

## Application of Value Added Tax Calculation on Sales (Case Study of PT. Tiga Nova Sentosa)

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### Abstract

*This research is entitled an application that can calculate input VAT and output VAT on sales in a company. The lack of utilization of current technology or the system in calculating VAT sometimes results in errors in the difference in payments for the VAT. Therefore, it is necessary to have a system that functions as a VAT calculation tool. So that when the SPT period is reported there are no errors. This application aims to improve accuracy, speed and accuracy so as to reduce errors in management and report generation. The method of data collection uses interviews, observations and literature studies, while the research method used is descriptive method and for its development is Laravel which is an open source PHP-based web application, using the Model-View-Controller concept. This web-based information system was developed using the PHP and MySQL programming languages. The new system can maximize the work of the finance department in tax calculations in a way to be more effective and efficient*

**Keywords :** Application, SPT, Calculation, VAT, Laravel, PT. Tiga Nova Sentosa

### INTRODUCTION

Taxation is a significant revenue source for the advancement and sustenance of state organizations. In Indonesia, taxes fulfill two primary tasks, namely, the budgetary function and the regulatory function. Taxes are a significant revenue source for governments to fund ordinary state operations and facilitate developmental initiatives within the budgetary framework. Taxes represent compulsory financial contributions that individuals and corporations must make to the government, either through personal income or corporate revenues, to support various developmental endeavors across all sectors. Taxes are compulsory levies imposed on individuals by the government to generate revenue for the state.

The primary purpose of taxes is to generate revenue to fund government expenses. Taxes serve as a means to finance various aspects of societal progress, encompassing the allocation of resources towards development initiatives and

the provision of remuneration for public officials, among other essential functions. Taxation is a primary means by which governments generate revenue to fund their various expenses. Taxation encompasses several levies, including customs charges, excise, and direct and indirect taxes. Taxes serve as a source of revenue for the state and impose a compulsory financial responsibility on each individual within a given jurisdiction.

From a fiscal standpoint, taxes serve as a significant domestic revenue stream for the state. Examining the equilibrium between revenue and expenditure makes it possible to strategize the appropriate level of taxation to be levied on taxpayers. The Value Added Tax (VAT) is a taxation levied on providing taxable products and services inside the customs area. This tax applies to various supply chain entities, including producers, primary distributors or agents, importers, and patent and trademark holders of taxable goods or services.

The business sector in which it operates includes commercial activities related to the distribution and trade of electronic and fiber optic equipment, providing repair and project services. PT Tiga Nova Sentosa is classified as a Taxable Entrepreneur (PKP). One of the responsibilities of PT Tiga Nova Sentosa as a registered Taxable Entrepreneur is to perform the computation of the Value Added Tax amount to ascertain any potential discrepancies, such as underpayment, overpayment, or no variance.

Zulia Hanum asserts that the Value Added Tax (VAT) is levied on three specific activities: (1) The provision of taxable goods inside the customs area by entrepreneurs, (2) The importation of taxable goods, and (3) The provision of taxable services within the customs area by entrepreneurs. (4) The usage of intangible taxable products originating from external sources and those originating within the domestic customs area. (5) The utilization of taxable services originating from external sources within the domestic customs area or taxable enterprises' exportation of taxable goods. The researcher is undertaking a final project entitled "An Application for Calculating Value Added Tax on Sales: A Case Study of PT TIGA NOVA SENTOSA."

## **METHOD**

The term "research" may be traced back to its etymological roots, namely the combination of the Latin prefix "re," meaning "again," with the verb "to search." Consequently, research can be understood as searching once more or conducting a renewed investigation. However, within the research context, its connotation extends beyond merely conducting a subsequent search.

Research refers to a methodical and structured approach employed to examine a particular issue to acquire knowledge or data that can be utilized to address the problem at hand effectively. The concept of research methodology encompasses the examination and analysis of various research methodologies that have the potential to generate novel insights and expand the existing body of knowledge. The research technique involves various components, including research methods, questions, research backgrounds, hypotheses, data collection, data analysis, data/information interpretation, results, and recommendations.

