



Web-Based Inventory Tracing Design in Hospitality

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ABSTRACT

Hotel is a type of accommodation or a provider of facilities and services for lodging, food, beverages and Convention Hall. Where in a hotel will have a lot of inventory and stock of goods needed for the operation of the hotel. Information systems are very important and much needed in hospitality. One of these information systems is the inventory system. With the inventory system, the hotel can manage, control and track all required inventory and stock of goods. The inventory system can simplify the analysis of stock requirements that must be met by the hotel, control the location of stock storage and find out the stock that has been used. A case study in designing inventory tracing is PT. Sapadia Wisata Medan which is engaged in the hotel/lodging sector in the city of Medan. Where the company has 5 lodging properties and of course has a lot of inventory mutation transactions and transactions in and out of stock goods. The obstacle faced by the company is the absence of an information system for inventory. So that many problems occur because of the absence of an information system. The design uses UML (Unified Modeling Language) diagrams, namely use-case diagrams, class diagrams and activity diagrams).

1. INTRODUCTION

Technology and digitalization have developed very rapidly and have become a necessity for the community, agencies and companies. With the continued development of technology and digitalization, it is considered that there will be more opportunities to develop potential in all aspects so that it can be utilized optimally. In

addition, the application of technology and digitization can save time, energy and also costs. The inventory system is one of the information systems that has become very important to be used by many companies where all companies have a lot of inventory that must be maintained and used as well as possible. With the inventory system all inventory becomes organized and very well

organized. Not only that, with an inventory system, all information on all assets can be obtained easily. Not a few companies still do not have an inventory system. And many obstacles are faced because of this, for example the origin of the goods is unknown, the whereabouts of the goods are unknown, and the history of the goods is unknown because all of them are not recorded.

PT. Sapadia Wisata Medan is a company engaged in the service sector, namely lodging that has more than one property in the city of Medan. The company's inventory system is still not run optimally. Where the inventory system is still done manually and the historical data of goods is not recorded in detail and is not stored in one file. In addition, with the many properties that make many transactions occur between property mutations and only use manual recording in the form of minutes of goods handover. This causes problems regarding inventory and information on goods. With the various obstacles faced, it is important to design an

inventory system that can solve the problems encountered. The inventory system must be able to be used to manage, organize and record the transaction history of all inventories.

Based on what has been described above, it is hoped that later it will be able to help resolve the problems regarding inventory faced at PT. Sapadia Wisata Medan. And can make it easier to do inventory tracing of all existing inventory. In addition, it can help facilitate the stock of name at PT. Sapadia Wisata Medan.

2. METHODS

2.1 Types of Research

In the research in this street vendor activity, the waterfall method approach is used so that the design gets good results and is right on target according to the research objectives. The research framework is shown in Figure 1.

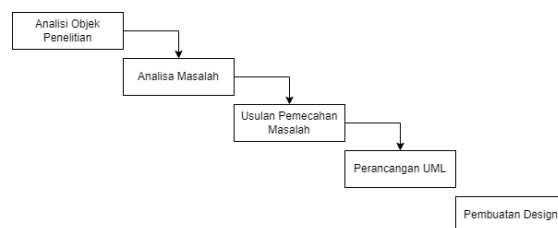


Figure 1. Research Framework

2.2 Research Object Analysis

In a company / agency / institution, of course there will be a problem. An analysis is needed to describe this problem. At PT. Sapadia Wisata uses a Property Management System (PMS), namely an application called the Visual Hotel Program (VHP). VHP is a product of Sindata. In the VHP application there are features needed for hospitality such as at PT. Sapadia Wisata. VHP is a leading Hospitality Software that is fully integrated and available as a Cloud application or Server based and includes Front Office (PMS), Point of Sales (POS) and Back Office (Accounting) modules. VHP is able to become software that can help PT. Sapadia Wisata.

2.3 Problems Analysis

During the PKL activities at PT. Sapadia Wisata, problems were found in the VHP application. The menu or inventory feature in VHP is locked. PT. Sapadia Wisata does not have a license or access right to use the inventory menu.

