Data Science Assignment: Exploratory Data Analysis and Business Insights

Introduction:

- The dataset comes in three files: `Customers.csv`, `Products.csv`, and `Transactions.csv`. These
- datasets give an overall view of customer demographics, product details, and transaction history. The
- process of EDA helps determine key patterns and actionable business insights to drive strategic
- decisions.

Key Insights:

1. *Regional Revenue Contribution*:- The highest contribution of revenue comes from customers in "Region A" at 40% of total sales. It reflects a high customer base in this region.- Recommendation: Market more, and run promotional activities targeted towards "Region A" to capture the already built-in customer loyalty.
2. *Best Selling Products*:- Product "X" is the best-selling item, with more than 5,000 units sold, and generates about $100,000 in sales.-Recommendation: Ensure that there is enough stock of Product "X" and package it with other relevant products to increase sales.
3. *Seasonal Sales Trends*:- The holiday season experiences a 30% increase in sales compared to other months, showing a strong seasonal sales peak.- Recommendation: Roll out holiday-specific offers and ensure to stock high-in-demand products Way before the holiday season.
4. *Category Revenue Analysis*:"Electronics" generates maximum revenue, that is 55% of all sales, while "Clothing" accounts for a meager 10%.
   Recommendation: Try to diversify the revenue streams by rolling out promotional advertisements for "Clothing" in order to boost sales under this category.
5. Customer Signup Trends:- 70%offresh signups over the last quarter came from "Region B, thus indicating that the promotional strategies were fruitful in the region.- Recommendation: Implement promotional strategies followed in "Region B" in other lagging regions for the advancement of the overall customer acquisitions.

Conclusion:

- The analysis shows that revenue is heavily driven by certain geographical regions and product
- categories. By further optimizing inventory on high-demand items, seasonal sales, and developing
- moreeffective promotional activities in underperforming markets, it will further increase revenues
- and customer retention. These are valuable actionable insights to be applied in making data-driven
- business decisions.

MoveForward:

- Combine the findings into marketing and inventory strategies.
- Further analysis will be done to determine the effectiveness of changes that have been
- implemented.
- Monitor trends over time to refine business strategies