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BKD Files Management Application

Rijois Iboy Erwin Saragih, Universitas Methodist Indonesia, Indonesia

Correspondence: E-mail: rijoissaragih@gmail.com

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ABSTRACT

The Lecturer BKD Files Management Application is a system designed to facilitate digital management of Lecturer Tri Dharma (BKD) files. This application aims to simplify the process of recording, archiving and reporting BKD which is often complicated and time consuming if done manually. With features such as file upload, document search, and archive management, this application allows lecturers to easily manage and track various documents related to their BKD. Apart from that, this application also makes it easy for the administration to verify and monitor lecturers' BKD efficiently. The implementation of this system is expected to increase effectiveness and accuracy in BKD management, as well as reduce the administrative burden faced by lecturers and the administration. This research contributes to the academic community by providing a practical tool that enhances the efficiency of BKD management. The application reduces administrative overhead, minimizes errors associated with manual processes, and improves the transparency and accessibility of BKD records. Furthermore, this study offers insights into the challenges and best practices in developing digital solutions for academic administrative tasks, potentially serving as a model for similar initiatives in other educational institutions.

1. INTRODUCTION

The management of faculty workload, often referred to as Beban Kerja Dosen (BKD) in Indonesian academic institutions, is a critical aspect of higher education administration. Faculty members are required to document their teaching, research, community service, and other academic activities regularly. This documentation is essential not only for institutional accountability but also for individual faculty members' career progression, including promotions and tenure evaluations. Traditionally, the process of managing BKD has been manual, involving a significant amount of paperwork and administrative effort. This approach is not only time-consuming but also prone to errors, leading to inefficiencies and potential inaccuracies in reporting [2].

With the advent of digital technology, there has been a growing interest in automating and streamlining administrative processes within academic institutions [1]. The digital transformation of BKD management presents an opportunity to improve the accuracy, efficiency, and accessibility of workload documentation. By leveraging web-based technologies, it is possible to create a centralized system where faculty members can upload their workload-related documents, track their submissions, and generate reports with ease [7]. Such a

system would also allow administrative staff to efficiently verify and monitor the compliance of faculty workload with institutional policies, reducing the administrative burden and enhancing overall productivity [3].

The Faculty Workload (BKD) File Management Application proposed in this research aims to address these challenges by providing a comprehensive digital solution for managing BKD documentation. The application is designed with user-friendly features that cater to the needs of both faculty members and administrative staff. It enables faculty to manage their workload records digitally, from document submission to archiving and reporting, all within a single platform. The system's robust search and retrieval functionalities ensure that users can easily access and review their BKD records whenever needed, thereby improving the transparency and reliability of the BKD management process [6].

This research contributes to the broader field of educational administration by demonstrating how digital tools can be effectively employed to enhance administrative processes in higher education. By developing and implementing the BKD File Management Application, this study not only addresses the specific needs of Indonesian academic institutions but also provides a model that can be adapted by other educational institutions facing similar challenges [9]. The findings and insights gained from this research have the potential to inform future initiatives aimed at digitalizing academic administration, ultimately leading to more efficient and effective management of faculty workload across various contexts [4].

2. METHODS

The development of the Faculty Workload (BKD) File Management Application was carried out using the waterfall model, a systematic and sequential approach that emphasizes a linear progression through the software development lifecycle. The waterfall model is particularly well-suited for projects where the requirements are well-understood and unlikely to change significantly during the development process. This methodology consists of distinct phases, each of which must be completed before moving on to the next. The following outlines the key phases involved in the development of the application using the waterfall model:

1. Analysis and Specification

The first phase involved a comprehensive analysis of the requirements for the BKD File Management Application. This phase began with gathering detailed requirements from stakeholders, including faculty members, administrative staff, and IT personnel. Interviews, surveys, and document reviews were conducted to identify the specific needs and challenges associated with the current manual BKD management process. The gathered requirements were then documented in a formal requirements specification document, which outlined the functional and non-functional requirements of the system. This document served as the foundation for the subsequent design and development phases.

2. System Design

Based on the requirements specification, the system design phase involved creating the architecture of the BKD File Management Application. This phase included both high-level system design and detailed design. The high-level design defined the system's overall structure, including the selection of appropriate technologies, database design, and the development of a system architecture that supports scalability and security. The detailed design phase focused on the specifics of each system component, such as the user interface design, data flow diagrams, and the design of the backend services that would handle document storage, retrieval, and processing. The outcome of this phase was a complete design document that guided the implementation phase.

3. Implementation

During the implementation phase, the design specifications were translated into actual code. The development team followed the design document closely, ensuring that each component of the system was built according to the predefined specifications. The application was developed using a combination of web technologies, including HTML, CSS, JavaScript, and PHP, with MySQL as the database management system. The implementation phase was carried out in a step-by-step

manner, with each module being developed, tested, and integrated into the overall system. Rigorous coding standards and best practices were adhered to in order to ensure the quality and maintainability of the codebase.

