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Development of an Information System for Archiving PED (Planning, Engineering, & Deployment) Data at Telkom Indonesia Regional 1 Sumatra

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ABSTRACT

Digital transformation in data management has become a strategic necessity for telecommunications companies such as PT Telkom Indonesia, particularly in Regional 1 Sumatra. One of the challenges faced is the manual process of archiving PED (Planning, Engineering, & Deployment) data, which is prone to data loss, delayed access to information, and low operational efficiency. To address these issues, this study aims to develop a web-based data archiving system capable of managing PED data systematically, securely, and easily accessible by authorized users. The system development methodology used is Waterfall, starting from needs analysis, system design, implementation, to testing. The system was built using XAMPP as the development platform, PHP as the backend programming language, and MySQL as the database system. Testing was conducted using the Blackbox method to evaluate system functionality based on real-world user scenarios. The development results show that the system built is capable of effectively handling archiving processes, including document upload features, archive search, metadata input, and user access rights management. This system significantly improves work efficiency, recording accuracy, and data security. Thus, the PED archiving information system is expected to become a digital solution that supports operational transformation in Telkom Indonesia Regional 1 Sumatra.

Keywords: Information System, Digital Archiving, PED, Web-Based, Telkom Indonesia, Waterfall

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1. INTRODUCTION

Advances in information technology, particularly the internet, have revolutionized the way organizations manage, store, and disseminate information (Al Mansoori et al., 2021). As the main foundation of digital transformation, the internet provides various platforms and tools, one of which is a web-based system that enables efficient, structured, and real-time data access. PT Telkom Indonesia, as the largest state-owned telecommunications company, has been at the forefront of leveraging these advancements to enhance operational efficiency and meet the evolving demands of its customers.

However, amid these digitalization efforts, Telkom Indonesia Regional 1 Sumatra still faces serious challenges in terms of data management and archiving in the Planning, Engineering, &

Deployment (PED) division. This division is responsible for vital activities such as network planning, technical design, and infrastructure implementation. Currently, PED's documentation and data storage activities still rely on static files such as spreadsheets, Word documents, and local directory folders without a centralized management system. This has led to several fundamental problems, including: data duplication, document version inconsistencies, limited access between work units, and slow data search and verification processes.

These limitations not only hinder effective decision-making, but also reduce the organization's ability to respond quickly to dynamic and complex operational needs. In addition, the lack of version control, metadata standardization, and audit trail mechanisms increases the risk of losing important data, inaccurate documentation, and weak cross-team coordination in large-scale projects.

To address this issue, a solution is needed in the form of a web-based archiving information system that can integrate all PED data management processes in a centralized, secure, and easily accessible manner. This system will not only improve efficiency in technical information management but also support the company's overall digital transformation. Web-based technology enables the implementation of features such as metadata-based quick search, document version control, user access authorization, and document change history tracking, which are essential in technical work environments and infrastructure projects.

Several studies conducted by (Fadillah & Komalasari, 2024) focused on the operational needs of Telkom Indonesia. SIMOOLTAN was designed with a responsive user interface and integrated features to support timely decision-making. This research employs the prototyping method in system development, aiming to understand user needs, detail required features, and obtain feedback through an initial product that serves as a test concept and reference for replication or further development. The results of this website research play a role in providing understanding and transparency to stakeholders within Telkom, from the planning, implementation, monitoring, to evaluation stages. This serves as a best practice in OLT management, which can be used as input for ongoing business processes while also serving as a reference for innovation development in subsequent stages.

Meanwhile, research conducted by (Utamajaya et al., 2023) Therefore, it is necessary to implement technology-based risk management using the COBIT 5 framework, particularly in the APO12 (Manage Risk) domain, to manage potential risks that may arise. Based on the evaluation of data obtained through observation, interviews, and questionnaire analysis referencing the six subdomains of APO12, it was found that the risk management capabilities of the hotel application currently stand at level 3. This means that the process is proceeding in accordance with standards, but has not yet reached the target level 4, resulting in a one-level gap. Based on these findings, recommendations are needed that can be implemented by the hotel to improve information technology risk management, so that the target level can be achieved and APO12 capabilities can develop more optimally.

Research conducted by (Prihartono, 2023), shows that the digitization process of villages through the Lebu Digital Program can be integrated with information systems provided by the central government, provinces, and regencies. To support this, a system was developed using an Enterprise Architecture Planning (EAP) approach based on the Federal Enterprise Architecture Framework (FEAF). The research findings provide insights from the perspectives of five key stakeholders: Planners, Owners, Designers, Builders, and Subcontractors, offering a comprehensive overview of the planning and development process. Additionally, the implementation of Enterprise Architecture using the FEAF framework can serve as a valuable reference or input for information system service providers and the

Indramayu District Government in their efforts to enhance the quality of services within the Lebu Digital Program.

This research aims to design and develop a web-based digital archiving system tailored to the specific data management needs of Telkom Indonesia Regional 1 Sumatra. Using the Waterfall system development methodology, this research covers the stages of user requirement identification, system architecture design, interface and business logic implementation, and evaluation of the system's effectiveness in supporting operational efficiency. The results of the system development enable improved data integrity and accessibility, accelerated technical decision-making processes, and strengthened Telkom Indonesia's position as a pioneer in the digital transformation of the national telecommunications sector.

2. LITERATURE REVIEW

The development of a digital archiving system relies on various technological foundations and concepts, including information systems, websites, databases, and software tools like XAMPP, PHP, and MySQL. This literature review highlights key aspects that underpin the design and implementation of such systems.