### **The topic of interest is research methods.**

Research methods are integral to research methodology, elucidating, delineating, and prognosticating a given event. Research techniques encompass a repertoire of systematic procedures, frameworks, and algorithms employed as instrumental tools in the execution of research endeavors. All research methodologies are intentionally designed to adhere to scientific principles and strive for objectivity. The methods encompass a range of techniques, such as theoretical procedures, experimental research, numerical schemes, statistical approaches, and other methodologies. Research methods facilitate data collection from representative samples and aid in identifying resolutions to particular issues. Descriptive methods encompass three distinct categories: observational methods, case study methods, and survey approaches. In the context of this study, the present research employs the subsequent methods for data collection:

### **The topic of discussion is the methodology employed in system development.**

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In order to augment the research, the author employs the Object-Oriented Analysis and Design (OOAD) approach to construct the software system. Object-Oriented Analysis and Design (OOAD) is an analytical approach that investigates requirements by considering the classes and objects involved in a given problem. This method informs the software architecture by focusing on manipulating system or subsystem objects. Object-Oriented Analysis and Design (OOAD) is a contemporary approach that involves the application of models to address problem-solving scenarios, focusing on aligning these models with real-world concepts and principles. The fundamental basis of Object-Oriented Analysis and Design (OOAD) lies in the concept of objects, which integrate data structures and behavior into a cohesive entity.

The proposed system will be implemented in an online environment, using the Laravel framework and the MySQL database for system design. The process of Object-Oriented Analysis and Design (OOAD) can be divided into two distinct stages: Object-Oriented Analysis (OOA) and Object-Oriented Design (OOD).

Object-Oriented Analysis (OOA) is a methodology employed for examining requirements inside the issue domain, focusing on the classes and objects found within this domain. The problem at hand is examined and analyzed through the utilization of object-oriented approaches in the field of Object-Oriented Analysis (OOA).

Object-Oriented Design (OOD) is a methodology employed to facilitate the structuring of software architecture by manipulating objects within a system or subsystem. Object-oriented design (OOD) is a

design methodology that encompasses the process of decomposing objects and is expressed through notations used to depict both static (class diagram) and dynamic (statechart diagram) models of a system.

System analysis is considered the initial phase of system development, playing a crucial role in establishing the viability and effectiveness of the final information system. System analysis is a comprehensive term that encompasses the preliminary stages of development. Al Fatta defines system analysis as the process of deconstructing a comprehensive information system into its constituent parts to find and assess anticipated issues to offer enhancements.

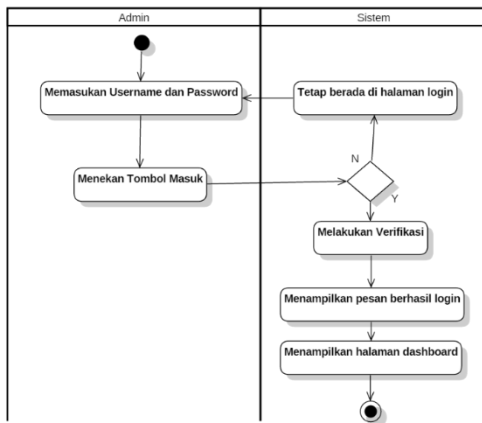
System analysis is a methodical approach that involves evaluating the functioning of a system by examining the input processes, as well as the data output processes, to enhance organizational processes. Therefore, system analysis plays a crucial role in three key aspects: 1) In the capacity of a consultant, 2) In the role of a support expert, and 3) In the position of a change expert. According to Taufiq (2013:153), system analysis may be defined as the comprehensive examination of a system, whether it is manual or computerized. This examination encompasses many stages, including system analysis, problem analysis, logical design, and decision-making based on the analysis outcomes.

