

Web-Based Assignment Management System Application Design to Increase Personnel Productivity and Effectiveness in Product Documentation Division

Seftian Candra Pratama¹, Eryan Ahmad Firdaus^{*2}, Rochedi Idul Adha³

¹²³Universitas Pertahanan, Indonesia

E-mail: ¹seftianpratama290@gmail.com, ^{*2}eryan.firdaus@idu.ac.id, ³rochedi.adha@idu.ac.id

Abstract

An effective task management is essential for enhancing productivity and operational efficiency within organizations. Currently, the Production Documentation Division of the Information Service of the Indonesian Army (Dispend) uses WhatsApp for task coordination, which results in fragmented communication, limited tracking, and reduced transparency. To overcome these issues, this study develops a web-based assignment management system to improve task distribution, monitoring, and reporting. The system is built using the Rapid Application Development (RAD) model, which emphasizes iterative prototyping and users' feedback. Key features include task creation, progress tracking, file submission, approval workflows, and reporting tools, supported by role-based access control for both administrators and users. The implementation of this system shows significant improvements in workflow efficiency, transparency, and accountability compared to the previous WhatsApp-based method. In conclusion, the system contributes to better documentation, timely task completion, and enhanced collaboration, thereby increasing overall productivity. Future enhancements may include mobile integration and real-time notifications to further improved accessibility and operational effectiveness.

Keywords—Task Management System, Web-Based Application, Productivity, Dispend

Submission: March 21, 2025

Accepted: June 24, 2025

Published: July 10, 2025

DOI Article : <https://doi.org/10.25134/ilkom.v19i2.368>

1. INTRODUCTION

The Product documentation Division is responsible for creating content to be distributed across various social media platforms owned by the Indonesian Army, focusing on task assignment, content creation, and efficient reporting of the final products to superiors.

However, several challenges arise in the current workflow, particularly in communication and task management. Currently, communication relies heavily on WhatsApp, which presents several limitations. WhatsApp is not designed for complex project management, resulting in scattered, difficult-to-track, and poorly organized information. Additionally, the distribution of information across multiple groups complicates accessibility and reference retrieval. Monitoring task progress and generating reports is also challenging due to the lack of integrated project management features, leading to delays and reduced transparency.

To overcome the inefficiencies in task management within the product Documentation Division of Dispend, which currently relies on WhatsApp for coordination, this study aims to design and develop a web-based assignment management system. The existing use of WhatsApp results in scattered communication,

lack of task tracking, and reduced accountability, making it unsuitable for structured content production workflows. Therefore, the main objective of this project is to enhance personnel productivity and effectiveness in social media content creation by implementing a centralized digital platform. The proposed solution offers streamlined task distribution, integrated communication, real-time progress tracking, and clear reporting mechanisms to improve workflow structure, transparency, and overall organizational efficiency.

The development of this web-based application is expected to offer several benefits, including replacing the existing personnel assignment system that relies on WhatsApp, which is unsuitable for structured task management. The system will function as a dedicated task management platform for product documentation division personnel, enabling them to work more effectively and productively in social media content production. The application will streamline task assignment, tracking, and reporting, ensuring that all personnel remain well-informed and accountable for their respective responsibilities.

To ensure an optimal and secure implementation within the limited time frame of

the OJT period, the scope and limitations of this project have been clearly defined. The system will specifically focus on managing task assignments for product documentation division personnel under Sub-Department of Documentation Coverage and Production Dispenad. It will consist of two primary roles: the Admin, responsible for assigning and monitoring tasks, and the User, who receives and executes the tasks. The workflow will align with the existing practices in product documentation division, where tasks are assigned based on designated roles or direct appointments from superiors. The system will facilitate task submission, approval, and revision processes, with a task history log for easy tracking. Additionally, the platform will allow file uploads and link-based submissions to accommodate large media files. The Admin will have full visibility of all user activities and performance, while Users will only have access to their assigned tasks. This structured approach is expected to enhance the efficiency of task distribution, tracking, and completion, ensuring a more productive working environment for product documentation division personnel.

2. RESEARCH METHOD

The development of the web-based assignment management system for product documentation division Dispenad follows the Rapid Application Development (RAD) model, which is a System Development Life Cycle (SDLC) approach that enables rapid prototyping, continuous feedback, and iterative improvements [1].



Figure 1. RAD Method

The development process begins with the Requirements Planning phase, where system needs are gathered through discussions with stakeholders, identifying inefficiencies in task management due to the reliance on WhatsApp for assignment distribution and tracking. In the User Design phase, a prototype is developed using Unified.

