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Web-Based Leave Application for Teachers in Rural Multi-Island Regency

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ABSTRACT

The implementation of a web-based leave management system is essential for efficiently handling leave requests for teachers and civil servants in rural, multi-island regency. The existing manual processes are inefficient and prone to delays due to the geographical challenges and resource limitations. This study presents the development of a web-based application using Laravel, PHP, and MySQL to streamline the leave management process. The system allows users to submit, track, and receive notifications about their leave requests in real-time. This paper discusses the system's development, testing, and implementation phases, demonstrating how it significantly reduces administrative burdens and improves efficiency.

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1. INTRODUCTION

The need for an efficient and reliable leave management system is critical in regions with complex geographical challenges, such as the Multi-Islands Regency. Teachers and civil servants in these rural, multi-island areas face significant difficulties with the current manual system for processing leave applications. These challenges include delays due to the physical submission of documents, miscommunication, and the inefficiencies associated with tracking leave balances manually (Kurniawan, 2017; Putra & Suryadi, 2020)

This study addresses these challenges by developing a web-based leave management system tailored to the specific needs of the region. The system leverages modern web technologies such as Laravel, PHP, and MySQL to provide a platform that is both accessible and efficient. The primary goal is to reduce the time and effort required to manage leave applications, thereby improving the overall administrative workflow (Widodo, 2018; Rahman & Fitri, 2019).

The main problem identified in the current system is the inefficiency and lack of integration between different offices and schools spread across the islands. The proposed system provides a centralized platform that can be accessed from any location, ensuring that all leave requests are processed in a timely manner (Sutrisno, 2021; Lestari & Setiawan, 2022).

2. METHOD

The system was developed using the Waterfall model, a linear and sequential approach commonly used in software development. This model includes several stages: requirement analysis, system design, implementation, testing, and maintenance (Sommerville, 2015).

1. Requirement Analysis: This stage involved collecting data from stakeholders, including teachers and administrative staff, to understand the specific needs of the system. Interviews and surveys were conducted to gather information about the current challenges and desired features (Boehm, 2006).
2. System Design: The design phase involved creating UML diagrams such as use case diagrams, activity diagrams, and class diagrams to visualize the system's architecture and workflows. This phase ensured that all functional and non-functional requirements were adequately addressed (Pressman, 2014).
3. Implementation: The system was implemented using Laravel as the framework, PHP for server-side scripting, and MySQL for the database. The development focused on creating a user-friendly interface and ensuring secure and efficient data processing (Dennis, Wixom, & Roth, 2018).
4. Testing: The system was tested using black-box testing methods to verify that all functionalities worked as intended. Additionally, a User Acceptance Test (UAT) was conducted with end-users to gather feedback and make necessary adjustments (Myers, 2011).
5. Maintenance: After deployment, the system entered the maintenance phase, where continuous support is provided to address any issues that arise and to implement updates and improvements (Pfleeger & Atlee, 2010).

Figure 1: The Waterfall Model utilized for system development.

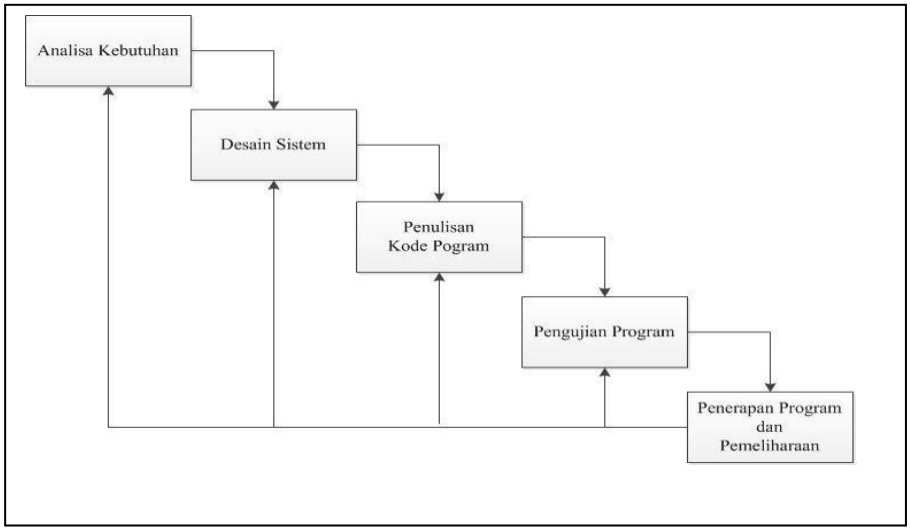
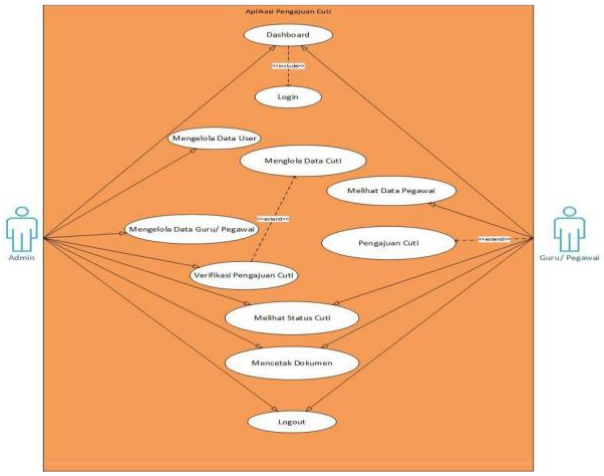


