

Building Data Collection Information System in the Papua Province Building and Environmental Arrangement Work Unit

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Abstract

The Papua Province Environmental and Building Arrangement Work Unit is still carried out conventionally in carrying out building data collection. Data collection is still using a questionnaire form, then entered into a computer using Microsoft Excel. This study aims to build an online building data collection information system. Data obtained through direct observation on the object of research and interviews with the building data collection field. The analytical method used to analyze problems in the ongoing system is the PIECES analysis method. The design is carried out using an object-oriented design method, namely, UML design. And the system testing stage uses the black box method. With the existence of an online building data collection information system, it is expected to be a solution to simplify and speed up the process of the survey team conducting building data collection.

Keywords: *Information System, building data collection, Papua Province Building and Environmental Management Work Unit*

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1. Introduction

The use of IT in government circles has been going on for a long time. The development of IT developed in government or what is called e-government should encourage activities carried out to be faster, time-saving, and accurate so that the goals to be achieved are more easily realized. Speed, punctuality, and precise results are expected to improve the performance of the ASN Building and Environmental Management Unit for Papua Province. Currently, building data collection at the Papua Province Building and Environmental Management Work Unit is carried out conventionally. The data collection process is still using a questionnaire form, then inputted using Microsoft Excel. Errors when inputting data sometimes cannot be avoided due to a large amount of data in the questionnaire [1].

If an error occurs, it will take a long time to check the input results in the Microsoft Excel document file with the data in the questionnaire, and it will allow for damage or loss of data on the questionnaire intentionally or accidentally and the data can be manipulated. Another problem is that there are no districts or cities with data on buildings containing complete administrative and technical requirements and are stored in a database according to the Building Building Law (UUBG) and Building Implementation Regulations (PPBG). This encourages an online-based information system that can assist the survey team in carrying out building data collection and easily entering building data [2].

2. Literature review

2.1 Previous Research

Research on state-building data collection has resulted in a state building data collection system that can make it easier for users to find information on state-building data collection. The system can provide detailed information on both building details and the desired state building permit. However, this

system's output can only display data for buildings that already have a building permit. Meanwhile, State buildings that do not have a license cannot be displayed [3].

Research on Population Data Information Systems in Sedayu Bantul District will produce a desktop-based system. This information system will generate reports including population data reports, family member reports, card data reports, family reports, reports of residents who died, reports of incoming residents, reports of moving residents, pieces of birth data, and population age. Research on Disaster Data Collection Information Systems in Disaster Management in Banda Aceh. The output produced from this study is that this offline disaster data collection system can minimize the possibility of delays in the data collection process of disasters that occur in Aceh province. The ease and accuracy in data search are assisted by the search function in the system and a function that can backup and restore data [4].

2.2 Information Systems

An information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control within an organization. Besides supporting decision-making, coordination, and management, information systems can also help managers and workers analyze problems, visualize complex subjects, and create new products.

2.3 Building and Building Data Collection

Building data collection is the activity of collecting data on a building by the regional government, which is carried out jointly with building a building permit, building a building function-worthy certificate, and the demolition of a building, well as registering and registering existing buildings. A building is a physical form of the result of a construction work integrated into its domicile, partly or wholly above and in the ground or in water, which functions as a place for humans to carry out their activities, either for shelter residents. Religious activities, business activities, socio-cultural activities, and special activities in Implementing Regulations [5].

2.4 Building permit

Building Construction Permit is a permit granted by the Regional Head to building owners to build new, modify, expand, reduce, and maintain buildings according to applicable administrative and technical requirements. IMB is a legal product to create a particular order to create order, security, safety, comfort, and legal certainty [6]. Every person or body should construct a building to have a Building Construction Permit. Building construction permits are regulated by the Regional Regulations of each City or Regency, and the City of Jayapura where this research is carried out is regulated by Perda No. 19 of 2002.

