

ABSTRAK

Saat ini, pertumbuhan objek wisata di Surabaya mulai tumbuh akibat pelonggaran aturan COVID-19 yang sempat mengancam di berbagai sektor, salah satunya sektor pariwisata. Selain akibat pandemi, terdapat beberapa faktor yang membuat tempat pariwisata tersebut sepi pengunjung yaitu kurangnya dukungan dari pemerintahan setempat, faktor aksesibilitas, dan kurangnya promosi. Maka dari itu sistem rekomendasi mempunyai peran besar dalam memberikan rekomendasi kepada target *user*, terlebih dalam mempertahankan objek wisata lama yang masih layak untuk dikunjungi.

Pada Sistem Rekomendasi ini, data yang digunakan adalah data rating dari *user* dan kemudian akan dilakukan *preprocessing* data. Kemudian akan dilanjutkan dengan penerapan algoritma *User-Based Collaborative Filtering* yang didalamnya terdapat perhitungan masing-masing *similarities*, yaitu *Tanimoto Coefficient Similarity* dan *Adjusted Cosine Similarity* serta ditutup dengan perhitungan prediksi dan *Mean Absolute Error* (MAE). Perhitungan MAE yang akan menjadi penentu algoritma *similarity* yang cocok digunakan dalam pendekatan menggunakan *User-Based Collaborative Filtering*.

Hasil dari penelitian yang dilakukan bahwa penerapan *Tanimoto Coefficient Similarity* dan *Adjusted Cosine Similarity* dalam Sistem Rekomendasi cukup baik. Keakuratan sistem ini dibuktikan dengan hasil rerata MAE yang dimana dengan menggunakan *Tanimoto Coefficient Similarity* dengan 20 tetangga menghasilkan rerata MAE sebesar 0.208892715 dan pada *Adjusted Cosine Similarity* dengan 10 tetangga menghasilkan rerata MAE sebesar 0.428202462.

Kata kunci : Surabaya, Objek Wisata, Sistem Rekomendasi, *User-Based Collaborative Filtering*, *Tanimoto Coefficient Similarity*, *Adjusted Cosine Similarity*, Perhitungan Prediksi, *Mean Absolute Error*

ABSTRACT

Currently, the growth of tourist attractions in Surabaya is starting to grow due to the easing of COVID-19 regulations that had threatened various sectors, one of which is the tourism sector. Apart from the pandemic, several factors make these tourism sites empty of visitors, namely the lack of support from the local government, accessibility factors, and lack of promotion. Therefore, the recommendation system has a big role in providing recommendations to target users, especially in maintaining old tourist attractions that are still worth visiting.

In this Recommendation System, the data used is rating data from users, and then data preprocessing will be carried out. Then it will be continued with the application of the *User-Based Collaborative Filtering* algorithm in which there is a calculation of each similarity, namely *Tanimoto Coefficient Similarity* and *Adjusted Cosine Similarity*, and closed with a prediction calculation and *Mean Absolute Error* (MAE). The MAE calculation will determine which similarity algorithm is suitable for use in the User-Based Collaborative Filtering approach.

The results of the research conducted that the application of *Tanimoto Coefficient Similarity* and *Adjusted Cosine Similarity* in the Recommendation System is quite good. The accuracy of this system is evidenced by the average MAE results where using *Tanimoto Coefficient Similarity* with 20 neighbors produces an average MAE of 0.208892715 and *Adjusted Cosine Similarity* with 10 neighbors produces an average MAE of 0.428202462.

Keywords: Surabaya, Tourism Objects, Recommendation System, User-Based Collaborative Filtering, *Tanimoto Coefficient Similarity*, *Adjusted Cosine Similarity*, Prediction Calculation, *Mean Absolute Error*