Market Basket Analysis using (Equivalence Class Clustering and bottom-up Lattice Traversal) ECLAT

1 Problem

Ex: Bread - Buttter - Ketchup

Identifying the buying Pattern to increase sales - Association with Items

2 Dataset

Buying Pattern - Items

Association of Items - Market Basket

3 Summarize Dataset

(7500, 20)

dataset.shape

dataset.head(5)

4 Algorithm

ECLAT

- Analogy of Bread, Butter & Ketchup

- Apriori algorithm works in a horizontal sense imitating the Breadth-First Search of a graph
  - ECLAT algorithm works in a vertical manner just like the Depth-First Search of a graph

- Apriori vs ECLAT
  - The ECLAT algorithm is typically faster than the Apriori algorithm
  - The ECLAT algorithm does not involve the repeated scanning of the data to compute the individual support values - Requires Less time

- Disadvantage of ECLAT
  - Suitable for less dataset
  - It needs less time

Measures

1. Support — Signifies popularity of the Item — supp(bread)=No. of Transaction of Bread / Total no. of Transaction

2. Confidence — Signifies the Likelihood of butter purchased when bread is purchased — Conf(bread->butter) = supp(bread U butter) / supp(bread)

Steps

1. Database in Vertical Format — Itemset vs List of Items

2. Itemset generated by intersection of 1 itemset — Itemset bs List of Items

3. Itemset generated by intersection of 2 itemset

4. Itemset generated by intersection of 3 itemset

5. Taking the Itemset which is having high value than the threshold confidence level

5 Data Preprocessing

6 Training Dataset with APRIORI

7 Consider only Support and Confidence

8 Result in Dataframe format