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REVOLUTION OF COMPLAINT HANDLING AND VETTING: A WEB-BASED APPROACH FOR GOVERNMENT UNITS

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Abstract – XYZ Unit is a government unit tasked with examining employee disciplinary violations in their environment. The process of receiving complaints and checking is still done manually, which affects the quality of data and services to stakeholders. Therefore, it is necessary to develop a structured web-based information system to manage complaint and inspection data. The purpose of this research is to increase the efficiency of business processes, facilitate users in managing data, and improve the speed, accuracy and quality of service. The fountain method was chosen to design this system because of its flexibility in changes and low cost. The results of the research show that the complaints and examination information system can answer the problems of the XYZ Unit, and the tests show that this system can computerize the process of receiving complaints and examinations and provide data that is always updated. This research has produced a system that is able to process data and answer the problems of its users. Meanwhile, related to data confidentiality and a safe environment have not been confirmed in this study and still need to be followed up by the XYZ unit, namely through performance testing, security testing and load testing. In addition, a user acceptance test (UAT) is also needed to measure whether the system meets the aspects of ease of use, intuitiveness and responsiveness

Keywords: Fountain method, complaint acceptance and inspection, web-based

I. INTRODUCTION

The government regulation that regulates violations of employee discipline is in Government Regulation Number 53 of 2010 as last amended by Government Regulation Number 94 of 2021. The government regulation states that civil servant discipline is the ability to comply with obligations and avoid prohibitions specified in laws and regulations. . This government regulation is implemented based on Law Number 5 of 2014 concerning State Civil Apparatus. The purpose of this law is to ensure that civil servants carry out their functions properly by upholding a code of ethics. The code of ethics for civil servants, which is regulated in Government Regulation of the Republic of Indonesia Number 42 of 2004 concerning Corps Spirit Development and the Code of Ethics for Civil Servants, is a guideline for attitudes, behavior, and actions of Civil Servants in carrying out their duties and in daily life interactions.

The General Data Protection Regulation (GDPR) is the regulation governing the protection of personal data of individuals in the European Union. The GDPR provides clear guidelines and requirements for the processing of personal data, including the collection, storage, use and deletion of data. ISO 27001 is an international standard that regulates the management of information security in an organization. The GDPR focuses on protecting individual personal data, while ISO 27001 more generally manages information security within organizations. Implementation of ISO 27001 can help organizations meet the data security

requirements required by the GDPR so that organizations can process data in a standardized manner without compromising data security.

The XYZ Unit, as a third echelon unit in the government, has been responsible for examining civil servant disciplinary violations since 2000. To improve integrity and efficiency in enforcing discipline, this unit has opened channels for complaints of violations of employee discipline from various channels. Incoming complaint data is then identified and examined. If it is proven that there has been a violation, a disciplinary sanction will be imposed. This process is crucial because it has an impact on the fate of the employee concerned. If the violation is sensitive or large-scale, it can have an impact on the image of the organization. The obstacle faced is the data collection system which is still offline and processed manually. As a result, it is difficult to monitor case developments, employee performance, and data submission to third parties. Therefore, it is necessary to develop a web-based complaint information system and employee inspection with special attention to data security.

Research related to the complaint information system was also carried out by several researchers, namely (Firgia et al., 2022) stating that the community complaint system in Cipta Karya Village is currently still carried out manually by word of mouth, letters and suggestion boxes. This manual complaint system has also created confusion for the local community regarding the complaint system made by authorized officials. A manual complaint system can cause loss and damage to public complaint data. To overcome the problem, a complaint information system is implemented using the codeigniter framework. Furthermore (Juarsyah et al., 2021) in his research stated that the Jambi City Communication and Informatics Service is required to follow the era of globalization to continue to innovate in providing public information services to the community. In the process of realizing prosperity for the people, the Jambi City government is realizing the Smart City Concept in the form of public complaints. Meanwhile ((Mulyani et al., 2022)in his research stated that with a service complaint information system that can be

accessed on various browsers, with features in which it can help school managers receive complaints or suggestions from parents of students. (Febri Kuncoro et al., 2022) states that the Website is a solution for the lengthy process of public complaints to government agencies. (R Andarsyah & A. Permata Sari, 2019)states that a complaint information service application design is needed to make it easier for the public to convey their complaints and aspirations, so that they can be channeled to PT. Indonesian post. So that PT. Pos Indonesia can control problems and complaints that exist with consumers directly. (Ratnawati & Subandri, 2023) states that the community can convey the problems they face through a complaint system which will be followed up by the Regional Apparatus Organization (OPD) that provides services.