2.1. Digital Filing System

A digital archiving system is a technology-based solution designed to manage documents electronically, from storage and organization to efficient retrieval of information (Prasetya et al., 2020). In the era of digital transformation, conventional archiving methods that rely on physical documents or local files on personal computers are no longer sufficient to meet the demands for speed, accuracy, and data security (Baffy et al., 2020). Digital archiving systems make it easier to manage large volumes of documents, support metadata-based searches, and enable the grouping of documents based on projects, work units, or types of work.

The main advantages of this system lie in its versioning features, role-based access authorization, audit trail, and automatic backup, which ensure document integrity and traceability. In the context of the PED unit at Telkom Indonesia, complex work processes such as technical design development, network planning, and project implementation documentation require a system capable of managing various file formats (technical drawings, reports, proposals, network layouts) while ensuring their security and validity. The digital archiving system ensures that every document can be accessed by authorized parties at any time and from anywhere, without compromising information security.

Furthermore, digitizing archives also enables more structured and efficient collaboration between work units. Documents that were previously stored separately and not well documented can be integrated into a single web-based platform, which facilitates cross-departmental integration. Digital archiving with a system specifically designed for PED workflows will be the main foundation for building a data-driven work culture and increasing project execution speed.

2.2. Web-based information system

A web-based information system is a type of information system that is accessed through a browser and connected to a central server that stores and processes data (Faruqi & Ramadhan, 2024). The advantage of this approach lies in its flexibility and accessibility, as users can access the system from various devices without the need to install additional applications. In addition, web-based

systems are also easy to maintain, modular in development, and can be integrated with other digital services such as cloud storage, ERP systems, and centralized authentication services.

In the context of Telkom Indonesia, particularly Regional Unit 1 Sumatra, the need for an information system that can be used by many users from various locations is very important. PED projects are not only carried out by a single team but involve planning, design, implementation, and supervision teams from various regions. A web-based system enables all parties involved to access documents, update information, and provide validation without geographical restrictions, ultimately accelerating work processes and reducing coordination errors.

In addition, system security is also an important consideration in the development of web-based systems. The implementation of SSL protocols, role-based authorization, and data encryption are key standards that must be met to ensure the confidentiality and integrity of information. With Telkom Indonesia's internal infrastructure and network, the development of a web-based archiving system can be carried out in a centralized and integrated manner, thereby supporting operational efficiency and consistency in technical data management.

2.3. System Development Technology: XAMPP, PHP, and MySQL

In the development of digital archiving information systems, choosing the right technology is a determining factor in the success of implementation. One software package commonly used in the system development and testing stages is XAMPP (Cross-Platform, Apache, MySQL, PHP, Perl). XAMPP provides a local server environment that allows developers to build, run, and test web applications in an integrated manner without having to deploy them directly to the production server. In the context of the PED archiving system at Telkom Indonesia Regional 1 Sumatra, XAMPP is used to simulate server infrastructure to accelerate the development process of web-based systems, minimize production errors, and strengthen the debugging process before final implementation.

Within XAMPP, one of the core components utilized is PHP (Hypertext Preprocessor), a server-side programming language specifically designed for dynamic web development. PHP enables direct integration with various database management systems, one of which is MySQL, allowing users to interact with data in real-time (Syahputri & Dewi, 2024). In the PED archiving system, PHP is used to manage system logic flow, user authentication processes, document uploads, form input validation, and data presentation based on user access rights. The advantages of PHP lie in its flexibility and compatibility with various platforms, as well as its extensive developer community, making it an ideal solution for medium to large-scale system development needs.

As the data storage base in this archiving system, MySQL is used to build an organized, relational database structure capable of handling large volumes of technical data. MySQL supports various Structured Query Language (SQL) commands to efficiently store, modify, and extract data (Sinaga & Aida, 2025). In PED data archiving, MySQL is used to store document metadata, user data, project status, and historical records of data changes. MySQL's capabilities in managing search indexes, table relationships, and optimal integration with PHP enable quick and accurate document search and tracking. Thus, the combination of XAMPP, PHP, and MySQL forms a robust technological foundation for building an efficient, secure, and easily accessible PED archiving information system.

By synthesizing these technological foundations, the proposed system integrates web-based interfaces with secure and efficient database management to meet organizational needs. Leveraging tools such as XAMPP, PHP, and MySQL (Dinev & Spasova, 2024), the system ensures user accessibility,

robust performance, and streamlined operations, providing a solid foundation for improving data archiving at Telkom Indonesia Regional 1 Sumatra.

3. METHODS

The development of the digital archiving system for PED (Planning, Engineering, & Deployment) data at Telkom Indonesia Regional 1 Sumatra follows a structured approach using the Waterfall development methodology. This methodology is a linear and sequential model comprising several distinct stages, ensuring that each phase is thoroughly completed before proceeding to the next. The following sections outline the methods used in this study. Sementara itu, visualisasi desain menggunakan UML, berupa usecase diagram dan Activity Diagram (Nugroho & Rahmadani, 2024).

3.1. System Development Process

The system was developed using the Waterfall methodology, The Waterfall methodology is a linear and sequential approach to software development, where progress flows in one direction through a series of predefined stages. Each stage must be fully completed and validated before moving to the next, ensuring a structured and methodical process. This model is particularly effective for projects with clearly defined requirements and objectives, such as the digital archiving system for Telkom Indonesia Regional 1 Sumatra. Uraian diagram Waterfall dapat dilihat pada Gambar1 (Rifki & Syamia, 2024).