Modeling Language (UML) diagrams, including Use Case, Activity, Sequence, and Class Diagrams, to visualize system functionalities and facilitate user feedback for refinements [2]. The Construction phase involves system development using Laravel for backend processing, Bootstrap for frontend design, and

MySQL as the database, ensuring seamless integration of features such as task assignment, tracking, and reporting [3]. Iterative testing is conducted to improve system performance, leading to the Cutover phase, where Blackbox testing is employed to verify system functionality without assessing the internal code structure [4]. The implementation of this methodology ensures a structured and agile development process, providing product documentation division personnel with an efficient and scalable task management solution that enhances productivity, transparency, and accountability in handling assignments.

3. RESEARCH RESULTS

A use case diagram is a graphical representation of some or all actors, use cases, and their interactions, introducing a system [2]. A use case diagram does not provide detailed explanations about the use of use cases but only gives a brief overview of the relationships between use cases, actors, and the system. Through this use case, the functions within the developed system can be identified.

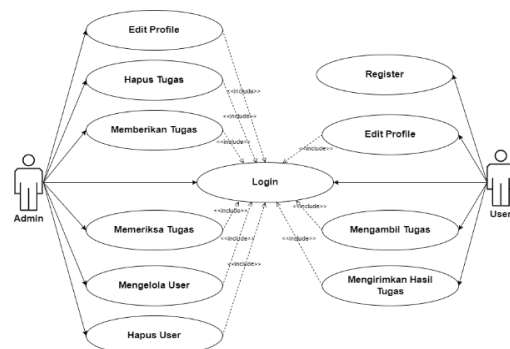


Figure 2. Use Case Diagram Model

In the use case diagram, once the admin successfully logs into the system, they are granted access to perform various actions, including managing users, assigning tasks, and reviewing task submissions uploaded by users. In terms of user management, the admin has the authority to add, edit status, or delete user accounts. Additionally, the admin can assign new tasks, which will then be received by the designated users. The admin also has the ability to monitor task progress, review uploaded files and links, and manage the task list, including searching for specific tasks and removing unnecessary ones.

1. Activity Diagram

An Activity Diagram represents the flow of activities or workflows within a system to be

executed. It is important to note that the activity diagram illustrates the activities that can be performed by the system, not what the actors do [2].

Activity Diagram for Admin Login

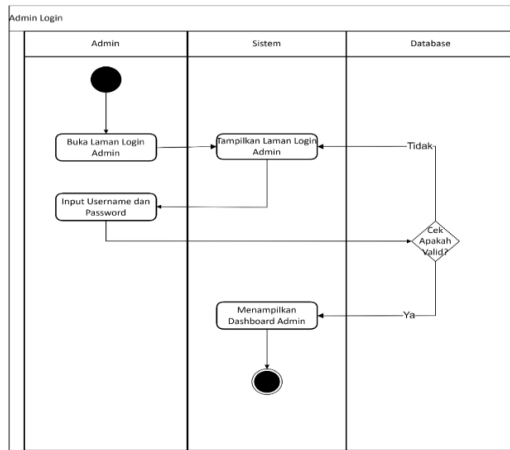


Figure 3. Login Activity Diagram for Admin

In the admin login activity, the first step involves accessing the admin login page through the provided URL. Once the page is displayed, the admin is required to enter a valid username and password into the login form. Upon pressing the login button, the system initiates a validation process to verify whether the entered credentials match the data stored in the database.

Activity Diagram Admin for Assigns Tasks

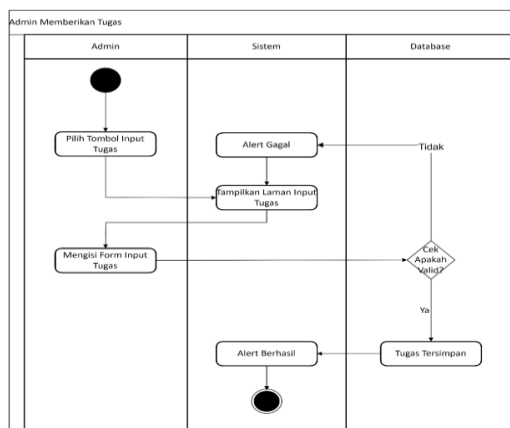


Figure 4. Activity Diagram for Assigns Tasks

The admin has the ability to assign tasks to users. The process begins with the admin accessing the Task Input Page. Once the page is displayed, the admin fills out the provided form with the necessary information, including the task title, description, deadline, and other relevant details.

