

ABSTRAK

Sistem rekomendasi merupakan bagian penting dalam membantu pengguna menemukan item yang sesuai dengan preferensi mereka. Pada penelitian ini, dibangun dan dibandingkan dua metode sistem rekomendasi game android berbasis popularitas, yaitu *Content-Based Filtering (CBF)* menggunakan algoritma *K-Nearest Neighbors (KNN)* dan *Collaborative Filtering (CF)* menggunakan algoritma *Singular Value Decomposition (SVD)*. Dataset ini yang digunakan terdiri dari 100 game *Andorid* dengan atribut seperti *title*, *total ratings*, *installs*, *average rating*, *growth* (30 dan 60 days), *paid* dan *category*.

Metode *Content-Based Filteg* merekomendasikan game berdasarkan kemiripan atribut antar *game*, sedangkan *Collaborative Filtering* menyarankan *game* berdasarkan pola kesamaan preferensi antar pengguna, yang dalam penelitian ini disimulasikan. Evaluasi kinerja sistem dilakukan menggunakan metrik *Precision@K*, *Recall@K*, dan *nDCG@K* untuk menilai akurasi dan relevansi rekomendasi yang diberikan.

Hasil evaluasi menunjukkan bahwa *Content-Based Filtering* lebih unggul dalam matrik *Precision* dan *Recall*, dengan nilai 0.247 yang menandakan kemampuannya dalam menghasilkan rekomendasi yang relevan secara kuantitas. Sementara itu, *Collaborative Filtering* lebih unggul dalam *nDCG*, dengan nilai 0.6380 yang menunjukkan kemampuannya dalam menyusun urutan rekomendasi yang lebih relevan. Kesimpulannya, kedua metode ini memiliki keunggulan masing-masing dan dapat disesuaikan dengan kebutuhan dan ketersediaan data.

Kata kunci: Sistem Rekomendasi, *Game Android*, *Content-Based Filtering*, *Collaborative Filtering*, *K-Nearest Neighbors (KNN)*, *Singular Value Decomposition (SVD)*, Evaluasi, *Precision*, *Recall*, *nDCG*.

ABSTRACT

Recommender systems play a crucial role in helping users discover items that match their preferences. In this study, two popularity-based Android game recommendation methods are developed and compared: Content-Based Filtering (CBF) using the K-Nearest Neighbors (KNN) algorithm, and Collaborative Filtering (CF) using the Singular Value Decomposition (SVD) algorithm. The dataset used consists of 100 Android games with attributes such as title, total ratings, installs, average rating, growth (30 and 60 days), paid status, and category.

CBF recommends games based on attribute similarities between games, while CF suggests games based on shared preference patterns among users, which in this study are simulated. The system's performance is evaluated using the metrics Precision@K, Recall@K, and nDCG@K to assess the accuracy and relevance of the recommendations.

The evaluation results show that Content-Based Filtering outperforms in terms of Precision and Recall, with a score of 0.247, indicating its ability to generate quantitatively relevant recommendations. Meanwhile, Collaborative Filtering excels in nDCG with a score of 0.6380, demonstrating its strength in ranking recommendations more effectively. In conclusion, both methods have their own advantages and can be adapted based on data availability and system needs.

Keywords: *Recommender System, Android Games, Content-Based Filtering, Collaborative Filtering, K-Nearest Neighbors (KNN), Singular Value Decomposition (SVD), Evaluation, Precision, Recall, nDCG.*