METODE *MARKET BASKET ANALYSIS* DAN ALGORITMA *FOLD-GROWTH* UNTUK PENEMPATAN BUKU PADA PERPUSTAKAAN

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Abstrak

Dalam survey yang telah dilakukan terhadap pengunjung perpustakaan Universitas Pembangunan Nasional "Veteran" Jakarta, 81% pengunjung seringkali merasa kesulitan dalam mencari buku yang dibutuhkan. Oleh karena itu, perlu adanya sistem yang digunakan oleh pihak perpustakaan dalam penentuan pola penempatan buku berdasarkan buku yang paling sering dipinjam secara bersamaan oleh pengunjung, sehingga pola penempatan buku pada rak menjadi optimal serta memudahkan pengunjung dalam pencarian buku yang akan dipinjam secara bersamaan. Dengan memanfaatkan ketersediaan data yang besar dapat dilakukan teknik penggalian data atau *Data Mining* dengan menggunakan metode Market Basket Analysis serta diproses dengan Algoritma *FOLD-Growth* yang merupakan hasil gabungan dari algoritma *FOLDARM (Fast Online Dynamic Association Rule Mining)* dan *FP-Growth (Frequent Pattern Growth)*. Algoritma FOLD-Growth memiliki proses penggalian data yang lebih cepat dibandingkan dengan algoritma sebelumnya, yaitu algoritma FP-Growth dan Apriori. Pengujian dilakukan terhadap data transaksi peminjaman buku sebanyak 71 transaksi yang diujikan terhadap lima buah nilai *minimum support* (10%, 15%, 20%, 25% dan 30%) dan lima buah nilai *minimum confidence* (10%, 20%, 30%, 40% dan 50%). Hasil Kombinasi yang dapat digunakan ialah dengan *minimum support* 10% dan *minimum confidence* 10%, dengan jumlah kombinasi sebanyak empat aturan. Pemilihan kombinasi minimum support dan minimum confidence ini dimaksudkan agar hasil yang didapat lebih banyak.

Kata Kunci : Perpustakaan, Data Mining, Market Basket Analysis, FOLD-Growth

IMPLEMENTATION OF MARKET BASKET ANALYSIS METHOD AND FOLD-GROWTH ALGORITHM FOR BOOKS PLACEMENT IN THE LIBRARY

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Abstract

In a survey that have been done to University of Pembangunan Nasional "Veteran" Jakarta library visitors, 81% of visitors often feel difficulty in finding the book is needed. Therefore, the need for systems that are used by the library in determining the placement of the pattern books based on books borrowed most often, simultaneously by the visitors, so the pattern of placement of books on the shelf be optimal as well as make it easier for visitors in search of books to be borrowed at one time. By utilizing large data availability can do the technique data mining or Data Mining by using the method of Market Basket Analysis as well as processed by the algorithm FOLD-Growth that is the result of a combination of algorithm FOLDARM (Fast Online Dynamic Association Rule Mining) and FP-Growth (Frequent Pattern Growth). Algorithm of FOLD-Growth processes are faster compared to the previous algorithm, that algorithm FP-Growth and a priori. Testing was performed against the data transactions of loan books as much as 71 transactions to be tested against five minimum support value (10%, 15%, 20%, 25% and 30%) and five minimum confidence (10%, 20%, 30%, 40% and 50%). The result is a combination that can be used with 10% of minimum support and 10% of minimum confidence, with the number of combination of as many as four rules. The selection of the combination of minimum support and minimum confidence is intended so that the results obtained are more numerous.

Keyword : Library, Data Mining, Market Basket Analysis, FOLD-Growth.