

ABSTRAK

Pingki Subaidah. 2026. Sistem Informasi Administrasi Berbasis Web dengan Metode Shortesst Job First (SJF) (Studi Kasus : Desa Kemuning Kecamatan Sambit Kabupaten Ponorogo). Skripsi. Program Studi Teknik Informatika, FT, Universitas PGRI Madiun. Pembimbing (I) Yoga Prisma Yuda, S.Kom., M.Kom. (II) Alim Citra Bima, S.Pd., M.Kom.

Pelayanan administrasi kependudukan di Desa Kemuning, Kecamatan Sambit, Kabupaten Ponorogo, sebelumnya masih menggunakan metode manual dan semi-komputerisasi yang menimbulkan kendala seperti keterbatasan akses fisik bagi masyarakat perantau, risiko kehilangan arsip dokumen, serta lamanya waktu tunggu akibat penerapan sistem antrian *First-Come First-Served* (FCFS). Untuk mengatasi permasalahan tersebut, penelitian ini bertujuan merancang dan membangun Sistem Informasi Administrasi Kependudukan berbasis web yang mengintegrasikan algoritma *Shortest Job First* (SJF) guna mempermudah akses layanan mandiri masyarakat sekaligus mengoptimalkan urutan pemrosesan pelayanan di kantor desa. Pengembangan sistem mengadopsi metode *Rapid Application Development* (RAD) menggunakan *framework* Laravel dan basis data MySQL, di mana algoritma SJF dilengkapi mekanisme *aging* untuk memprioritaskan antrian berdasarkan estimasi waktu penyelesaian terpendek tanpa memicu penundaan berlebih (*starvation*), serta diuji tingkat kebergunaannya menggunakan *System Usability Scale* (SUS). Hasil dari penelitian ini berupa sistem informasi berbasis web dengan fitur utama pendaftaran akun, pengajuan surat mandiri, pengunggahan berkas, verifikasi admin, pemrosesan antrian otomatis berbasis SJF, hingga penerbitan surat digital yang terbukti berhasil memangkas waktu tunggu antrian, meningkatkan akurasi data kependudukan, dan mempermudah aksesibilitas pelayanan bagi warga Desa Kemuning baik lokal maupun perantau.

Kata Kunci: Administrasi Kependudukan, *Shortest Job First* (SJF), *Rapid Application Development* (RAD), *Website*, *System Usability Scale* (SUS).

ABSTRACT

Pingki Subaidah. 2026. *Web-Based Administrative Information System Using the Shortest Job First (SJF) Method (Case Study: Kemuning Village, Sambit District, Ponorogo Regency)*. Thesis. Informatics Engineering Study Program, Faculty of Engineering, Universitas PGRI Madiun. Advisors: (I) Yoga Prisma Yuda, S.Kom., M.Kom. (II) Alim Citra Bima, S.Pd., M.Kom.

Population administration services in Kemuning Village, Sambit District, Ponorogo Regency, previously relied on manual and semi-computerized methods, which led to various obstacles such as limited physical access for migrant residents, the risk of lost document archives, and prolonged waiting times due to the implementation of the First-Come First-Served (FCFS) queuing system. To address these issues, this study aims to design and develop a web-based Population Administration Information System that integrates the Shortest Job First (SJF) algorithm to facilitate self-service access for residents while optimizing the service processing sequence at the village office. The system development adopted the Rapid Application Development (RAD) method using the Laravel framework and MySQL database, in which the SJF algorithm was equipped with an aging mechanism to prioritize queues based on the shortest estimated completion time without triggering excessive delays (*starvation*), and its usability level was evaluated using the System Usability Scale (SUS). The result of this research is a web-based information system featuring account registration, independent letter request submission, document uploading, administrative verification, automatic SJF-based queue processing, and digital letter issuance. The system was proven to successfully reduce queue waiting times, enhance population data accuracy, and improve service accessibility for Kemuning Village residents, both local and overseas/migrants.

Keywords: Population Administration, Shortest Job First (SJF), Rapid Application Development (RAD), Website, System Usability Scale (SUS).