Discovering Time Constraint Association Rules in Web Server Log Files

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Abstract

Web mining generates web access patterns, web structures, regularity and dynamics of web contents. Association rules are used to describe what items are frequently bought together. One could also use them in web usage mining to describe the pages that are often visited together. This paper presents time-constraint association rules by extensions of Apriori algorithm, where Support and confidence ratios are also computed. Current web usage mining algorithms based on association rule do not consider the time sequence of web usage data. Time-constraint association used in this paper not only maintains the sequential information, but also set the time frame of the web usage data. In time constraint association rule, time ratios express the conditional probability of X and Y occurring in the time window defined by t1 and t2, given the fact that X and Y are accessed together in the same session. This system generates association rules based on time constraints; i.e; in which, access pattern occur in the same time frame. Rules generated from this system can be applied to recommender system, where there is more relationship between pages with time constraint.