks, dairy, beverages) often contribute a large share of revenue.

This insight is crucial for **inventory planning and category management**.

3️⃣ Fat Content by Outlet for Total Sales

This multi-variable visualization helps compare how different outlets perform for various fat content categories.

Possible business conclusions:

- Some outlets specialize in premium/regular-fat categories.
- Low-fat items may perform better in urban outlets depending on customer profile.

4️⃣ Total Sales by Outlet Establishment Year

Outlets established earlier often show higher cumulative sales due to customer trust and local market dominance.

Conversely, newer outlets allow the business to identify growth patterns and potential expansion opportunities.

5️⃣ Sales by Outlet Size

Outlets are typically categorized as:

- **Small**
- **Medium**
- **Large**

Insights usually show:
Large outlets often drive the highest revenue due to wider inventory and better logistical capacity.
Small outlets may have high transactions but lower total sales.

6️⃣ Sales by Outlet Location Type

Outlets across **Tier 1, Tier 2, and Tier 3** cities are compared for their revenue contribution.

Typical patterns:

- Tier 3 cities surprisingly contribute substantial sales due to higher demand concentration and fewer competing platforms.
- Tier 1 outlets may show strong average basket values.

📉 Data Quality & Cleaning

The project includes:

- **Handling missing values**
- **Ensuring correct data types**

- **Fixing inconsistent text entries (e.g., fat content labels)**
- **Outlier detection**
- **Summary statistics for numerical and categorical columns**

This ensures all insights are data-driven and trustworthy.

📝 4. Overall Conclusion

The Blinkit EDA project successfully provides valuable insights into:

- **Customer buying behavior**
- **Sales performance across product categories**
- **Outlet type, size, and location impact on revenue**
- **Customer satisfaction via ratings**
- **Operational trends linked to outlet establishment years**

These insights support data-driven decision-making for:
✔ Inventory optimisation
✔ Category-wise business strategy
✔ Outlet performance enhancement
✔ Expansion planning
✔ Customer experience improvement