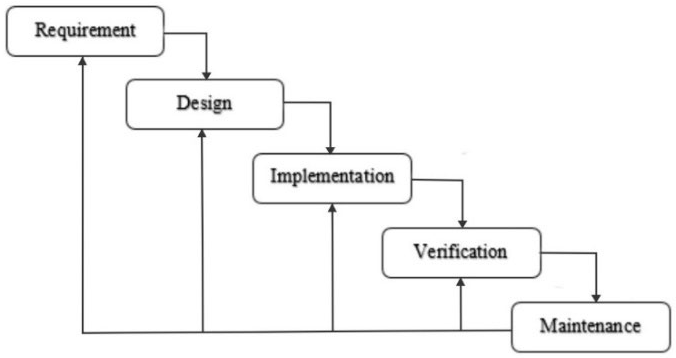

Figure 1. Waterfall Model

The key stages of the Waterfall methodology include:

1. Requirement Analysis: Identifying user and organizational needs to define the system's scope and functionality.
2. System Design: Creating detailed system architectures, including use case diagrams, activity diagrams, and ERDs to guide development.
3. Implementation: Building the system using web-based technologies such as PHP and MySQL within the XAMPP environment.
4. Testing: Performing rigorous validation and verification of the system to ensure it meets functional requirements and is free of errors.
5. Maintenance: Providing ongoing support and updates to ensure the system remains efficient and reliable over time.

3.2. System Modeling Tools

System modeling tools are essential for designing and visualizing the structure and functionality of a system during development. These tools provide a blueprint that guides the implementation process, ensuring the system meets user requirements and operates as intended. For the development of the digital archiving system at Telkom Indonesia Regional 1 Sumatra.

3.3. Use Case Diagram

The use case diagram for the digital archiving system at Telkom Indonesia Regional 1 Sumatra outlines the interactions between three primary actors: Admin, Staff, and Users. Admin holds the highest level of access, allowing them to manage user accounts, staff data, categories, and archives while also monitoring download histories. Staff have permissions to upload, edit, and delete their own archives, view user data, and monitor download activities. Users, with the most restricted access, can only browse and download available archives. This diagram ensures a clear role-based access structure, streamlining workflows and maintaining data security across the system.

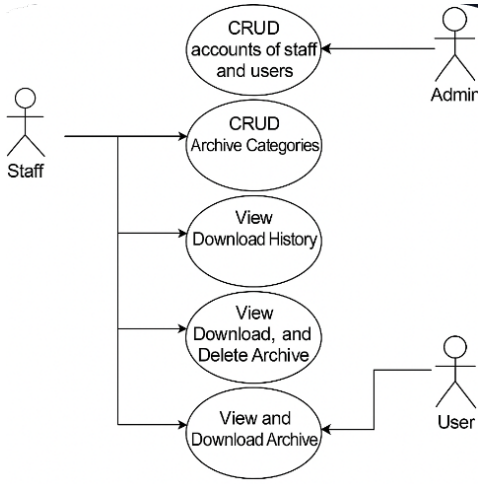

Figure 2. Use case diagram of digital archive system

Based on Figure 2, there is interaction between three main actors in the PED data archiving information system, namely Admin, Staff, and User. Each actor has different roles and access according to their needs in the system. The description of the actors' activities can be explained as follows:

1. Admin
   a. CRUD accounts of staff and users: Admins can create, read, update, and delete system user accounts, both for staff and external users.
   b. CRUD Archive Categories: Admins also have the authority to create and manage archive categories for more systematic data organization.

2. Staff
   Staff are the primary users responsible for managing and maintaining archive data. Staff access rights include:
   a. CRUD Archive Categories: Similar to Admin, Staff can manage archive categories to ensure that data is stored in a structured manner.

b. View Download History: Staff can view the download history of archives by users as part of their monitoring function.
c. View, Download, and Delete Archive: Staff can access and download archives, and have the right to delete archives that are no longer relevant or have expired.
d. View and Download Archive: In addition, Staff can also view and download archives stored in the system.

3. User

Users are external parties or end users who are given limited access. Their access rights are:

a. View and Download Archive: Users can only view and download archives that are available in the system, in accordance with the access rights granted.

This diagram is designed to ensure that the system has a clear and controlled access rights structure, so that data security is maintained and in line with Telkom Indonesia's operational needs. The CRUD (Create, Read, Update, Delete) function, which is limited to certain roles, demonstrates the implementation of the principle of least privilege, whereby each actor is only given the rights necessary for their tasks.

3.4. Activity Diagram

Activity diagrams represent the workflows and processes within a system, illustrating the sequence of activities and decisions involved (Rifki et al., 2023). These diagrams help identify potential bottlenecks and ensure smooth operations. Meanwhile, the activity diagram illustrates the user login process flow with the Admin role into the PED archiving information system at Telkom Indonesia. This diagram is divided into two swimlanes, namely Admin and System, each representing external actors and internal systems involved in the process. In the digital archiving system for Telkom Indonesia Regional 1 Sumatra, several key activity diagrams were developed:

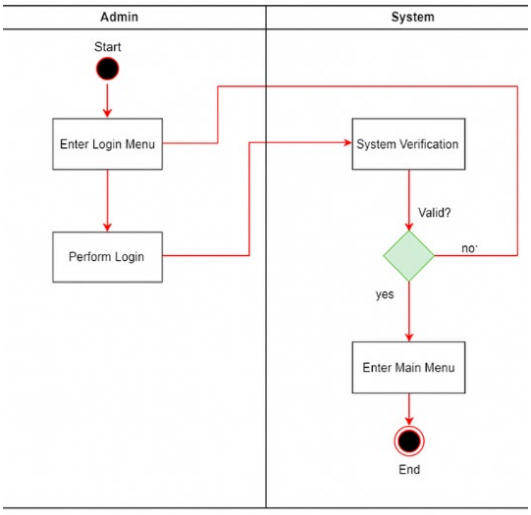

Figure 3. Login Activity Diagram

Based on Figure 2, authentication is explained as the first step in maintaining secure access to strategic and important archive data. The division of activities between human actors (admin) and the system demonstrates a separation of responsibility approach, which is useful in the design of large-scale systems to make them easier to maintain and secure.

