INTISARI

SISTEM REKOMENDASI BUKU UNTUK PERPUSTAKAAN MENGGUNAKAN ALGORITME GENETIKA DAN *ASSOCIATION RULE MINING*

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Sistem rekomendasi bertujuan untuk memberikan rekomendasi sesuatu yang memungkinkan paling sesuai dan menarik bagi pengguna. Beberapa penelitian mengenai sistem rekomendasi buku untuk perpustakaan sudah dilakukan, salah satunya menggunakan *association rule mining*. Namun, sistem kurang optimal dalam memberikan rekomendasi yang sesuai preferensi pengguna dan mencapai tujuan sistem rekomendasi. Penelitian ini mengembangkan sistem rekomendasi buku untuk perpustakaan dengan mengoptimisasi *association rule mining* menggunakan algoritme genetika untuk menangani kelemahan sistem sebelumnya.

Penelitian ini menggunakan data Perpustakaan Kota Yogyakarta waktu 2 tahun terakhir (2015-2016). Hasil penelitian pada *association rule mining* mendapatkan nilai *minimum support* paling besar 0,01 dan rata-rata *confidence* 0,435923541 dikarenakan data yang banyak dan persebarannya tidak merata. Hasil pengujian lain pada *rule* yaitu nilai rata-rata *Laplace* 0,499471 , nilai rata-rata *lift* 30,7527 dan nilai rata-rata *conviction* 1,91534252 menunjukkan bahwa *rule* memiliki tingkat kepercayaan yang cukup baik, cukup menarik dan tidak independen sehingga saling berkaitan antar *antecendent* dan *consequent*. Optimisasi menggunakan algoritme genetika memerlukan *running time* yang cukup lama namun mampu menghasilkan rekomendasi buku yang lebih baik daripada hanya menggunakan *association rule mining*. Selain itu, sistem mendapat persentase rata-rata 77,5 % dalam pencapaian tujuan sistem rekomendasi yaitu *relevance, novelty, serendipity dan increasing recommendation diversity*.

Kata kunci : sistem rekomendasi, algoritme genetika, *association rule mining*, perpustakaan, optimisasi

ABSTRACT

BOOK RECOMMENDER SYSTEM FOR LIBRARY
USING GENETIC ALGORITHM AND *ASSOCIATION RULE MINING*

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Recommender system aims to provide a recommendation on something that likely most suitable and attractive for users. Some research on the book recommender system for library have already been done, one of them uses association rule mining. However, the system isn't optimal in providing recommendations that appropriate the user's preferences and achieving the goal of recommendation systems. This research developed a book recommender system for library with optimizing association rule mining using genetic algorithms to handle the weaknesses of previous system.

This research uses data from Yogyakarta City Library in last 2 years (2015-2016). The results of the association rule mining study shows 0.01 for the greatest value of minimum support and 0,435923541 for the average confidence value due to a lot of data and uneven distribution of data. Other study results on rules are 0,499471 for the average of Laplace value, 30,7527 for the average lift value and 1,91534252 for the average conviction value, which those values indicate that the rule has good enough level of confidence, quite interesting and dependent which indicates existing relation between antecedents and consequent. Optimization using genetic algorithm, need long running time, but it is able to produce book recommendations better than just using association rule mining. In addition, the system gets 77,5% for achieving the goal of recommender systems, namely relevance, novelty, serendipity and increasing recommendation diversity.

Keyword : recommender system, genetic algorithm, association rule mining, library, optimization