DESIGN AND PROTOTYPE OF INFORMATION SYSTEM IN WAREHOUSE

OF TAMANSARI BICYCLE SHOP

A THESIS

**Submitted in Partial Fulfillment of the Requiremet for the Degree of
Bachelor of Engineering in Industrial Engineering**

GALIH RADITYA DEWANGGA

16 14 09061

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A THESIS ON

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Submitted by

Galih Raditya Dewangga

16 14 09061

Was examined and approved on

Faculty Supervisor,

Kristanto Agung Nugroho, S.T., M.Sc.

Board of Examiners,

Chair,

Theodorus B. Hanandoko, ST., MT.   Dr. Parama Kartika Dewa SP., ST., MT

Yogyakarta,

Universitas Atma Jaya Yogyakarta,

Faculty of Industrial Technology,

Dean,

Dr. A. Teguh Siswantoro, M.Sc.

HALAMAN PENGESAHAN

Tugas Akhir Berjudul

DESIGN AND PROTOTYPE OF INFORMATION SYSTEM IN WAREHOUSE TAMAN SARI
BICYCLE SHOP

yang disusun oleh

GALIH RADITYA DEWANGGA

161409061

dinyatakan telah memenuhi syarat pada tanggal 21 Juli 2020

		Keterangan
Dosen Pembimbing 1	: Kristanto Agung Nugroho, S.T., M.Sc.	Telah menyetujui
Dosen Pembimbing 2	: Kristanto Agung Nugroho, S.T., M.Sc.	Telah menyetujui
Tim Penguji		
Penguji 1	: Kristanto Agung Nugroho, S.T., M.Sc.	Telah menyetujui
Penguji 2	: Theodorus B. Hanandoko, ST., MT.	Telah menyetujui
Penguji 3	: Dr. Parama Kartika Dewa SP., ST., MT	Telah menyetujui

Yogyakarta, 21 Juli 2020

Universitas Atma Jaya Yogyakarta

Fakultas Teknologi Industri

Dekan

ttd

Dr. A. Teguh Siswantoro, M.Sc

DECLARATION OF ORIGINALITY OF RESEARCH

I certify that the research entitled "Implementation of Information System in Warehouse Of Taman Sari Bicycle Shop" in this thesis has not already been submitted for any other degree.

I certiythat to the best of my knowledge and belief, this thesis which I wrote does not contain the works of parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should.

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Signature   :

Student name   : Galih Raditya Dewangga

Student ID   : 161409061

Date   : 10th July 2020

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ABSTRACT

This research was conducted to develop an Information System and Prototype Design to help UD. Tamansari Bicycle Shop in making a faster inventory recording method that easy to use and has complete item data.

The problems at UD Tamansari occur because of UD. Tamansari still uses conventional data recording systems using paper and pens where Data is not stored correctly and requires much time that causes when there are transactions from customers, employees must look for customer requests by checking random drawers one by one. This process causes the customer to have to wait a long time, and decreased customer satisfaction. Besides, conventional data recording systems cause the owner to make long-term data records and cause warehouse data records to be often damaged or unusable for the long term.

As the solution, the Design and Prototype of Information Systems in the form of Microsoft Excel connected to the Barcode Scanner is made with features of Procurement, Transactions, Checking Data, and Data Reporting to improve the current data recording system in UD. Tamansari. There are two indicators of successful use of this Prototype and Design of Information Systems, such as the ability to reduce business process time and be easy to use.

To further see which Design and Prototype Information can reduce business process time, the implementation phase will be carried out by calculating the time using a stopwatch, and the results of the calculation will be compared with the time calculation before the software implementation. To achieve an 'easy-to-use software' aspect, the training will be conducted for each user before the device is implemented.

As a result, the average time of the Proposed Selling Business Process that has passed only takes 1 minute and 14 seconds, decreasing 3 minutes from the earlier time. Business Process Average New Procurement Process that has passed only takes 1 minute and 13 seconds, minus 9 minutes and 32 seconds. During the implementation phase, the Design and Prototype of the User's Information System are not having a problem in the use of the software, so this software is approved to meet the aspects that are easy to use.

Keywords: Design, Prototype, Information Systems, Inventory, Microsoft Excel, Barcode Scanners, Barcodes, Sales, Procurement

CHAPTER 1

INTRODUCTION

1.1. Background

Information systems have an important role in supporting business process activities of a company. One of its examples is providing a complete data warehouse that can help the company in managing inventory and services for customer transactions. However, if the company has not implemented the Information System in its business activities, the process of storing data for the benefit of business process activities will run less optimally and will reduce the competitiveness of its competitors.

UD (Usaha Dagang). Tamansari is a bicycle shop located in Jl KH Wahid Hasyim no. 109, Notoprajan, Ngampilan, Yogyakarta. It was established in 1990 by Mr Henry. This bicycle shop has a total of 20 employees that work together from 08.00 until 17.00 daily. This bicycle shop has three functional rooms; there are Shop, Warehouse Finance and Control Room. The Shop room is a place to sells the goods to the customer. A warehouse is a place to store the product. Finance Room is a place to make a financial report, planning, and managing the whole company system.