In developing website applications, several methods are known, including Waterfall, RAD, Agile and Fountain. The Waterfall methodology is a classic method which is simple and systematic consisting of several stages where the output of the previous stage can be used as input for the next stage (Stefanus et al., 2020). The Waterfall model is often called the linear sequential model or classic life cycle (Rosa & M. Shalahuddin, 2013) . Waterfall is an SDLC approach sequentially from analysis, design, coding, testing, and support. Waterfall has the advantage of having a clear flow of stages and good documentation, but it is considered less flexible and takes a long time. The second method is Rapid Application Development (RAD), which is a software development method that focuses on speed and feedback during the development and testing period (Wahyudin & Rahayu, 2020), RAD has good time efficiency, this is proven by a framework consisting of The 3 stages including planning, system design and implementation can be done in a short time (Dwi Wijaya, 2020). RAD was chosen as a method for developing software because it has the advantage of being able to produce a fast and quality system (Hariyanto et al., 2021). Therefore RAD is considered more flexible than Waterfall because it is considered easier to make changes to functions and even designs without having to disrupt the final output (Wahyudin & Rahayu, 2020).

The third method is Agile, the author focuses on RUP which is a derivative of Agile. Rational Unified Process (RUP) is a software development method by collecting various best practices in this industry `(Supriadi & Hardian, 2019)`, it is also an iterative and incremental software development (RirinPerwitasari et al., 2020). RUP has 4 stages, namely inception, elaboration, construction, and transition. The advantage of RUP is that it allows additions to the process and systematically controls changes that occur during the development process. In addition, this method also accommodates the repetition of processes in software development.

The fourth method is Fountain. The Fountain model is an improvement from the Waterfall model, the stages are the same (IER, 2020). However, in this model the developer can prioritize or skip a stage, but there are stages that cannot be skipped such as design before coding, if this is skipped there will be an overlap in the SDLC cycle. The four methods are options in the development of this system. Through a literature review, the design of this system will use the Fountain method. The choice of the Fountain method is due to its characteristics that suit the needs of this system design. Among other things, this method accommodates development carried out by individuals or small teams unlike Agile which requires teamwork. Fountain also has regular and systematic stages, can accommodate changes throughout the design process and accommodates good documentation.

II. METHODS

The design of this information system uses the Fountain method. The Fountain model is an improvement from the Waterfall model with the same steps and sequence of procedures. However, in this Fountain model, the developer can prioritize a stage or skip that stage. However, there are things that cannot be preceded, such as design before coding so that there is no overlap in the SDLC cycle. The

stages of the Fountain method were adopted and detailed more specifically according to the conditions in this study. Based on this, the stages of this research are:

a. User requirements analysis: the current system is examined and identified by interviewing Examiners, Complainants and authorized officials. In addition, a literature study was also carried out regarding complaints and inspection rules

b. User requirements specifications: at this stage the expected business process modeling is carried out

c. Software requirements specifications: specification of software requirements from the user's side so that the system designed is in accordance with the organizational environment

d. Logical design: design use case diagrams, activity diagrams, screen dialog designs, component diagrams, class diagrams, sequence diagrams, collaboration diagrams and ERD to determine system design logically.

e. Physical design: logical record structure (LRS) modeling, table specifications and deployment diagrams to clearly identify the physical description of the system.

f. Implementation: at this stage the design that has been made is poured into the code until an application is realized.

g. Testing: testing is carried out functionally with blackbox testing.

This design will only reach the testing stage considering the implementation and maintenance process is time-consuming and ineffective within the scope of this research.

III. RESULTS AND DISCUSSION

Table 1. Results of User Needs Analysis

No	Problem	Expected Solution
	Data collection on incoming complaints and the	The existence of a centralized and computerized

	inspection process is still done manually. Manual recording has several risks, namely: a) Requires a long time and impractical. b) Risk of scattered data and issues of data validity. c) Non-uniformity in recording makes it difficult to fulfill data requests and to carry out periodic analysis. d) Requires a large storage area to accommodate all data as the number of complaints and cases continues to increase e) Storage files that are prone to damage, corruption and loss due to frequent transfers. f) Searching for case, reported and reporter data takes time.	system with a database that is always updated
	The absence of a system makes it difficult for management to monitor case progress and employee performance.	There is a system with dashboard data of cases and their positions, cases with their resolution, and fulfillment of data requests and the performance of each employee. From there the performance as an organizational unit can be seen. The existence of a system also facilitates direct supervisors to report the results of their inspections
	The absence of a system also makes it difficult for stakeholders to	There is a system with a case search feature with various indicators

	make decisions on matters related to the Reported Party's employment.	
	Business processes that have not been computerized have resulted in the current quality of complaint services being considered less than optimal	There is a system with data input features so that all XYZ Unit personnel and superiors directly input complaint data and updates there according to their respective duties and functions

By looking at the results of these interviews and observations, the XYZ unit requires an online system with a centralized database that can accommodate inputting and updating data for Complaint Recipients, Examiners, and Direct Superiors. This system is expected to increase efficiency and effectiveness in managing complaint data and examinations as well as provide better service to reporters.

User Requirements

Specifications this stage is in the form of identifying solutions for users to problems in the current system. From the results of the previous User Requirements Analysis, it is known what solutions must be met by the proposed system. This Complaint and Examination Information System is intended for XYZ Unit employees in carrying out their complaint data processing business processes. This information system must provide an intuitive and easy user experience for its users.

