

PART 1:

PROBLEM-2 Describe the Goal & two main steps of Apriori Process.

Answer:

(i) Goal:

The main goal of Apriori Process is to find "Association Rules." Given a database of transactions, where each transaction is a list of items, we find all rules that associate the presence of one set of items with that of another set of items. In Apriori process, we form the association rules ($X \Rightarrow Y$) from the frequent item sets. An association rule, $X \Rightarrow Y$ will be of the form "for a set of transactions, some value of itemset X determines the values of itemset Y under the condition in which minimum support and confidence are met."

(ii) Steps of Apriori Process:

Two main steps are as follows -

Step 1: We use Apriori Algorithm to find the set of frequent itemsets defined by user fixed support count.

We follow below steps for this phase:-

- * Count the occurrences of items in database D
- * Fix the minimum support value (usually low)
- * Calculate frequent 1-item sets, 2-item sets until k-item sets. We stop this iteration when there are no more frequent item steps. We use Apriori

Algorithm to generate frequent item sets.

This is the end of "Apriori - Algorithm" phase.

Step 2: We fix the ~~min~~ minimum confidence parameter (usually high) and generate set of strong association rules (rules with support $>$ min support & confidence $>$ min confidence)

This is the end of "rules-generation" phase.

Apriori Process ends after successfully completing both the phases.