For the Business Process, UD. Tamansari generates profit from the sales of their main product, which are bicycle, bicycle parts, and bicycle accessories. This company has a partnership with some bicycle supplier from Surabaya, Jakarta, and Semarang to fulfil the demand from the customers. There are supplies of product weekly and monthly to fulfil the demand, which is very fluctuative. The marketing method of this company is Word-Of-Mouth from their strong company brand because of their existence since 1990 and their service to the customer.

Problems in UD. Tamansari occurs because of UD. Tamansari still uses a conventional inventory data recording system using paper and pen where inventory data does not reflect the current situation. That causes when there is a transaction from the customer; the employee must look for the customer's request items by checking the random drawers one by one even though at the end, it turns out the item is empty. The process causes the customer to have to wait a long time which in the long run, this process can cause customer satisfaction to decline, which affects the reputation of the store. In addition,

conventional inventory data recording systems cause the owner to often lose inventory data over an extended period because of the conventional method of using paper and pen results in inventory records being lost or damaged.

From these problems, the creation of the Prototype and Design of Information System with the feature of Procurement, Transactions, Checking Data, and Data Reporting will help UD. Tamansari in shortening customer transaction time and make a complete inventory data so that the problem of customer satisfaction due to long-serving time can be solved and inventory data can be stored in the long term of period.

1.2. Problem Formulation

Based on previous background, the problem that can be formulated on this research is the conventional method of goods data recording that caused a long time of the process that caused a long time of goods serving time to customer also the loss of inventory goods data.

1.3. Research Objective

The objective of this research is to develop the Design and Prototype of an Information System to help UD. Tamansari Bicycle Shop to improve its inventory data recording method. The expected benefit from the Design and Prototype of Information System is to decrease the good serving time to the customer and make a complete data of inventory goods.

1.4. Problem Limitation

a. Research held at UD Tamansari is in Jl KH Wahid Hasyim no. 109, Notoprajan, Ngampilan, Yogyakarta.

b. Observation starts on the 17th of January 2020 until the 30th of April 2020

c. There are problems in UD. Tamansari such as the Inventory recording methods and warehouse layout. But the developing a Design and Prototype of Information System to improve the Inventory recording methods in order to decrease time serving and make complete goods data records has been selected as the focus point of this thesis writing.

d. The result of this paper will be proposed to the owner of UD. Tamansari Bicycle Shop as the decision-maker.

CHAPTER 2
LITERATURE REVIEW AND THEORITICAL BACKGROUND

2.1. Literature Review

Before constructing the plan as a proposed solution to the problem of this research, the earlier research about the similar topic must be found and collected to compare it with the plan of this research.

2.1.1. Previous Research

There are ten research and thesis which discuss similar information and topic for Design and Prototype of Information System in Warehouse with different methodologies and object of research.

(Almas, 2017) Conducted Research in SMK Negeri 3 Malang about the Information System Management in the Library of SMK Negeri 3 Malang to use the Information System to integrate with user experience (students) as the user with the availability data of the books in the Library. In this case, the Information System takes control of Synchronizing the Inventory, Catalogue, Literature Review, Member Management, and Statistic of the Library with Explorative Descriptive Research Methods which is conducted by analysis only until the level of description and present data systematic in order to be understood easier and conducted. Descriptive explorative research also aims to describe the state of a phenomenon, no intended to test the hypotheses but only describe what the presence of a variable, symptom, or condition.

(Tendean, et al., 2016) Conducted Research in PO Sarana About the use of the Barcode in Sales Information System Development. This research is about the implementation of the Information System with the barcode system to increase the efficiency, precise, accuracy on their inventory data calculation, sales, and report to provide a better service to the customer. The method on this research is descriptive research which is a research that represent the current situation based on the facts and datas from when the research is conducted.

(Silalahi, 2019) Conducted Research in CV Profestama Kurnia Nisa about the Extreme Programming in Meubel System Inventory. In this case, the Information System is used to handle the inventory system of CV Profestama Kurnia Nisa in order to make a real time, integrated and synchronized to be shown in both customers and internal teams with Extreme Programming method that consist of

several steps: Planning, Design, Coding, Testing and Software Increment. The new developed system can be accessed online so the owner can be easy to understand the quantity of furniture and when the stock is not avaiable, he can make a direct order to the supplier even the owner is another place.

(Sholeh, et al., 2013) Conducted Research in SMAN 18 Kabupaten Tangerang about the Use of Barcode to Make a Transaction in Library. This research is about the developing and implementation of barcode technology to make a more efficient and effortless process of book rent in SMAN 18 Kabupaten Tangerang's Library. The method that used in this research is observation (direct observation in the library), interview (interview with the librarian) and Study Literature (research about the source from books, media, and experts a preliminary research).

