**FOOD DELIVERY COST ANALYSIS PROJECT**

**Overview**

This project aims to analyze the financial aspects of a food delivery dataset. By cleaning and processing the data, I extracted valuable insights, profits, and customer behaviors. The goal is to provide a comprehensive understanding of the financial dynamics within the food delivery service.

**Conclusion**

In this food analysis project, I meticulously cleaned and processed the dataset to extract meaningful insights, Key steps included:

**Data Transformation:** Converting date and time fields to a standardized datetime format, ensuring consistency for time-based analysis.

**Value Standardization:** Extracting and standardizing discount and offer values, allowing accurate calculation of total costs and profits.

**Key Findings**

**Cost Distribution:**

Delivery fees, payment processing fees, and discounts and offers were identified as significant cost components. Visualizing these through pie charts provided a clear understanding of their relative contributions to the total costs.

**Profit Analysis:**

By calculating the total costs and subtracting them from the commission fees, we were able to determine the overall profitability. This analysis revealed key areas where costs could be optimized to improve profit margins.

**Customer Behavior Insights:**

The analysis of payment methods through bar charts highlighted customer preferences, which can inform strategic decisions on payment options offered.

The distribution of delivery fees, visualized through histograms, showed variability in delivery charges, suggesting potential areas for standardization or targeted discounts.

**Actionable Insights**

**Cost Management:** Identifying major cost drivers allows the business to target these areas for cost reduction strategies, such as negotiating lower payment processing fees or optimizing delivery routes to reduce fees.

**Profit Maximization:** Understanding the impact of discounts and offers on overall costs helps in designing more effective promotional strategies that balance customer attraction with profitability.

**Strategic Decision-Making:** Insights into payment method preferences can guide the implementation of preferred payment options, potentially enhancing customer satisfaction and loyalty.

Overall, this project provided a comprehensive overview of the financial dynamics within the food delivery data, offering valuable insights for optimizing cost management, enhancing profitability, and making data-driven strategic decisions.

**Requirements**

To execute this project, the following libraries and tools were required:

**Pandas:** For data manipulation and analysis.

**Matplotlib:** For data visualization.

**Seaborn:** For enhanced visualizations.

**The dataset includes the following key columns:**

* Order Date and Time
* Delivery Date and Time
* Discounts and Offers
* Order Value
* Delivery Fee
* Payment Processing Fee
* Commission Fee
* Payment Method
* Features

**Data Cleaning**

* Conversion of date and time fields to datetime format.
* Extraction and standardization of discount and offer values.
* Filling missing values in the discount and offers column.

**Data Analysis**

* Calculation of total costs by summing delivery fees, discounts and offers, and payment processing fees.
* Calculation of profit by subtracting total costs from commission fees.
* Aggregation of total profit.

**Visualization**

* Pie chart displaying the distribution of various costs.
* Bar chart showing the distribution of different payment methods.
* Histogram illustrating the distribution of delivery fees.
* These features provide a detailed analysis of the financial performance within the food delivery service, highlighting areas for potential cost optimization and revenue enhancement.