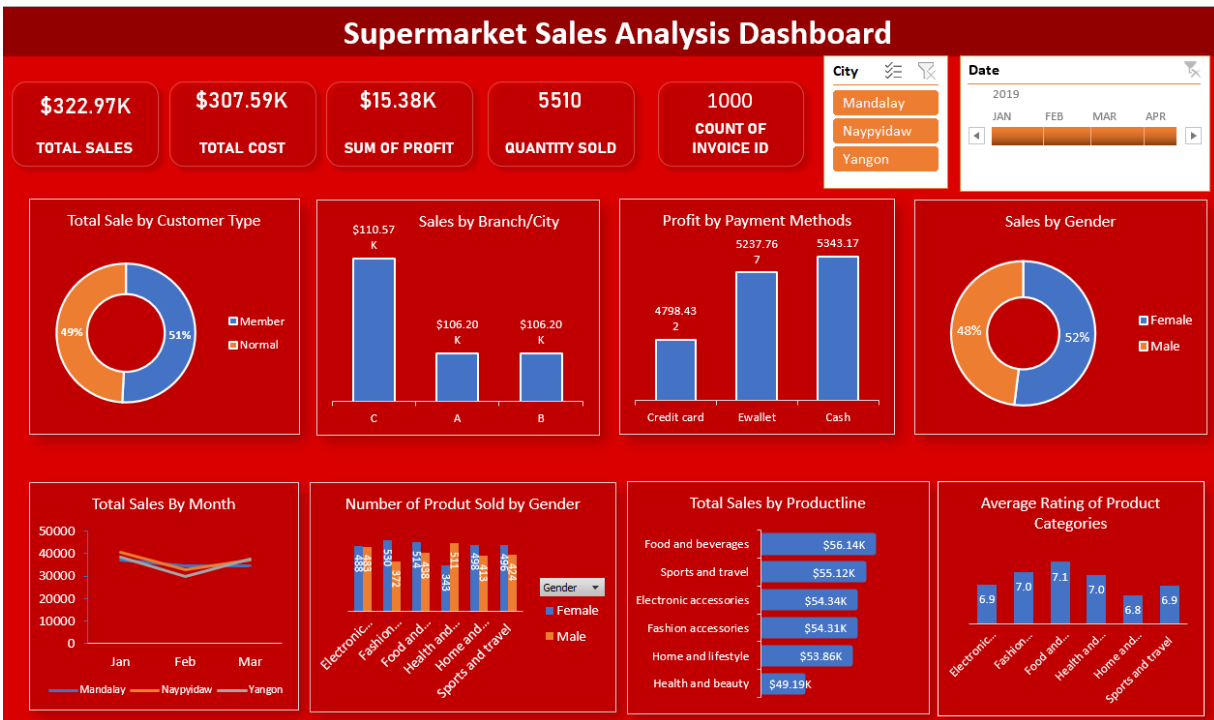# REPORT OF SUPERMARKET SALES ANALYSIS
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Data Understanding:

The Supermarket Sales dataset comprises 1001 rows and 17 header columns. It has undergone thorough data cleaning processes, including error rectification, handling missing values, and removing duplicates. The dataset covers various aspects of supermarket sales, including customer information, product details, sales transactions, and payment types. Key variables include sales amount, gross income, cost of goods sold, city, customer type, product name, branch, and date.

Introduction:

The Supermarket Sales dataset, consisting of 1001 rows and 17 header columns, underwent thorough data cleaning to rectify errors, handle missing values, and remove duplicates. Subsequently, pivot tables and visualizations were generated to extract key insights. The analysis revealed significant metrics such as total sales, gross income, and cost of goods sold.

Problem Statement:

The primary challenge is to gain insights from the sales data to optimize business strategies and enhance overall performance. This includes understanding sales patterns across different dimensions such as cities, customer types, product categories, branches, and months. Additionally,

identifying factors that influence sales and determining actionable recommendations to improve sales performance and profitability are essential.

Objective:
- Analyze sales performance across various dimensions.
- Identify trends and patterns to optimize business strategies.
- Provide actionable recommendations based on insights derived from the data.

Analytical Technique:
Descriptive Analysis.

Business Benefits:
By understanding the best performing product, customer type and, supermarket operators can make informed decisions to improve sales volume, increase profit, and enhance the overall business growth.

Business Questions:
1. What are the total sales, gross income, and cost of goods sold?
2. How do sales vary across different cities?
3. What is the purchasing behavior of member versus non-member customers?
4. Which product categories contribute the most to total sales?
5. What is the distribution of sales across different branches?
6. How do sales vary over different months?
7. Does the payment type have a significant impact on total sales?

Data Dictionary
1. **Sales Amount:** Total sales amount in dollars.
2. **Gross Income:** Gross income generated from sales transactions.
3. **Cost of Goods Sold:** Total cost of goods sold.
4. **City:** City where the sales transaction occurred.
5. **Customer Type:** Type of customer, whether member or non-member.
6. **Product Name:** Name of the product purchased.
7. **Branch:** Branch of the supermarket where the transaction took place.
8. **Date:** Date of the sales transaction.
9. **Payment Type:** Type of payment made by the customer.

Key Insights:
1.   **Total Sales Analysis:** Total sales amount to $322,966.75. Gross income sums up to $15,379.37, while total cost of goods sold amount to $307,587.38. The total quantity of product sold is 5510, while the count of invoice ID is 1000

2. **Sales by Location:** Naypyidaw leads in total sales with $110,568.71, followed by Yangon with $106,200.37, and Mandalay with $106,197.67.
3. **Customer Segmentation:** Members contribute more to sales with $164,233.44 (51%), compared to non-members at $158,743.31 (49%).
4. **Product Performance:** Food and beverages are the top-selling category with $56,144.84 in sales, followed by Sports and travel at $55,122.83. Electronic accessories and fashion accessories also perform well with sales of $54,337.53 and $54,305.90 respectively.
5. **Branch Analysis:** Branch C accounts for 34% of total sales, while Branch A and B each contribute 33%.
6. **Monthly Sales Trends:** January records the highest sales at $116,291.87, followed by March with $109,455.51, and February with the lowest sales of $97,219.37.
7. **Payment Type Impact:** Payment type does not significantly affect total sales but does affect the profit with Cash having the highest profit, followed by Ewallet while Credit Card has the least profit.

Recommendations:
1. Implement strategies to attract non-member customers to increase overall sales.
2. Focus on stocking popular product categories such as Food and Beverages, Sports and Travel, Electronic Accessories, and Fashion Accessories.
3. Monitor branch performance and allocate resources accordingly to balance sales distribution, branch C located at Naypyidaw being the highest in sales.
4. Adjust marketing and inventory strategies based on monthly sales variations, prioritizing months with higher sales.
5. Although the world is going cashless, payment by cash should be more encouraged while still maintaining other types of payment methods.

Link:
https://onedrive.live.com/embed?resid=2A9EA3578976AE94%21351&authkey=!ADrghN5Mr-yrL4o&em=2

Conclusion
The analysis of the Supermarket Sales dataset provided valuable insights into sales performance across cities/branches, customer types, product categories, months, and payment types. By leveraging these insights, the supermarket operators can make informed decisions to optimize sales strategies and enhance overall business performance. The recommendations outlined in this report aim to guide strategic initiatives aimed at maximizing revenue and optimizing operational efficiency, ultimately driving sustainable growth and competitiveness in the marketplace.