In Figure 3 Login Activity Diagram, this diagram demonstrates the process users go through to access the system. Upon entering their credentials, the system validates them. If the credentials are correct, the user is redirected to the main dashboard based on their role (Admin, Staff, or User). If validation fails, the system returns the user to the login page for reattempts.

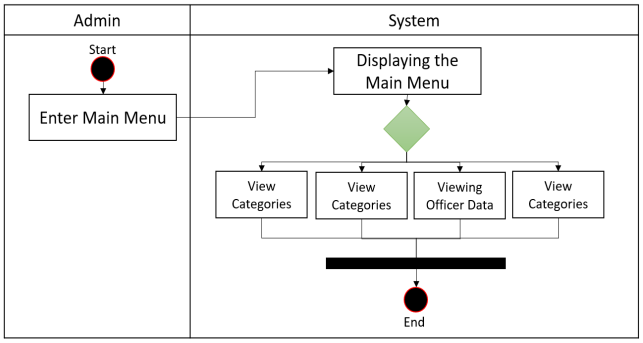

Figure 4. Main Menu Activity Diagram

Based on Figure 2, the activity diagram explains the flow of the Admin's activities after successfully logging into the main menu of the Telkom Indonesia Regional 1 Sumatra PED archiving information system. This diagram consists of two swimlanes, namely Admin and System, which show the division of responsibilities between users and the system. Decision Making by Admin After the main menu is displayed, the Admin can choose one of the following options:

1. View Categories: Displays a list of archive categories used to group PED documents.
2. View Staff Data: Displays information related to staff accounts registered in the system.
3. View User Data: Displays data on external users or users with limited access to download archives.
4. View Archive Data: Displays a list of PED archives available in the system.

In figure 4 Main Menu Activity Diagram, the main menu serves as the central navigation point for the system. Admins are directed to various management options, including user accounts, categories, archives, and download histories. Staff and users are guided to their respective features based on their access levels.

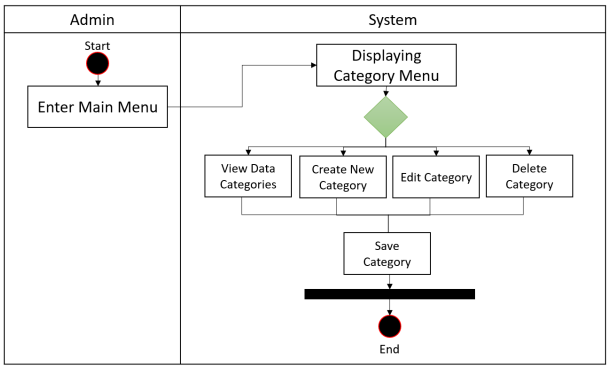

Figure 5. Category Management Activity Diagram

Figure 5 shows that the system is designed with a user-centered approach that facilitates feature navigation for administrators. The use of decision nodes and fork nodes reflects a modular structure,

allowing features within the system to be developed or modified independently. This supports the principles of scalable and maintainable system design. This diagram details the process Admins follow when managing archive categories. Admins can view existing categories, add new ones, update category details, or delete unused categories. This ensures that categories remain relevant and well-organized for archive classification.

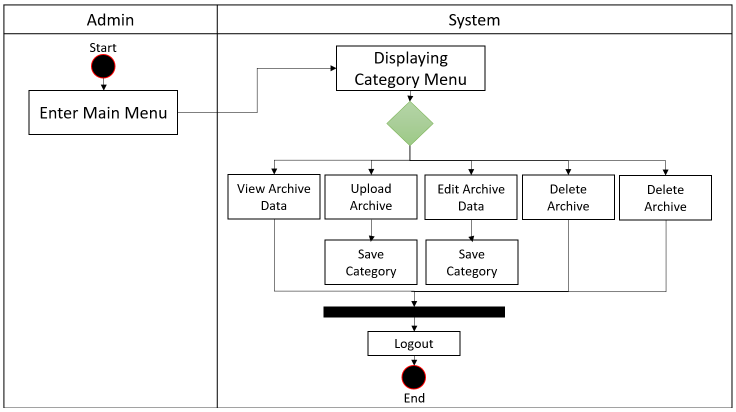

Figure 6. Staff Archive Management Activity Diagram

Activity diagram that models the workflow of administrators in managing archives in a system. The process begins when the administrator enters the main menu (Enter Main Menu), which triggers the system to display the category menu (Displaying Category Menu). At this stage, the administrator can choose several archive management options, namely viewing archive data (View Archive Data), uploading new archives (Upload Archive), editing archive data (Edit Archive Data), or deleting archives (Delete Archive). The process of uploading or editing archives will be followed by a category saving step (Save Category) to ensure that the data is stored in the system. After completing the desired activity, the admin can log out of the system, which marks the end of the archive management process. This diagram is divided into two swimlanes: Admin, which represents user activities, and System, which illustrates processes executed automatically by the system. The notation used includes an initial node as the start of the process, a decision node for decision-making, an activity box to describe actions, and a final node as the end of the process.