(Wallah, et al., 2017) Conducted Research in Apotek An-Nafi Sumbawa about the Inventory System of Goods Data. This Information system provide the integrated data from the current condition in inventory includes the lack of the product in real time to be controlled of the supervisor in the Apotek An-Nafi. The data of product and the demand data of the product can be the parameter of the procurement process of the business with the Spiral Method. The spiral method is the improvement of the waterfall and prototype with includes these steps: Customer Communication (communication between developer and customer about the problems an data), Planning (Defining the resource, time allocation and system developing plan), Analysis (Make an analysis from the interview and observation that has been conducted to understanding the tool and material requirement to develop the system).

(Yudhanto, et al., 2016) Conduct a Research about the Making of Application of Weapon Warehouse Information System in XYZ Batalyon. This research is about building the Information System to report the Weapon Lists, Member Lists, the weapon and ammunition amount in warehouse, and statistic of usage of the weapon that controlled by the Operator in Warehouse and the Member (Army) as the User. The method that used for this research is prototyping models, which include these steps: Communication, Quick Plan, Modelling Quick Desgn, Construction of Prototype, Deployment Delivery and Feedback that goes continously to improve the system on and on.

(Suffah, 2014) Conducted a Research about Implementation of Barcode in the

Information System of Marketing Section in PT. Coca Cola Amatil Indonesia, Surabaya Branch. This research is to describe how to implement the barcode in the Information System of Marketing Section from PT. Coca Cola Amatil Indonesia, Surabaya Branch outlet. The method that used in this research is triangulation with sourcing triangulation and method triangulation.

(Akbar & Putro, 2018) Conducted a Research about Analysis of Warehouse Information System with QR Code in CV. Karya Nugraha. This research is to implement the use of QR Code software in CV. Karya Nugraha to decrease the time of raw material data input. The research methods include the Data Gathering, Current Warehouse System Analysis, System Requirement Analysis, System Developing, QR Code Developing and User Interface Analysis.

(Gunaya, et al., 2016) Conducted a Research about the Implementation of Warehouse Data for Book Rental in the Udayana University Library Analysis. This paper is about developing the application system to integrate the book data to be easier to access with the user with the computer that available in the library. The method of this research is started by import the database source to the application, ETL process for the database source to resulting the Warehouse Data.

(Simanjuntak, 2015) Conducted a Research about the Analysis of Barcode System Design in Raw Material Handling Flow at the Lumberyard Department at PT Ebako Nusantara Semarang. This research is about the analysis about the barcode system design of Raw Material Handling that been applied in PT Ebako Nusantara Semarang.by using barcode-128 type and RF Cordless Wireless Barcode Scanner as the hardware of the system. The method that used in this research start with Preliminary Study, Problem Formulation, Objective Determination, Scope Determination, Design and Analysis until Conclusion and Suggestion.

Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
1	SMK Negeri 3 Malang's Library	Hanafi Almas	Integrating the data of books availability	Descriptive; Analysis only until the description stage to make analysis can be more understandable and easier to make a conclusion	The Information System of SMK Negeri 3 Library works with automation system that implemented with computerized system, supporting with 5 units of computer that exist in Library
2	PO Sarana	Sandi Tendean, Andhika Adnan, & Bachtiar	Use of the Barcode in Sales Information System Development.	Descriptive Research (represent the current situation based on facts and datas)	After implementing the proposed system, all the transaction process like purchasing, sales and reporting process can be conduct in faster time and simplify the work of the employees by using the barcode technology.

Extend from Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
3	CV. Profestama Kurnia Nisa	Yulia Mesri Silalahi	Handling the Inventory System of CV Profestama Kurnia Nisa	Extreme Programming; Planning, Design, Coding, Testing, Software Increment	The Inventory System of CV Profestama Kurnia Nisa has been built with PHP to make the operating process become easier. The inventory system in CV Profestama also implemented with Extreme Programming where efficiency and effectively can be increased

Extend from Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
4	SMAN 18 Kabupaten Tangerang	Oleh Sholeh, Dede Sopiyan, Vieco Ristiandana, & Ahmad Zaeni	Develop and Implement the barcode for the book rental in SMAN 18 Kabupaten Tangerang's Library	Observation, Interview, and Study Literature	After implementing the barcode system for SMAN 18 Kabupaten Tangerang's Library, the system simplifies the operational of book rental and the service become more fast, precise, and efficient. The process of finding the book become faster.