Activity Diagram Admin for Checking Tasks

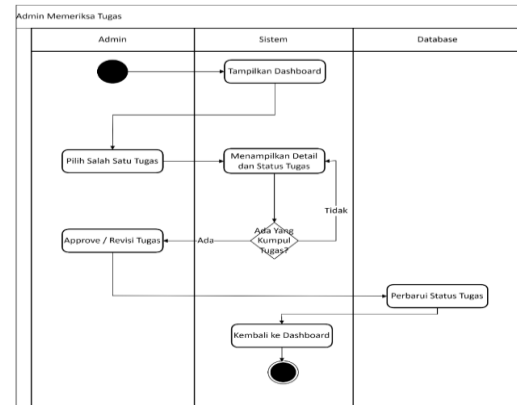


Figure 5. Activity Diagram for Checking Tasks

Once the task has been assigned by the admin, users are required to submit their completed tasks according to the given instructions. Users can either upload a file or provide a link to their task submission through the designated page. Once the submission is uploaded, the admin gains access to review and evaluate the task.

Activity Diagram User for Takes Tasks

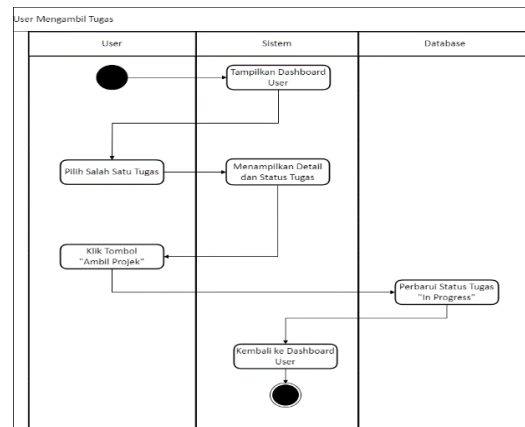


Figure 6. Activity Diagram for Takes Tasks

Once the user's account has been activated by the administrator, they can immediately access their dashboard page. On this page, users can view a list of assigned tasks, which are displayed with basic information such as the title, deadline, and task status.

Activity Diagram User for Submit Tasks Result

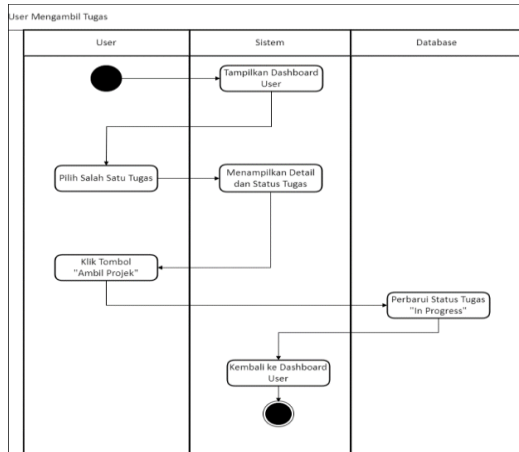


Figure 7. Activity Diagram Submit Tasks Result

Once the user's account has been activated by the administrator, they can immediately access their dashboard page. On this page, users can view a list of assigned tasks, which are presented with essential information such as the title, deadline, and task status.

2. Interface Display

Admin Login Interface Display

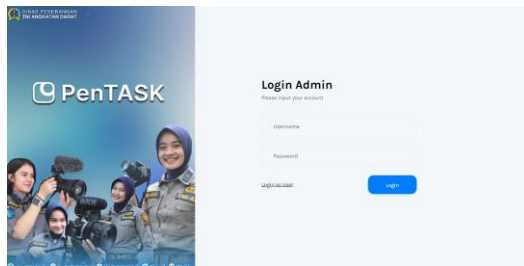


Figure 8. Admin Login Interface Display

Login is an authentication process that allows an individual (admin) to access an application system or website using credentials, typically consisting of a username and password. This process ensures that only authorized users can access the available information or services. In the admin login section, the admin can log in using a predefined username and password.

Member List Display

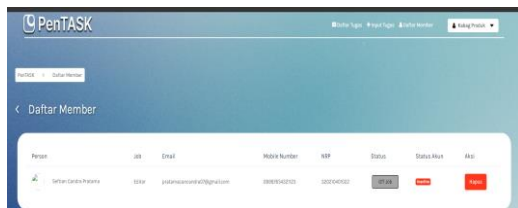


Figure 9. Member List Display

The member list is a dedicated page accessible exclusively to administrators, allowing them to view all registered personnel. Within this list, administrators can process new members who have completed their registration and monitor their employment status whether they have secured a job or are still seeking employment.

