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INFORMATION SYSTEM DEVELOPMENT FOR RECEIVING AND HANDLING CUSTOMER COMPLAINTS IN PUBLIC SERVICES

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ABSTRACT
Good public service is one indicator of the success of a government in providing satisfaction for the community. Along with the development of information technology, the government is also trying to improve public services by developing information systems that make it easier for people to make complaints or complaints about public services. This research aims to develop an information system that can improve the receipt and handling of customer complaints on public services. The method used in this research is the waterfall method. Data will be collected through interviews with relevant parties in public services, direct observation of the existing complaint system, and literature study related to the development of information systems. The results of this research are expected to produce an effective and efficient information system in receiving and handling customer complaints in public services. In this case, the information system can facilitate customers in making complaints, as well as speeding up the handling process and responses from related parties. So that it is expected to increase customer satisfaction with the public services provided.

INTRODUCTION

Public service is a form of service provided by the government to the community (Sulila, 2015). Good and effective public services are an obligation for the government to provide convenience and satisfaction in obtaining access to the services provided (Apriyansyah et all, 2018). One form of public service is receiving and handling customer complaints. In this case, the government has an obligation to provide adequate facilities and infrastructure in receiving and handling customer complaints quickly and appropriately (Rahmadana et all, 2020). In Indonesia, many systems for receiving and handling customer complaints in public services are ineffective (Putri & Mutiarim, 2018). Many customers complain about the difficulty of access to submit complaints,

The problem of receiving and handling customer complaints in public services is a problem that is often faced by the government and society. Even though good public services are an important indicator for the progress of a country, there are still many obstacles to providing them. One problem that often arises is ineffectiveness and inefficiency in receiving and handling customer complaints. Often customers have to wait a long time and a complicated process to get proper complaint handling. In addition, there are still many cases of complaints that are not handled properly or even ignored by the authorities, causing customer dissatisfaction and reducing the overall quality of public services.

This problem is becoming increasingly complex with technological developments that make it easier for customers to access information and express complaints. Therefore, an information system is needed that can optimize the process of receiving and handling customer complaints in a more effective and efficient way. This triggers customer dissatisfaction which affects the quality of public services as a whole. To overcome these problems, it is necessary to develop an information system for receiving and handling customer complaints in public services.

The role of information technology and information systems is very important in improving the quality of receiving and handling customer complaints in public services. With adequate information technology and information systems, the process of receiving and handling customer complaints can be carried out more effectively and efficiently. Information systems can help manage and process information needed for receiving and handling customer complaints, thus speeding up response times and ensuring better service quality (Putra, 2018).

In addition, information systems can also increase transparency in the process of receiving and handling customer complaints in public services. With an integrated information system, information related to customer complaints can be accessed easily and quickly by all parties involved, be it customers, public service officers, or management. Thus, the complaint handling process can run transparently, and customers can find out the progress of handling their complaints more clearly (Ristiani, 2020).

Research in developing information systems that can provide effective and efficient solutions in receiving and handling customer complaints in public services is very important. Based on the description of the background of the problem, the researcher is interested in conducting research with the title "Development of Information Systems for Receiving and Handling Customer Complaints in Public Services".

METHOD RESEARCH

Research methods

The method used in this research is the waterfall method. The waterfall method or waterfall model is a software development model that is linear and structured. This model consists of 5 phases, namely requirements analysis, design, implementation, testing, and maintenance. Each phase must be completed before entering the next phase, so this model is also known as a linear sequential model (Susanto & Andriana, 2016). In the needs analysis phase, the development team will analyze user needs and determine the functions and features required by the system. The design phase will determine the system architecture, database design, algorithms and user interface design. In the implementation phase, the design will be implemented into program code. Then proceed to the testing phase, where the system will be tested to evaluate functionality, performance, and system errors. Finally, in the maintenance phase, the system will be maintained and repaired if there are problems or changes in user needs.

Data collection technique

Data will be collected through interviews with relevant parties in public services, direct observation of the existing complaint complaint system, as well as literature studies related to the development of information systems.