This diagram highlights the workflow for Staff when managing their archive files. Staff can upload new files, edit file details, delete outdated files, and view or download their archives. This feature streamlines their role in maintaining accurate and updated archive records.

3.5. Entity Relationship Diagrams (ERD)

The Entity Relationship Diagram (ERD) is a visual representation of the database structure, illustrating entities, their attributes, and the relationships between them. For the digital archiving system at Telkom Indonesia Regional 1 Sumatra, the ERD serves as the foundation for designing a robust and scalable database that supports the system's operational requirements.

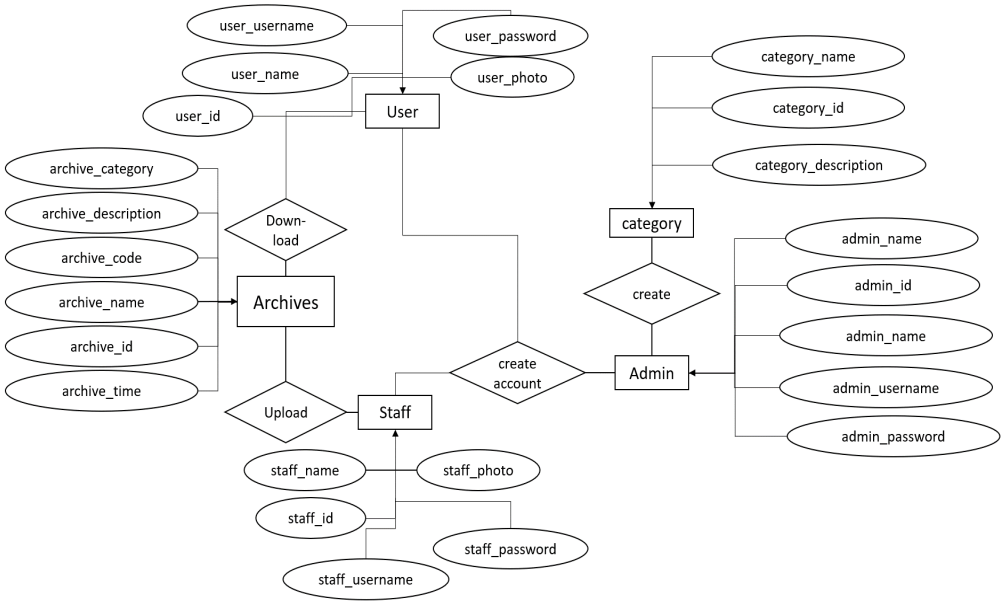

Figure 7. Entity Relationship Diagram

The ERD consists of key entities, including Admin, Staff, Users, Categories, Archives, and Download Logs. Each entity is linked through defined relationships to ensure seamless data management. For example, Admins can manage multiple categories and create accounts for Staff and Users. Staff are associated with the archives they upload, and Users are connected to the archives they download.

This structured relationship ensures data consistency and integrity across the system. By organizing the database in this way, the system facilitates efficient data retrieval, secure access, and easy scalability, meeting the demands of the organization's digital archiving needs.

4. RESULTS AND DISCUSSION

4.1. *Result*

The development of the digital archiving system for PED (Planning, Engineering, & Deployment) data at Telkom Indonesia Regional 1 Sumatra has resulted in a fully functional web-based platform. The system is designed to streamline data management, ensure secure storage, and enhance operational efficiency.

4.2. *Login Page*

The login page is the entry point for all users of the digital archiving system. It allows users to log in based on their assigned roles: Admin, Staff, or User. Users are required to enter their username and password for authentication. The system validates the provided credentials, directing successful logins to the appropriate dashboard based on their roles. If the credentials are invalid, the system prompts the user to re-enter their details. This feature ensures secure access to the system while maintaining role-based functionality for different user groups. Based on the image, there is a login form: This section includes three main input fields, and login page display can be seen in Figure 8.

1. Username: A field for user identification.
2. Password: An input field for authentication credentials.
3. Access Rights: A dropdown menu with the option "Admin" visible.

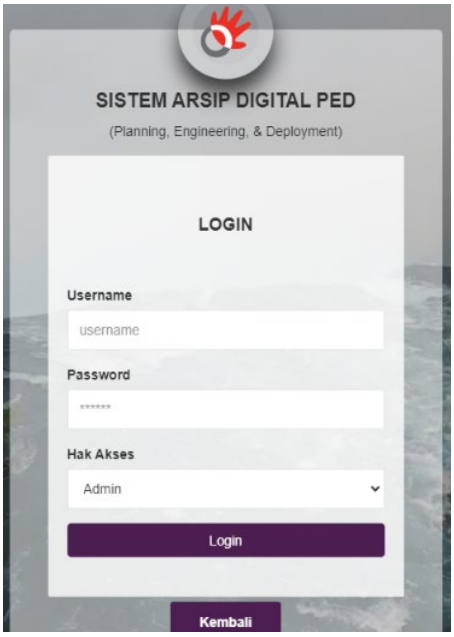

Figure 8. Login Page

This indicates the existence of an access hierarchy in the system, which allows for different levels of user authorization. This feature is essential for restricting access to certain functions and data based on user roles, thereby enhancing security and compliance.

4.3. Dashboard Page

The Admin dashboard provides an overview of system activities, including a graphical representation of archive downloads by users over time. It serves as a central hub for accessing various system functions, such as managing categories, users, staff, archives, and download logs. Tampilan halaman The dashboard page display can be seen in Figure 9.

