Amazon Sales Data Analysis

Product, Sales, and Customer Insights

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Project Overview

Objective: To gain insights into Amazon's sales data and understand factors affecting sales across different branches.

Branches Analyzed: Mandalay, Yangon, Naypyitaw

Data: 17 columns, 1000 rows including sales transactions, customer details, product lines, and more.

Data Overview

Data Description:

- **Invoice ID:** Unique identifier for sales transactions
- **Branch:** Location of sales
- **Customer Type:** Type of customer (e.g., Member, Normal)
- **Product Line:** Category of product sold
- **Quantity:** Number of units sold
- **Total:** Total sales amount
- **Date & Time:** Timestamp of transaction
- **Payment Method:** Mode of payment (e.g., Cash, Credit Card)
- **Rating:** Rating the product by user.

Data Quality: Ensured no NULL values through database constraints

Feature Engineering

- **New Columns Added**:
  - **timeofday**: Categorized as Morning, Afternoon, Evening
  - **dayname**: Extracted day of the week
  - **monthname**: Extracted month of the year

- **Purpose**: To identify patterns in sales over different times and days

Product Analysis

- **Objective:** To understand performance across different product lines.

- **Key Findings:**
  - **Best Performing Product Line:** Electronic accessories (Sales of 971)
  - **Needs Improvement:** Health and Beauty (Sales of 854)
  - **Top Product Line by Revenue:** Food and Beverages ($ 56144.844)

Sales Analysis

- **Objective:** To analyze sales trends and effectiveness of sales strategies.

- **Key Findings:**
  - **Monthly Revenue:** January ($ 116291.868)
  - **Sales Peak Time:**

timeofday	Total_Quantity	Total_Sales(in $)
Afternoon	2946	172468.56
Evening	1526	88699.38
Morning	1038	61798.81

  - **Highest Sales Month:** January (Sales of 1965)
  - **Cost of Goods Sold Peak:** January ($ 110754.16)

Customer Analysis

- **Objective:** To segment customers and analyze their purchasing behaviour.

- **Key Findings**:
  - **Most Frequent Customer Type**: Members
  - **Highest Revenue Contributor:**: Member ($ 164223.444)
  - **Predominant Gender**: Female

