Rural And Urban Land And Building Tax Calculation Application (PBB-P2) (Case Study Of Cangkuang Wetan Village)

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ABSTRACT

The PBB-P2 application, which focuses on the case study of Cangkuang Wetan Village, is specifically created to streamline and enhance the inputting and managing of rural and urban land and building taxes. The data-gathering methods employed, including thorough observation, comprehensive interviews, and extensive literature review, ensure the accuracy and reliability of the system. The system design was created with descriptive techniques and the object-oriented analysis and design (OOAD) development methodology, employing, which involves a process of analysis, system design, and object-oriented implementation outlinas ed by the Unified Modeling Language (UML). This design aims to provide benefits to Cangkuang Wetan Village by automating the tax computation process, managing citizen data, and generating time-saving reports.

Keywords: Application, Calculation, PBB-P2, Design, Descriptive Method, OOAD, UML

INTRODUCTION

In the age of fast globalization, information technology has made enormous advancements that have greatly influenced all aspects of life, including the field of taxation. A tax information system is crucial for businesses and government organizations to effectively and precisely manage and process tax information in compliance with relevant legislation. This technology enables corporations and municipal authorities to enhance tax compliance, mitigate the risk of infractions, and optimize tax administration. (Nurafifah & Irawan, 2020; Sartika & Krisnanda, 2020; Wicaksono & Asmandani, 2021)

Information technology is crucial in digital transformation, encompassing a range of advancements like cloud computing, big data, artificial intelligence, and the Internet of Things (IoT). These advancements not only enhance operational effectiveness but also create fresh possibilities for developing applications that may automate intricate corporate procedures. Within the realm of taxation, this technology facilitates the delivery of superior services to taxpayers, enhances data management efficiency, and provides more comprehensive analysis to support informed decision-making. (Prong, Lambey & Latjandu, 2023; Waleleng, Elim & Kindangen, 2022; Safitra & Hanifah, 2022)

Taxes in Indonesia are a primary revenue stream for the state. Tax revenues fund diverse development projects and essential public services, including education, health, infrastructure, and security. In addition, taxes redistribute income and mitigate economic inequalities within society. Hence, it is crucial to foster tax compliance and awareness across all strata of society in order to bolster sustainable and equitable growth. (Tambunan, 2022; Hasanah, Najwa, Nurpadhilah, Ramadhani, Putriyani & Sidharta, 2023)

Indonesia imposes several sorts of taxes, such as Income Tax (PPh), Value Added Tax (PPN), Sales Tax on Luxury Goods (PPnBM), Motor Vehicle Tax (PKB), and Tax on Land and Buildings (PBB). There is no text provided. The Land and Building Tax (PBB) is a tax levied on the ownership or utilization of land and buildings. The Provincial Business Tax (PBB) substantially contributes to regional revenue and is utilized to fund regional growth and progress. Nevertheless, the efficacy of PBB administration remains a hurdle, particularly in regions that rely on manual management techniques. (Riningsih & Yap, 2024; Pratiwi, 2021; Dewi, Nuridah & Rosidah, 2023)

Cangkuang Wetan Village, similar to several other regions in Indonesia, continues to handle PBB (Property Tax) manually. This approach

requires a significant amount of time and effort and is also susceptible to a range of inaccuracies. Challenges encountered include

    a. the time required to verify residents' PBB payments,

    b. the individual PBB balances of each resident and

    c. details on the amount of tax owed and already paid.

The manual technique frequently needs to deliver current and precise information regarding the required PBB payment for each resident, which creates challenges in monitoring PBB payments.

