Application Of Vat Calculations, PPh Article 22, and PPh Article 23 On the Procurement of Goods/Services

(Lagadar Village Office Case Study)

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ABSTRACT

The Lagadar Village Office still uses a manual approach to calculate taxes on acquiring goods and services. This condition involves using a calculator and recording the calculations in a notebook. Consequently, the Treasurer frequently made errors while performing computations, whether misclassifying the tax type or inaccurately incorporating the tax rate. Moreover, the requirement to input tax computation data again before printing creates a challenge for the Treasurer in locating the necessary information in the notebook for monthly reporting to the leadership. Hence, there is a requirement for a system that can simplify the Treasurer's task of calculating and summarizing the tax data. This project aims to develop apps that can accurately compute value-added tax, income tax 22, and income tax 23 for the acquisition of goods and services. The employed research methodology is the descriptive research method. The system development method employed is the Object-Oriented Analysis and Design (OOAD) model system development method. The system design employs a web programming language integrated with the Codeigniter framework, utilizes a MySQL database, and employs the Visual Studio Code text editor for development purposes.

A research study has led to developing an application at the Lagadar Village Office. This application, designed to calculate Value Added Tax, Article 22 Income Tax, and Article 23 Income Tax for procuring goods and services, is a significant step towards more efficient tax calculations. Its purpose is to assist the Treasurer in efficiently calculating, collecting, recording, and reporting tax calculation data, ensuring accurate and organized records in the system. Research-based recommendations for further development of the application include the creation of an application landing page that provides information on taxation. This will enable application users to stay updated on the latest government regulations pertaining to taxation, particularly for Village Offices. This application not only simplifies the Treasurer's tasks but also ensures accurate and up-to-date tax calculations, instilling a sense of optimism for the future of tax management at the Lagadar Village Office.
Keywords: Application, Calculation, Tax

INTRODUCTION

In today's digital age, there is a growing demand for computer utilization across multiple industries, including administrative and financial management within government organizations. Computers are anticipated to enhance effectiveness and efficiency in work, particularly those involving data processing. Computerizing this data greatly benefits various organizations, including schools, hospitals, and government offices. In addition to computer technology, a complementary system is required to record, store, and process this data efficiently.

As members of society, people and organizations must fulfill their duty of contributing taxes to the government. Tax is an obligatory payment that individuals, institutions, and agencies must make. Indonesia levies several forms of taxes, such as Value Added Tax (VAT), Income Tax (PPh) Article 22, and Income Tax (PPh) Article 23. Government institutions, such as village offices, are responsible for managing and paying taxes—these taxes, particularly in the context of acquiring goods and services. (Damarwati & Gunardi, 2023; Pitriyadi & Iqbal, 2024; Rahman, Silifusti & Afif, 2024)

The village fund treasurer, the local government tax collector, is responsible for deducting Article 22 and Article 23 PPh from payments made to purchase goods and use of services. In addition to PPh Article 22 and Article 23, the village treasurer is responsible for computing and gathering Value Added Tax (VAT) on the village's purchases of commodities. Lagadar Village is also required to manage, calculate, collect, and deposit Value Added Tax (VAT), Income Tax Article 22, and Income Tax Article 23 for acquiring goods and services.

Efficient and effective tax management is a crucial component of financial administration at the village office. The village treasurer's responsibilities as a tax collector involve computing taxes on the acquisition of commodities. However, the manual process of tax calculations and documentation in books can be burdensome and prone to errors. Examples of potential issues include inaccuracies in inputting product prices, variations in tax kinds, and challenges in reporting to the Village Head. This circumstance highlights the necessity for a system that can alleviate these burdens and streamline the process of tax management for officers. (Novida & Erion, 2020; Taroreh, Morasa & Mawikere, 2021; Damariyanti & Fathah, 2023)

An efficient computerized system will empower the village treasurer, enhancing his ability to fulfill his responsibilities. Tax calculation applications offer an effective option to address issues that arise from manual computations. This program is anticipated to accurately and efficiently compute VAT, PPh Article 22, and PPh Article 23, while also streamlining the tax deposit and reporting procedures.

