

## Lab 2 – Association-Mining

1.

### Output:

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Name: Jiya Hona
Symbol No: 29097/078
Initial Data:
  TransactionID      Items
0             1      [Bread, Milk]
1             2 [Bread, Diaper, Beer, Eggs]
2             3 [Milk, Diaper, Beer, Coke]
3             4 [Bread, Milk, Diaper, Beer]
4             5 [Bread, Milk, Diaper, Coke]

One-Hot Encoded Data:
  Bread  Milk  Diaper  Beer  Eggs  Coke
0   1.0   1.0   0.0   0.0   0.0   0.0
1   1.0   0.0   1.0   1.0   1.0   0.0
2   0.0   1.0   1.0   1.0   0.0   1.0
3   1.0   1.0   1.0   1.0   0.0   0.0
4   1.0   1.0   1.0   0.0   0.0   1.0

Frequent Itemsets:
  support  itemsets
0    0.8    (Bread)
1    0.8    (Milk)
2    0.8    (Diaper)
3    0.6    (Beer)
4    0.6  (Milk, Bread)
5    0.6 (Diaper, Bread)
6    0.6 (Diaper, Milk)
7    0.6 (Diaper, Beer)

Association Rules:
  antecedents consequents antecedent support consequent support support \
0    (Milk)    (Bread)          0.8          0.8          0.6
1    (Bread)    (Milk)          0.8          0.8          0.6
2    (Diaper)  (Bread)          0.8          0.8          0.6
3    (Bread)  (Diaper)          0.8          0.8          0.6
4    (Diaper)  (Milk)          0.8          0.8          0.6
5    (Milk)    (Diaper)          0.8          0.8          0.6
6    (Diaper)  (Beer)          0.8          0.6          0.6
7    (Beer)    (Diaper)          0.6          0.8          0.6
```

	confidence	lift	representativity	leverage	conviction	zhangs_metric	\
0	0.75	0.9375	1.0	-0.04	0.8	-0.25	
1	0.75	0.9375	1.0	-0.04	0.8	-0.25	
2	0.75	0.9375	1.0	-0.04	0.8	-0.25	
3	0.75	0.9375	1.0	-0.04	0.8	-0.25	
4	0.75	0.9375	1.0	-0.04	0.8	-0.25	
5	0.75	0.9375	1.0	-0.04	0.8	-0.25	
6	0.75	1.2500	1.0	0.12	1.6	1.00	
7	1.00	1.2500	1.0	0.12	inf	0.50	

	jaccard	certainty	kulczynski
0	0.60	-0.250	0.750
1	0.60	-0.250	0.750
2	0.60	-0.250	0.750
3	0.60	-0.250	0.750
4	0.60	-0.250	0.750
5	0.60	-0.250	0.750
6	0.75	0.375	0.875
7	0.75	1.000	0.875

Rule: {'Milk'} -> {'Bread'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Bread'} -> {'Milk'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Diaper'} -> {'Bread'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Bread'} -> {'Diaper'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Diaper'} -> {'Milk'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Milk'} -> {'Diaper'}  
Support: 0.60  
Confidence: 0.75  
Lift: 0.94

Rule: {'Diaper'} -> {'Beer'}  
Support: 0.60  
Confidence: 0.75  
Lift: 1.25

Rule: {'Beer'} -> {'Diaper'}  
Support: 0.60  
Confidence: 1.00  
Lift: 1.25

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