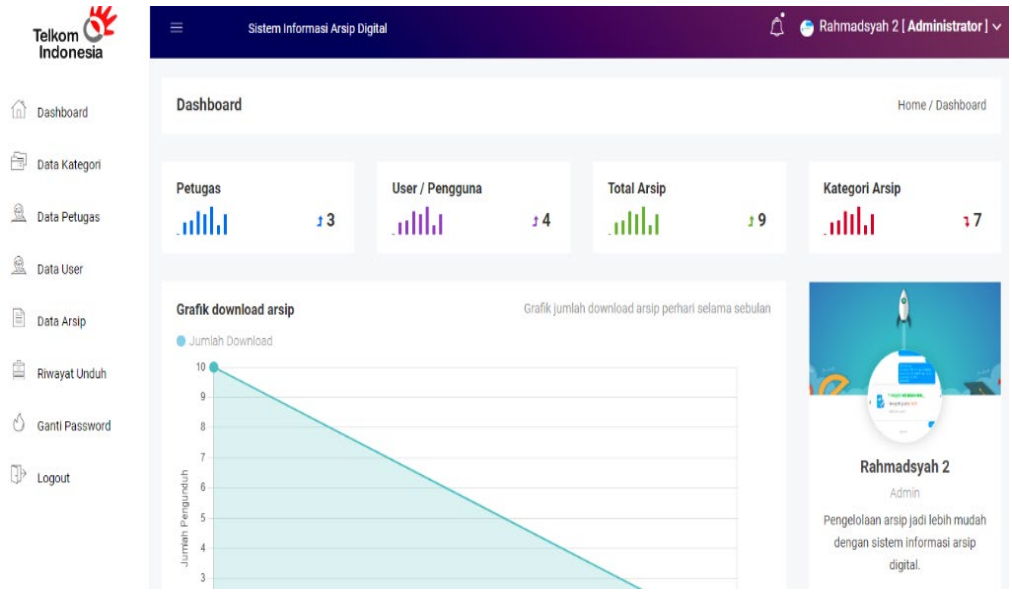

Figure 9. Dashboard Page

Figure 9. shows the proposed Digital Archive Information System Dashboard interface. This dashboard functions as a control center for monitoring and managing digital archive data. On the left-hand navigation side, there is a menu containing key features such as archive category management, staff data, user data, archive data, download history, and security settings via password change and logout options. The top of the dashboard displays four important statistical indicators showing the number of staff, number of users, total archives, and archive categories. This visualization helps administrators quickly monitor the development and capacity of the archives.

In the middle of the page, there is a graph of the number of archive downloads visualized in the form of a downward line, showing the download trend over a certain period. Meanwhile, the right side displays the profile of the logged-in user, namely Administrator access rights, accompanied by a brief description of the ease of managing archives through this system. Overall, this dashboard integrates monitoring functions, data management, and statistical visualization into a simple yet informative interface, thereby streamlining the process of administering digital archives efficiently and structurally.

4.4. Data Categories Page

This feature allows Admins to manage archive categories. Admins can view existing categories, add new ones, edit details, or delete irrelevant categories. The functionality ensures that archives are organized into meaningful classifications, simplifying access for users and staff.

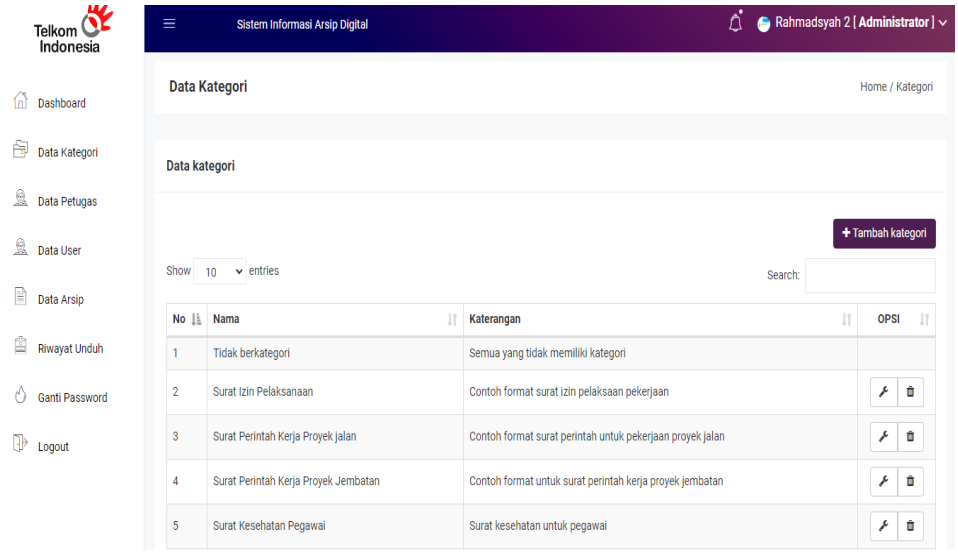

Figure 10. Data Categories Page

This image shows the Category Data page on Telkom Indonesia's Digital Archive Information System. This page is used to manage various archive categories stored in the system. At the top, there is an "+ Add category" button to add new categories, as well as a search field to facilitate searching for existing category data. The data is displayed in a table with columns for No, Name, Description, and Options. The table includes several examples of archive categories, such as: Uncategorized, Work Permit Letter, Project Road Work Order Letter, Project Bridge Work Order Letter, and Employee Health Certificate. The Description column provides a brief description of the content or format of the documents in that category. Meanwhile, the Options column provides action buttons to edit or delete

category data. This interface is designed to be simple yet functional, making it easy for administrators to manage archive categories quickly and efficiently.