The manual handling of PBB also raises issues about transparency and accountability. Many citizens face challenges when seeking information about their PBB (Property Tax Bill) and ensuring the accuracy of their payment records. This condition can erode citizens' confidence in the village authority and diminish their willingness to comply with tax obligations. Hence, finding solutions that can enhance efficiency, precision, and transparency in PBB management is imperative. (Chandra, Sabijono & Runtu, 2020; Sudira, 2022; Huda & Wicaksono, 2021)

This condition shows the need to implement a tax information system capable of automating the PBB management process. With an integrated tax information system, it is hoped that PBB management in Cangkuang Wetan Village can be carried out more efficiently, accurately, and transparently. This system is also expected to increase citizen compliance in paying PBB and reduce the risk of tax revenue leakage. (Dwiningtyas, Sidharta, Najwa & Herawati, 2023; Putra & Putra, 2024; Daud, Sondakh & Pangerapan, 2021)

A modern tax information system can include various features, such as digital recording of tax objects, automatic calculation of tax amounts, real-time tracking of payment status, and presentation of comprehensive reports. In addition, this system can be integrated with other technology, such as electronic payment services, making it easier for citizens to pay taxes. Implementing a tax information system can also support better decision-making by village governments based on accurate and up-to-date data.

METHOD

Object-oriented, also called OOP, is a contemporary approach in software engineering that conceptualizes a system as a group of interacting objects.

Objects refer to all the tangible entities that constitute the physical universe in our surroundings. Every object possesses distinct characteristics and actions. Attributes refer to data or characteristics associated with objects,

whereas behaviors are actions or functions that govern the organization of objects.

The object-oriented development methodology possesses certain distinct traits, precisely:

1. Hereditary transmission of characteristics or traits from one generation to another.

2. Encapsulation refers to encapsulating data and methods within a single unit, known as a class, in object-oriented programming. This condition allows for the data to be protected and accessed

3. Polymorphism in Various Forms

4. Connection

5. Aggregation refers to combining multiple elements or components into a single entity or group.

Object-oriented analysis and design (OOAD) is a systematic approach to analyzing and designing systems. It involves applying object-oriented principles and creating graphical system models across the software development life cycle.

RESULTS and DISCUSSION

The research aims to develop a system that improves the efficiency of inputting and managing taxes by using the Rural and Urban Land and Building Tax calculations (PBB-P2) to the case study of Cangkuang Wetan Village. Researchers obtained data by employing methods such as observation, interviews, and literature study, enabling them to get insight into the requirements and challenges present in the field. The system design employs descriptive techniques and utilizes Object Oriented Analysis and Design (OOAD), which is elucidated using the Unified Modeling Language (UML). This approach was selected based on its capacity to dynamically and flexibly represent the system. The design stages encompass requirements analysis, creating UML diagrams such as use case diagrams, class diagrams, and sequence diagrams, and implementing and testing the system to ensure optimal performance. This application automates the PBB-P2 calculating process, minimizing human error risk and facilitating organized citizen and tax data administration. In addition, implementing the automatic report printing function is anticipated to enhance efficiency by reducing the time required for report generation and simplifying the report creation process. In summary, this application is anticipated to yield substantial advantages for the village administration and the residents of Cangkuang Wetan Village by enhancing precision, productivity, and openness in the administration of land and building taxes.

1. System Analysis
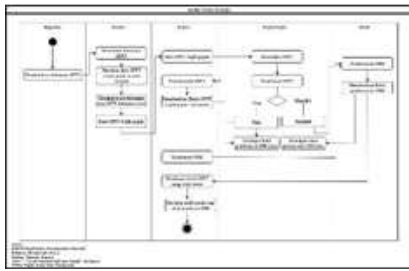   a. Running System Analysis

Figure 1. Current System Analysis

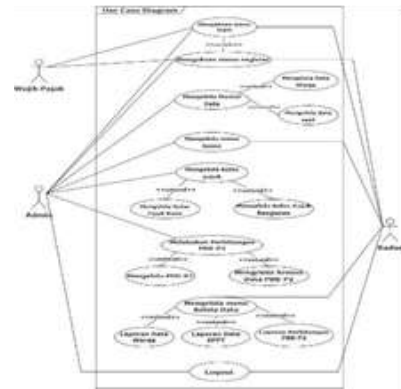b.   Use Case Diagrams

Figure 2. Use Case Diagram
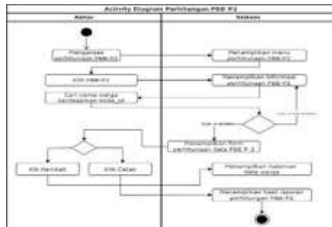
c.   Activity Diagram Calculation PBB-P2