3. Methodology

3.1. Research methods

This study's data collection method was the observation carried out at the Papua Province Building and Environmental Management Work Unit by observing the survey team in collecting building data. Then an interview was conducted with the building data collection coordinator to obtain the required information [7]. The final stage is to conduct a literature study by reading or studying material related to literature reviews obtained from previous journals and internet media. The analysis method is PIECES (Performance, Information, Economic, Control, Efficiency, and Services). For more details, it can be seen in Table 1 as follows:

Table 1. Pieces Analysis

ANALISIS PIECES	OLD SYSTEM	NEW SYSTEM
<i>Performance</i>	The building data collection process is still carried out conventionally, such as when the survey team went to the field the data collection process was still using	The data collection process for new buildings uses a computerized system, so that access to building data will be easier and faster. In

	a questionnaire form. Then the survey data were entered into a computer using Microsoft Excel. So the work will take a lot of time and be less effective.	addition, technological advances will greatly assist in any building data collection process.
<i>Information</i>	Information regarding building data collection still uses a questionnaire form, so if the questionnaire form is lost or damaged, the building data will be invalid, not on time, and difficult to know for reports.	Information regarding building data collection is more accurate and easier to obtain accurate information, safe, and easy to store.
<i>Economy</i>	The current system requires high operational costs, especially costs for questionnaire forms in printing building data collection forms.	A computerized system will save operational costs because building data is entered directly into the computer.
<i>Control</i>	There is no security of building data recorded by field officers, thus allowing damage or loss of data and data manipulation to occur. The vulnerability to loss of permit requirement documents is stored in the closet, so these documents can be scattered or even lost.	Field officers can control data security. Building data is not easily damaged or lost because it is stored in a computer database and there are access rights for field officers in the form of passwords so that the data is not easily manipulate
<i>Efficiency</i>	More resources are used because data collection is still using a questionnaire form and checking the results of the questionnaire form takes a long time, because it must be checked one by one to be entered into a computer.	Fewer resources are used because the building data collection process is carried out on an online computer that can be accessed directly, so it doesn't take a long time.
<i>Services</i>	The building data collection process takes a long time because officers have to come to the location using a questionnaire form and then take notes, document building data, and input them into the computer.	The building data collection process can be done quickly because building data collection is done online to be stored directly in a computer database.

3.2. Analysis and Design

Use case diagrams are a description of the relationship between actors. The system in which there are two actors in this system, namely the data collection officer is the actor who manages the course, this data collection officer must log in, to then be able to see owner data, land data, building data, and documents. Add owner data, land data, building data, and documents [8]. Change owner data, land data, building data, records. And delete owner data, land data, building data, and documents.

The coordinator of the data collection team is the actor who uses the system. The data collection team coordinator must log in to view owner data, land data, building data, and reports. more details can be seen in the following image:



Figure 3. The login page display

4.2 Building Data Page Views

This is a page that is used by data collection officers to manage building data, namely adding building data, changing building data, and deleting building data and displaying building data that has been entered by the data collector. For more details, see figures 4, 5, 6 below:



Figure 4. Display of the building page



Figure 5. Display of illegal building yard



Figure 6. Display of legal building page

4.3 Add Building Data Page Views

The yard that is used by data officers when conducting surveys or building data collection to add legal or illegal building data. For more details, it can be seen in the following image:



Figure 7. Add building data page view

4.4 Document Page Views

This is a page that is used by a data collection officer to manage documents, namely adding documents, changing documents, and deleting documents as well as displaying documents that have been entered by the data collection officer. For more details, it can be seen in the following image:



Figure 8. Document page view

4.5 Add Document Page View

This is the page that is used by data officers when conducting surveys or data collection on buildings to add documents. For more details, it can be seen in the following image:



Figure 9. Add document page view

4.6 Report Download Page Views

This is the page used by the building data collection team coordinator to download data reports on legal buildings and illegal buildings. For more details, see figures 10 and 11 below:



Figure 10. Display of legal building report download page



Figure 11. Display of illegal building report download page

5. Closing

5.1 Conclusion

Using a manual system or using Ms Excel requires a long time to collect data. With this data collection information system, it can speed up the data management process. This research produces an online Building Data Collection Information System that can assist the process of conducting building data collection.

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