Extend from Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
5	Apotek An-Nafi Sumbawa's Inventory	Rita Wallah, Shinta Esabella & Yudi Mulyanto	Integrating the data of medicine in Apotek An-Nafi	PHP System Programming with Spiral Method (Customer Communication, Planning, Analysis, Modelling, Construction and Release, Evaluation)	Inventory Goods System from An-Nafi Apotek has successfully built with the PHP Programming System (Hypertext Preprocessor) and MySQL Database. The result is to make the owner can manage the transaction, inventory checking, reporting become more easy
6	XYZ Batalyon Warehouse	Yudho Yudhanto, Setiadi Darmawan, & Winita Sulandari	Building the Information System of Warehouse	Prototyping Models	The SGS Application (Weapon Warehouse System) with PHP has been successfully built. The result is increasing the speed of transaction and inventory process in the warehouse

Extend from Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
7	CV Budi Karya	Dandy Permana Arkaf, & Ramantiyo Eko Putro	Analyst the Warehouse Information System in CV Budi Karya	Warehouse, Management Information System, System Development Life Cycle (SDLC)	The Planning of Inventory Management System in CV Budi Karya can be obtained that sometimes there are mistakes of recording process
8	CV Karya Nugraha	M. Haidar Bagi Akbar, & Ramantiyo Eko Putro	Implement the barcode in the Information System of Marketing	Data Gathering, Current Warehouse System Analysis, System Requirement Analysis, System Developing, QR Code Developing and User Interface Analysis	Some of recording process still run manually, the other has been implemented the Information System with Database System
9	PT. Coca Cola Amatil Indonesia, Surabaya Branch Outlet	Fifi Fella Suffah	Implement the Barcode in the Information System of Marketing Section	Sourcing Triangulation and Method Triangulation	Simplify the process of sending the Information, Increase the Accuracy of Database, Control the Workflow of the Marketing Section Employee in more exact and simple way.

Extend from Table 2.1. Literature Review Summary

No	Research Object	Author	Research Purpose	Method	Result of Research
10	PT Ebako Nusantara Semarang	Devy Christine GM Simanjuntak	Analyst the Barcode System Design in Raw Material Handling Flow at Luberyard Departement	Preliminary Study, Problem Formulation, Objective Determination, Scope Determination, Design and Analysis, Conclusion and Suggestion	The design of the barcode can reduce the problem in the transaction recording process. The flow of material that been designed with the barcode system can simplify the operator's work

2.1.2 Present Resarch

The research will be conducted at UD Tamansari Bicycle Shop with the conventional inventory data record method using the paper and pen, which results in the long-time process and incomplete data of inventory goods. For solution, an improvement in the warehouse was made by implementing the Design and Prototype of Information System in the form of using the Microsoft Office Excel software and Barcode Scanner hardware as the new method for Inventory Goods Data recording.

Microsoft Office Excel selected because Microsoft Office Excel is a software with the most user in worldwide with 1.2 million users than Microsoft Visual Basic (100.000+ users) and Quick Basic Software (72.000+ users). The barcode scanner is used because of the most (not all) goods in the warehouse of UD. Tamansari Bicycle Shop are patched with UPC-A barcode.

From the preliminary research, the Tendean, Adnan, and Bachtiar method is used and because the method is not enough, the Bagi Akbar & Eko Putro method is used as the method combination.

The prototype and design of Information System (Mulyadi, 2016) from Warehouse of UD. Tamansari has the main objective to develop a new method to make a complete inventory data and decrease the goods serving time to the customer.

2.2. Theoretical Background

2.2.1. System

According to Mulyadi (2008), system are two or more components that linked each other (subsystems that unite to achieve the objective), from McLeod (2013), system is a group of elements that are integrated with the common propose of achieving an objective). The conclusion from those theories, system is a group of components that integrate each other to achieve the objective.

2.2.2. Information

Information according to Gordon B Davis (2015), is a data that processed into a form that important to the receiver and has an obvious value that can be the basis of present decision making or decision making in the future. Jogiyanto (2013) also describe the term Information as the data that processed into more useful and meaningful to its receiver. Concluding from those theories, Information is a meaningful and useful data from to its receiver in order as the foundation of

the decision making in present, period and in the future.

2.2.3. Information System

According to Tafri D. Muhyuzir (2001), System is a set of elements and procedures that interact each other to accomplish some objective or target, and Information is a data that have been processed to be an important form that can be used by the user as the input for the decision making. From those explanation, Information System is a gathered data that grouped and calculated into a combination of information that integrated each other and can be used by individual or parties in an objective.

2.2.4. Microsoft Office Excel

Microsoft Office Excel (MS Excel) is a software that produce by Microsoft Corporation and sold in a pack of Microsoft Office with another software such as Microsoft Words, Microsoft Power Point, Microsoft Access, Microsoft Outlook et cetera. Microsoft Excel is well-known software that consist of spreadsheets in form of data calculating that has many functions. The spreadsheet of Microsoft Excel consist of 1.048.576 rows and 16.384 columns of data with user-friendly command to supports the user to processing and calculating the data they want. (Laudon & Downey, 2002)