Form Input Tasks Display

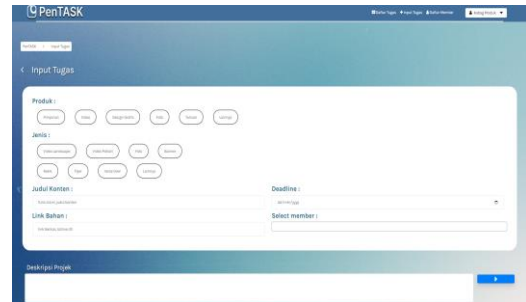


Figure 10. Form Input Tasks Display

Task input is one of the core functions of the Pentask web system, performed by administrators to assign new tasks that will be executed by product documentation division Dispenad personnel in the field. The primary function of task input involves filling out a predefined form and submitting it to the Task List page. To initiate task input, the administrator must click the "Task Input" button located in the top navigation bar.

Review Admin Display

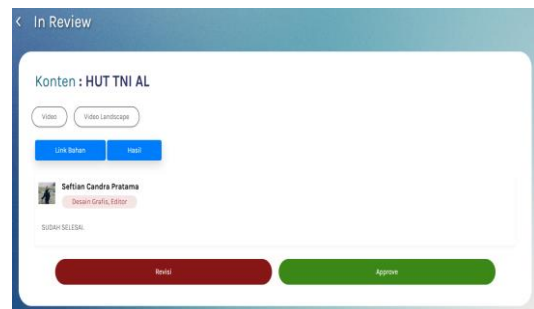


Figure 11. Review Admin Display

The primary function of the administrator in the Task List is to review and evaluate social media content submitted by users. Administrators assess whether the submitted work meets the required standards and decide whether to approve the task or request revisions.

Form Registration Display

Figure 12. Form Registration Display

The sign-up process on this website requires users to complete all fields in the registration form according to the specified requirements. Notably, the password must contain a combination of uppercase letters, lowercase letters, numbers, and symbols to ensure security.

Description Take Task Display

Figure 13. Description Take Tasks Display

When a new task is registered in the Task List, the user can initiate the process of accepting the assigned task by clicking the "New Task Status" button. This action will display the task description, allowing the user to review the details before proceeding.

User Task Submission Form Display

Figure 14. User Task Submission Form Display

The following is the form interface where users submit the final product of their assigned tasks. Users are required to fill in the project description in the "Submit Project" field and choose whether to submit the product as a link if the file size is large or as an attached file. Upon clicking the submit arrow button, the submitted product undergoes a review process by the admin.

3. Testing

Based on the results of the testing process conducted on the developed web-based task management system, the system was found to function in accordance with the predefined expectations. Testing began from the login page, where various scenarios were evaluated, including accessing the system without logging in, using valid and invalid username-password combinations, and session persistence across tabs. The system successfully redirected users to the appropriate pages or displayed relevant warning messages as expected.

In the profile management section, the functionalities to update account information and perform logout were executed correctly. For task-related features, the system demonstrated the ability to display a comprehensive list of tasks, open specific task details, and accurately reflect task status such as "New," "In Progress," "In Review," and "Done." Furthermore, functionalities like revision submissions, task approvals, and task confirmation were performed without errors, ensuring a seamless review and approval workflow.

The task input module allowed for successful task creation when all required fields were completed, and it appropriately restricted submissions when mandatory fields were left empty. The search and filter features operated effectively in helping users locate specific tasks. Additionally, the system allowed for the deletion of tasks and correctly updated the task list accordingly.

In the member management section, account activation, viewing paginated member lists, and deletion of user accounts were all executed successfully, with changes accurately reflected in the system. Overall, the testing results indicate that the system met all functional requirements, offering a reliable platform for managing assignments, enhancing task tracking, and improving overall productivity in the Product Documentation Division of the Indonesian Army's Public Relations Office.

4. Comparison

This comparison was conducted to compare the assignment management system in the Proddok subdisLipproddok Dispenad section which still uses applications such as Whatsapp or manually via verbal commands and the assignment management system if it uses a web-based system innovation that has been designed.

