

Week 9 – Apriori and Association Rules (Calculations with Tables)

Dataset Information

Total Transactions (N) = 5

Minimum Support = 60%

Minimum Confidence = 80%

Transactions

Transaction ID	Items Purchased
T1	Mango, Onion, Nintendo, Key-chain, Eggs, Yo-yo
T2	Doll, Onion, Nintendo, Key-chain, Eggs, Yo-yo
T3	Mango, Apple, Key-chain, Eggs
T4	Mango, Umbrella, Corn, Key-chain, Yo-yo
T5	Corn, Onion, Key-chain, Ice-cream, Eggs

Step 1: Frequent 1-Itemsets

Item	Count	Support (%)
Mango	3	60%
Onion	3	60%
Key-chain	5	100%
Eggs	4	80%
Yo-yo	3	60%

Frequent 1-itemsets ($\geq 60\%$): {Mango, Onion, Key-chain, Eggs, Yo-yo}

Step 2: Frequent 2-Itemsets

Itemset	Count	Support (%)
{Mango, Key-chain}	3	60%
{Onion, Key-chain}	3	60%

{Onion, Eggs}	3	60%
{Key-chain, Eggs}	4	80%
{Key-chain, Yo-yo}	3	60%

Step 3: Frequent 3-Itemsets

Itemset	Count	Support (%)
{Onion, Key-chain, Eggs}	3	60%

Step 4: Association Rules

Rule	Support	Confidence	Lift
{Onion, Key-chain} → Eggs	60%	100%	1.25
{Onion, Eggs} → Key-chain	60%	100%	1.00
Onion → {Key-chain, Eggs}	60%	100%	1.25

Strong Rules

All rules listed above are strong because their confidence is greater than 80%.