Task 1 – Report

Five business insights from the EDA:

1. Sales Trends Over Time:

The sales trend over time reveals high variability, with significant fluctuations indicating dynamic customer purchasing behavior or seasonality. Despite the ups and downs, sales activity remains consistent, with no prolonged inactivity, highlighting steady customer engagement. Noticeable peaks suggest correlations with promotional events, holidays, or seasonal demand. However, sharp drops between these peaks indicate opportunities to smooth sales through targeted campaigns during low-demand periods. A deeper seasonal analysis could uncover temporal patterns, enabling better forecasting and strategic planning. This analysis can guide initiatives to stabilize revenue, optimize promotions, and maintain consistent sales performance throughout the year.

2. Top 10 Products by Revenue:

This bar chart highlights the top 10 products by total revenue. The "ActiveWear Smartwatch" is the clear leader, generating the highest revenue, indicating its popularity among customers. Other high-performing products include "Soundwave Headphones" and "Soundwave Novel," showcasing a strong demand for technology and entertainment-related items. Mid-range performers, such as "ActiveWear Jacket" and "Techpro Rug," point to steady demand in activewear and home essentials. Products like "BookWorld Cookbook" and "Techpro Textbook" suggest moderate interest in educational and lifestyle items. Businesses can focus on expanding inventory for top-performing products and reevaluating strategies for lower-ranking products to maximize profitability.

3. Customer Distribution by Region:

The pie chart titled "Customer Distribution by Region" highlights that South America holds the largest customer share at 29.5%, indicating it as a key market. Europe follows with 25%, showing steady performance and contributing significantly to the overall customer base. North America accounts for 23%, slightly lower but still an important region. Asia, with the smallest share at 22.5%, presents a potential growth opportunity. Together, South America and Europe dominate, representing over half the customer distribution, emphasizing the need to maintain strong retention strategies in these regions while exploring opportunities to expand in Asia.

4. Lifetime Value (LTV) per Customer:

The bar chart titled "Top 10 Customers by Lifetime Value" reveals that Customer C0141 contributes the highest lifetime value, exceeding $10,000, making them a critical revenue driver. Customers such as C0054, C0065, C0156, and C0082 also contribute significantly,

with lifetime values ranging between $8,000 and $9,000. The remaining top customers, including C0188, C0028, and C0059, demonstrate comparable lifetime values, reinforcing their importance for sustained business growth. Collectively, these customers play a pivotal role in revenue generation, underscoring the need for tailored retention strategies, loyalty programs, and personalized engagement to maintain and enhance these valuable relationships.

5. Revenue Contribution by Region:

The pie chart titled "Revenue Contribution by Region" illustrates revenue contributions by region, with South America accounting for the largest share at 31.8%, followed by Europe at 24.1%. Asia contributes 22%, while North America closely follows with 22.1%. This indicates that South America is a key revenue driver, significantly outperforming other regions. Europe holds a notable share, highlighting its importance, while Asia and North America contribute almost equally but lag behind South America. The balanced distribution among Asia, Europe, and North America suggests potential for further growth, while South America's dominant contribution signifies its critical role in the overall revenue strategy.