2.2.5. Barcode

Barcode or bar coding is a form of artificial identifier which is a machine code that can be read in form of bar and space (black and white) in the ratio that defined to represent the alphanumeric characters. The common code-language for barcode is UPC (Universal Product Code) that consists of optical data that can be read by optical scanner (barcode scanner). The UPC-A is use massively in common store, shops, and retail to tracks the flow of goods, show the attribute and value (including the inventory stock) and facilitate the operator to update the inventory level of their goods. (Palmer, 1995) To prevent the falsification when using barcode number method, the company should understand the barcode numbering system the in UPC-A codes. In UPC-A codes, the first digits of the barcode number can show the characteristic of products. The example is for barcode number "3 12345 – 67890 6". The first digits "3" shows the Drugs and Pharmaceutical products. Another example is "2" in "2

12345 – 99291 2". The digit "2" in first digit order of that barcode number shows

for items that sold by weight. The second to fifth order of the digits defines company code, and the sixth until the twelfth shows the product code. Example, 99291 2 in barcode number "2 12345 – 99291 2" Represents the product code. (Barcode, 2014)

Picture 2.1. UPC-A barcode

There are three steps to read and interpret the UPC-A Code, take the example from Picture 2.1. First, begin to find the three sets of longer lines, as shown in the Picture 2.2. Below

Picture 2.2. Three longer lines in UPC-A barcode

Second, identify the four width of the bar. Each vertical bar (black or white) can have one of four different width. Going from thinnest to thickest, these will be described as width 1, 2, 3, or 4 for the rest of this method.
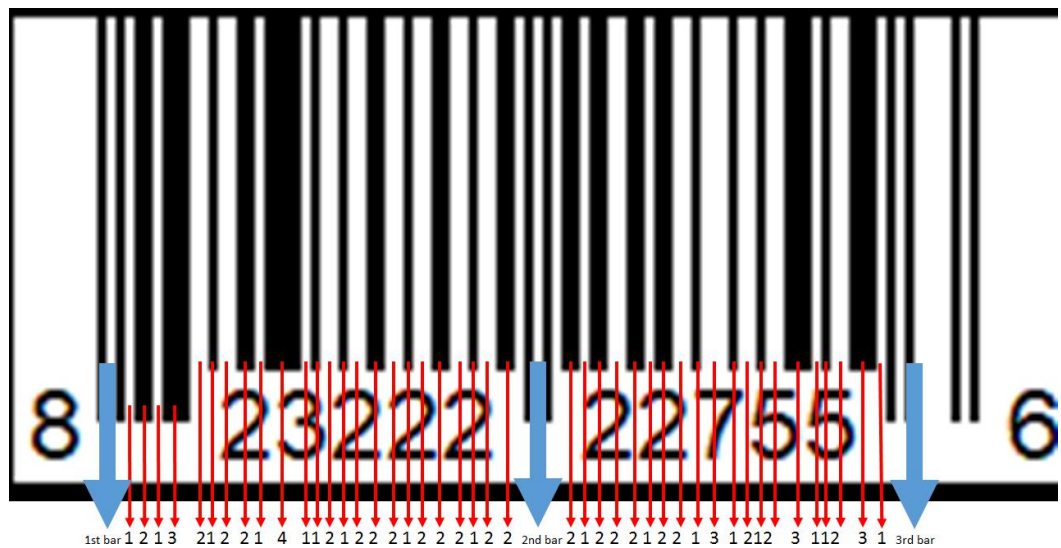
Picture 2.3. Define the width of each bar for the barcode into 4 level.

After done with defining the width of the bar, begin the write down all of number, it will be *1213 2122 1411 2122 2122 2122 2122 2122 1312 1231 1231.* Then Interpret those code to 1-10 scale code, as shown in picture below:

Width Level	Number
3211	0
2221	1
2122	2
1411	3
1132	4
1231	5
1114	6
1312	7
1213	8
3112	9

Picture 2.4. The code for interpreting the 4 barcode width level into numbers

After interpreting the 4-levels-barcode width with into number, the result is *8 23222 22755*. Same as shown in the barcode number from Picture 2.1. From the author perspective, it's dangerous if the user of this Information System did not understand how to read and make the UPC-A barcode number manually, because there are probability of interruption by another parties to fault the system and make a fake barcode for their own behalf. For example, the workers in warehouse can use the fake barcode to synchronize the actual data and the

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inventory goods data when they were stealing the goods.

2.2.6. Barcode Scanner

Barcode Scanner is an optical scanner tool that used to read the barcode that commonly used in the store, warehouse, and other business. According to Surodjo (2009), the using of Barcode scanner can solve some problem such as:

a. Number Error

The error because of the item code that contained is not clearly visible because of distraction from external factors (scratched, etc.)

b. Eyes Distraction

Eyes distraction is a condition where the number that used as the trigger on the input process can be clearly seen because of some factors.

c. Data Input Error

Data Input error is an error of inputting the data from the goods into the calculating device, the common cause-factor that has a significant impact with this error is because of lack of concentration

d. Lateness

Lateness is a condition of the longer time of the process that caused by the conventional way of input data process. The using of barcode scanner can speed up the process at some point (recording the data, calculate the present inventory stock, etc.). Some consideration of using this barcode scanner are efficiency, accuracy, and precision. The advantages of using the barcode scanner are decrease the time of data input process, increase the accuracy and precise of input process, decrease the cost (from the data input error and workload) and improving the employee working performance.

