MARKET BASKET INSIGHTS

# INTRODUCTION

# The retailer wants to target customers with suggestions on itemset that a customer is most likely to purchase .I was given dataset contains data of a retailer; the transaction data provides data around all the transactions that have happened over a period of time. Retailer will use result to grove in his industry and provide for customer suggestions on itemset, we be able increase customer engagement and improve customer experience and identify customer behavior. I will solve this problem with use Association Rules type of unsupervised learning technique that checks for the dependency of one data item on another data item.

# Association Rule is most used when you are planning to build association in different objects in a set. It works when you are planning to find frequent patterns in a transaction database. It can tell you what items do customers frequently buy together and it allows retailer to identify relationships between the items.

**1.Data Source: Choose a dataset that includes transaction data, like a CSV file with columns for customer ID and purchased products.**

[**https://www.kaggle.com/datasets/aslanahmedov/market-basket-analysis**](https://www.kaggle.com/datasets/aslanahmedov/market-basket-analysis)

**2. Data Preprocessing: Clean and transform the data into a suitable format. For example, convert it into a transactional format where each row represents a unique customer and their purchased items.**

**3. Association Analysis: Apply the Apriori algorithm to find frequent itemsets, which are combinations of products that appear together frequently. Then, generate association rules based on these itemsets.**

**4. Insights Generation: Interpret the association rules to understand customer behavior. For example, if customers who buy bread also tend to buy butter, you can infer that there's a strong association between these two products.**

**5. Visualization: Create visualizations to present the discovered associations and insights. You can use charts, graphs, or even a network diagram to showcase the relationships between different products.**

**6. Business Recommendations: Based on the insights, provide actionable recommendations for the retail business. For instance, you could suggest placing bread and butter near each other in the store to encourage cross-**