The Analysis of Joint Inspection Repository System and The Proposed Solution

Misinem[1*], Rika Nuryani[2]

[1] Computer Engineering, Faculty of Vocational Studies, Bina Darma University
[2] Informatics Management, Faculty of Vocational Studies, Bina Darma University

Email: misinem@binadarma.ac.id

Abstract

Technology advancements indicate that labor performed by humans is now more easily accomplished. Initially, this was carried out conventionally at the business where we studied report management and storage at PT. Kereta Api Indonesia Regional Division III. In this perspective, we suggested a solution based on the study that revealed the creation of a new system known as the Web-based Repository Joint Inspection System was judged required to facilitate staff members' handling, storing, and monitoring of current reports (for managers). The four (4) distinct user groups or access levels in this system are Administrator, User, Manager, and Safety. The Rational Unified Process, or RUP, was the development approach employed for this system. Still, this section goes into great detail about the uploading, downloading, and deleting of data. Following the upload, download, and removal of files, the system must be examined to make sure it is operational. Both feature testing and the black box method are used to test this system. It is possible to develop test scenarios based on how the system works.

Keywords

Analysis, Joint Inspection, RUP (Rational Unified Process), Black Box

Introduction

In today's era of globalization, computer technology has developed very rapidly. Government or corporate computer users are an alternative tool to streamline and optimize initially manual processes, and there is no electronic mechanism for digitization (computerization). Computerization has many advantages for government agencies and businesses because it can optimize and streamline time and data management.

The repository is a container or storage place of various data or digital files. It also includes digital libraries, print collections, documents, public archives, and open-source software derived from its scope (Krishnan, 2016). It also contains administrative outputs such as directory reports and local or other archival documentation to support storage needs (Oktori & Purnama, 2023). At the same time, according to (ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, 2012), joint inspection is an inspection of import documents of several goods

on a roof. This policy is mandated by presidential instruction number 5 of 2020 concerning the structuring of the national logistics ecosystem for a product produced, whether it is following the standards and rules that have been set to ensure the quality of the products made following its provisions so that customer satisfaction can be adequately achieved.

The repository is a container or storage place of various data or digital files. In previous joint inspections, data checking activities and the results of those checks were sometimes lost files. Therefore, the application is made only for data warehouses. PT KAI is trying to improve performance by providing a website-based application (Anggadwita & Dhewanto, 2013). Consequently, we are trying to build a website-based Joint Inspection Repository System application for PT. Kereta Api Indonesia (Persero) Palembang Regional Division III aims to make it easier for managers, employees, or employees to upload, download, and delete needed material files anytime and anywhere.

Methodology

The method used by researchers is called the descriptive method, where all data or conditions of the subject/object of research (test questionnaires, structured interviews, and so on) (Hawa et al., 2001). Descriptive analysis methods are statistics used to analyze data collected without intending to make generalized conclusions or generalizations (Yellapu, 2018). Gather information about the Joint Inspection Repository with analysis and comparison based on current realities and try to find solutions to the problem.

Data Collection Methods
The data collection method used by researchers in this study is documentation, observation, and interviews.

System Development Methods
The system development method that the author uses is the RUP (Rational Unified Process) model. The RUP method is divided into four (4) stages (Shafiee et al., 2023), namely:
- Inception
- Elaboration
- Construction
- Transition

Figure 1.   RUP (Rational Unified Process)

Results and Discussion

Running System Analysis
Running System Issues
Based on observations made at PT. Kereta Api Indonesia (Persero) Regional Division III Palembang, pay attention to the current system, that PT. Kereta Api Indonesia has used computers to manage data typing (Sultan Ageng et al., 2019). Usage makes Microsoft Office applications, namely Microsoft Word and Excel, as data storage applications, where the supervisor must manually type existing documents. Likewise, documents created do not have a repository to maintain document security and are only stored on a computer, more precisely, in a particular folder. With the creation of this website, the employees of PT. KAI can more easily upload, download, and view joint inspection documents.

