**Introduction**

This report looks at a dataset in "ECOMM DATA.xlsx" with the goal of identifying trends in sales data, discovering top-selling items, and calculating the overall sales.

**Methodology**

**Data Overview**

The sales records in the dataset include Order ID, Date, Customer Information, Product Information, Sales, and Profit data on the transactions.

**Tools Used**

Data manipulation was made more straightforward through Python's pandas library, and creating visual representations of the findings was made less difficult by matplotlib. The analysis was carried out in an interactive environment provided by Jupyter Notebooks.

**Data Cleaning**

We initiated the process by removing duplicate records to maintain the authenticity of our results:

import pandas as pd.

# Load the data from an Excel file

df = pd.read\_excel("ECOMM DATA.xlsx")

# Remove any duplicate rows

df\_cleaned = df.drop\_duplicates()

**Results**

**Total Sales**

A simple sum of the 'Sales' column gave us the total sales value:

# Calculate total sales by summing up the 'Sales' column

total\_sales = df\_cleaned['Sales'].sum()

print(f"Total Sales: {total\_sales}")

The total sales computed from the dataset amounted to $12,642,501.91, showing the revenue generated over the period covered by the dataset.

**Sales Trends Over Time**

We grouped the data by month to decipher trends:

# Create the monthly sales trend data

df\_cleaned['Order Month'] = df\_cleaned['Order Date'].dt.to\_period('M')

monthly\_sales\_trend = df\_cleaned.groupby('Order Month')['Sales'].sum()

# Plotting the monthly sales trend

import matplotlib.pyplot as plt

plt.figure(figsize=(15, 6))

plt.plot(monthly\_sales\_trend.index.astype(str), monthly\_sales\_trend, marker='o')

plt.title('Monthly Sales Trend')

plt.xlabel('Month')

plt.ylabel('Total Sales')

plt.xticks(rotation=90)

plt.tight\_layout()

plt.show()

A graph with blue lines and numbers

Description automatically generated

**Best-Selling Products**

The following code identified the best-selling products:

# Find the best-selling products

best\_selling\_products = df\_cleaned.groupby('Product Name').agg({'Sales': 'sum', 'Quantity': 'sum'}).sort\_values(by='Sales', ascending=False).reset\_index()

# Display the top 10 best-selling products

print(best\_selling\_products.head(10))

# Plotting the top 10 best-selling products

top10 = best\_selling\_products.head(10)

plt.figure(figsize=(15, 6))

top10.plot(kind='bar', x='Product Name', y='Sales', legend=False, color='skyblue')

plt.title('Top 10 Best Selling Products')

plt.xlabel('Product Name')

plt.ylabel('Total Sales')

plt.xticks(rotation=90)

plt.tight\_layout()

plt.show()

A screen shot of a computer

Description automatically generated

A graph of a company

Description automatically generated with medium confidence

**Discussion**

Seasonal sales patterns were clearly apparent in the sales trend analysis, with certain times of year displaying noteworthy spikes. Advertising campaigns and inventory management may benefit from this. The product sales data indicated a concentration of sales in a small number of important products, indicating areas to focus on for specific marketing and stock replenishment.

**Conclusion**

The data analysis provides insight into significant product performances and patterns in sales. Making tactical choices in promotional activities, managing inventory, and forecasting revenue relies upon these conclusions. The results demonstrate the significance strategies based on data are for enhancing company efficiency and their competitive edge.