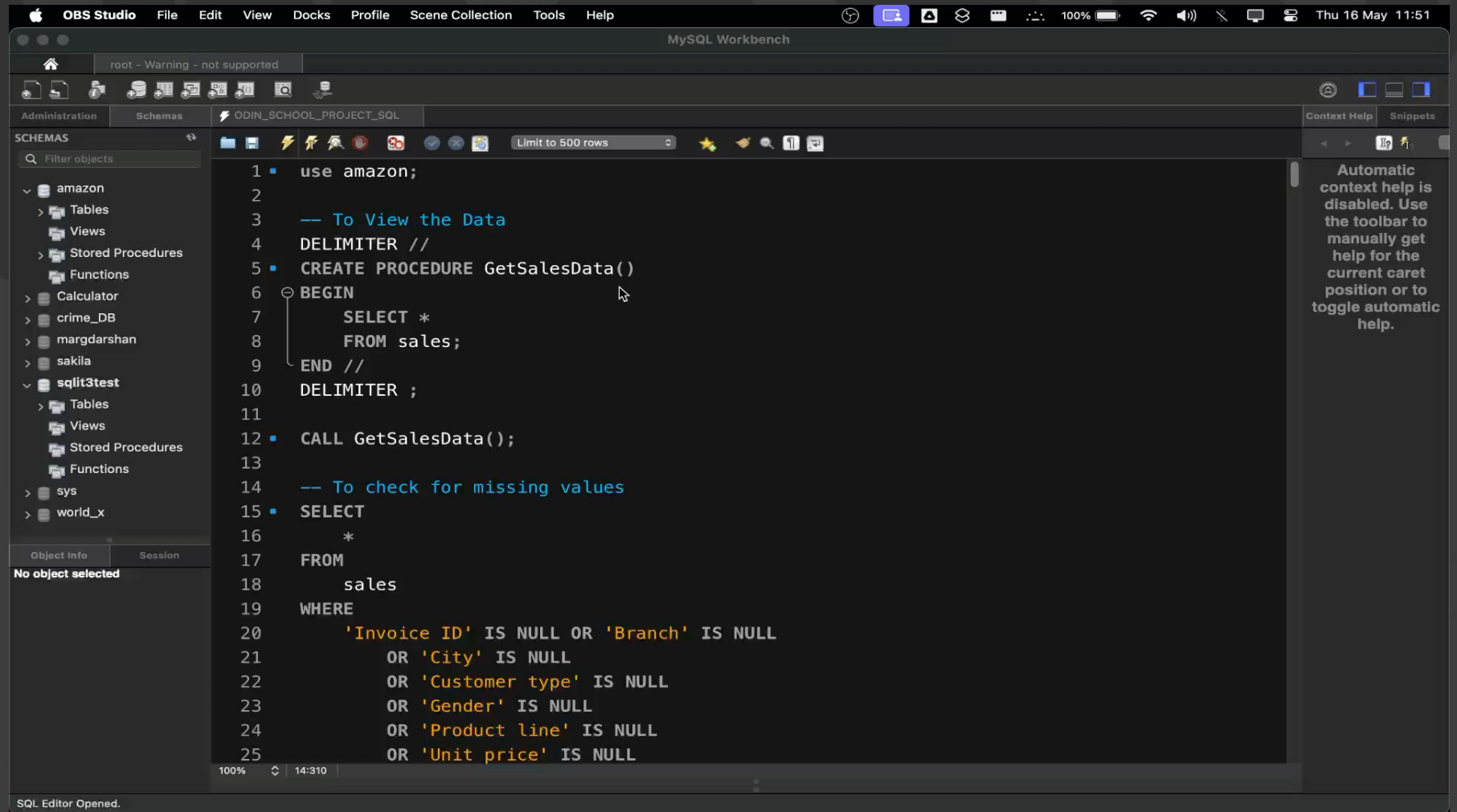
Customer Analysis

- **Key Findings**:
  - **Branch-wise Gender Distribution**:

Branch	Gender	Count	Distribution (%)
A	Male	179	52.65
A	Female	161	47.35
B	Male	170	51.20
B	Female	162	48.80
C	Female	178	54.27
C	Male	150	45.73

Work Video

- **Video Content:** Overview of the analysis process, key insights, and findings.
- **Purpose:** To provide a visual and engaging summary of the work done.



Business Questions Answered

- **Distinct Cities**: 3 (Mandalay, Yangon, Naypyitaw)
- **Product Lines**: 6 (Health and Beauty, Electronic accessories, Home and Lifestyle, Sports and travel, Food and Beverages, Fashion accessories)
- **Frequent Payment Method**: Ewallet
- **City with Highest Revenue**: Naypyitaw
- **Product Line with Highest VAT**: Fashion accessories (4.965%)
- **Customer Type with Highest VAT Payments**: Member (4.965%)
- **Day with Highest Ratings**: Monday (Average Rating of 7.2)

Business Questions Answered

- **Average Rating per Product Line:**

	Product line	avergae_ratings
	Food and beverages	7.1
	Health and beauty	7
	Fashion accessories	7
	Electronic accessories	6.9
	Sports and travel	6.9
	Home and lifestyle	6.8

Recommendations

- **Product Strategy**:
  - Focus on improving Health and Beauty Product Line.
  - Promote high-revenue generating products
- **Sales Strategy**:
  - Increase marketing during Afternoon.
  - Introduce offers in February.
- **Customer Engagement**:
  - Target Members with loyalty programs.
  - Personalized campaigns for predominant gender in each branch.

Conclusion and Next Steps

- **Summary**:
  - Detailed insights into product performance, sales trends, and customer segments
  - Data-driven recommendations for boosting sales and customer engagement
- **Next Steps**:
  - Implement recommended strategies
  - Continuous monitoring and analysis for improvement
  - Further analysis on customer feedback and satisfaction

Thank You!