Hardware Requirements
The hardware requirements used in building this system are as follows, as shown in Table 1.

Table 1. Hardware Requirements

No.	Hardware	Specifications
1	Laptop	Toshiba Intel Celeron N4000 1.1 GHz
2	Ram	4GB DDR4
3	Hard drive	1 TB
4	Screen	14' LCD

System Design
Bar design is the next step in systems analysis, and once you have a clear idea of what's going on in systems analysis, move on to thinking about system design (Yik Ern, 2019).

Use Case

A use case diagram is a graphical representation of how a user might interact with a technology. A use case diagram depicts the system's many use cases and user categories and is frequently complemented by other graphs (Filipova & Nikiforova, 2019). Circles or ellipses represent the use scenarios. The actors are commonly depicted as stick figures, as shown in Figure 2.
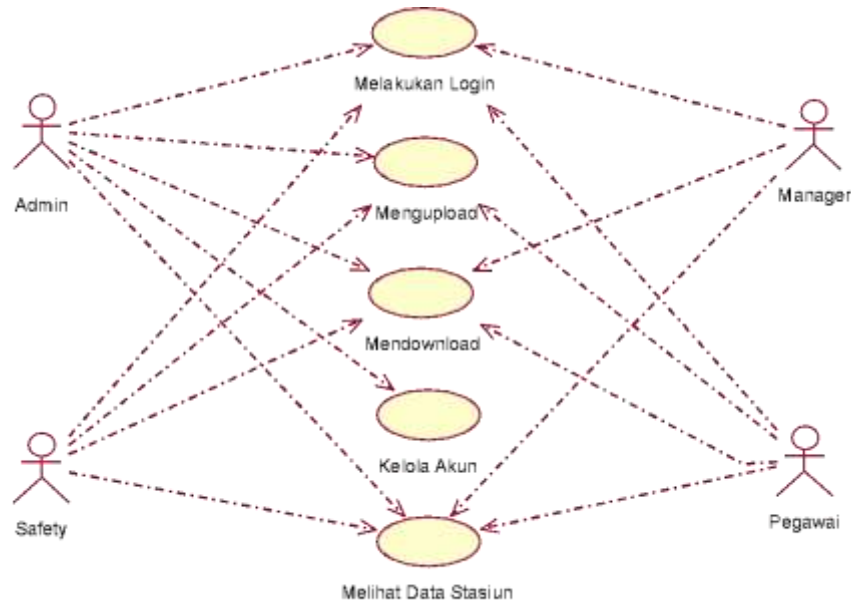

Figure 2.   Use Case Diagram

Class Diagram

The class Diagram illustrates the courses in the system and their relationships, attributes, and operations in the database (Alkhiaty & Ahmed, 2016). The class diagram designed on the website can be seen in the following image, Figure 3.
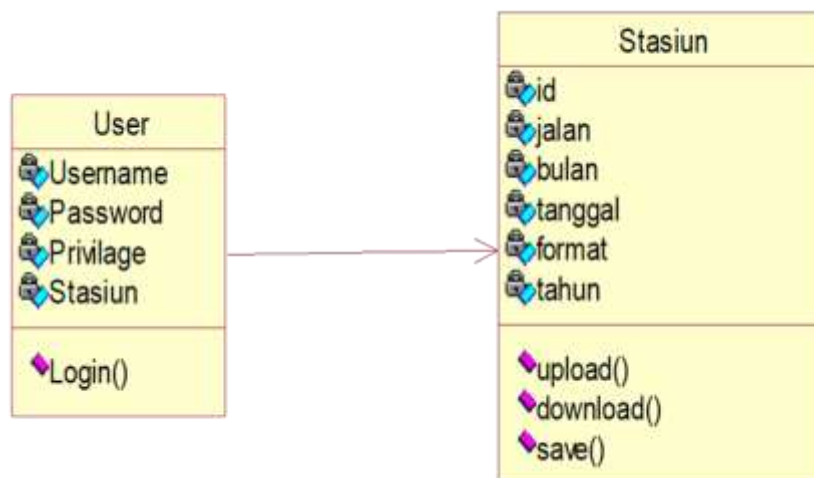

Figure 3.   Class Diagram

Activity Diagram

Activity diagrams are made in the Unified Modelling Language, but because of their size, they are not included in this publication. This flowchart is designed to explain how computers, systems, and organizational operations operate.