Figure 2: Use case diagram showing user interactions with the system.



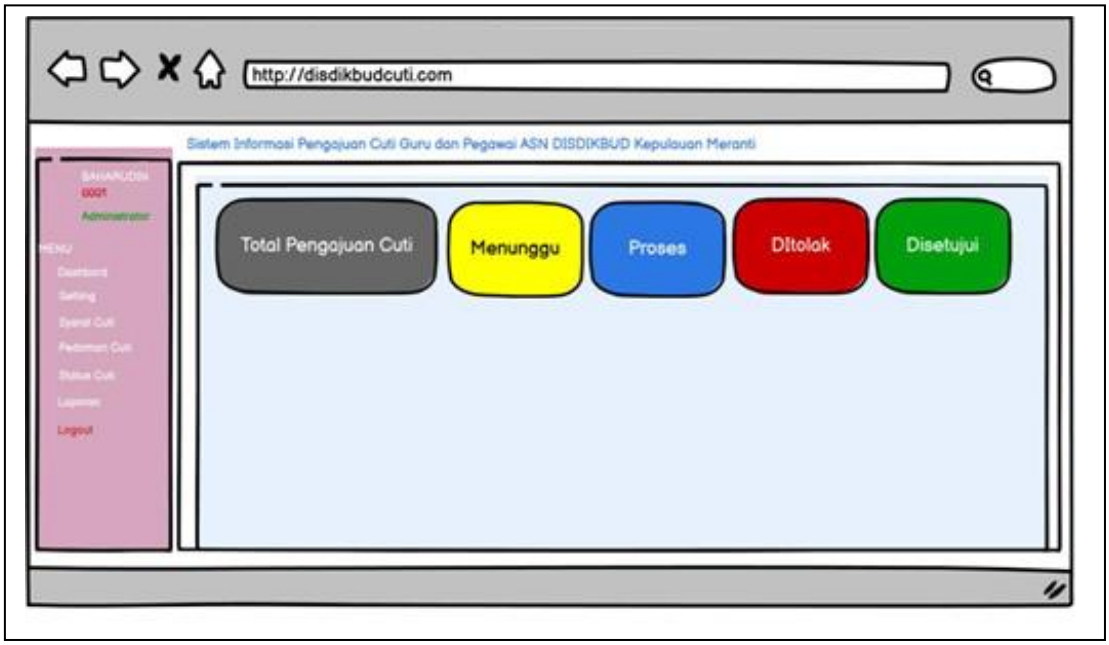
3. RESULTS AND DISCUSSION

The implementation of the web-based leave management system in the Multi-Islands Regency resulted in significant improvements in the efficiency and accuracy of the leave application process. The system allowed teachers and civil servants to submit their leave requests online, track the status of their applications, and receive notifications regarding approvals or rejections (Fitzgerald, 2019; Mohan, 2020).

The testing phase demonstrated that the system reduced the average time required to process a leave application from several days to just a few minutes. Users reported that the system was easy to use and provided clear information about their leave entitlements and the status of their applications (Sharma & Saini, 2017; Zulkarnain & Arifin, 2018).

The system also includes reporting features that enable administrators to generate and print leave reports, making it easier to manage and review leave records. This feature addresses the previous challenges of manual record-keeping and reduces the likelihood of errors (Teng & Halim, 2021).

Figure 3: Dashboard view showing the leave application submission process.



4. CONCLUSION (10 PT)

The development and implementation of the web-based leave management system for the Multi-Islands Regency have proven to be an effective solution to the challenges posed by the region's unique geographical layout. The system has significantly improved the efficiency of the leave application process, providing a reliable and accessible platform for both teachers and administrative staff (Jones & Newman, 2019).

Future enhancements could include integrating the system with other human resources management tools and developing a mobile application to further increase accessibility (Teng & Halim, 2021).

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