Assignment Tasks:

Task 1: Exploratory Data Analysis (EDA) and Business Insights

Business Insights from Exploratory Data Analysis

1. **Sales Distribution by Product**: The analysis reveals the top 10 products contributing significantly to overall sales. These products account for the majority of the total quantity sold, making them essential for inventory management and targeted marketing strategies. Identifying these key products ensures the business can maintain supply and meet customer demand effectively.

2. **Revenue by Product Category**: Categories such as Electronics and Home Appliances are the highest revenue generators. By focusing on these categories, the business can maximize profitability. Offering promotions or bundles for underperforming categories may stimulate demand and diversify revenue streams, balancing overall business growth.

3. **Customer Signup Trends Over Time**: The trend analysis shows a steady increase in customer signups, with significant spikes during specific months, likely driven by seasonal promotions or successful campaigns. These insights enable businesses to plan targeted campaigns during peak signup periods and ensure resources are optimized during off-peak times.

4. **Revenue Contribution by Region**: Regions like Europe and North America are leading contributors to overall revenue. Investing in infrastructure, marketing, and logistics in these regions can sustain their performance. Additionally, analyzing the unique customer preferences in these regions will help create customized strategies to maximize revenue potential.

5. **Regional Sales Analysis**: A detailed breakdown indicates that certain regions underperform in terms of sales compared to others. By identifying the causes of underperformance and tailoring campaigns to address regional challenges, the business can unlock untapped potential while maintaining strong revenue streams in already thriving regions.

Summary:

This comprehensive report outlines critical business insights derived from an exploratory analysis of transactions, products, and customer data. By leveraging data patterns and trends, the findings emphasize actionable strategies, including prioritizing high-performing products, enhancing revenue generation in key categories, and focusing marketing efforts on top-performing regions. Furthermore, identifying customer signup trends helps optimize seasonal and campaign-driven initiatives. The report also highlights the need for targeted interventions in underperforming regions to unlock their revenue potential. With these insights, decision-makers are equipped to enhance overall business efficiency and growth, ensuring a data-driven approach to strategic planning and execution.