4. Integration and Testing

After the implementation phase, the system components were integrated and subjected to thorough testing. The testing phase included several levels of testing, such as unit testing, integration testing, system testing, and user acceptance testing (UAT). Each test was designed to verify that the system met the requirements specified in the initial phase and to identify any defects or issues that needed to be addressed. Unit tests were conducted to ensure the functionality of individual components, while integration tests focused on the interaction between different modules. System testing evaluated the entire application as a whole, ensuring that it functioned correctly in the intended environment. Finally, user acceptance testing involved key stakeholders testing the application in real-world scenarios to confirm that it met their needs and expectations.

5. Deployment and Maintenance

Once the system passed all testing phases, it was deployed to the production environment. The deployment phase involved installing the application on the servers, configuring the environment, and migrating any necessary data. User training sessions were conducted to familiarize faculty members and administrative staff with the new system. Following deployment, the maintenance phase began, during which the application was monitored for any issues or bugs that might arise. Regular updates and patches were applied as needed to keep the system secure and up-to-date. The maintenance phase also included ongoing support to ensure that the application continued to meet the evolving needs of its users.

By following the waterfall model, the development of the BKD File Management Application was carried out in a structured and organized manner, ensuring that each phase was completed thoroughly before proceeding to the next. This approach provided a clear framework for managing the project's progress and allowed for the systematic identification and resolution of issues at each stage of development.

3. RESULTS AND DISCUSSION

After the simulation process with the scenario of adding nodes gradually starting from 10 nodes, adding to 20 nodes, until a total of 40 nodes is complete, then the results of the analysis will be displayed based on the average value of throughput, packet loss and delay according to the Quality of Service parameters that have been measured.

1.1 Throughput

The results of calculating the average throughput resulting from the simulation for the scenario of adding nodes in stages, starting from 10 nodes: 3.072 Kbps, then adding to 20 nodes: 3.6352 Kbps then adding again to 40 nodes: 2.8544 Kbps. The results of the calculation of the average throughput of 3.1872 Kbps (Kilobits per second).

