

Project6 -

Q1:

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Q2:

(a)(NotSure) $I_4 \rightarrow I_5$

(b) For association rule $I_1 \rightarrow I_6$,

$$\text{support}(I_1 \rightarrow I_6) = \text{support}(\langle I_1, I_6 \rangle) = 2$$

$$\text{confidence}(I_1 \rightarrow I_6) = \text{sup}(\langle I_1, I_6 \rangle) / \text{sup}(I_1) = 2/3$$

$$\begin{aligned} \text{lift}(I_1 \rightarrow I_6) &= \text{conf}(I_1 \rightarrow I_6) / \text{rsup}(I_6) = \text{conf}(I_1 \rightarrow I_6) / (\text{sup}(I_6) / |\text{Trans.}|) \\ &= (2/3) / (3/5) = 10/9 \end{aligned}$$

$$\begin{aligned} \text{conviction}(I_1 \rightarrow I_6) &= (1 - \text{rsup}(I_6)) / (1 - \text{conf}(I_1 \rightarrow I_6)) = (1 - 3/5) / (1 - 2/3) \\ &= (2/5) / (1/3) = 6/5 \end{aligned}$$

Q3:

Minsup is 3

C1

Itemset	Sup
A	1
C	2
D	1
E	4
I	1
K	5
M	3
N	2
O	3
U	1
Y	3

L1

Itemset	Sup
E	4
K	5
M	3
O	3
Y	3

C2

Itemset	Sup
E,K	4
E,M	2
E,O	3
E,Y	2
K,M	3
K,O	3
K,Y	3
M,O	1
M,Y	2
O,Y	2

L2

Itemset	Sup
E,K	4
E,O	3
K,M	3
K,O	3
K,Y	3

C3

Itemset	Sup
E,K,O	3
E,K,M	2
E,K,Y	2
E,O,M	1
E,O,Y	2
K,M,O	1
K,M,Y	2
K,O,Y	2

L3

Itemset	Sup
E,K,O	3

End

Frequent Itemsets Identified with $\text{misup}=3$

Itemset	Sup
E	4
K	5
M	3
O	3
Y	3
E,K	4
E,O	3
K,M	3
K,O	3
K,Y	3
E,K,O	3