Executive Summary: McDonald's Sales Analysis

This report presents an in-depth analysis of McDonald's sales data, with the primary goal of identifying key trends, patterns, and insights to inform business strategy. The analysis process included data extraction, cleaning, transformation, and visualization, ultimately resulting in a comprehensive sales dashboard.

Data Cleaning and Preparation

- **Header Alignment**: The first row of the "Menu-Items" data was converted to headers to ensure accurate data mapping.

- **Data Type Adjustments**: Data types were fixed to align with the intended format, particularly the date formats, which were standardized to align with non-US conventions.

- **Data Integrity**: Duplicate values were checked and removed in the "Order-Details" dataset, and null values were filled to ensure data completeness.

Data Transformation

- **Merging Datasets**: The price data from "Menu-Items" was merged with the "Order-Details" dataset using the item ID as the key.

- **Feature Engineering**: New columns were derived from existing data, including month names, day names, day_of_week (indicating whether the day was a weekday or weekend), and hour_of_order extracted from the order time.

- **Time Segmentation**: A new column was added to categorize sales into time periods (Morning, Afternoon, Evening, Night), allowing for more granular analysis.

Data Modeling

- **Data Relationships**: The "Menu-Items" and "Order-Details" tables were modeled using the item ID as the common column, ensuring accurate linkage and data integrity across the datasets.

Data Visualization and Insights

The resulting dashboard provides a comprehensive view of McDonald's sales performance across various dimensions:

- **Revenue Distribution**:

  - **By Category**: Chicken products are the top revenue generators, contributing significantly to overall sales.

  - **By Time Period**: Afternoon sales dominate, accounting for 48% of the total revenue, followed by Evening and Morning periods.

- o **By Day of Week**: Sales remain relatively consistent throughout the week, with slight variations between weekdays and weekends.

- **Top Performers**:

  - o **Top 5 Dishes by Orders**: The Teriyaki Chicken Sandwich leads in the number of orders, followed by other popular menu items.

  - o **Top 5 Dishes by Revenue**: Chicken-based dishes dominate the top revenue spots, highlighting their importance to the menu.

- **Order Patterns**:

  - o **Hourly Distribution**: Sales peak during lunch hours (12 PM - 1 PM), followed by a gradual decline through the evening and night.

  - o **Category Trends**: Chicken items are the most popular, particularly in February, indicating possible seasonal or promotional impacts.

Conclusion

This analysis highlights key trends in McDonald's sales, emphasizing the importance of chicken-based products and the significance of afternoon sales. The insights drawn from the dashboard can guide strategic decisions in menu offerings, promotional strategies, and resource allocation to maximize revenue and optimize operations.

Recommendations

- **Focus on Chicken Products**: Given their strong performance, continued innovation and promotion in this category could further drive sales.

- **Optimize Afternoon Promotions**: With afternoon sales being the highest, targeted promotions during this time could enhance revenue.

- **Monitor Day-of-Week Trends**: Although sales are consistent, minor adjustments in marketing strategies could capitalize on any subtle variations between weekdays and weekends.