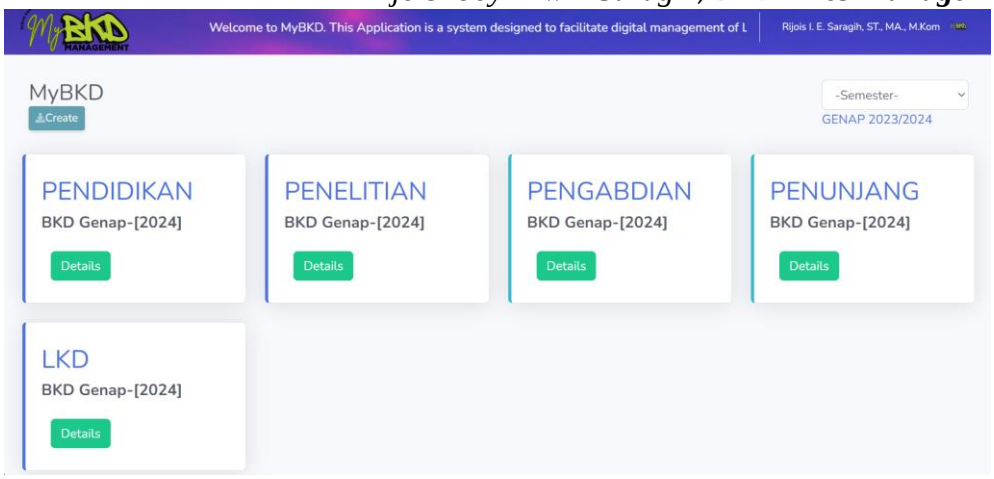

Figure 1. Homepage

Figure 2. Pendidikan Page

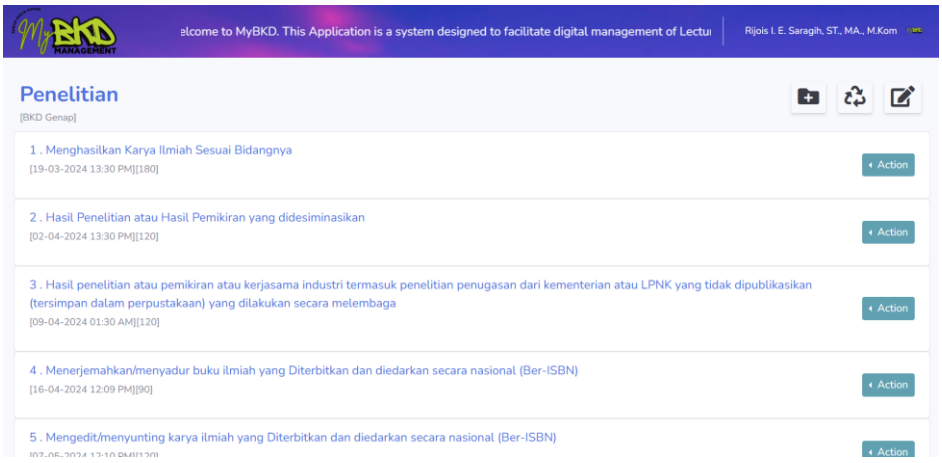

Figure 3. Penelitian Page

Figure 4. Pengabdian Page

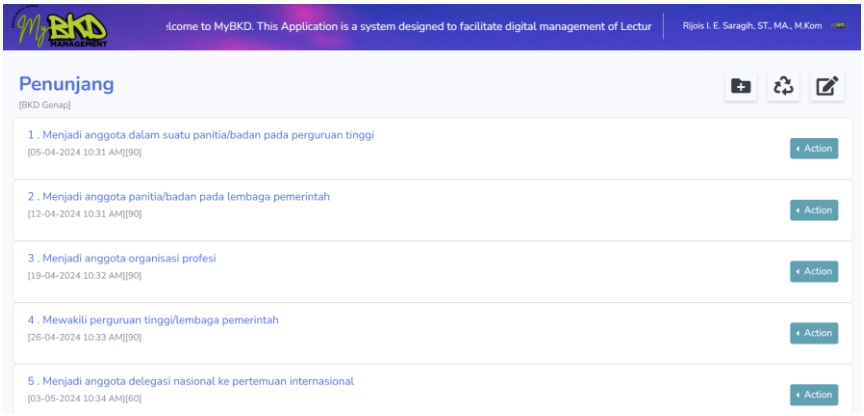

Figure 4. Penunjang Page

4. CONCLUSION

The development and implementation of the Faculty Workload (BKD) File Management Application mark a significant advancement in the management of academic administrative tasks within Indonesian higher education institutions. By addressing the inefficiencies and challenges associated with the traditional, manual BKD management process, this digital solution has demonstrated its potential to streamline operations, reduce administrative burdens, and enhance the accuracy and accessibility of faculty workload documentation. The application's user-friendly interface, combined with its robust features for document submission, tracking, and retrieval, has empowered both faculty members and administrative staff to manage BKD records more effectively.

Through the application of the waterfall model in the design and development process, the research ensured a structured and systematic approach to software creation. Each phase, from requirements analysis to deployment, was carried out meticulously, resulting in a well-documented and thoroughly tested system. The successful deployment of the application and the positive feedback from users highlight the effectiveness of this methodological approach in delivering a reliable and functional software product.

This research contributes to the broader field of educational administration by providing a practical example of how digital tools can be utilized to improve administrative efficiency in higher education. The insights gained from this project offer valuable lessons for similar initiatives aimed at digitalizing academic processes, not only within Indonesia but also in other educational contexts facing similar challenges. As educational institutions continue to evolve in response to technological advancements, the principles and findings from this research can serve as a guide for future developments in digital academic administration.

In conclusion, the Faculty Workload (BKD) File Management Application represents a meaningful step toward modernizing the management of academic workloads. It has the potential to significantly reduce the time and effort required for BKD documentation, thereby allowing faculty and administrative staff to focus more on their core academic responsibilities. As the system continues to be refined and adapted, it is anticipated that it will contribute to ongoing improvements in the efficiency and effectiveness of academic administration, ultimately benefiting both educators and the institutions they serve.

5. ACKNOWLEDGMENT

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6. REFERENCES

[1] Fadillah, R., & Widiastuti, T. (2020). The role of digital technology in the administration of higher education. Journal of Educational Technology, 12(2), 125-134.

[2]Hasanah, A., Priyono, A., & Ardiansyah, M. (2021). Enhancing administrative efficiency through digital BKD management. Indonesian Journal of Education Management, 3(1), 45-58.

[3] Hartono, M., & Pratama, Y. (2018). Administrative challenges in Indonesian higher education institutions. Journal of Higher Education Policy and Management, 40(3), 213-227.

[4] Nurhasanah, D., & Putra, A. (2021). Digital transformation in academic administration: Case studies from Indonesian universities. International Journal of Educational Management, 35(4), 765-781.

[5] Rahman, F. (2019). Understanding the importance of BKD in academic career progression. Journal of Academic Administration in Higher Education, 15(2), 97-104.

[6] Setiawan, R., & Yuniarti, S. (2019). Web-based systems for managing faculty workload in Indonesian universities. Journal of Information Systems in Education, 14(3), 111-120.

[7] Suwandi, A., & Rachman, B. (2021). Streamlining academic administrative processes through technology. Journal of Educational Technology Research, 18(2), 215-230.

[8] Suryadi, D., & Jatmiko, A. (2020). BKD and its impact on academic productivity in Indonesia. Journal of Higher Education Research, 22(1), 29-40.

[9] Widodo, S. (2020). Digital solutions for academic workload management: Implementation and outcomes. Journal of Educational Administration and Leadership, 28(4), 341-355.