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Abstract
The information technology has been developed dozens of years, and already generally have up to now become the essential factor which all the various trades and occupations manage. Its rapid development also makes the enterprises have the more and more ways to gain informations, and the data are relatively more and more complicated too. How to excavate the useful informations hidden in huge database by data mining technology has become the subject which the enterprises pay attention. In the transactional databases, each record includes the trading time, items as well as customer and so on. And the numbers of the data will be gradually increased along with the time. When we use the former association rule algorithms to find the rules from dynamic database, if the database is updated, it is unavoidably to mine from scratch. But the scanning database is often the stage which spends the most time in data mining. If we can avoid scanning the original database repetitively, it will be helpful to promote the efficiency of the performance.
This research is based on complete FP-tree. We employ the advantages of the FP-tree which are compressing the transaction data and only scanning the database two times to design an algorithm. It can completely compress all of the transaction records into a tree structure, and find all of the frequent itemsets that do not have to scan the original database repetitively when the database is updated. Then we apply this algorithm in two aspects. One is mining the association rule with one item, which can upgrade the efficiency by avoid calculating the unconcerned items. Another is mining quantitative association rules which contain the numbers of the trading items. It can help managers understand the relationship between items and numbers, and the marketing strategy will conform to the customer demand more.
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