Figure 3. PBB-P2 Activity Diagram

2.   System Planning

a.   Sequence Diagrams

Figure 4. Sequence
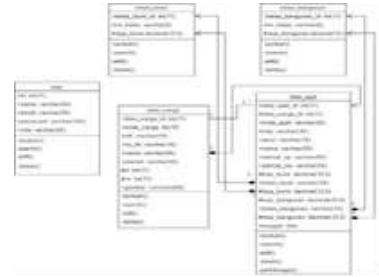DiagramManaging PBB-P2

b.   Class Diagram Calculations

Figure 5. Class Diagram

c.   Database Design

Table 1. Users

No	Field	Type	Primary
1	id	int (11)	*
2	name	varchar(50)	
3	email	varchar(50)	
4	password	varchar(100)	
5	role	varchar(20)	

Table 2. Citizen_Data

No	Field	Type	Primary
1	data_warga_id	int (11)	*
2	citizen_code	int(10)	
3	Nick	int(16)	
4	no_kk	int(16)	
5	Name	varchar(50)	
6	address	varchar(50)	
7	rt	int(11)	
8	rw	int(11)	
9	picture	varchar(255)	

Table 3. Data_Sppt

No	Field	Type	Primary

1	data_sppt_id	int (11)	*
2	data_warga_id	int(11)	
3	sppt_code	varchar(20)	
4	nov	varchar(30)	
5	account	varchar(15)	
6	Name	varchar(50)	
7	op_address	varchar(50)	
8	wp_address	varchar(50)	
9	earth_area	decimal(10,0)	
10	earth_class	varchar(10)	
11	njop_bumi	decimal(12,2)	
12	building area	decimal(10,0)	
13	building_class	varchar(10)	
14	njop_bangunan	decimal(12,0)	
15	date	Date	

Table 4. Earth_Class

No	Field	Type	Primary
1	class_bumi_id	int (11)	*
2	class_no	varchar(6)	
3	njop_bumi	decimal(12,0)	

Table 5. Building_Classes

No	Field	Type	Primary
1	class_building_id	int (11)	*

2	class_no	varchar(6)	
3	njop_bumi	decimal(12,0)	

d. Table Relations

Figure 6. Table Relations

e. Menu Structure

Figure 7. Admin Main Menu

Structure

f. Interface Design
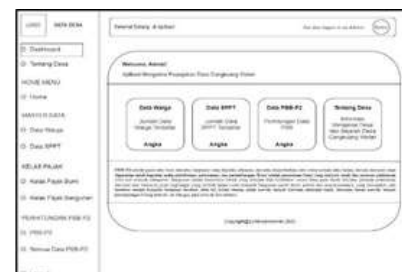

Figure 8. Login Form Design

Figure 9. Dashboard Display Design

Figure 10. Home Display Design

3. System Implementation

The system implementation stage involves the detailed description and preparation of an application system to ensure its readiness for operation.

Figure 11. Login Form Display

Figure 12. Dashboard Menu Display

Figure 13. Home Menu Display

CONCLUSION

The following are the conclusions. A computerized system has been used to automate the process of recording land and building tax data in Cangkuang Wetan Village. This technology simplifies the task of recording and calculating land and building tax data. The process involves acquiring accurate data and organizing and storing the corresponding SPPT files of each taxpayer neatly and methodically. The land and building tax computation program is a computerized system in Cangkuang Wetan Village.

The author presents the following suggestions: Performing software and hardware maintenance to ensure seamless user and operational activities and creating software solutions to enable taxpayers to conveniently access and make payments using online platforms. Conduct surveys to validate data regarding the land area and land and building tax objects, ensuring that reliance is not solely on current data. They are enhancing the deficiencies in this application.

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