Eclat Algorithm

The Eclat algorithm (Equivalence Class Transformation) is a frequent itemset mining algorithm used in association rule learning. Unlike the Apriori algorithm, which is based on a breadth-first search strategy, Eclat uses a depth-first search strategy. It is particularly efficient in cases where the dataset is dense or when there are many frequent itemsets.

Steps of the Eclat Algorithm:

Step-1: Generate Tidsets: For each item in the dataset, create a Tidset containing all transaction IDs where the item appears.

Step-2: Recursive Exploration: Extend each itemset by intersecting Tidsets to generate larger itemsets.

Step-3: Pruning: If the support of an itemset (size of its Tidset) is less than the minimum support threshold, prune it.

Step-4: Frequent Itemsets: After all extensions and prunings, the remaining itemsets are the frequent itemsets.