2.2.7. Warehouse

Warehouse is a tangible building that exist to store the goods, or things that related to the business to support the business progress. There are two function that support the Warehouse, there are Material Handling function and Storage function. In the conventional shop / store, the warehouse has important function to store the products from the supplier. The warehouse in conventional store influenced by the number of demands of the products, frequency of material handling and size of the product. The frequency of material handling itself also influenced by the frequency of sales, frequency of loading / store and frequency of goods

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checking. (Stock & Lambert, 1993).

CHAPTER 6

CONCLUSION

6.1. Conclusion

The Current Selling Business Process and Current Procurement Business Process at UD. Tamansari Shop conducted conventionally using only paper and pens. This situation and caused customer dissatisfaction and worker disappointment because of a long time. From observations, the average time elapsed for the Selling Business Process is 4 minutes and 20 seconds and the average time elapsed for the Procurement Process is 11 minutes and 5 seconds.

To the time elapsed, the Design and Prototype of Information System in the form of Microsoft Excel that connected to the Barcode Scanner that can help the UD. Tamansari with the features of Goods Procurement, Transactions, Checking Goods Data, and Data Reporting has been implemented.

As a result, the Proposed Selling Business Process average time elapsed took only 1 minute and 14 seconds, decreased by 3 minutes from time before. P Procurement Business Process average time elapsed took only 1 minute and 13 seconds, decreased by 9 minutes and 32 seconds. During the implementation phase, users of the Design and Prototype of Information System have no problems using the software, and then this software is declared to have fulfilled the easy-to-use aspect.

6.2. Suggestion

UD. Tamansari Shop must implement an Information System to reduce the time needed in the Selling Business Process and Procurement Business Process as a solution to reduce serving time to increase customer satisfaction and satisfy workers.

For further research, it is better to make and Prototype and Design of Information System that can be operated on a smartphone because it is more ergonomic, and practical while still paying attention to an easy-to-use aspect.

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ATTACHMENTS

List of Questions and Answers from Owner (Accountant)

1. What is your name?
   - *My name is Henry*

2. How long UD. Tamansari Shop has existed?
   - *UD. Tamansari Indah has been exist since 1997, its around 23 years until present time.*

3. What is your role of UD. Tamansari Shop beside you as the owner of this Company?
   - *I also exist as the Accountant of this company, because it is the position that hard to delegate.*

4. What is the task that you did in UD. Tamansari Indah as the owner and the accountant to the company?
   - *As the owner, I take place as the highest decision maker of this company. I am also directing all my workers in this company, control them when they are doing their job, evaluating if there are mistake and solving the problem with the job. As the Accountant, I made an annually sales report and goods report, made a receipt to customer, receive the invoice and make a payment to the customer.*

5. Do you have a problem with your current task in UD. Tamansari Shop?
   - *Problem is an ordinary things for me, in current situation there is a problem in bookkeeping where sometimes the customer receipt is gone after 1 year in archive rack, also I dont have a proper goods data receipt because the time is often not enough to make a proper goods data record.*

6. On your opinion, what it (the problem) should be?
   - *My workers must be faster to find the goods and there must be a device or tool to make the bookkeeping data can be last longer than now.*

7. Are you using the Information System (gadgets, smartphone, computers, etc.?)
   - *Yes, I use a smartphone right now.*

8. What do you think if the writer makes an Information System model to solve the problem on your task and improveing the business process in UD. Tamansari Shop?

    - *It is okay as long it can be improve the performance of warehouse, the bookkeeping process and the important is, that thing must be easy to use.*

List of Questions and Answers from Salesman

1. What is your name?
    - *My name is Kalahari.*
2. What is your position in UD. Tamansari Shop?
    - *I am the salesman on this company.*
3. How long you have been working in UD. Tamansari Shop?
    - *I have been working since 2010, so it is around 10 years.*
4. What is your task as your current position in UD. Tamansari Shop?
    - *My job is to persuade customer to buy the product and receiving their order, go to the warehouse and communicating with the Warehouse Staff about the availability of the goods, then serving the products to the customer or reject their order.*
5. Do you have a problem with your task in UD. Tamansari Shop and what are them?
    - *Yes, I hate it when the customer are complains about the long their waiting time before the product is served.*
6. On your opinion, what it (the task with the problem) should be?
    - *The problem occurs because I wait too long for the Warehouse Staff to find the products in the warehouse, the time to find the goods must be faster than now.*
7. Are you using the Information System device like Gadgets, Smartphone, or Computer?
    - Yes, *Currently I had laptop and using 2 smartphones.*
8. What do you think if the writer makes an Information System model to solve the problem on your task and improve the business process in UD. Tamansari Shop?