Data analysis

Data analysis was carried out by collecting data from the results of interviews, observations, and literature studies that had been carried out. The data will then be analyzed and interpreted to determine customer needs and build an information system that fits those needs.

RESULT AND DISCUSSION

Needs Analysis

Analysis of system requirements in developing an Information System for Receiving and Handling Customer Complaints in Public Services aims to obtain information regarding the needs of customers and system users in handling complaints. This is done so that the system built can meet the needs and expectations of customers optimally. Development of Information Systems for Receiving and Handling Customer Complaints on Services using ERD (Entity

Relationship Diagram) which aims to describe the relationship between entities or objects in the information system (Hasugian & Shidiq, 2012). This ERD consists of several entities or objects, including:

1) Entity Customer (Customer) with attributes such as name, address, telephone number, and email
2) Entity Complaint with attributes such as complaint number, complaint description, complaint date, complaint status, and complaint priority
3) Entity Service (Service) with attributes such as service name, service description, and service fee
4) Entity Employee (Employee) with attributes such as name, address, telephone number, and email
5) Relationship between Customer and Complaint, where one customer can have many complaints, but only one customer has one complaint
6) Relationship between Complaint and Service, where a complaint can be related to one or more services
7) Relationship between Complaint and Employee, where one complaint can be handled by one or more employees.

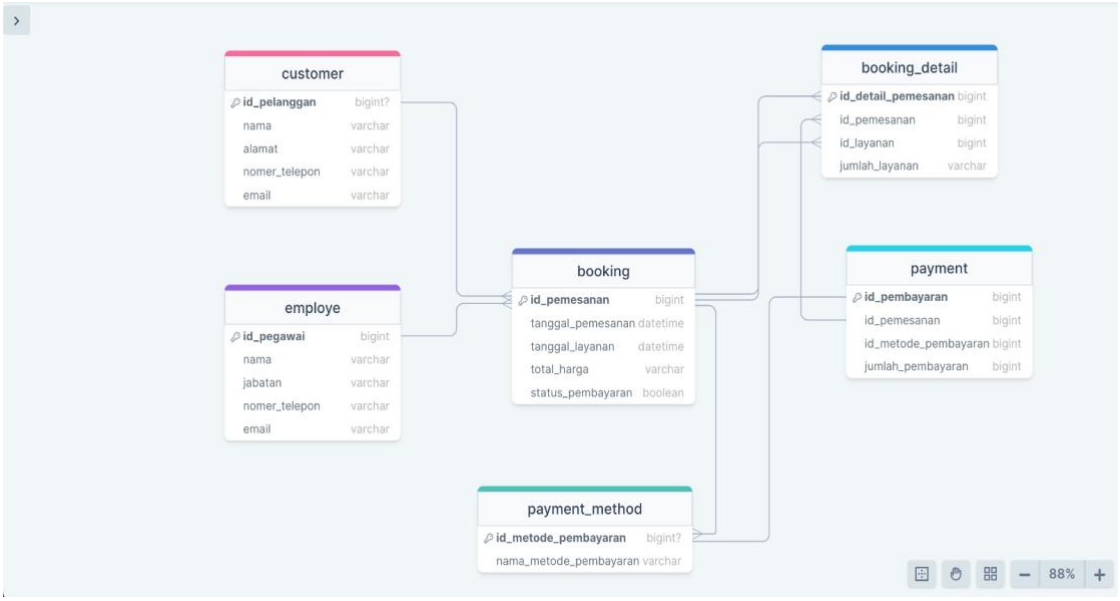

Figure 1. ERD design

After the ERD is made, the next step is to make a correlation to the ERD which includes:

1) The entity "Customer" is linked to "Customer Complaint" via the "submit" relationship. This indicates that customers can file complaints on certain public services.
2) The "Customer Complaints" entity is linked to the "Complaints Category" through the "includes" relationship. This shows that each customer complaint can be categorized based on a different type of complaint.
3) The "Customer Complaints" entity is connected to "Complaints Handling" via the "handled by" relationship. This indicates that any customer complaints will be handled by the public service staff who are responsible for solving the problem.
4) The "Complaint Handling" entity is connected to "Follow Up" via the "require" relationship. This indicates that any follow-up required to resolve customer complaints will be recorded in the system.

