

Homework 2 Due beginning of class, Thursday, Feb 2nd

1. Given the following transaction database, apply Apriori algorithm to derive from the database:

- (a) all frequent itemsets, and
- (b) all strong association rules

that has the min_support_count = 2, and the min_confidence 70%.

Show all intermediate steps (C_k , L_k , Join steps, ...) as done in class.

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

2. The Apriori algorithm makes use of prior knowledge of subset support property

- (a) show that the support of any nonempty subset s' of itemset s must be as great as the support of s
- (b) Given frequent itemset l and subset s of l , show that the confidence of the rule " $s' \rightarrow (l-s')$ " cannot be more than the confidence of " $s \rightarrow (l-s)$ ", where s' is a subset of s .