SISTEM REKOMENDASI PEMILIHAN LAPTOP MENGGUNAKAN METODE *CONTENT BASED FILTERING* DAN *K-NEAREST NEIGHBOR*

Ilzam Rojabi[1], Ilham Saifudin[2], Guruh Wijaya[3]
Program studi Teknik Informatika, Fakultas Teknik
Universitas Muhammadiyah Jember
e-mail: ilzamrojabi8@gmail.com

ABSTRAK

Sistem rekomendasi memiliki peran penting dalam membantu pengguna menemukan produk yang tepat di antara banyaknya pilihan. Penelitian ini bertujuan mengembangkan sistem rekomendasi laptop menggunakan metode *content-based filtering* dan *K-Nearest Neighbors* (K-NN). Sistem ini dirancang untuk memberikan saran laptop berdasarkan spesifikasi dan harga. Dataset yang digunakan mencakup atribut penting seperti RAM, SSD, HDD, sistem operasi, dan prosesor. Penelitian ini menggunakan TF-IDF (*Term Frequency-Inverse Document Frequency*) untuk mengukur bobot atribut setiap laptop dan *cosine similarity* untuk menilai kesamaan antar laptop. Metode K-NN digunakan untuk menemukan laptop yang paling mirip berdasarkan atribut harga yang dipilih pengguna. Dataset diambil dari *Kaggle* dan diproses menggunakan berbagai pustaka *Python* seperti *pandas*, *numpy*, dan *scikit-learn*. Hasil penelitian menunjukkan bahwa metode *content-based filtering* dan K-NN efektif dalam memberikan rekomendasi laptop yang relevan dan sesuai dengan kebutuhan pengguna. Hasil Pengujian sistem menggunakan metode content based filtering menunjukkan nilai MAE pada user input ke-1 0,1161, pada user input ke-2 0, dan user input ke-3 0,3036. dan hasil pengujian pada algoritma K-Nearest Neighbor menunjukkan hasil akurasi 70% pada prediksi harga laptop.

***Kata Kunci**: Sistem rekomendasi, Laptop, Content Based Filtering, K-Nearest Neighbor*

LAPTOP SELECTION RECOMMENDATION SYSTEM USING CONTENT BASED FILTERING AND K-NEAREST NEIGHBOR METHOD

Ilzam Rojabi[1], Ilham Saifudin[2], Guruh Wijaya[3]
Program studi Teknik Informatika, Fakultas Teknik
Universitas Muhammadiyah Jember
e-mail: ilzamrojabi8@gmail.com

ABSTRACT

Recommendation systems have an important role in helping users find the right product among many choices. This research aims to develop a laptop recommendation system using content-based filtering and K-Nearest Neighbors (K-NN) methods. This system is designed to provide laptop suggestions based on specifications and price. The dataset used includes important attributes such as RAM, SSD, HDD, operating system, and processor. This research uses TF-IDF (Term Frequency-Inverse Document Frequency) to measure the attribute weights of each laptop and cosine similarity to assess the similarity between laptops. The K-NN method is used to find the most similar laptops based on the price attribute selected by the user. The dataset is taken from Kaggle and processed using various Python libraries such as pandas, numpy, and scikit-learn. The research results show that the content-based filtering and K-NN methods are effective in providing laptop recommendations that are relevant and in accordance with user needs. The results of system testing using the content based filtering method show that the MAE value for the 1st user input is 0.1161, for the 2nd user input 0, and for the 3rd user input 0.3036. and test results on the K-Nearest Neighbor algorithm show 70% accuracy in laptop price predictions.

Keywords*: Recommendation System, Laptop, Content Based Filtering*, *K-Nearest Neighbor*