

- Viva Questions :-

(Q1) State the Apriori Law or property. How does apriori algo be significantly used for data mining application?

→ Apriori property :- "All non-empty subsets of a frequent itemset must also be frequent".

→ Significance :- used to discover frequent itemsets & generate association rules in large datasets, aiding in market basket analysis, recommendation system etc.

(Q2) Enlist the limitations of the Apriori Algo ~~wrt~~ wrt implementation on huge datasets for data mining.

→ High Computational Cost for large datasets.

→ Generates numerous Candidate itemsets, The memory usage

→ Inefficient with low Support threshold due to excessive Iterative

→ Slow with dense or high-dimensional datasets.

Experiment - 03

Objectives:- Demonstrate of association rule using any dataset using Apriori algo in meta explorer.

Theory:- Association rules mining method for determining frequent itemsets and Association rule.

Steps:- ① Create itemsets starting from 1 element in each, till all the possible itemsets are considered.

② Remove those itemsets having support count and confidence less than the threshold.

③ In the last step, itemsets with max possible elements will be the frequent itemset.

④ From the frequent itemsets, determine the association rule by computing confidence for each possible association rule & consider only those with confidence value more than the threshold.

Result:- In this experiment have seen the total rules generated theoretically and by the meta are matching, hence the rules generated are 5.

EXPERIMENT 3

Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Associator
Choose **Apriori** N=10-T=0.9-D=0.05-L=1.0-M=0.1-S=1.0-c=1
Result list (right-click for...)
Start Stop
Associator output
=====
20:59:45 - Apriori

Apriori
=====
Minimum support: 0.15 (694 instances)
Minimum metric <confidence>: 0.9
Number of cycles performed: 17
Generated sets of large itemsets:
Size of set of large itemsets L(1): 44
Size of set of large itemsets L(2): 380
Size of set of large itemsets L(3): 910
Size of set of large itemsets L(4): 633
Size of set of large itemsets L(5): 105
Size of set of large itemsets L(6): 1
Size of set of large itemsets L(7): 1

Best rules found:
1. biscuits=frozen food=fruit=total=high 738 => bread and cake=723 <conf: (0.92) > lift: (1.27) lev: (0.03) [155] conv: (3.35)
2. baking need=biscuit=fruit=total=high 760 => bread and cake=696 <conf: (0.92) > lift: (1.27) lev: (0.03) [149] conv: (3.28)
3. baking need=frozen food=fruit=total=high 770 => bread and cake=705 <conf: (0.92) > lift: (1.27) lev: (0.03) [150] conv: (3.27)
4. biscuits=fruit=vegetables=total=high 815 => bread and cake=746 <conf: (0.92) > lift: (1.27) lev: (0.03) [155] conv: (3.26)
5. party snack food=fruit=total=high 854 => bread and cake=779 <conf: (0.91) > lift: (1.27) lev: (0.04) [164] conv: (3.15)
6. biscuits=frozen food=vegetables=total=high 777 => bread and cake=725 <conf: (0.91) > lift: (1.26) lev: (0.03) [151] conv: (3.06)
7. baking need=biscuit=vegetables=total=high 772 => bread and cake=701 <conf: (0.91) > lift: (1.26) lev: (0.03) [145] conv: (3.01)
8. biscuits=fruit=total=high 954 => bread and cake=866 <conf: (0.91) > lift: (1.26) lev: (0.04) [179] conv: (3)
9. frozen food=fruit=vegetables=total=high 834 => bread and cake=757 <conf: (0.91) > lift: (1.26) lev: (0.03) [156] conv: (3)
10. frozen food=fruit=total=high 969 => bread and cake=877 <conf: (0.91) > lift: (1.26) lev: (0.04) [179] conv: (2.92)

Status Log OK