Utilizing technology in tax management at village offices offers numerous advantages. Through a tax calculation program, village treasurers can mitigate the likelihood of calculation inaccuracies and guarantee the proper fulfillment of all tax responsibilities. In addition, this program offers enhanced data security and organization, facilitating the audit and reporting procedures. (Wahyuni & Primandita Fitriandi, 2022; Yulianti, Wulandari & Rustianah, 2024; Sundah, Sondakh & Budiarso, 2020)

Tax management is not just a component, but a crucial pillar of financial administration in all government agencies, including village offices. Lagadar Village, along with other villages in Indonesia, is not just required, but entrusted with the responsibility to fulfill its tax obligations, which include payment of various forms of taxes such as Value Added Tax (VAT), Income Tax Article 22, and Income Tax Article 23. This responsibility encompasses the computation, collection, and submission of taxes on the acquisition of goods and services.

Nevertheless, the manual tax calculating process frequently gives rise to several issues, underscoring the importance of efficient tax management.

One of the primary challenges encountered in manual computations is the occurrence of errors when inputting data, such as item prices and tax types. This blunder has the potential to result in financial losses for the village but also to give rise to legal complications if the submitted tax reports contain inaccuracies. In addition, manual recording necessitates additional time and effort, diminishing the town treasurer's job efficiency. (Sumantri, 2022; Handayani & Zahro, 2021; Putra & Maulidasari, 2020)

On the other hand, the integration of technology in the administrative and financial management of village offices can bring about a host of benefits. The tax calculation program, for instance, offers a faster and more accurate method for calculating and documenting taxes. It also has the capacity to electronically store data, thereby simplifying the process of searching and generating reports. Most importantly, this program can assist the village treasurer in ensuring the timely and accurate fulfillment of all tax obligations.

This study aims to create a software program that can accurately compute the Value Added Tax (VAT), Income Tax Article 22, and Income Tax Article 23 for the acquisition of goods and services at the Lagadar Village Office. This program is anticipated to enhance precision and effectiveness in tax administration while also simplifying the responsibilities of treasurers as tax collectors. The author intends to perform research titled "Application of VAT Calculation, Pph Article 22, and Pph Article 23 for Procurement of Goods/Services (Case Study of Lagadar Village Office)" based on the provided background.

METHOD

The research process uses descriptive approaches to locate the necessary facts and information to fulfill the objectives of the described topic by determining the intended input and output. The activities involved interviews with the village fund treasurer at the Lagadar Village Office. These interviews aimed to gather precise data regarding the current processes and system requirements that will be developed in the future. In addition, the treasurer was observed directly at the Lagadar Village Office in their role as a tax calculator officer. This was done to understand the system developed to meet future customers' requirements.

The research utilizes the Object-Oriented Analysis and Design (OOAD) system development method. The selection of this strategy was founded on its capacity to manage the intricacy of object-based systems and provide modular and straightforward designs to maintain. The system architecture was implemented utilizing a web programming language and the CodeIgniter framework, renowned for its simplicity and efficiency in accelerating web application development. The database employed is MySQL, a dependable and extensively utilized relational database management system. During the coding process, developers utilize the Visual Studio Code text editor, which provides a range of capabilities to streamline application development and debugging.

This project has a clear aim to create a highly functional and streamlined application for calculating VAT, PPh Article 22, and PPh Article 23. It does so by integrating descriptive data-gathering methods and OOAD system development approaches. But more importantly, this program aims to enhance the performance of village treasurers. By minimizing the likelihood of tax computation errors and streamlining the tax reporting procedure to the Village Head and relevant agencies, this project directly addresses the stakeholders' interests. This technique guarantees that the system designed aligns with the genuine requirements of users, consequently enhancing the precision and effectiveness of financial administration at the Lagadar Village Office.