System Main Functions

a. Complaint Recipients need functions to add, modify, and delete complaint data and request data confirmation.

b. Examiners must be able to add, modify, and delete inspection data.

c. Managers should be able to view complaint and inspection data as well as data confirmation reports

d. Complaint Recipients, Examiners and Managers must be able to see the performance of the Examiner

e. The Direct Superior must be able to report on the process of disciplinary examinations and punishments that have been carried out.

f. Complainants, Examiners and Managers and Immediate Supervisors must be able to change passwords and view system logs

g. Admin should be able to access all menus and functions.

Software Requirements

Specifications at this stage, the specification of software requirements from the user's side is carried out

Environmental Requirements

a. The system must be accessible from a PC or laptop

b. The system must be able to run on the Apache web platform

c. The system must be able to run on the Windows operating system

System Performance

The system must be responsive and fast in loading data.

Security and Privacy

a. The system must be secure and protect user data with encryption.

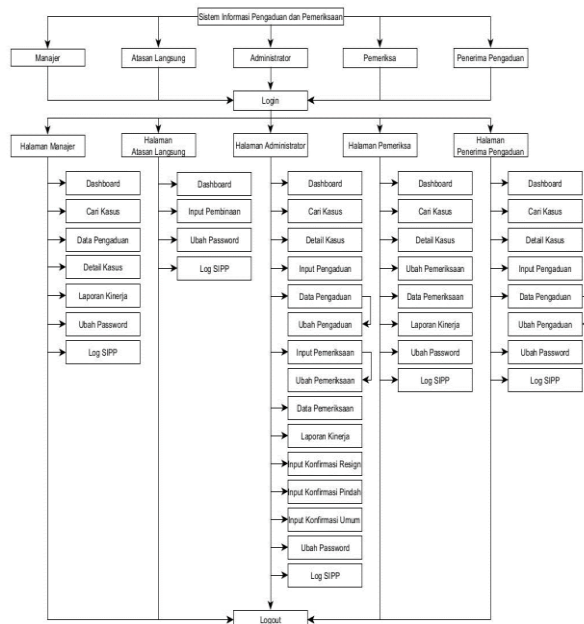b. Admins must have access control to all data

Logical Design

Figure 1. Logical Design

Physical Design

This diagram describes the interaction between hardware and software. This system consists of Controllers, Models and Views that interact with the database to produce an interface on the client browser. The browser interacts with the whatsapp PDF and API to provide some of the application's functionality. The bridge between the system and the user is hardware or hardware, namely computers, laptops to printers.
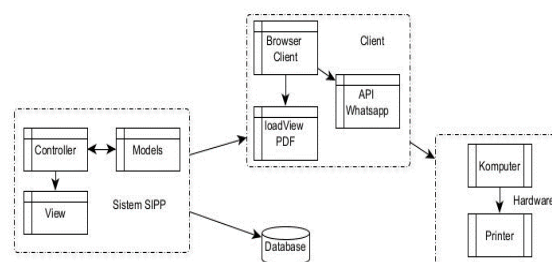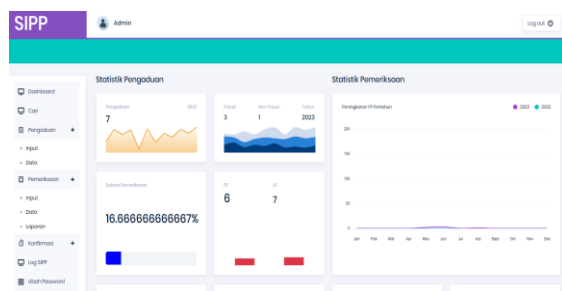

Figure 2. Physical Design

Implementasi

Figure 3. Dashboard Complaint and Examination Statistics

Figure 4. Complaint Data

Figure 5. Examination data

IV. CONCLUSION

The need for data can be fulfilled with a good information system. The existence of computerized and structured data helps management in formulating action plans and making the right decisions, including in the case of disciplinary violations. From the point of view of the Examiner and the Direct Supervisor,

the Information System for Complaints and Examination of employees is designed to improve the quality of decision making on the cases they handle. From the Manager's point of view, this system makes it easy to monitor the performance of Examiners and Complaint Recipients. From the Admin side, this system acts as a database and monitoring tool in fulfilling data confirmation requests from external parties.

The Fountain method is used because it fits the needs of this system, namely that it can be applied in designs carried out by a person or a small team, can be applied to designs in a short time (1-2 months), has a detailed and systematic flow, is not rigid to change, and applies good documentation. From the test results, information is obtained that the system runs according to its functionality and computerized data properly. The Complaint and Examination Information System is expected to continue to develop in response to dynamic organizational needs in order to create peace at work, fairness in decision making, and a strong institutional system in creating an environment of integrity.

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