By not being able to use the inventory menu, it becomes a problem that must be solved. So far, inventory management is not done well. Inventory is only recorded manually. In addition, having many properties causes inventory mutation transactions to be high and the recording is done only manually using only mutation

reports. With these obstacles, it is often difficult to track the company's inventory and the stock of name process is not difficult. Such reports have the risk of being scattered and lost if they are not stored properly. And it can be difficult when it comes to tracking inventory items.

2.4 Proposed Troubleshooting

From the results of the problem analysis that the author has done at PT. Sapadia Wisata regarding inventory that is done manually and recording inventory transactions that are not clear. Can cause many problems that will harm the company if not followed up properly. Therefore, an information system is needed to manage company inventory at PT. Sapadia Wisata is expected to provide positive value in managing, controlling and making it easier to find information for the company's existing inventory.

3. RESULTS AND DISCUSSION

3.1 UML Design

The author uses the Unified Modelling Language (UML) diagram to create a design on the system design which consists of use-case diagrams, class diagrams, and activity diagrams to make it easier to build an inventory tracing system application.

a. Use Case Diagrams

In making a use-case diagram requires 4 steps that must be done first. The stages are as follows:

1. Definition of actor
2. Define use-case
3. Making use-case scenarios
4. Draw a use-case diagram

The first stage is the definition of actors. In the design of this information system the definition of actors.

The second stage is defining the use-case. In designing this information system the definition of use-case.

Table 1. Defining Actor At PT. Sapadia Wisata

No	Actor	Description
1	Superuser	Superuser is a person who has full access rights to the system to manage manipulating user data, property data, goods data, incoming goods transactions, outgoing goods transactions, reporting goods data, incoming goods transactions, outgoing goods transactions.
2	Admin	Admin is a person who has access rights one level below the superuser to the system. What the admin can do is to manage property data, goods data, incoming goods transactions, outgoing goods transactions, reporting goods data, incoming goods transactions, outgoing goods transactions.
3	User	User is a person who is given the task only to manipulate goods data, incoming goods transactions and outgoing goods transactions.

Table 2. Definition of Use-case at PT. Sapadia Wisata

No	Definition	Description
1	Login	The process of entering the system according to the level of the actor.
2	Manipulating User Data	The process of adding, changing and deleting data from actors.

3	Manipulating Data	The process for adding, changing and deleting property data, item data, item unit data, item type data, outgoing goods transactions and incoming goods transactions.
4	Make a report	The process for searching and recording information data from property data, goods data, incoming goods data and outgoing goods data
5	Logout	The process of exiting the system

The third stage is making use-case scenarios. In designing this information system, use-case scenarios for the login process are made, use-case scenarios for the input process, use-case scenarios for

searching and exporting reports, use-case scenarios for the logout process are made.

And The fourth stage is the stage of describing the use-case diagram for each actor.

Table 3. Use-case Login Process

Action Actor	System Reaction
Normal Scenario	
1. Enter username, password and level	2. Checking data username, password and level. 3. Log into the system
Alternatif Scenario	
1. Enter an invalid username, password, and level.	2. Checking data username, password dan level. 3. Display/show alert failed Login

Table 4. Use-case Data Manipulation Process

Action Actor	System Reaction
Add Data Scenario	
1. Select the menu for the data to be added	2. Displays the selected menu table
3. Click button add	4. Show/display form
5. Input data	7. Checking data on form
6. Click button save	8. Displays a message that the data has been saved successfully if the form is filled. And displays a message that the form is not

complete if the form is still not filled in all

Edit Data Scenario

1. Select the menu for the data to be edited
2. Display it in the selected menu table
3. Click button edit
4. Display the form with the selected data for editing
5. input data
6. Click button save
7. Checking data on form
8. Display message data successfully updated

Delete Data Scenario

1. Select the menu for the data to be deleted
2. Display the selected menu table
3. Click the delete button in the cell that is in the same row as the data to be deleted
4. Display the message "are you sure you want to delete this data?"
5. Click button "OK" or "Cancel"
6. If the "Cancel" button is selected, the message is lost. If the "OK" button is selected, the data is deleted and displays a message that the data has been successfully deleted
7. Click Button "OK"

Table 5. Use-case Scenario Logout Process

Action Actor	System Reaction
Normal Scenario	
1. Click button logout	2. Display a message are you sure you want to log out
3. Click button "Ok" or "Cancel"	4. If Ok, displays the login page. If cancel, remove the message.

