

ABSTRAK

Jumlah game di platform *Steam* yang terus bertambah dengan beragam genre, harga, dan tingkat popularitas menyebabkan pengguna kesulitan menemukan game yang sesuai dengan minat dan preferensi mereka. Fitur pencarian dan rekomendasi bawaan *Steam* belum sepenuhnya mampu memenuhi kebutuhan pengguna secara personal. Penelitian ini mengembangkan Sistem Rekomendasi Game berbasis web pada platform *Steam* menggunakan pendekatan *Content-Based Filtering* dengan algoritma *Term Frequency-Inverse Document Frequency (TF-IDF)* dan *Cosine Similarity* untuk mengukur tingkat kemiripan antara preferensi pengguna dan karakteristik game. *Dataset* yang digunakan merupakan data game *Steam* yang bersumber dari Kaggle dengan judul *Best-Selling Steam Games* dan mencakup informasi genre, fitur, rating, serta data pendukung lainnya. Tahap praproses data meliputi *lowercasing*, *punctuation removal*, *tokenization*, *stopword removal*, dan *stemming* untuk memastikan kualitas data sebelum diproses lebih lanjut. Pembobotan kata dilakukan menggunakan metode *TF-IDF*, kemudian nilai kemiripan dihitung menggunakan *Cosine Similarity* untuk menghasilkan daftar rekomendasi yang dipersonalisasi. Sistem dibangun menggunakan *React.js* sebagai antarmuka pengguna dan *Flask (Python)* sebagai *backend* pemrosesan. Pengujian dilakukan dalam dua tahap, yaitu uji validitas dan uji beta oleh pengguna umum. Hasil uji validitas menunjukkan kesesuaian penuh antara hasil sistem dengan perhitungan manual dengan akurasi 100%. Nilai rata-rata *Precision* sebesar 0,72, *Recall* sebesar 1,00, dan *F1-Score* sebesar 0,83 mengindikasikan bahwa sistem mampu menghasilkan rekomendasi yang relevan secara konsisten. Hasil pengujian usabilitas menunjukkan hasil yang memuaskan dengan nilai pada masing-masing aspek yaitu *Effectiveness* (92), *Efficiency* (92), *Learnability* (92,44), *Memorability* (90), *Error* (89,78), dan *Satisfaction* (92,44). Keywords: game recommendation; content-based filtering; TF-IDF; cosine similarity; Steam

ABSTRACT

The growing number of games on the *Steam* platform, with diverse genres, prices, and popularity levels, makes it increasingly difficult for users to find games that match their interests and preferences. *Steam*'s built-in search and recommendation features have not been fully capable of meeting users' personal needs. This study develops a web-based Game Recommendation System on the *Steam* platform using a *Content-Based Filtering* approach with Term Frequency-Inverse Document Frequency (*TF-IDF*) and *Cosine Similarity* algorithms to measure the degree of similarity between user preferences and game characteristics. The dataset used consists of *Steam* game data sourced from Kaggle under the title Best-Selling *Steam* Games, covering information on genres, features, ratings, and other supporting attributes. The data *preprocessing* stage includes *lowercasing*, *punctuation removal*, *tokenization*, *stopword removal*, and *stemming* to ensure data quality prior to further processing. Word weighting is performed using the *TF-IDF* method, and similarity values are calculated using *Cosine Similarity* to generate personalized recommendation lists. The system is built using React.js as the user interface and Flask (Python) as the processing backend. Testing was conducted in two stages, namely validity testing and beta testing by general users. The validity test results show full agreement between the system output and manual calculations with an accuracy of 100%. Average *Precision* of 0.72, *Recall* of 1.00, and *F1-Score* of 0.83 indicate that the system is capable of consistently producing relevant recommendations. The *usability* test results show satisfactory outcomes with scores across each aspect: *Effectiveness* (92), *Efficiency* (92), *Learnability* (92.44), *Memorability* (90), Error (89.78), and *Satisfaction* (92.44). Keywords: game recommendation; content-based filtering; TF-IDF; cosine similarity; Steam