

Experiment 1-04

- Objectives - Implementation of FP growth algo using meta explorer on any dataset of market basket analysis.
- Theory - FP growth method for determining frequent itemsets and FP growth rule.
- Steps :-
 - ① Create itemsets starting from elements in each, till all the possible itemsets are considered.
 - ② Remove those itemsets having support & confidence less than the threshold.
 - ③ In the last step, itemsets with max possible element will be the frequent itemsets.
 - ④ From the frequent itemsets, determine the association rule by computing confidence for each possible FP growth rule and consider only those with confidence value more than the threshold.
- Result - In this experiment have seen that total rules generated theoretically & by the meta are matching, hence the rules generated are 5.

EXPERIMENT 4

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Weka Explorer
Preprocess
Classify
Cluster
Associate
Associator
Choose **FPgrowth** · P 2 - I 1 - N 10 - T 0 - C 0.9 - D 0.05 - U 1.0 - M 0.1

Start Stop
Result list (right-click for...)

Associator output

```

Result list (right-click for...)
21305:36 - FP-Growth
Scheme: weka.associations.FPGrowth -P 2 -I 1 -N 10 -T 0 -C 0.9 -D 0.05 -U 1.0 -M 0.1
Relation: supermarket
Instances: 4627
Attributes: 217

==== Run information ====
Associator model (full training set) ====
Associator found 16 rules (displaying top 10)

FP-Growth found 16 rules (displaying top 10)

1. [fruit=t, frozen food=t, biscuit=t, total=high]: 788 => [bread and cake=t]: 723 <conf: (0.92) > lift: (1.27) lev: (0.03) conv: (3.35)
2. [fruit=t, baking need=t, biscuit=t, total=high]: 760 => [bread and cake=t]: 636 <conf: (0.92) > lift: (1.27) lev: (0.03) conv: (3.28)
3. [fruit=t, baking need=t, frozen food=t, total=high]: 770 => [bread and cake=t]: 705 <conf: (0.92) > lift: (1.27) lev: (0.03) conv: (3.27)
4. [fruit=t, vegetable=t, biscuit=t, total=high]: 815 => [bread and cake=t]: 746 <conf: (0.92) > lift: (1.27) lev: (0.03) conv: (3.26)
5. [fruit=t, party snack food=t, total=high]: 854 => [bread and cake=t]: 779 <conf: (0.91) > lift: (1.27) lev: (0.03) conv: (3.15)
6. [vegetable=t, frozen food=t, biscuit=t, total=high]: 797 => [bread and cake=t]: 725 <conf: (0.91) > lift: (1.26) lev: (0.03) conv: (3.06)
7. [vegetable=t, baking need=t, biscuit=t, total=high]: 772 => [bread and cake=t]: 701 <conf: (0.91) > lift: (1.26) lev: (0.03) conv: (3.01)
8. [fruit=t, biscuit=t, total=high]: 954 => [bread and cake=t]: 866 <conf: (0.91) > lift: (1.26) lev: (0.04) conv: (3)
9. [fruit=t, vegetable=t, frozen food=t, total=high]: 834 => [bread and cake=t]: 757 <conf: (0.91) > lift: (1.26) lev: (0.03) conv: (3)
10. [fruit=t, frozen food=t, total=high]: 969 => [bread and cake=t]: 877 <conf: (0.91) > lift: (1.26) lev: (0.04) conv: (2.92)

```

Status: Ok

Log

Q • Viva Questions-

Q1 Briefly discuss the strategy of FP-growth algo for determining frequent itemset in any dataset.

- FP growth is a tree based algo for mining freq. itemset without generating candidate sets.
 - It constructs an FP tree by compressing the dataset based on freq. items.
 - Recursive tree traversal extracts freq. itemsets
 - It is more efficient than apriori for large dataset.

Q2 Enlist / State any 5 real time applications each for FP growth algo w.r.t. data mining domain.

- - ① Market Basket Analysis
 - ② fraud detection in financial transaction
 - ③ Healthcare analysis
 - ④ Social media analysis
 - ⑤ e-commerce upselling strategies.