**DIY Project – 1: 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.

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. Load the dataset and perform Data Preprocessing, Outlier Detection and Exploratory Data Analysis of the dataset to provide insights on the various KPIs identified.

3) Use Association Rule Mining technique to identify the items frequently bought together and their demands.

4) Use Classification techniques to develop a model and predict the item categories and sub-categories that would provide the highest sales and profit region wise/state wise.

5) Modify the dataset to incorporate the Non-Volatile feature of data warehouse, where data cannot be updated or deleted but only can be modified. If changes are required, all the updates should be made available for analysis.

**N.B:**

1. The entire work should be stored in a single folder within the Virtual Environment. Name the folder as DIY1\_YourName.

2. To explain certain conditions (if required) create a word document and explain with reference to QNo. Screenshots of executable code and its outputs are mandatory.

3. Create .zip/7z file of the folder created which should contain the entire solution. Upload the .zip/7z file to submit. To create a zip file, the following command may be used:

zip -r DIY1\_YourName.zip DIY1\_YourName