LAB - 07 : Apriori Algorithm

Example - I

TID	Items
100	1 3 4
200	2 3 5
300	1 2 3 5
400	2 5

minimum support = 2

Solution :

C1 →

itemset	minimum Support
{1}	2
{2}	3
{3}	3
{4}	1 ✗
{5}	3

L1 →

itemset	min. Support
{1}	2
{2}	3
{3}	3
{5}	3

C2 →

itemset	min. support
{1,2}	1 ✗
{1,3}	2
{1,5}	1 ✗
{2,3}	2
{2,5}	3
{3,5}	2

L2 ⟶

itemset	min. support
{1,3}	2
{2,3}	2
{2,5}	3
{3,5}	2

C3 ⟶

itemset	min. support
{1,2,3}	1 ✗
{1,3,5}	1 ✗
{2,3,5}	2

* Confidence

Pair	Support	confidence	confidence (%)
2 → 3^5	2	2/3 = 0.66	66 %
3 → 2^5	2	2/3 = 0.66	66 %
5 → 2^3	2	2/3 = 0.66	66 %
2^3 → 5	2	2/2 = 1	100 %
3^5 → 2	2	2/2 = 1	100 %
2^5 → 3	2	2/2 = 1	100 %

Example - 2

TID	Items
1	Bread, Milk
2	Bread, Diaper, Beer, Egg
3	Milk, Diaper, Beer, Coke
4	Milk, Diaper, Beer, Coke
5	Bread, Milk, Diaper, Coke

1	1 2
2	1 3 4 5
3	2 3 4 6
4	2 3 4 6
5	1 2 3 6

Solution :

C1 →

itemset	min support
{1}	3
{2}	4
{3}	4
{4}	3
{5}	1
{6}	3

L1 →

itemset	min support
{1}	3
{2}	4
{3}	4
{4}	3
{6}	3

C2 ⟶

itemSet	min. Support	
{1, 2}	2	
{1, 3}	2	
{1, 4}	1	X
{1, 6}	1	X
{2, 3}	3	
{2, 4}	2	
{2, 6}	3	
{3, 4}	3	
{3, 6}	3	
{4, 6}	2	

L2 ⟶

itemSet	min. Support
{1, 2}	2
{1, 3}	2
{2, 3}	3
{2, 4}	2
{2, 6}	3
{3, 4}	3
{3, 6}	3
{4, 6}	2

C3 ⟶

itemset	min.support
{1,2,3}	1 ✗
{1,2,4}	0 ✗
{1,2,6}	1 ✗
{1,3,4}	1 ✗
{1,3,6}	1 ✗
{2,3,4}	2
{2,3,6}	3
{2,4,6}	2
{3,4,6}	2

L3 ⟶

itemset	min.support
{2,3,4}	2
{2,3,6}	3
{2,4,6}	2
{3,4,6}	2

C4 ⟶

itemset	min.support
{2,3,4,6}	2

* Confidence

Pair	Support	confidence	confidence (%)
2 → 3^4^6	2	2|4 = 0.5	50 %
3 → 2^4^6	2	2|4 = 0.5	50 %
4 → 2^3^6	2	2|3 = 0.66	66 %
6 → 2^3^4	2	2|3 = 0.66	66 %
2^3 → 4^6	2	2|3 = 0.66	66 %
2^4 → 3^6	2	2|2 = 1	100 %
2^6 → 3^4	2	2|3 = 0.66	66 %
3^4 → 2^6	2	2|3 = 0.66	66 %
3^6 → 2^4	2	2|3 = 0.66	66 %
4^6 → 2^3	2	2|2 = 1	100 %
2^3^4 → 6	2	2|2 = 1	100 %
2^3^6 → 4	2	2|3 = 0.66	66 %
2^4^6 → 3	2	2|2 = 1	100 %
3^4^6 → 2	2	2|2 = 1	100 %