An Activity Diagram is a graphical representation of the sequence of activities or workflows within a system intended to be executed. The Activity Diagram is utilized to define or organize the display flow of the system. The Activity Diagram consists of many components represented by distinct forms and interconnected with arrows. Activity diagrams

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represent workflows that illustrate circumstances, restrictions, and sequential and parallel activities. In contrast, the primary objective of Use Cases is to solely delineate the functionality of a system, precisely, what actions the system does, without delving into the details of how these actions are executed.

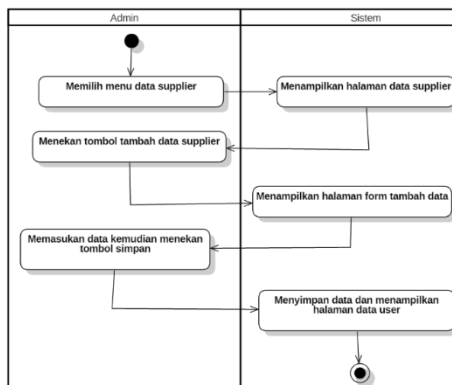
**1. Login Activity Diagrams**



**Figure 1. Activity diagram login**

**2. Activity diagrams manage supplier data**

**a. Input Data Supplier**

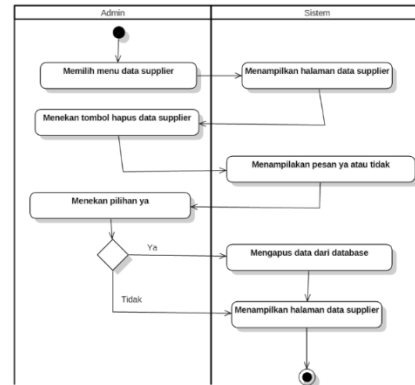


**Figure 2. Supplier Data Input**

**b. Edit Data Supplier**

**Figure 3. Edit Supplier Data**

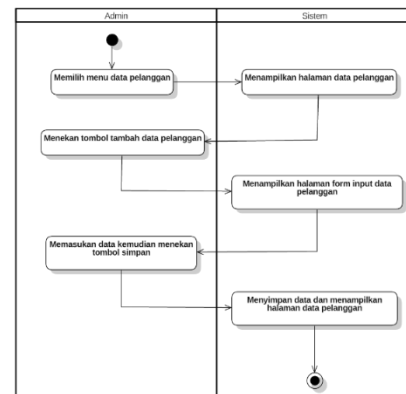
**c. Delete Data Supplier**



**Figure 4. Delete supplier data**

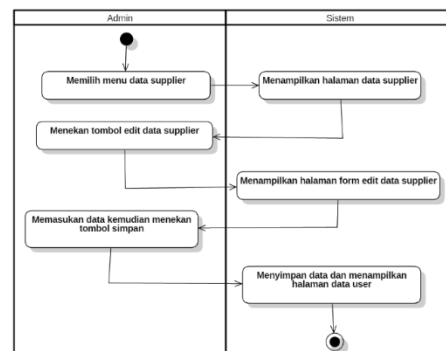
**3. Activity Diagram Managing Customer Data**