4.5. Staff Data Management Page

The Admin has full control over staff accounts, including the ability to add, edit, and delete staff records. Admins can assign unique usernames and passwords to staff, enabling them to access their dedicated features within the system.

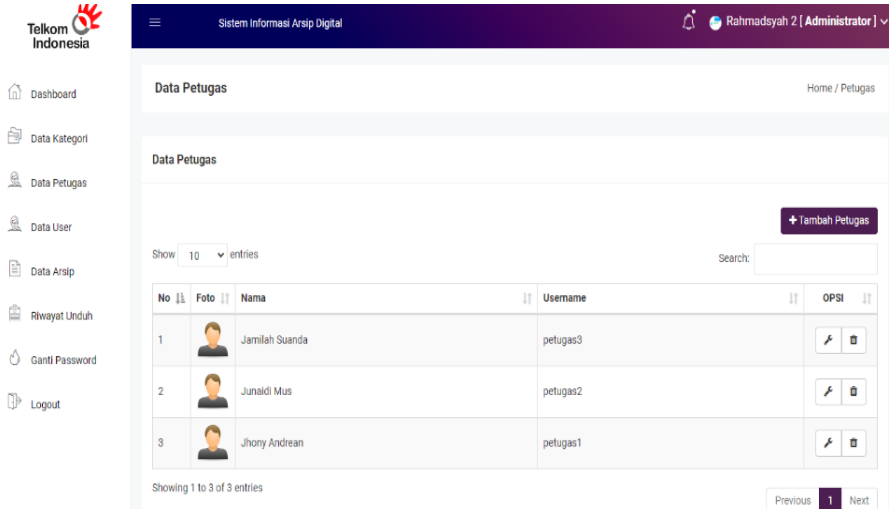

Figure 11. Staff Data Management

4.6. User Data Management Page

Similar to staff management, Admins can manage user accounts by adding, editing, or deleting records. This feature ensures that only authorized users can access the system, enhancing security and access control.

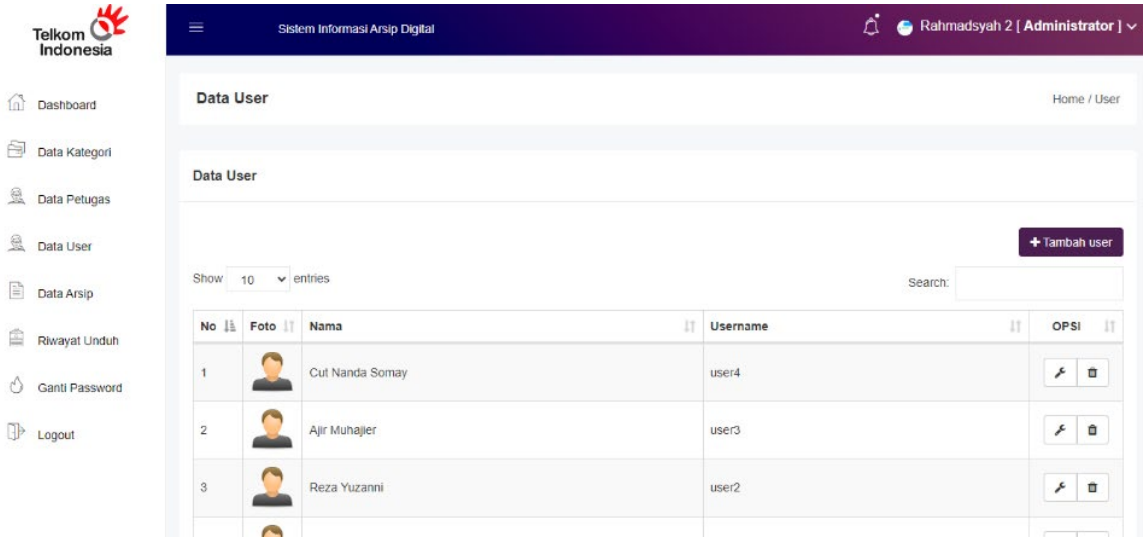

Figure 12. User Data Management Page

4.7. Archive Data Page

The archive management feature enables Admins to monitor all uploaded files. Admins can view details of each archive, download files, or delete outdated records to maintain a clean and efficient system.

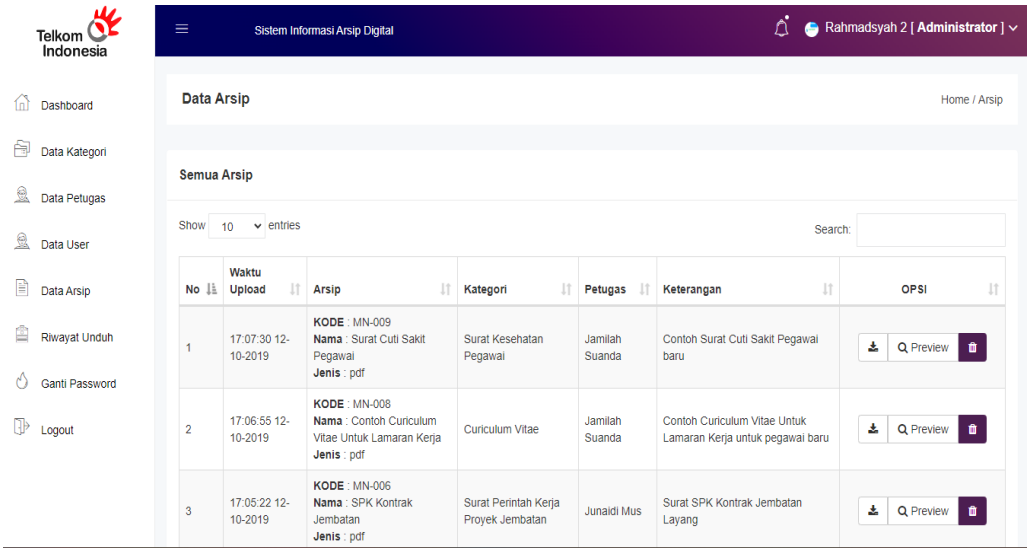

Figure 13. Archive Data Page

4.8. Download Logs Page

This feature provides a comprehensive view of download activities by users. Admins can track which files have been accessed and by whom, allowing for better monitoring and analytics.

