☆ Apriori Algorithm :-

minimum support = 2

Ex-1

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

frequent-1

C_1

Itemset	min sup	
{1}	2	
{2}	3	
{3}	3	
{4}	1	✗
{5}	3	

L_1

Items	support
{1}	2
{2}	3
{3}	3
{5}	3

frequent-2

Itemset	support	
{1,2}	1	✗
{1,3}	2	
{1,5}	1	✗
{2,3}	2	
{2,5}	3	
{3,5}	2	

L_2

Items	support
{1,3}	2
{2,3}	2
{2,5}	3
{3,5}	3

frequent-3

Itemset	support	
{1,2,3}	1	✗
{1,3,5}	1	✗
{2,3,5}	2	✓

L_3

Items	support
{2,3,5}	2

* Rule generation

confidence = support count of {2^3^5} / support count of {2^3}

Associan Rule	support	confidence	confidence (%)
1^2 → 5	2	2/2 = 1	100%
3^5 → 2	2	2/2 = 1	100%
2^5 → 3	2	2/3 = 0.66	66%
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%

ex-2

minimum support = 3

TID	Items
1	Bread, Milk
2	Bread, Diapes, Beer, Eggs
3	Milk, Diapes, Beer, Coke
4	Milk, Diapes, Beer, Coke
5	Bread, Milk, Diapes, Coke

Frequent-1

C_1

Items	support
{Bread}	3
{Milk}	4
{Diapes}	4
{Beer}	3
{Eggs}	1 ✗
{Coke}	3

L_1

Items	support
{Bread}	3
{Milk}	4
{Diapes}	4
{Beer}	3
{Coke}	3

Frequent-2

C_2

Items	support	
{Bread, Milk}	2	✗
{Bread, Diapes}	2	✗
{Bread, Beer}	1	✗
{Bread, Coke}	1	✗
{Milk, Diapes}	3	
{Milk, Beer}	2	✗
{Milk, Coke}	3	
{Diapes, Beer}	3	
{Diapes, Coke}	3	
{Beer, Coke}	2	✗

L_2

Items	support
{Milk, Diapes}	3
{Milk, Coke}	3
{Diapes, Beer}	3
{Diapes, Coke}	3

Frequent-3

C_3

Items	support
{milk, Diapes, cola}	3
{milk, Diapes, Bees}	2
{Diapes, Bees, cola}	2

L_3

Items	support
{milk, Diapes, cola}	3

*Rule generation

Association Rule	Support	Confidence	Confidence (%)	
{milk, Diapes} → {cola}	3	3/3 = 1	100%	~
{milk, cola} → {Diapes}	3	3/3 = 1	100%	~
{Diapes, cola} → {milk}	3	3/3 = 1	100%	~
{cola} → {milk, Diapes}	3	3/3 = 1	100%	~
{Diapes} → {milk, cola}	3	3/4 = 0.75	75%	
{milk} → {Diapes, cola}	3	3/4 = 0.75	75%	