**a. Input Customer Data**



**Figure 5. Customer Data Input**

**b. Edit Customer Data**



**Figure 6. Edit Customer Data**

**c. Delete Customer Data**

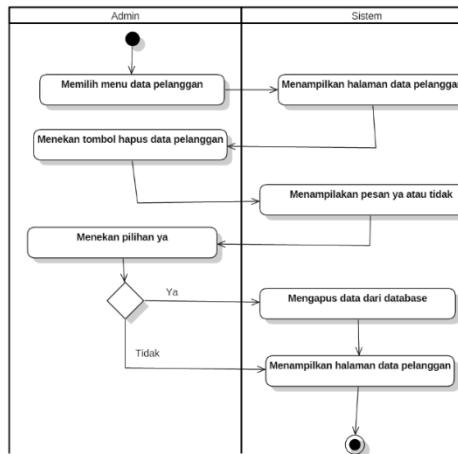


Figure 7. Delete Customer Data

4. Activity Diagram Managing Goods Data

a. Input Data Barang

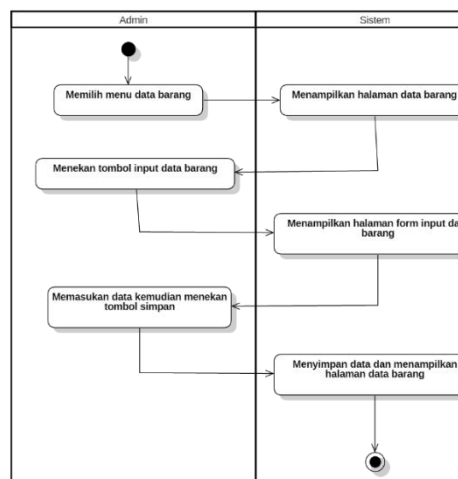


Figure 8. Item Data Input

b. Edit Data Barang

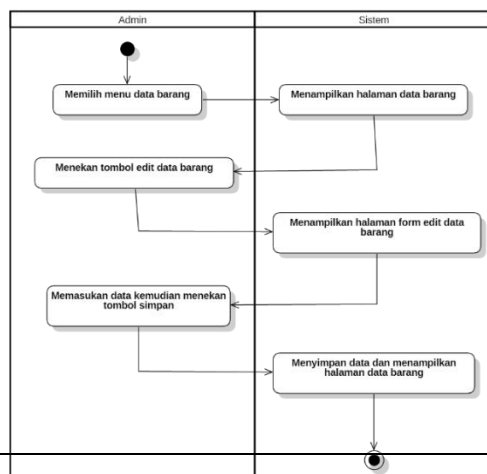


Figure 9. Edit Goods Data

c. Delete Data Barang

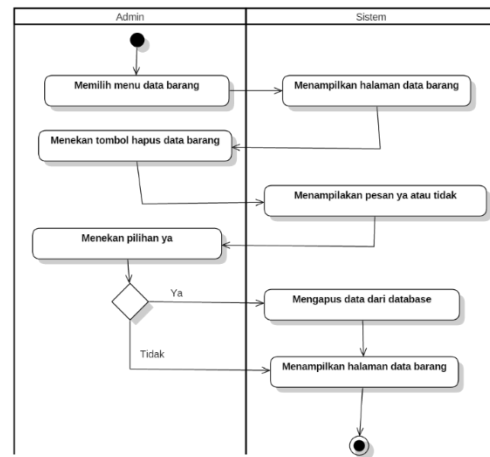


Figure 10. Delete Goods Data

5. Activity Diagram Calculating incoming and outgoing goods VAT

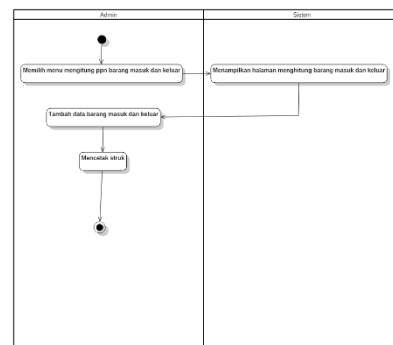


Figure 11. Activity Diagram Calculating VAT on incoming and outgoing goods

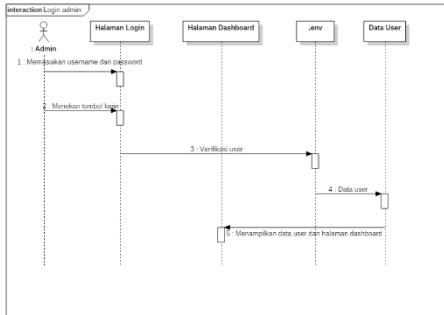
RESULT AND DISCUSSION

A sequence diagram is a type of UML (Unified et al.) diagram representing the interactions between objects or components in a system.