- *I agree for improving the current system as long the system is easy to use, simplify our work and there will not be a complaint from customer.*

List of Questions and Answers from Warehouse Staff

1. What is your name?
   - *My name is Rizal.*
2. What is your position in UD. Tamansari Shop?
   - *I am the Warehouse Staff on this company.*
3. How long you have been working in UD. Tamansari Shop?
   - *I have been working since 2007, its 13 years.*
4. What is your task as your current position in UD. Tamansari Shop?
   - *My job is to keep the goods in place, the warehouse clean and clear and get the desired product of the customer. Also, I am the most responsible person when there is a Procurement process that happened every 2 weeks in the company. I receive the goods, put it in the proper rack and make a goods data recording after.*
5. Do you have a problem with your task in UD. Tamansari Shop and what are them?
   - *Yes, even if I am the Warehouse staff, because in the peak hour the order is high. I felt difficult to find the product because I must find them first manually in every rack and it takes a lot of time, that's why the Salesman often mad at me because of this. Also, when the procurement session is happened, I take a long time to record the goods data, because I must write it one-by-one in the goods data book manually. Sometimes, the data is not complete because the time is not enough.*
6. On your opinion, what it (the task with the problem) should be?
   - *There must be an improvement on the goods finding process, goods recording process. It can be buying a new warehouse, hire new person or new technology to improve it.*
7. Are you using the Information System device like Gadgets, Smartphone, or Computer?
   - *Yes, I and my wife are using smartphone, and so my two kids.*

8. What do you think if the writer makes an Information System model to solve the problem on your task and improve the business process in UD. Tamansari Shop?

- *I agree as long it can fasten the finding process in the warehouse, because it is my task here.*