Login Page

The main menu page displays access, login, and initial presentation of the website the author created to enable access to the sections in the feature, as shown in Figure 4.

Figure 4.   Login Page

Homepage

The homepage is a page used for features used by each different privilege. The function of different homepages can be explained by the fact that each homepage is for the opening page, which will take the user to the intended menu. Figure 5 shows the home page.

Figure 5.   Homepage

Station Page, Month, and Year

The page selects station, month, and year. Joint inspection is the page users use to choose the station, month, and year for admin, safety, and manager. Select the station, month, and year of joint inspection for the page view, as shown in Figure 6.

Figure 6.   Gallery Page

File Format Page

The file format page is used for users to face a carrier that provides two (2) file formats to be downloaded or uploaded. Figure 7 shows that page.

Figure 7.   File Format Page

Download and Upload Page

Download and upload pages are pages used to download the latest files and can also upload files that match the previously selected file type. Still, the upload feature only applies when the user is logged in as Admin, User, and Safety, while the manager can only download the latest File, as shown in Figure 8.

Figure 8.   Download and Upload Page

List File Page
The list file page directs users to the list file page, so admins will see the entire list, while users, managers, and safety will see the latest files, as shown in Figure 9.

Figure 9.   List File Page

Conclusion

The requirement analysis has produced the application of Joint Inspection as a solution to improve employee performance and working time to support cautious report management at PT. Kereta Api Indonesia (Persero) Regional Division III Palembang. With the testing done using the Black Box approach for each function, the system established in this study is performing as expected in each test period. The functionalities developed can function properly and be used by consumers.

References

Alkhiaty, M., & Ahmed, M. (2016). UML Class Diagrams: Similarity Aspects and Matching. *Lecture Notes on Software Engineering*, *4*, 41–47. https://doi.org/10.7763/LNSE.2016.V4.221

Anggadwita, G., & Dhewanto, W. (2013). *Service Innovation in Public Sector : A Case Study on PT. Kereta Api Indonesia*. https://doi.org/10.13140/2.1.1736.8002

Hawa, S., Prof, A., Madya, O., & Santhiram, R. (2001). *QUANTITATIVE AND QUALITATIVE RESEARCH METHODS: SOME STRENGTHS AND WEAKNESSES*.

Krishnan, M. (2016). *Digital Repositories: An Overview* (pp. 209–219).

Oktori, M., & Purnama, D. (2023). RANCANG BANGUN REPOSITORY PROGRAM STUDI TEKNIK INFORMATIKA BERBASIS WEB MENGGUNAKAN FRAMEWORK CODEIGNITER. *Jurnal Darma Agung*, *31*, 545. https://doi.org/10.46930/ojsuda.v31i1.2851

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. (2012). *OECD Reviews of Regulatory Reform INDONESIA MARKET OPENNESS*. www.oecd.org/regreform/backgroundreports.

Shafiee, S., Wautelet, Y., Poelmans, S., & Heng, S. (2023). An empirical evaluation of scrum training's suitability for the model-driven development of knowledge-intensive software systems. *Data & Knowledge Engineering*, *146*, 102195. https://doi.org/https://doi.org/10.1016/j.datak.2023.102195

Sultan Ageng, A., Karnesih, E., Saefullah, D., & Bekti, H. (2019). *Reframing on Organization Transforming at PT. Kereta Api Indonesia*.

Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, *4*, 60. https://doi.org/10.4103/IJAM.IJAM_7_18

Yik Ern, A. (2019). *System Analysis and Design (SAAD)*. https://doi.org/10.13140/RG.2.2.17384.01282