RESULTS AND DISCUSSION

System Analysis and Design

1. Systems Analysis

    The system process at the Lagadar Village Office begins with the acquisition of products by the Head of Planning, followed by the village treasurer's calculation and recording of taxes. Subsequently, the treasurer is responsible for remitting tax payments and providing reports to the Village Head and relevant governmental entities.
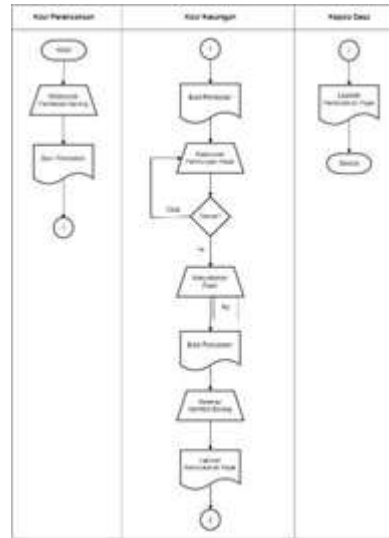

    Figure 1. System Analysis

2. Swot Analysis

    SWOT analysis is a strategic planning technique employed to assess the strengths, weaknesses, opportunities, and threats associated with a project inside a particular firm. This analysis entails identifying the objectives of a business or project and evaluating the internal and external elements that contribute positively towards accomplishing those objectives. Below is a SWOT analysis of the system used at the Lagadar Village Office:

Table 1. SWOT Analysis

Strengths	Weaknesses
The Treasurer is entrusted with the duty and responsibility of accurately computing and collecting taxes, which is effectively regulated in compliance with the relevant legislation.	a. The Treasurer still relies on manual techniques in the recording book to calculate the tax on products. b. A software application is required to input data on purchases of goods/services, do calculations, and generate reports for Value Added Tax (VAT), PPh Article 22, and PPh Article 23.
Opportunities	Threats

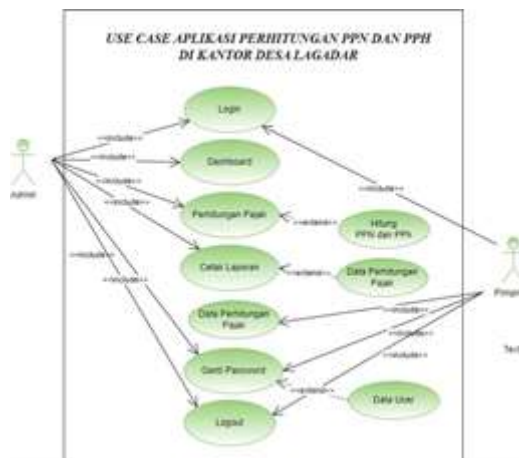|	
a. Simplify the process for the Treasurer to compute and gather taxes. b. When calculating taxes, the Treasurer needs to input the price of the goods or services acquired, and the system will automatically compute the amount of taxes that need to be collected. c. To view the monthly tax summary, the Treasurer only needs to select the month and year during which transactions for acquiring goods or services occurred. d. Generating the tax recapitulation report is a simple task. The treasurer needs to select the month and year when the transactions for purchasing goods or services took place.	The current system needs to be fully prepared for system development since adaptation to the new system is required.

3. Proposed New System
    a. Usecase Diagrams

Figure 2. Usecase Diagram

b. Tax Calculation Table Scenario

Table 2. Tax Calculation Table Scenario

Use Case	Tax Calculation
Aktor	Admin
Deskripsi	The process for carrying out tax calculations
Pre Condition	Displays the dashboard
Post Condition	Displays the tax calculation table
Main Flow of Event	
Actor Action	System Response
Click Tax Calculations	Displays tax calculation data