A sequence diagram visualizes the interactions between items, explicitly

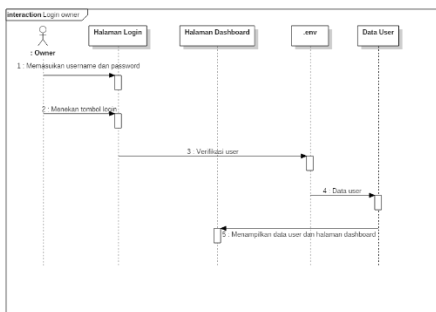
highlighting the communication and exchange of messages among these objects (Putri R. et al., 2021). The Sequence Diagram generated is closely associated with the primary operations of the object-oriented village revenue and spending budget information system.

**1. Admin Login Sequence Diagram**



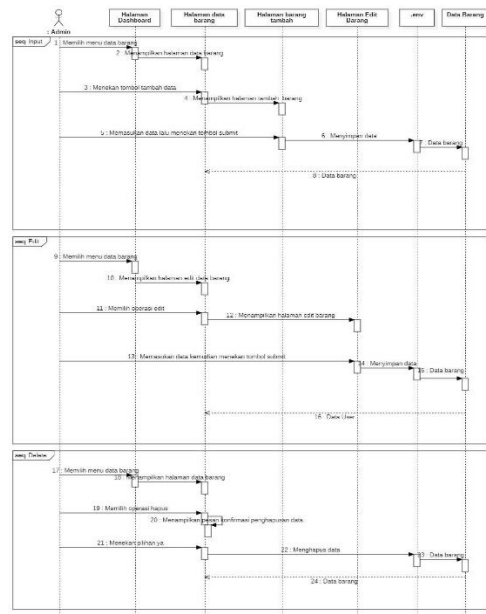
**Figure 12. Admin Login Sequence Diagram**

**2. Owner Login Sequence Diagram**



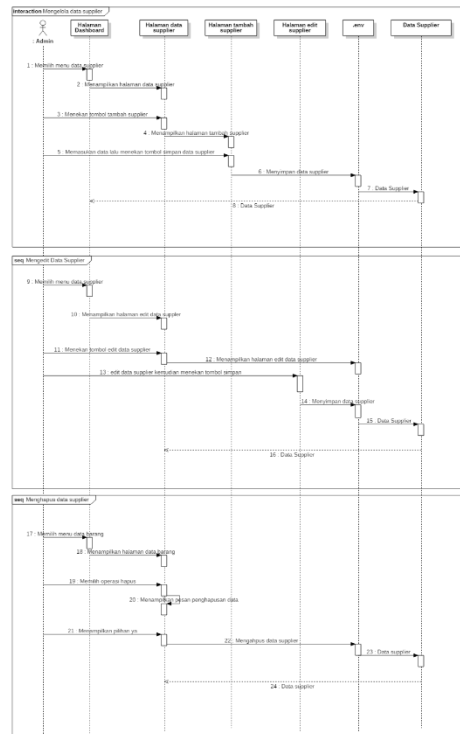
**Figure 13. Owner Login Sequence Diagram**

**3. Sequence Diagram Managing Item Data**



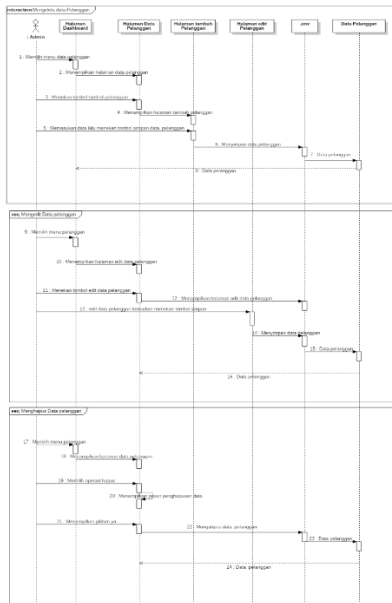
**Figure 14. Sequence Diagram for Managing Goods Data**