Table 1. Comparison of assignment management systems

Comparison Aspect	Current Task Management System Manual/WhatsApp	New Web-Based Task Management System
Task Assignment Method	Difficult to understand due to instructions being given via WhatsApp group chats or verbally in the field	Task assignments are clearly presented and easy to understand directly within the web platform
Task Delivery Process	Slow to reach the intended personnel due to messages buried in group chats requiring scrolling	Delivered quickly and directly to each personnel's task list on their respective accounts
Task Evaluation Process	Evaluation is delayed, often repeated verbally, and leads to miscommunication or misunderstanding	Evaluation is clearly documented within task status, minimizing confusion and forgotten feedback
Task Reception	Delayed due to cluttered group chat columns	Received instantly as the task appears directly in the user's task list
Task History	No clear record of completed tasks; difficult to trace past assignments	Easy to track with a neatly organized task history in the system
Personnel Productivity	Personnel activity is not tracked; unassigned members remain unproductive	High productivity as the system shows real-time task engagement status
Clarity of Task	Often unclear; users need to ask	Instructions are

Instructions	again or search through chat history	structured and detailed, with materials and descriptions displayed in one view
Task Monitoring	Tasks are monitored manually in the field or by asking personnel	Easily monitored through task status indicators within the system
Social Media Content Output	Outputs must be searched for or downloaded from chat, often unorganized	Completed outputs are well-organized and easily accessible in the web system

The comparison between the current manual task management system primarily using WhatsApp or verbal instructions and the newly developed web-based task management system highlights significant improvements in efficiency, clarity, and productivity. The web-based system streamlines task assignment and reception processes, making them faster and more transparent. Task evaluation becomes more structured, minimizing misunderstandings and repeated instructions. Additionally, the system provides a clear task history and real-time tracking of personnel productivity, which is lacking in the current approach. Task instructions are presented in a well-organized format, and monitoring is greatly enhanced through integrated status updates. Lastly, the final outputs, such as social media content, are more systematically stored and easily accessible, leading to better documentation and workflow management. Overall, the web-based system offers a comprehensive and effective solution that significantly enhances operational performance within the Product Documentation Division.

4. CONCLUSION

A. Conclusion

Based on the analysis and implementation of the web-based task management application for product documentation division Dispenad

personnel, the following conclusions were drawn:

1. The task management process, which previously relied on WhatsApp, can be improved through the implementation of a web-based application. This system enhances personnel performance in creating social media content for the Indonesian Army (TNI AD) by streamlining the entire workflow, from task assignment and acceptance to execution and evaluation of completed tasks.
2. The web-based application serves as a new task management system for product documentation division Dispenad personnel, making the process of producing social media content more productive and efficient throughout the workflow. Additionally, this system is expected to support efforts in achieving a higher quantity of high-quality social media content produced by product documentation division personnel in the future.

B. Recommendations

During the implementation of the On-the-Job Training program at the Public Relations Office of the Indonesian Army (Dinas Penerangan TNI AD) and the development of the web-based task management system for product documentation division personnel, several recommendations have been identified for future improvements and further considerations:

1. To support broader usability and user behavior studies in mobile environments, future research is recommended to explore the development of a mobile version of the system. This would enable comparative analysis of task management efficiency and user engagement between web-based and mobile platforms.
2. Future system development should incorporate intelligent notification features, such as adaptive reminders and predictive alerts, which could be studied for their impact on user performance and time management. Research can further examine how real-time alerts affect task prioritization and completion rates.
3. It is recommended to expand the system's scope to include additional sub-divisions within the Public Relations Office. This opens opportunities for further academic investigation into cross-functional task coordination, organizational behavior in

digital work environments, and the impact of centralized systems on overall institutional productivity.