5) The "Complaint Handling" entity is connected to "Reporting" via the "report" relationship. This indicates that any handling of customer complaints must be reported to the responsible management.

Design

System design for developing an Information System for Receiving and Handling Customer Complaints in Public Services can be done using the React JS framework. The React JS framework is one of the popular JavaScript frameworks used in web application development. In system design, React JS can assist in the development of a more interactive and responsive application interface. This is because React JS uses a component or modular approach, making it easier to manage each element in the view (Iswari, 2021).

In designing this system, React JS can also be used to simplify the data management process on the display. This framework allows the use of state and props, making it easier to update and send data between components. Apart from that, React JS can also assist in the development of additional features such as search features, customer account management, and so on. This framework also allows the development of mobile-friendly applications, making it easier for customers to access applications from their mobile devices (Dasmito, 2019).

Implementation

Implementation of Information System Development for Receiving and Handling Customer Complaints in Public Services can be carried out in several stages, including:

1) Installing the React JS framework
   The first step that needs to be done is to install the React JS framework on the server. This can be done by following the installation instructions provided by React JS.
2) Making the appearance (UI) of the application
   The next stage is to create an application display using React JS. Making the appearance of this application can be done by following the React JS guidelines and using the components provided by React JS.
3) Integration with databases
   After the application view has been created, the next step is to integrate the application with the database. This can be done using a back-end programming language such as PHP, Python, or Node JS.
4) Implementation of features
   The final stage is implementing the features required by the information system for receiving and handling customer complaints. These features may include features for receiving customer complaints, features for processing complaints, features for sending replies to customers, and so on.

After all the steps above have been completed, the application for developing an information system for receiving and handling customer complaints in public services is ready to be tested.

Testing

Testing the development of an information system for receiving and handling customer complaints in public services needs to be carried out to ensure that the system runs according to its function and meets user needs (Fitrisia, 2021). Several types of tests that can be done include:

1) Unit testing: testing each component or program unit to ensure that each component functions properly.

2) Integration testing: testing on the integration between program components or between program modules to ensure that these components can run properly together.
3) System testing: testing the entire system to ensure that the system can run properly and meet user needs.
4) Acceptance testing: testing carried out by users or interested parties to ensure that the system meets predetermined requirements.

In addition to the types of testing above, functional testing can also be carried out to ensure that the system can function properly, performance testing to ensure the system can run properly under high load conditions, and security testing to ensure that the system is safe from attacks or other security threats. After testing, the results must be evaluated and corrected if errors or deficiencies are found.

Maintenance

After the information system for receiving and handling customer complaints in public services is implemented, system maintenance is needed to ensure that the system continues to run well and meet user needs (Haryanti, 2021). System maintenance can be done in several aspects, namely:

1) Bug fixes
   Bug fixes on the system are carried out to ensure that there are no system errors or errors that arise when users use the system.
2) Performance improvements
   Performance improvements are made to ensure the system runs quickly and efficiently and is able to handle an increasing number of users.
3) Feature improvements
   Feature enhancements are made to meet the growing needs of users. New features can be added to the system or existing features can be improved to make it better and according to user needs.
4) Security improvements
   Security enhancements are made to prevent external attacks or damage to existing data. This is important to ensure the security of customer data and information stored in the system.

System maintenance can be done routinely or when needed. In carrying out system maintenance, it is important to ensure that there is no disturbance to the system while maintenance is being carried out. This can be done by backing up data and systems and ensuring that system maintenance is carried out at the right time and does not disturb the user.

CONCLUSION

Development of information systems for receiving and handling customer complaints in public services is very important to increase customer satisfaction. In this case, the waterfall method was chosen as an information system development method because it proved to be effective and efficient in developing applications. Data collection techniques were carried out through interviews, observation, and document studies. The results showed that the implementation of an information system for receiving and handling customer complaints can improve the performance of public services and minimize the level of customer complaints. Thus, it can be concluded that the development of an information system for receiving and handling customer complaints is very important to improve customer satisfaction and overall public service performance.

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