Discovery Temporal Association Rules in Distributed Databases

Authors :	Zhao Yan, Long Jin, Yongmi Lee , Sungbo Seo, Keun Ho Ryu
Presenter :	Long Jin
Affiliation :	Dept. of Computer Science, Chungbuk National University
Address :	Gaesin-dong Heungdeok-gu, Cheongju-si Chungcheongbuk-do (Seoul 361-763 Korea)
E-mail :	{zhaoy, kimlyong, ymlee , sbseo, khryu}@dblab.chungbuk.ac.kr
Phone /Fax :	+82-43-267-2254 / +82-43-275-2254
Presentation :	Oral

Suggested topic: Database, Data mining

Abstract

Mining for association rules in distributed database environments is a central problem in knowledge discovery area. While the data are located in different share-nothing machines and each data site is grown by time, mining global frequent itemsets is hard and not efficient in large number of distributed servers. There are many excellent algorithms (such as CD, FDM, FPM and DDM) trying to resolve the problem, but all of these don't consider the temporal aspect and the recent algorithms can not generate time-related knowledge in distributed database environments. So the discovered knowledge is only a part of knowledge and not useful. In this paper, we propose a DTA (distributed temporal association) algorithm that combines temporal concepts inside distributed association rules. Firstly, the DTA algorithm confirms the time interval for applying association rules in distributed databases. The DTA can generate temporal association rules in distributed environments. Secondly, we design a system structure to manage the temporal association mining tasks efficiently and query the generated results quickly. We implement the system and get the evaluation result by this system. The experiment results show that the DTA can generate interesting correlation frequent itemsets with calendar pattern. And the DTA algorithm can generate calendar pattern temporal association rules in the distributed database environment.