Coding from the UD. TAMANSARI SHOP Application Main Menu

```
Private Sub Label1_Click()
FormLaporanKasir.Show
End Sub

Private Sub frmAplikasi_Click()
End Sub

Private Sub Image2_Click()
End Sub

Private Sub imgCekStock_Click()
formCariBarang.Show
End Sub

Private Sub Label2_Click()
formUtama.Height = 415
End Sub

Private Sub Label4_Click()
formUtama.Height = 235
End Sub

Private Sub lblCekStok_Click()
formCariBarang.Show
End Sub

Private Sub lblTanggal_Click()
End Sub
```

```vba
Private Sub UserForm_Initialize()
formUtama.Height = 235
listLaporan.AddItem "Cetak Tabel Barang"
listLaporan.AddItem "Cetak Tabel Pembelian/Penjualan"
listLaporan.AddItem "Cek Keuntungan Harian / Bulanan"
lblTanggal.Caption = Format(Date, "Long Date")
End Sub

Private Sub cmdKeluar_Click()
Keluar = MsgBox("Anda akan keluar dari aplikasi?", _
    vbYesNo + vbQuestion, "Aplikasi Toko Retail")

If Keluar = vbYes Then
    Unload Me
    Sheets("TabelBarang").Visible = xlSheetVeryHidden
    Sheets("TabelPelanggan").Visible = xlSheetVeryHidden
    Sheets("TabelPembelian").Visible = xlSheetVeryHidden
    Sheets("TabelPenjualan").Visible = xlSheetVeryHidden
    Sheets("NotaPembelian").Visible = xlSheetVeryHidden
    Sheets("NotaPenjualan").Visible = xlSheetVeryHidden
    Sheets("Laporan").Visible = xlSheetVeryHidden
    ThisWorkbook.Close SaveChanges:=True
ElseIf Keluar = vbNo Then
    Exit Sub
End If
End Sub

Private Sub UserForm_QueryClose _
(Cancel As Integer, CloseMode As Integer)
    If CloseMode = vbFormControlMenu Then
    Cancel = True
End If
End Sub

Private Sub cmdModifikasi_Click()
Unload Me
formModifikasi.Show
```

```vb
                End Sub


        Private Sub cmdMasuk_Click()
        PilihanLogin = MsgBox("Tekan Yes jika Anda adalah
Sales" _
        & vbCrLf & "Tekan No jika Anda adalah Accountant
        (Owner)", _
        vbYesNoCancel + vbQuestion, "Pilihan Masuk Pengguna")

        If PilihanLogin = vbYes Then
            'Menampilkan Form Login Kasir
            formLoginKasir.Show
        ElseIf PilihanLogin = vbNo Then
            'Menampilkan Form Login Administrator
            formLoginAdministrator.Show
        End If
        End Sub
        Private Sub imgBarang_Click()
        formPro.Show
        End Sub
        Private Sub lblBarang_Click()
        formPro.Show
        End Sub

        Private Sub imgPemasok_Click()
        formDatabasePemasok.Show
        End Sub

        Private Sub lblPemasok_Click()
        formDatabasePemasok.Show
        End Sub

        Private Sub imgPelanggan_Click()
        formDatabasePelanggan.Show
        End Sub

        Private Sub lblPelanggan_Click()
        formDatabasePelanggan.Show
        End Sub
```

```vba
Private Sub imgPembelian_Click()
Set wsDtbsBrg = Sheets("TabelBarang")
Set wsDtbsPmsk = Sheets("DatabasePemasok")

If wsDtbsBrg.Range("A3").Value = "" Then
    'Menampilkan kotak pesan Database Barang Kosong
    Kosong = MsgBox("Tidak ada data dalam database
barang" & _     vbCrLf & "Input barang baru?", vbYesNo +
vbInformation, _
    "Database Barang Kosong")
    If Kosong = vbYes Then
       formTabelBarang.Show
    ElseIf Kosong = vbNo Then
       Exit Sub
    End If
End If

If wsDtbsPmsk.Range("A3").Value = "" Then
    'Menampilkan kotak pesan Database Pemasok Kosong
    Kosong = MsgBox("Tidak ada data dalam database
pemasok" & _
    vbCrLf & "Input pemasok baru?", vbYesNo +
vbInformation, _
    "Database Pemasok Kosong")
    If Kosong = vbYes Then
       formDatabasePemasok.Show
    ElseIf Kosong = vbNo Then
       'Keluar dari Sub Procedure
       Exit Sub
    End If
End If

formTransaksiBeli.Show
End Sub

Private Sub lblPembelian_Click()
Set wsDtbsBrg = Sheets("TabelBarang")
Set wsDtbsPmsk = Sheets("DatabasePemasok")
If wsDtbsBrg.Range("A3").Value = "" Then
```

```vba
        Kosong = MsgBox("Tidak ada data dalam database
barang" & _
    vbCrLf & "Input barang baru?", vbYesNo +
vbInformation, _
    "Database Barang Kosong")
    If Kosong = vbYes Then
        formTabelBarang.Show
    ElseIf Kosong = vbNo Then
        Exit Sub
    End If
End If

If wsDtbsPmsk.Range("A3").Value = "" Then
    Kosong = MsgBox("Tidak ada data dalam database
pemasok" & _
    vbCrLf & "Input pemasok baru?", vbYesNo +
vbInformation, _
    "Database Pemasok Kosong")
    If Kosong = vbYes Then
        formDatabasePemasok.Show
    ElseIf Kosong = vbNo Then
        Exit Sub
    End If
End If

formTransaksiBeli.Show
End Sub




Private Sub imgPenjualan_Click()
Set wsDtbsBrg = Sheets("TabelBarang")
Set wsDtbsPlgn = Sheets("TabelPelanggan")
If wsDtbsBrg.Range("A3").Value = "" Then
    Kosong = MsgBox("Tidak ada data dalam database
barang" & _
    vbCrLf & "Input barang baru?", vbYesNo +
vbInformation, _
    "Database Barang Kosong")
```

```vba
        If Kosong = vbYes Then
            formTabelBarang.Show
        ElseIf Kosong = vbNo Then
            'Keluar dari Sub Procedure
            Exit Sub
        End If
    End If


    If wsDtbsPlgn.Range("A3").Value = "" Then
        Kosong = MsgBox("Tidak ada data dalam database
pelanggan" & _
        vbCrLf & "Input pelanggan baru?", vbYesNo +
vbInformation, _
        "Database Pelanggan Kosong")
        If Kosong = vbYes Then
            formDatabasePelanggan.Show
        ElseIf Kosong = vbNo Then
            Exit Sub
        End If
    End If


    formTransaksiJual.Show
    End Sub


    Private Sub lblPenjualan_Click()
    Set wsDtbsBrg = Sheets("TabelBarang")
    Set wsDtbsPlgn = Sheets("TabelPelanggan")
    If wsDtbsBrg.Range("A3").Value = "" Then
        Kosong = MsgBox("Tidak ada data dalam database
barang" & _
        vbCrLf & "Input barang baru?", vbYesNo +
vbInformation, _
        If Kosong = vbYes Then
            'Menampilkan Form Database Barang
            formTabelBarang.Show
        ElseIf Kosong = vbNo Then
            'Keluar dari Sub Procedure
            Exit Sub
        End If
    End If
```

```vba
If wsDtbsPlgn.Range("A3").Value = "" Then
    Kosong = MsgBox("Tidak ada data dalam database pelanggan" & _
    vbCrLf & "Input pelanggan baru?", vbYesNo + vbInformation, _
    "Database Pelanggan Kosong")
    If Kosong = vbYes Then
        formDatabasePelanggan.Show
    ElseIf Kosong = vbNo Then
        'Keluar dari Sub Procedure
        Exit Sub
    End If
End If

formTransaksiJual.Show
End Sub


Private Sub listLaporan_DblClick(ByVal Cancel _
    As MSForms.ReturnBoolean)
If listLaporan.Value = "Cetak Tabel Barang" Then
    formCetakBarang.Show
ElseIf listLaporan.Value = "Cetak Tabel Pemasok/Pelanggan" Then
    formCetakPmsk_Plgn.Show
Else
    'Menampilkan Form Cetak Database Pembelian/Penjualan
    FormProfit.Show
    End If
End Sub
```