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Abstract
Due to the science and technology make a great progress, transactions, documents and data are transformed into electronic types, the large number of data has been accumulated. Therefore, data mining technology becomes more important than before in recent years. In data mining territory, mining association rules plays a quite important position. Many of association rules mining algorithms were proposed to improve the efficiency of data mining or save the utility rate of memory.
We propose two new algorithms－GSSA (Gradation Sorting and Scanning Approaches) and GSPT (Gradation Scanning using Prefix Table) for mining association rules. GSSA uses the concept of database grouping to reduce the scope of database scanning. GSPT uses prefix table to reduce the time of scanning database. However, the two algorithms have used gradation reduction mechanisms to reduce infrequent itemsets.
The GSSA and GSPT algorithms are the same as traditional association rules algorithm which consider no transaction time in the process finding the association rules, thus, the association rules found is unable to know the exact time of frequent which the rules occurred, and lead to unable to use the mining result sufficiently, due to the transaction items in the database are not have the same exhibition period, usually lead to higher total support amount of the items with longer exhibition period, resulting to failure in finding some meaning rules. We propose new algorithms－GSSA_TA and GSPT_TA to mining temporal association rules for solving the traditional association mining problem. The major study is to utilize the advantages of GSSA and GSPT algorithms to improve the PPM algorithm which is proposed by Lee, C.H., so we can get the temporal association rules efficiently.
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