

The strategy to perform Market Basket Analysis using Python:

- **Importing the Required Libraries:** Importing the necessary libraries for data analysis and market basket analysis. These are; `pandas`, `NumPy`, and `mlxtend`.
- **Loading the Data:** Loading the Online Retail dataset into a pandas dataframe.
- **Cleaning and Preparing the Data:** Cleaning and preprocessing the data by removing missing values, filtering out cancelled transactions, and transforming the data into a format suitable for market basket analysis. Converting the data into a transactional format, where each row represents a single transaction and the columns represent the items purchased in that transaction.
- **Calculating Item Frequencies:** Calculating the frequency of each item in the transactional dataset using pandas functions such as `groupby()` and `value_counts()`.
- **Generating Association Rules:** Using the Apriori algorithm from the `mlxtend` library to generate a set of association rules that describe the relationships between different items in the dataset. Setting parameters such as minimum support and minimum confidence to filter out weak or uninteresting rules.
- **Evaluating Association Rules:** Evaluating the generated association rules by calculating measures such as support, confidence, and lift using pandas functions.
- **Interpreting and Visualizing Results:** Analyzing the association rules and identifying patterns and trends in customer purchasing behavior. Creating visualizations (such as scatterplots or heatmaps) to help explore the relationships between different items and identify interesting patterns and trends in the data.