**Industry Assignment – 2: Retail Analytics: Supermarket Groceries**

**Time: 15 hours**

A Tamil Nadu based supermarket grocery sales chain “The Shoppe”, wants to analyze its sales of products along with customer demands, customer requirement etc. and thereby planning to scale up the business to a national level.

The retail chain has hired a software analytics company to understand the business metrics and predict the growth of the business and decide on measures which would improve the overall health of the business.

To support the activity the supermarket chain has provided a sample dataset “**Supermart Grocery Sales - Retail Analytics Dataset.csv”.**

Download the sample dataset to fulfill the requirement of the management. The dataset “**Supermart Grocery Sales - Retail Analytics Dataset.csv”** contains 11 columns and 9994 records. If required, you may save the file in excel format for further processing.

Assume yourself to be a part of the team of software analysts and have been given the responsibility to analyze the business to perform the following operations.

1. Identify at least 10 major KPIs that would be useful for the business.
2. Create separate worksheets to generate pivot tables to achieve the following reports using the original table loaded.

i) Yearly and quarterly average region wise, city wise sales. Map the pivot table generated to suitable chart/graphs.

ii) Product category, product sub-category wise region wise average sales. Map the pivot table generated to suitable chart/graphs.

iii) Product category wise yearly profit, region, and city wise. Map the pivot table generated to suitable chart/graphs.

iv) Highest selling category and sub-category of products region and state wise. Map the pivot table generated to suitable charts/graphs.

v) Find region wise, customer wise, sum of monthly purchased products categories. Map the pivot table to suitable chart/graphs.

3) Prepare an interactive dashboard using the pivot tables/charts created above. Add necessary interactivity to the dashboard.

4) Formulate a linear programming model to maximize the product wise profit. You may decide the objective function and goal constraints as per the dataset provided and your analytical abilities based on KPIs.

N.B:

1. The entire work should be done on a single WorkBook. Name the workbook as DIY2\_YourName. Please create separate worksheets for different questions and criteria. Rename worksheet with QNo and logical relevant names.

2. To explain certain conditions (if required) create a word document and explain with reference to QNo and relevant worksheet name. Example for Qno4, create a word document and explain the assumptions and constraints considered. Also, explain the variables taken and the basis of formulation of the model.

3. Create .zip/7z file with the workbook and the document(s) created. Upload the .zip/7z file to submit.