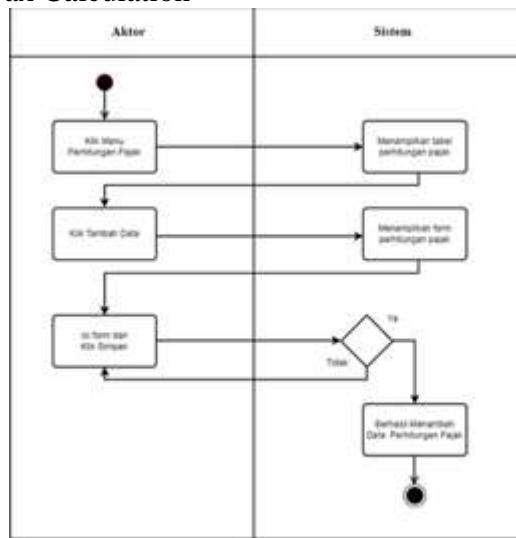| Click Add Data	Displays the tax calculation form to enter date, item name, price, VAT and PPh
Click Save	Display: a. If a form is not filled in, a warning message will be displayed. b. If the form is completely filled in, it will display the message "success", and the data will be saved into the database.

c. Activity Diagram Tax Calculation

Figure 3. Tax Calculation Activity Diagram
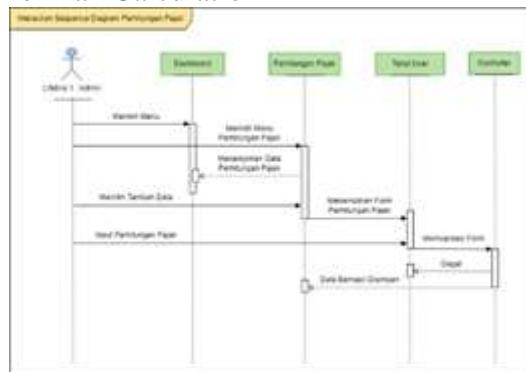
d. Sequence Diagram for Tax Calculation

Figure 4. Sequence Diagram for Tax Calculation
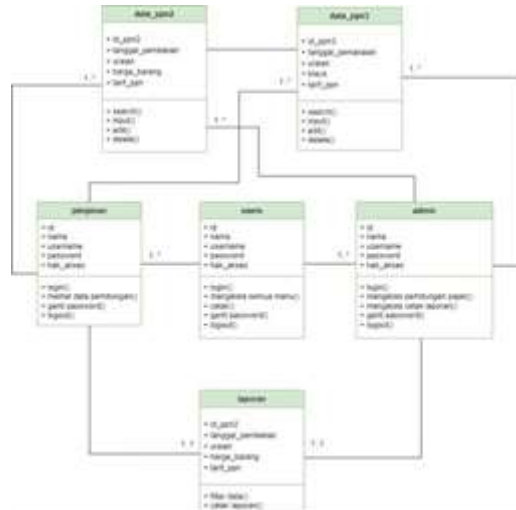
e. Class Diagrams

Figure 5. Class Diagram
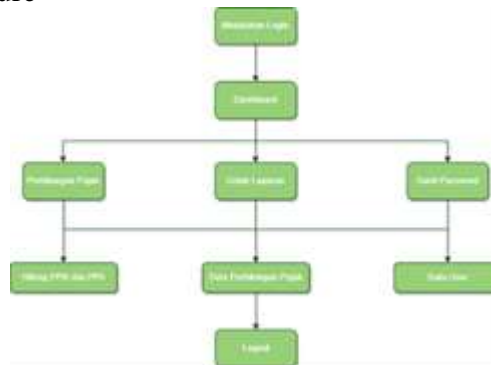
f. Admin Menu Structure

Figure 6. Admin Menu Structure
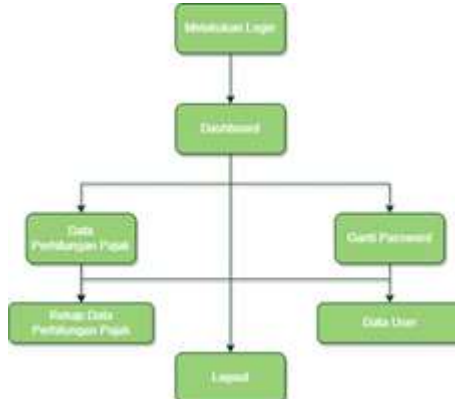
g. Leadership Menu Structure

