Practice Problems – Association Rule Mining

Q1: Suppose you have market basket data consisting of 100 transactions and 20 items. If the support count for item a is 25, the support count for item b is 90 and the support count for itemset {a, b} is 20. Let the support and confidence thresholds be 10% and 60%, respectively. Compute the confidence of the association rule {a}→{b}. Is the rule interesting according to the confidence measure?

Q2: Suppose you have market basket data consisting of *1000* transactions and *30* items. If the support for *item a* is *70%*, the support for *item b* is *40%* and the support for *itemset {a, b}* is *30%*. Let the support and confidence thresholds be *25%* and *50%*, respectively. Compute the confidence of the association rule *{a}→{b}*. Is the rule interesting according to the confidence measure?

Q3: A database has four transactions.

TID	Items-Bought
T100	{A, B, D, K}
T200	{A, B, C, D, E}
T300	{A, B, C, E}
T400	{A, B, D}

Find all frequent itemsets using Apriori algorithm with min_sup=3, i.e., any itemset occurring in less than 3 transactions is considered to be infrequent. Also list all the strong association rules with min_sup=3 and min_conf=80%.

Q4: A database has four transactions.

TID	Items-Bought
10	{A, C, D}
20	{B, C, E}
30	{A, B, C, E}
40	{B, E}

Find all frequent itemsets using Apriori algorithm with min_sup=2, i.e., any itemset occurring in less than 2 transactions is considered to be infrequent. Also list all the strong association rules with min_sup=2 and min_conf=100%.