Association Rules

The Objective of this assignment is to introduce students to rule mining techniques, particularly focusing on market basket analysis and provide hands on experience.

**Dataset:**

Use the Online retail dataset to apply the association rules.

**Task-1 Data Preprocessing:**

Pre-process the dataset to ensure it is suitable for Association rules, this may include handling missing values, removing duplicates, and converting the data to appropriate format.

**Task-2 Association Rule Mining:**

* Implement an Apriori algorithm using tool like python with libraries such as Pandas and Mlxtend etc.
* Apply association rule mining techniques to the pre-processed dataset to discover interesting relationships between products purchased together.
* Set appropriate threshold for support, confidence and lift to extract meaning full rules.

**Task-3 Analysis and Interpretation:**

* Analyse the generated rules to identify interesting patterns and relationships between the products.
* Interpret the results and provide insights into customer purchasing behaviour based on the discovered rules.

# **Interview Questions:**

1. What is lift and why is it important in Association rules?
2. What is support and Confidence. How do you calculate them?
3. What are some limitations or challenges of Association rules mining?