REFERENCES

- [1] Hidayat, N., & Hati, K. (2021). Penerapan Metode Rapid Application Development (Rad) Dalam Rancang Bangun Sistem Informasi Rapor Online (Siraline). *Jurnal Sistem Informasi*, 10(1), 8–17. <https://doi.org/10.51998/Jsi.V10i1.352>.
- [2] Mukherjee, M., & Mukherjee, M. (2016). Object-Oriented Analysis And Design. *International Journal Of Advanced Engineering And Management*, 1(1), 18–24. <https://srn.com/abstract=2905481> <https://srn.com/abstract=2905481> [electronic copy available at: https://srn.com/abstract=2905481](https://srn.com/abstract=2905481)
- [3] Tahir, T. Bin, Rais, M., & Sirad, M. A. H. (2019). Aplikasi Point Of Sales Menggunakan Framework Laravel. *Jiko (Jurnal Informatika Dan Komputer)*, 2(2), 55–59. <https://doi.org/10.33387/Jiko.V2i2.1313>
- [4] Indah, S., Ayuningtyas, N., Siti, N., Ambarwati, S., Teknik, F., Dan, K., & Kecantikan, P. (2024). Pengembangan Sistem Penugasan Karyawan Berbasis Website Dengan Metode Rapid Application Development Di Galeri X Wedding. *Jurnal Adijaya Multidisplin*, 2(03), 575–596–575–596. <https://ejournal.naurendigiton.com/index.php/Jam/Article/View/360>
- [5] Jibril, M., Zulrahmadi, & Amin, Muhammad. (2024). Pengujian Sistem Informasi E-Modul Pada Smpn 1 Tempuling Menggunakan Black Box Testing. *Jurnal Perangkat Lunak*, 6(2), 327–332. <https://doi.org/10.32520/Jupel.V6i2.3326>
- [6] Rohmayani, D., & Putra, B. L. (2021). Sistem Informasi Manajemen Penugasan Pegawai Berbasis Website Studi Kasus : Seameo Seamolec. *Journal Of Informatics And Electronics Engineering*, 1(1), 14–20. <https://ejournal.poltektedc.ac.id/index.php/jice/article/view/499>
- [7] Sanjaya, R., & Hesinto, S. (2017). Rancang Bangun Website Profil Hotel Agung Prabumulih Menggunakan Framework Bootstrap. *Jurnal Teknologi Dan Informasi*, 7(2), 57–64. <https://doi.org/10.34010/Jati.V7i2.758>
- [8] Kurniawan, M., & Kurniawan, B. (2020).

- Implementasi Pemrograman Python Menggunakan Visual Studio Code. *Jik: Jurnal Informatika Dan Komputer*, 11(2), 1–9.
<https://journal.unmaha.ac.id/index.php/jik/article/view/198>
- [9] Haviluddin, H. (2016). Memahami Penggunaan Uml (Unified Modelling Language). *Informatika Mulawarman : Jurnal Ilmiah Ilmu Komputer*, 6(1), 1–15.
<https://ocs.unmul.ac.id/index.php/jim/article/view/16>
- [10] Firnando, J., Franko, B., Pratama Tanzil, S., Wilyanto, N., Christianto Tan, H., & Hartati Kom, E. M. (2023). Pembuatan Website Menggunakan Visual Studio Code Di Sma Xaverius 3 Palembang. *Fordicate*, 3(1), 1–8.
<https://doi.org/10.35957/Fordicate.V3i1.5057>
- [11] Firdaus, E. A., Syani, M., Muttaqin, M. R., Maulani, S., Ciamis, U. G., Tedc Bandung, P., Keperwatan, A., & Dustira Cimahi, R. S. (2022). Perancangan Sistem Informasi Penugasan Dan Aktivitas Karyawan Pada Pt. Xyz. *Nuansa Informatika*, 16(2), 66–76.
<https://doi.org/10.25134/Nuansa>
- [12] Fauziana, C. A. F. C. A., Gunawan, S. G. S., & Saifudin, A. S. A. (2024). Pengujian Sistem Aplikasi Presensi Siswa Berbasis Web Pada Sma Terbuka Menggunakan Metode Black Box Testing Equivalence Partitioning. *Jurnal Ilmu Komputer, Teknik, Dan Multimedia*, 2(02), 47–52.
<https://doi.org/10.9999/Qqhfp369>
- [13] Ekaputra, B. A., Pradana, F., & Pramono, D. (2020). Pengembangan Sistem Management Dalam Melakukan Penugasan Berbasis Web. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*, 4(9), 2791–2800. <https://j-ptiik.ub.ac.id/index.php/j-ptiik/article/view/7768>
- [14] Christian, A., Hesinto, S. (2018). Rancang Bangun Website Sekolah Dengan Menggunakan Framework Bootstrap (Studi Kasus Smp Negeri 6 Prabumulih). *Jurnal Sisfokom (Sistem Informasi Dan Komputer)*, 7(1), 22–27.
<https://doi.org/10.32736/Sisfokom.V7i1.278>
- [15] Phan, I. K., & Yuricha, Y. (2023). Implementasi Pendekatan Backendless Dalam Rapid Prototyping Aplikasi Manajemen Penugasan Karyawan. *Jurnal Cahaya Mandalika Issn 2721-4796 (Online)*, 4(1), 111–118.