

ABSTRAK

Perkembangan pola belajar dan kerja fleksibel meningkatkan kebutuhan terhadap tempat publik yang dapat mendukung aktivitas produktif, tetapi informasi mengenai tingkat anggaran, fasilitas, lokasi, dan penilaian tempat masih tersebar pada berbagai platform serta belum disajikan secara personal. Penelitian ini bertujuan untuk membangun Cowspace, yaitu aplikasi rekomendasi tempat belajar atau bekerja alternatif berbasis *mobile* di kawasan Jakarta Selatan dengan menerapkan *hybrid filtering* yang menggabungkan *content-based filtering* dan *collaborative filtering* menggunakan 35 data tempat serta 875 data *rating* dari 25 responden. Aplikasi dikembangkan menggunakan Flutter sebagai *frontend*, FastAPI sebagai *backend*, dan MySQL sebagai basis data, sedangkan evaluasi model dilakukan secara *offline* menggunakan *5-fold cross-validation* per pengguna dengan batas item relevan berupa *rating* minimal 4. Hasil evaluasi menunjukkan bahwa *collaborative filtering* memperoleh performa tertinggi dengan Precision@5 sebesar 0,9360, Recall@5 sebesar 0,7735, F1@5 sebesar 0,8393, NDCG@5 sebesar 0,9630, dan MAP@5 sebesar 0,9418, sedangkan *hybrid filtering* dengan bobot CBF 0,2 dan CF 0,8 berada pada posisi kedua serta lebih baik daripada *content-based filtering*. Hasil *unit testing*, *integration testing*, dan *black box testing* menunjukkan bahwa seluruh skenario pengujian berhasil, sedangkan *User Acceptance Testing* memperoleh persentase 94,82% dengan kategori sangat layak, sehingga aplikasi Cowspace telah mampu mengintegrasikan model rekomendasi ke dalam aplikasi *mobile* dan memberikan rekomendasi tempat berdasarkan preferensi serta pola *rating* pengguna.

Kata Kunci: Sistem Rekomendasi, *Hybrid Filtering*, *Content-Based Filtering*, *Collaborative Filtering*, *Coworking Space*, Aplikasi *Mobile*.

ABSTRACT

The development of flexible study and work patterns has increased the need for public places that support productive activities, but information regarding budget levels, facilities, locations, and place ratings remains scattered across multiple platforms and is not presented personally. This study aims to develop Cowspace, a mobile-based recommendation application for alternative study or work places in South Jakarta by implementing hybrid filtering that combines content-based filtering and collaborative filtering using 35 place records and 875 rating records obtained from 25 respondents. The application was developed using Flutter as the frontend, FastAPI as the backend, and MySQL as the database, while the recommendation models were evaluated offline using user-based 5-fold cross-validation with a minimum rating of 4 as the relevance threshold. The evaluation results show that collaborative filtering achieved the highest performance, with a Precision@5 of 0.9360, Recall@5 of 0.7735, F1@5 of 0.8393, NDCG@5 of 0.9630, and MAP@5 of 0.9418, while hybrid filtering with CBF and CF weights of 0.2 and 0.8 ranked second and outperformed content-based filtering. Unit testing, integration testing, and black box testing showed that all test scenarios were successfully completed, while User Acceptance Testing obtained a score of 94.82% and was categorized as highly feasible, indicating that Cowspace successfully integrated the recommendation model into a mobile application and provided place recommendations based on user preferences and rating patterns.

Keywords: *Recommendation System, Hybrid Filtering, Content-Based Filtering, Collaborative Filtering, Coworking Space, Mobile Application.*