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Abstract
With the rapid advancing technology nowadays, humans can not afford to live without information technology. As the time goes by, with the fast growth of information technology, the data storage devices are getting more low-priced and that leads to the storage capacity of database expanded rapidly. Hence, searching for useful information in a huge database efficiently becomes crucial and the process for data searching is called data mining. Data mining can accomplish the following tasks or more in a huge database: association rules, sequence, clustering, classification, and forecasting. Data mining technology can widely apply in many fields, and association rules is one of the popular methods in data analysis. Association Rules can be categorized by productions of candidate itemset into two groups, and Frequent-Pattern tree and Apriori-like approach are most representative for each group. The main difference between the two methods is that Frequent-Pattern tree does not require producing candidate itemset during process, but instead this method compresses data into the structure of Frequent-Pattern tree, so that we can avoid redundant data searching in database. Apriroi-like approach requires producing candidate itemset during data searching.
The purpose of this thesis is to apply FP-tree（Frequent-Pattern tree）base theory through Boolean algorithm and quantity methods to accomplish data mining. By this application, the program can figure out the rule of relationship between the merchandise and their quantities in large database. In practice, the programs apply optimizing calculation method into efficiency tests, and also apply Boolean algorithm to optimize data mining efficiency. Furthermore, we applied Boolean FP-tree calculation into single merchandise data mining.
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