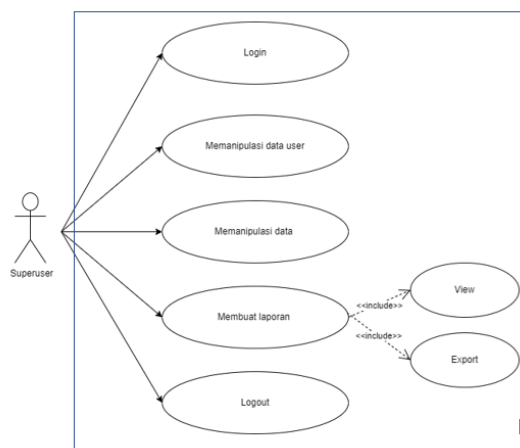


Figure 2. Use-case Diagram Superuser

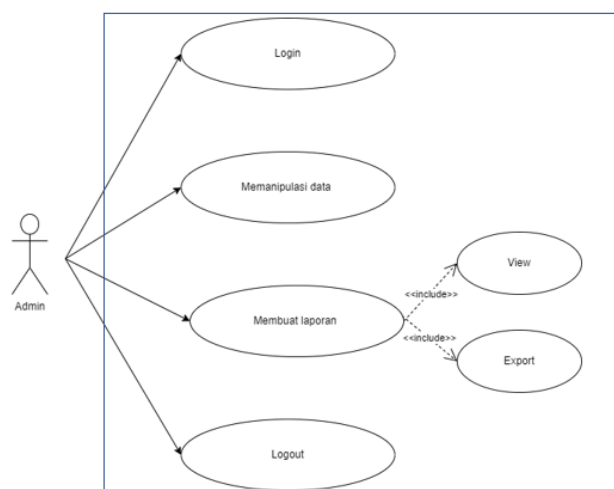


Figure 3. Use-Case Diagram Admin

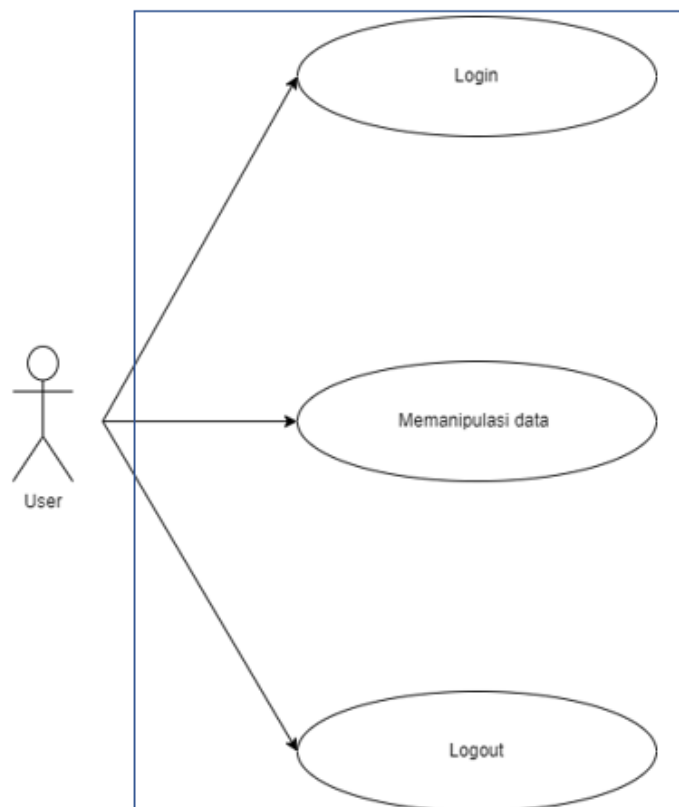
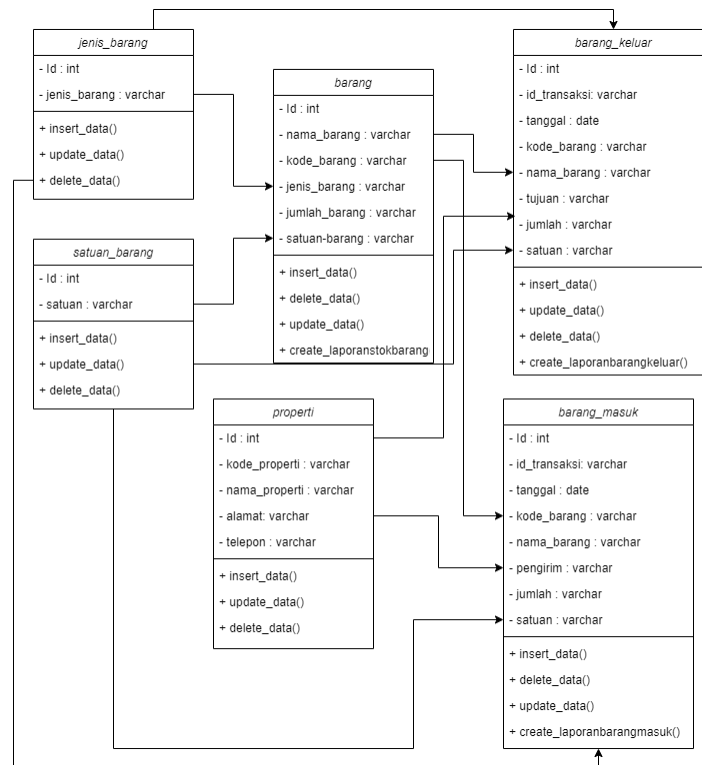
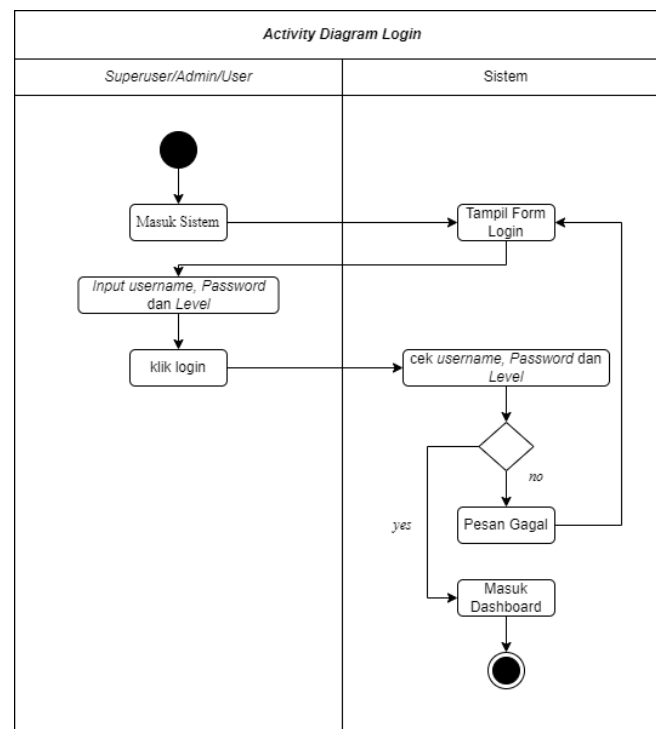


Figure 4. Use-case Diagram User**b. Class Diagram**

Class diagrams for designing inventory systems at PT. Welcome to Travel.

c. Activity Diagrams

In the design of information systems for PT. Sapadia Wisata made an activity diagram to describe the process in the inventory system.

**Figure 5.** Class Diagram Inventory System Design**Figure 6.** Activity Diagram Login

The login activity diagram in Figure 6 explains where the activity to register or register an account can be started by logging into the system, then registering according to the specified username, password and level

format. The system will check the username, password and level. If correct, then enter the application dashboard, and if it fails, an error message will appear.

