**Final Project Group 7**

**Retail Question:** What categories are growing or shrinking with changing customer engagement?

**Answer:**

If we have the money spent by customers based on each category, we can consider an increase in spend or growth as Class 0 and a decrease in spend or shrink as Class 1. Based on this data, we can apply classification algorithms like Logistic Regression, Linear Regression, or Naïve Bayes for better results.

Linear Regression would be best for evaluating trends and sales estimates from independent variables such as age, income range, type of products, etc. It also helps in analyzing pricing elasticity i.e., if the price of a particular product keeps changing, you can use regression analysis to see whether consumption drops as the price increases. Linear regression is suitable for predicting continuous value output.

Logistic regression is similar to Linear, but the regression line is a sigmoid curve and is best for classification problems, predicting a probability range between 0 and 1. For example, predict whether a customer will make a purchase or not.

Naïve Bayes is a simple probabilistic classifier that instead of simply providing a class label, provides a probability value of belonging to each class which helps us in determining how likely it is to switch classes or belong to the same class.