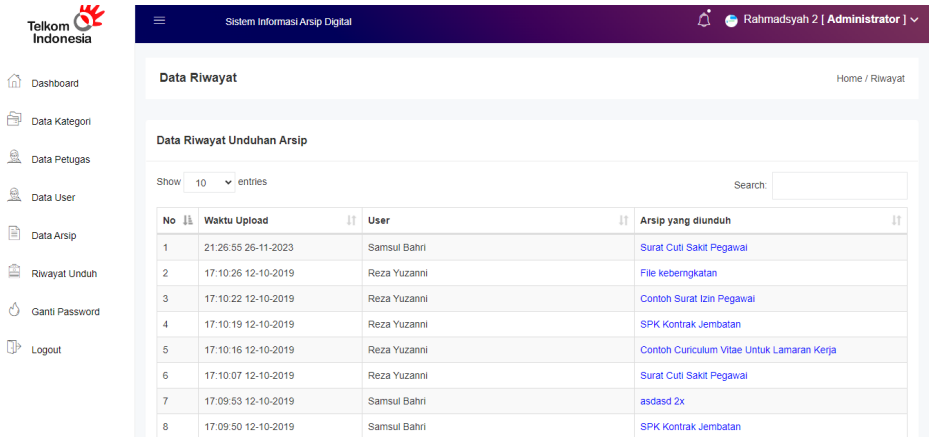

Figure 14. Download Logs Page

The implemented system addresses the challenges faced by Telkom Indonesia Regional 1 Sumatra in managing and archiving PED data. By providing an organized and user-friendly platform, the system improves accessibility, ensures data security, and supports efficient decision-making. The Admin interface, with its wide range of management tools, empowers administrators to maintain system integrity and streamline data workflows effectively. This system not only enhances operational efficiency but also aligns with the organization's digital transformation goals, setting a strong foundation for future advancements in data management.

4.9. System Testing

To ensure that the PED (Planning, Engineering, & Deployment) archiving information system developed runs in accordance with user requirements and functional specifications, testing was conducted using the Blackbox Testing method. (Wiesbrock & Groβmann, 2024) (Sonalitha et al., 2020). This test focuses on evaluating the functionality of the system without looking at the internal structure of the program code, by testing each feature based on the inputs and outputs produced. This method is used to determine whether the system can handle inputs correctly, provide the expected output, and respond to input errors appropriately (Barus & Sembiring, 2023) (Firdaus et al., 2022).

Each test case was designed based on real-world usage scenarios by end users, including login activities, document management, access rights validation, and data search. The results of this testing will serve as an indicator of the system's success in meeting the operational needs of archiving within the Telkom Indonesia Regional 1 Sumatra environment.

Based on the testing conducted on all major system features, the results indicate that all functions operate as expected. The system successfully executed all test scenarios with accurate outputs and appropriate validation. No critical errors were found at this stage, and all features demonstrated stable and responsive performance. Therefore, the system can be deemed suitable for use in daily operations as an efficient and secure digitalization and data archiving medium for PED. In detail, the application testing using the Blackbox method can be seen in Tabel 1.

Table 1. Black Box Testing Result

No	Features Tested	Test Scenario	Input	Expected Output	Status
1	Login	The user enters a valid username and password.	Username and password	The system displays the user dashboard	Valid
2	Login	The user entered an incorrect password.	Username is correct, password is incorrect	The system displays the error message “Login failed.”	Valid
3	Upload Document PED	Users upload files in .pdf format and less than 5MB in size.	File: ped_dokumen.pdf	The document has been successfully saved and appears in the document list.	Valid
4	Upload Document PED	The user uploaded a file with an unsupported extension (.exe)	File: ped_script.exe	The system rejects the upload and displays an error message.	Valid
5	Input Metadata Document	Pengguna mengisi Form metadata (title, date, document type)	All fields are filled in correctly	Metadata data is stored and displayed on the document page.	Valid
6	Search Documents by Keyword	The user enters the keyword “fiber optic” in the search field.	Keywords: “fiber optic”	The system displays a list of documents related to the keyword.	Valid

5. CONCLUSION

The development of a web-based PED archiving information system at Telkom Indonesia Regional 1 Sumatra has been successfully implemented with the main objective of improving efficiency, accuracy, and speed in the management of planning, engineering, and deployment data. This system is designed to address the issues that have been faced, such as manual document storage, potential data loss, difficulties in searching archives, and limited accessibility of information by relevant parties.

Using the Waterfall system development methodology, this system was built using XAMPP technology as the development environment, PHP as the backend programming language, and MySQL as the database management system. Blackbox testing of the system showed that all main functions, such as login, document upload, metadata input, archive search, and user access rights management, ran according to the specified specifications and produced valid results.

Overall, this information system has proven to facilitate the digital archiving of PED data, speed up the information retrieval process, improve data security, and support more accurate and efficient decision-making processes. It is hoped that this system can continue to be developed and integrated with other systems within Telkom Indonesia to strengthen the company's overall digital transformation.

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