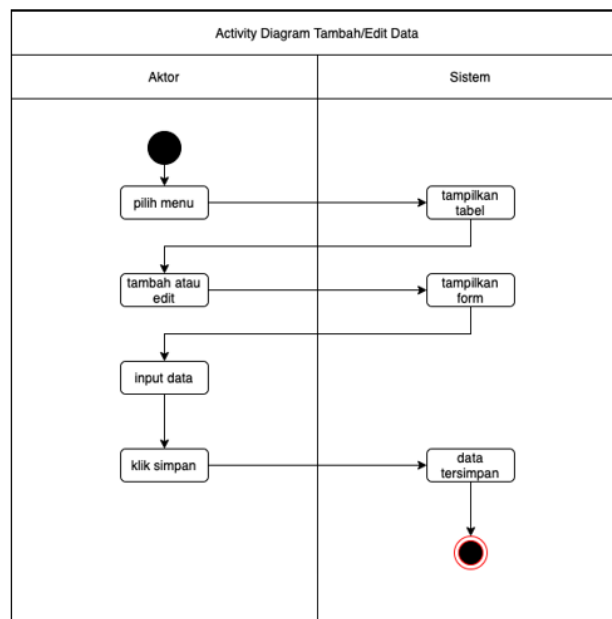


Figure 7. Activity Diagram Data Manipulation

Each transaction menu has features or functions to manipulate data such as adding and updating data. The activity of adding or updating data starts after the actor selects the

transaction menu. Where there will be buttons to add and edit. Then the system will display a form to be filled with information from the data to be added or updated.

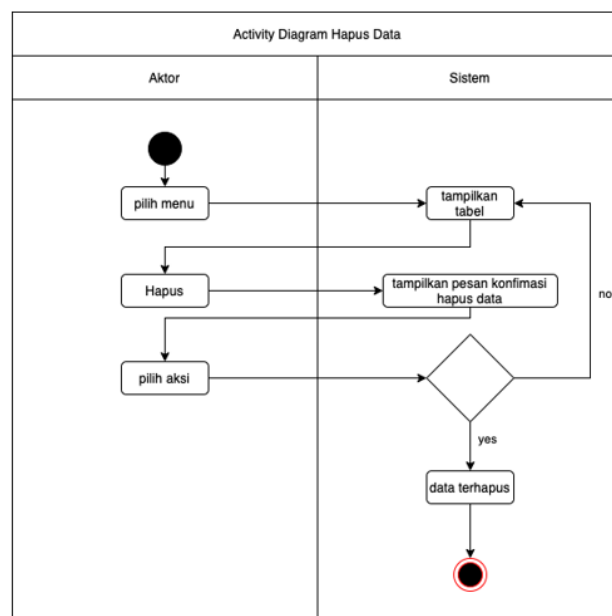


Figure 8. Activity Diagram Delete Data

The steps for deleting data are not much different from data manipulation activities. Start by selecting the transaction menu for the data to be deleted. After entering the

menu, you will be faced with a table containing data from the menu. Then the actor just presses the delete button on the data to be deleted. The system will respond

to confirm the deletion activity. When the actor selects "yes" then the data will be deleted. If you choose "cancel" it will remain on the menu.

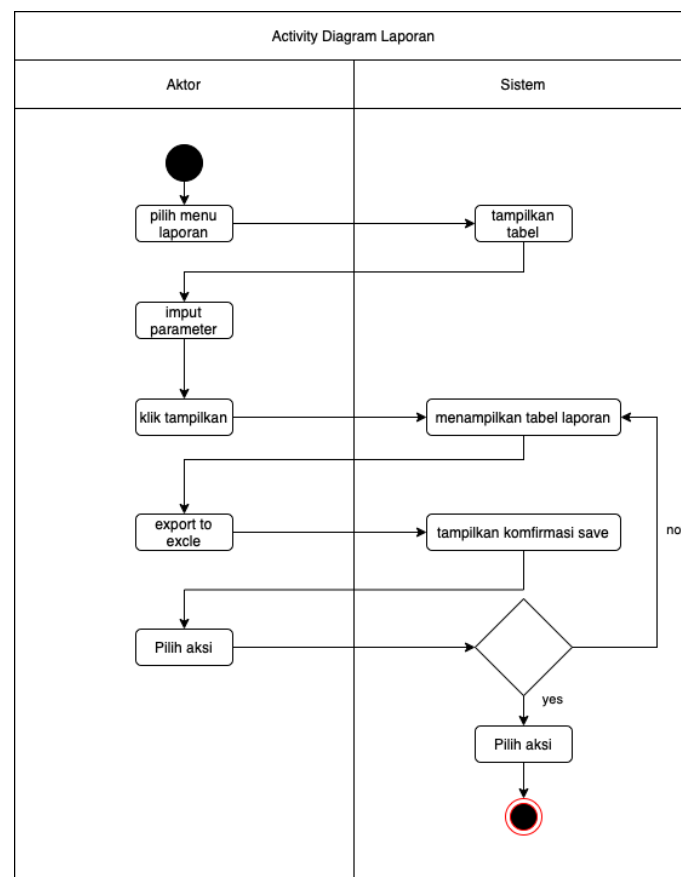


Figure 9. Activity Diagrams Report

The activity of making transaction reports can be carried out by superusers and admins. Which has a process to display reports of each transaction and can be exported to excel.

