ABSTRACT

Aozora Cat Care, a cat care service provider, faces significant operational challenges due to its manual booking system managed by a single admin via WhatsApp. This limitation leads to slow response times and the formation of customer queues, especially during peak hours. The reliance on this inefficient manual process negatively impacts customer satisfaction and hinders business scalability, where high demand cannot be met by the limited admin service capacity.

To address these issues, a web-based booking application system was developed, designed to automate and streamline the workflow. This solution allows customers to perform the entire process independently, from account registration and pet data management to selecting service schedules through an interactive calendar that displays real-time availability. With this self-service feature, admin involvement in each transaction is minimized, making the process faster and more efficient.

The test results demonstrate a drastic improvement in efficiency. A comparative analysis using queuing theory proves that the manual system, with a service capacity (μ) of 4 bookings per hour, becomes unstable ($\rho = 1,5$) when facing an arrival rate (λ) of 6 customers per hour. Conversely, the web-based system shows a far superior service capacity (μ) of approximately 9,68 bookings per hour, resulting in a highly stable system utilization rate (ρ) of 0,62 under the same load. Thus, it can be concluded that the developed application successfully resolves the queuing problem, more than doubles operational efficiency, and provides a better booking experience for customers.

Keywords: Booking System, Queuing Theory, Operational Efficiency, Web Application, Aozora Cat Care