Mining Several Kinds of Multi-Dimensional Temporal Association Rule

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Abstract: *To improve the effectiveness and efficiency of mining tasks, constraint-based mining enables users to concentrate on mining their interested association rules instead of the complete set of association rules. Previously proposed methods are mainly contributed to handling a single constraint and only consider the constraints which are characterized by a single attribute value. In this paper, we propose an approach to mine association rules with multiple constraints constructed by multi-dimensional attribute values. Our proposed approach basically consists of three phases. First, we collect the frequent items and prune infrequent items according to the Apriority property. Second, we exploit the properties of the given constraints to prune search space or save constraint checking in the conditional databases. Third, for each item set possible to satisfy the constraint, we generate its conditional database and perform the three phases in the conditional database recursively. Our proposed algorithms can exploit the properties of constraints to prune search space or save constraint checking. Therefore, our proposed algorithm is more efficient than the revised FP (Frequent Pattern)-growth and FIC (Fractal Image Compression) algorithms.*

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