Figure 7. Leadership Menu Structure

4. System Planning
   a. Database Design
      1. VAT_data table2

Table 2. Data_ppn2 table

No.	Fields	Type	Size	Information
1	id_ppn2	Int	11	Primary Key
2	purchase_date	Date		
3	goods	Varchar	100	

4	qty	Int	8	
5	category	Varchar	30	
6	price of goods	Int	10	
7	vat_tariff	Int	5	

2. VAT_data table3

Table 3. Data_ppn3 table

No.	Fields	Type	Size	Information
1	id_ppn3	int	11	Primary Key
2	usage_date	date		
3	description	varchar	100	
4	cost	int	10	
5	VAT_tariff	int	5	

3. Users table

Table 4. Users table

No.	Fields	Type	Size	Information
1	id	int	11	Primary Key
2	nama	varchar	15	
3	username	varchar	10	
4	password	varchar	32	
5	hak_akses	tinyint	1	

b. Interface Design

Figure 8. Interface Design

System Implementation

1. Login Page Display

Figure 9. Login Page Display

2. Home Page/Dashboard Display

Figure 10. Home Page/Dashboard Display

3. Tax Calculation Page Display

Figure 11. Tax Calculation Page Display
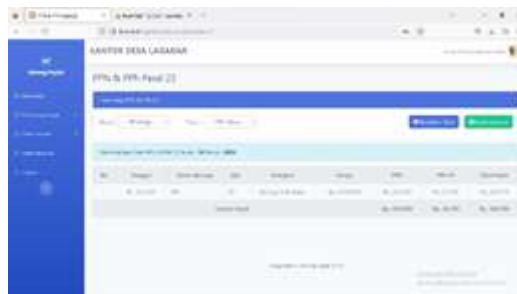
4. Report Print Page Display

Figure 12. Report Print Page Display

5. Report Print-Out Page Display

Figure 13. Report Print-Out Page Display

CONCLUSION AND RECOMMENDATION

The introduction of the new system is anticipated to enhance the efficacy of tax computation applications, offering substantial support to the Treasurer, who is accountable for tax collection at the village office. The findings derived from this ultimate task indicate that using data processing software significantly reduces the likelihood of errors in the input, calculation, and summary of VAT reports, PPh Article 22, and PPh Article 23. The tax computation data entered will be kept in the database, facilitating efficient data retrieval as required.

The application implementation enhances the tax calculating process by introducing a more organized and automated approach. This condition aids in mitigating the potential for human mistakes that frequently arise during manual calculations. Utilizing a database guarantees secure storage and efficient data retrieval, simplifying the audit and reporting procedures. Village treasurers can enhance their operational efficiency, alleviate the burden associated with tax administration, and enhance precision in tax reporting to relevant stakeholders, thereby empowering them to perform their duties more effectively.

The suggestions offered are expected to be beneficial for future system enhancements. Specifically, application users are expected to acquire a more profound comprehension of the tax system enforced by the Village Office. A clear comprehension of this is crucial for users to maximize their use of the application and guarantee adherence to tax legislation. Furthermore, it is anticipated that there will be a uniform method in which tax calculations and payments are conducted while acquiring products or services at the Village Office. Consistency is crucial to maintaining uniformity in tax transaction management, hence minimizing the likelihood of errors and enhancing transparency.

In general, the creation and execution of this tax computation program yield numerous advantages for the Lagadar Village Office. This program enhances both the efficiency and accuracy of tax management, while also promoting transparency and responsibility in village financial administration. This program aims to enhance the Lagadar Village Office's ability to perform its tax duties more effectively and punctually. Furthermore, this program offers a solid foundation for future system growth that may be customized to meet the individual requirements of communities in the next years, instilling a sense of optimism for the future of the village's financial management.

It is anticipated that this program will be further enhanced with new functionalities in the future to assist in managing many financial issues at the Lagadar Village Office. Therefore, this system serves not only as a tool for calculating taxes but also as a comprehensive platform for managing many areas of village finances, offering long-term advantages for the village and its population.

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