**4. Sequence Diagram Managing Suppliers**



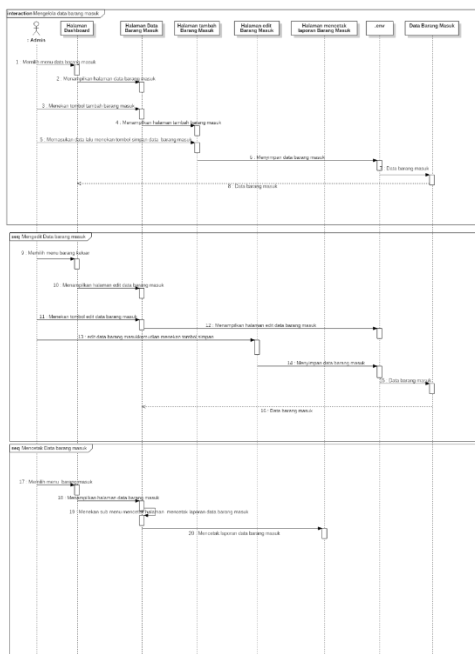
**Figure 15. Sequence Diagram of Managing Suppliers**

**5. Sequence Diagram of Managing Customers**



**Figure 16. Sequence Diagram of Managing Customers**

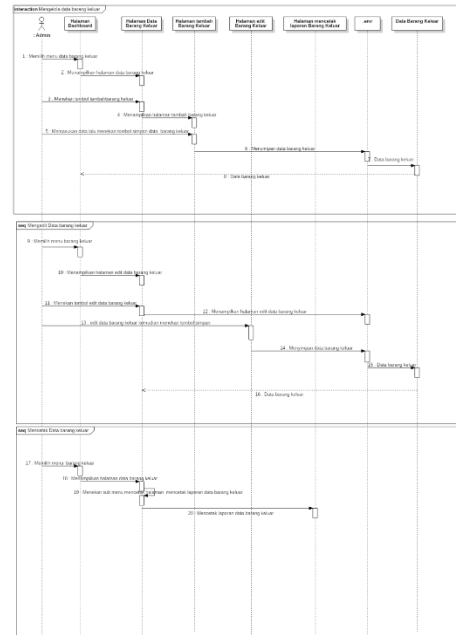
**6. Sequence Diagram Manages Incoming Goods Data**



**Figure 17. Sequence Diagram for Managing Incoming Goods Data**

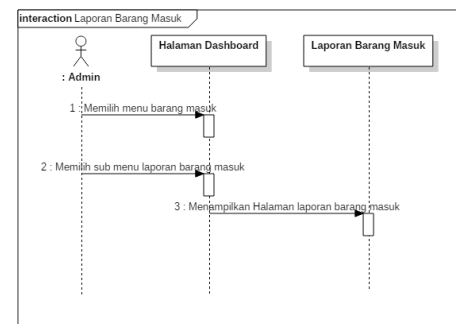
**7. Sequence Diagram Managing Outgoing**

**Goods Data**



**Figure 17. Sequence Diagram for Managing Outgoing Goods Data**

**8. Sequence Diagram for Incoming Goods Report**



**Figure 18. Incoming Goods Report Sequence Diagram**

**CONCLUSION**

**Conclusion**

After observing the system that is running and developing a new system, namely using the PHP programming language, the conclusions drawn from the results of this final assignment are:

1. Web-based VAT data management avoids errors from human error.
2. Errors in calculating the value-added tax must be paid have been minimized by providing input and output VAT data that can be printed according to the required period.
3. The calculation of output VAT and input VAT has begun to be organized because the company has regulations regarding canceling tax invoices and the return of goods.

#### Suggestion

Suggestions that can be given:

1. Software and hardware maintenance is required for the smooth use of the application.
2. Making a copy of the data (back up) is recommended to avoid data damage when the software or hardware experiences problems resulting in maintenance.
3. The need for supervision from the authorities to avoid data manipulation.

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