**Power BI Assignment 3 – Data Visualization**

**E-Commerce Sales Analysis**

This assignment will help you explore e-commerce sales data analysis using Power BI. Below are the files you will be working with (click on each to download):

* [**List of Orders.csv**](https://drive.google.com/uc?export=download&id=1ocgqJ_eHlsW68WwdFJZuNxpXRbkb-rld)
* [**Order Details.csv**](https://drive.google.com/uc?export=download&id=18Ony_FnR7Qz-6BMUbwmd10kqzqqsMPwy)
* [**Sales target.csv**](https://drive.google.com/uc?export=download&id=17pxFFGIMbqfTdxONaaoyLS4a_lFUqWbl)

In this exercise, you will perform detailed analysis and create compelling visualizations of e-commerce sales data using Power BI. By harnessing Power BI's tools and features, you will gain valuable insights into sales trends, profitability, and performance metrics within the e-commerce domain.

**Note**: Data modeling must be completed prior to data visualization. Ensure that relationships are established between the necessary tables, and calculations are performed to derive key metrics required for visualization. After creating the charts, make sure to format and customize them to enhance visual appeal and comprehension.

**Instructions:-**

1. **Sales by State:** Visualize the total sales amount for each state using a bar chart.

2. **Profit Distribution by Category:** Display the distribution of profits across different product categories using a column chart.

3. **Average Quantity of Products Sold by City:** Display the average quantity of products sold in each city using a bar chart.

4. **Sales Target Achievement by Category:** Compare actual sales with sales targets by category using a clustered column chart.

5. **Proportion of Sales by Category:** Represent the proportion of total sales contributed by each product category using a pie chart.

6. **Max Profit Margin by Sub-Category:** Analyze the maximum profit margin for each sub-category of products using a donut chart.

7. **Monthly Sales Trend:** Show the trend of monthly sales over time using a line chart.

8. **Comparison of Profit and Quantity by Sub-Category:** Compare the relationship between profit and quantity sold for different sub-categories using a scatter chart.

9. **Comparison of Total Sales Amount and Target:** Create cards to succinctly display the total sales amount alongside the sales target for quick comparison and analysis. Also, create a multi-row card to display the minimum target for each segment.

10. **KPI for Total Sales vs. Target:** Set up a KPI visualization to monitor overall sales performance against the designated sales targets over time.

11. **Top Customers by Total Spending:** Showcase the top customers based on their total spending using a table visualization.

12. **Sales Performance Matrix:** Build a matrix view to analyze how actual sales compare to sales targets across different categories and months.

13. **Geographic Sales Analysis:** Visualize total sales on a map by city to identify regional sales patterns.

14. **Sales Distribution by Sub-Category:** Represent the sales distribution across different sub-categories using a treemap.

15. **Order Count Analysis by State:** Create a funnel chart to visualize the distribution of order counts across different states.