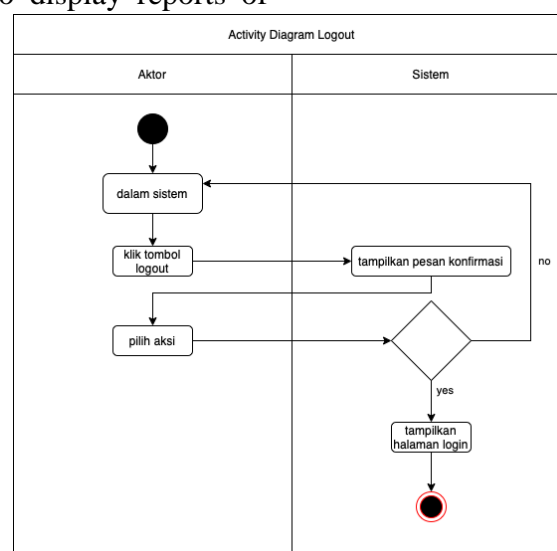


Figure 10. Activity Diagram Logout

In the process of logging out, the actor only needs to press the exit/logout button. And the system will respond and give a message to confirm the logout activity. When the actor selects "yes", the system will log out and then the system will display the login page.

3.2 UI Design

In accordance with the results of the previous analysis and diagramming. This

system has a display design framework that will be applied to the website.

Figure 11. Login Page Design

Figure 12. Dashboard Page Design

No	NIK	Nama	Telepon	Username	Password	Level	Foto	Aksi
1	100001	Dadi	098328	Suhamdani	terang123	Admin		Ubah Hapus

Figure 13. Data User Page Design

Figure 14. Add Data User Page Design

4. CONCLUSION

The design of the information system made in the form of a web-based inventory system application can be continued to the next stage, namely implementation at PT. Sapadia Tourism. It is hoped that this

application can facilitate PT. Sapadia Wisata in managing and controlling inventory.

5. ACKNOWLEDGMENT

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6. REFERENCES

- [1] Valacich, S. Joseph, F. G. Joey. "Modern Systems Analysis and Design. Ney Jersey: Pearson Education." 2017.
- [2] G. B. Shelly, and H. J. Rosenblatt. "Systems Analysis and Design. Boston: Nelson Education." 2014
- [3] D. Vincensius, and B. Wasito. "Analisis Dan Perancangan Sistem Informasi Point of Sales Pada Cv . Sanjaya Abadi". *Journal of Chemical Information and Modeling*, 53(9), 1689–1699. 2017
- [4] Y. M. Siagian. "Aplikasi Supply Chain Management dalam Dunia Bisnis" Jakarta:Grasindo Cikal Sakti. 2015
- [5] R. Vikaliana, at el. "Manajemen Persediaan. Media Sains Indonesia." 2020
- [6] S. Assauri. "Manajemen operasi produksi". Jakarta: PT Raja Grafindo Persada. 2016
- [7] Havaluddin. "Memahami Penggunaan UML (Unified Modelling Language). *Memahami Penggunaan UML (Unified Modelling Language)*, 6(1), 1–15. 2011
- [8] D. Braun, at el. "Object Oriented Analysis and Design Team". Kennesaw State University CSIS 4650-Spring 2001.
- [9] L Jeffry. at el. "System Analysis and Design Methods". 5th edition, McGraw-Hill.2004
- [10] R. I. E. Saragih and Rhamadani. "Context Mobile Application (CMA) for Increasing the Service of Koperasi in Indonesia" JTKSI. 2022.
- [11] R. I. E. Saragih and O. Simatupang, "Regression Genetic Algorithm (RGA) Based Approach For Optimizing Bank Deposit", IEEE publisher., 2019.