

# DESIGN OF SUPPLY CHAIN MANAGEMENT (SCM) PALM OIL PRODUCTION FLOW IN WEB-BASED

Henny Yulius<sup>1</sup>, Abulwafa Muhammad<sup>2</sup>, Susi<sup>3</sup>

1 Faculty of Industrial Technology Department of Industrial Engineering

2 Faculty of Computer Science Department of Informatics

University Putra Indonesia "YPTK" Padang

Email: henny\_yulius27@yahoo.com

## ABSTRACT

The application program Supply Chain Management (SCM) on the Company PT.Sari Fertile Valley is a web-based application program, in which benefits from this application is as one of the solutions to improve the performance of palm oil production flow from raw material to be semi-finished products (CPO), in which the plot consist suppliers, manufacturers, and distributors.

To improve the performance of the operator in order to increase palm oil production PT.Sari Fertile Valley designs a website that serves to simplify the management of the employment relationship, complete company information and promotional media of PT.Sari Fertile Valley.

The functions that exist in application programs Supply Chain Management (SCM) is a menu entry materials online, entry menu item reports and sales reports to help minimize the cost incurred by the company. The application program has been tested to ensure the program can function properly and in accordance with the designed result.

**KEY WORDS :** Supply Chain Management (SCM), PHP, Web

## 1. INTRODUCTION

### 1.1 Background

Supply Chain Management is a set of approaches used to integrate suppliers, manufacturers, warehouses, and stores. So that the goods are produced and distributed on the number, location and at the right time, and in order to minimize costs.

PT. Sari Fertile Valley today still uses the manual operating system for the performance of palm oil production flow or on any station in palm production. With the use of the current operating system the company is facing labor-intensive production processes, so that operational costs increased too great. So the company get less than the maximum in the process of production.

The system is working to expedite the flow of palm oil production in PT. Sari Fertile Valley, ranging from suppliers and processed at the manufacturer after the goods shipped to distributors. Distributors in this system only

serves to display all the information which is entered into a leading manufacturer supplier.

### 1.2 Problem Formulation

Based on the above, in the study of this issue the design is encapsulated by the formulation of the problem such as :

1. How can the production process be applied to the PT. Sari Fertile Valley?
2. How Supply Chain Management can be applied in the production of palm oil processing flow at PT. Sari Fertile Valley?
3. How the system work in order to facilitate data processing raw materials on PT. Sari Fertile Valley?

### 1.3 Limitation Problem

Supply Chain Management is designed by using PHP programming language (WEB). The extents of the scope of problem of Supply Chain Management is as follows :

1. Suppliers
2. Manufacturers
3. Distributor

#### 1.4 Research Objectives

Purpose of the research is

1. To accelerate the performance of current palm oil production at PT. Sari Fertile Valley. It is important, because the existence of this system will be very helpful in carrying out the performance of palm oil production.
2. To provide provision of equipment / media information and promotion company PT. Sari Fertile Valley and develop a new system.
3. To facilitate coordination of business organization as a whole, resulting in a real information.

## 2. FOUNDATION THEORY

### 2.1 Basic Concepts of Supply Chain Management

We use concept called 'the concept of supply chain' (supply chain or supply chain management concept). Deliberately term 'supply chain' is not translated into Indonesian language, because it is in the logistics or purchasing management. The term has been known by the term in the English language. If you want to translate into Indonesian language, you may use the term 'supply chain' or 'supply chain'. (according to Eko Indrajit and Djokopranoto Richardus, 2003).

In this consideration, there are some major players in the companies that have the same interests according Richardus Eko Indrajit and Djokopranoto, 2003, namely:

1. Suppliers (supplier) is instrumental which provides / prepares basic materials to be produced and is responsible for the appropriateness and quality of the material.
2. Manufacturer (factory) is a company that buys raw materials and process them into finished goods.
3. Distribution (agents / wholesalers) is a company that buys goods from factories in bulk for distribution to retailers.
4. Retail outlet (retail stores) is a merchant that serves as the end user consumer goods or services.
5. Customers (users) are users of the goods or services. Process and an explanation of the major players (suppliers, manufacturer, distribution, retail outlets, customers) themselves.

### 2.2 UML Diagram

In UML 2.3 which consists of 13 kinds of diagrams are grouped in 3 categories. The division of categories and various diagrams can be seen in the figure below:

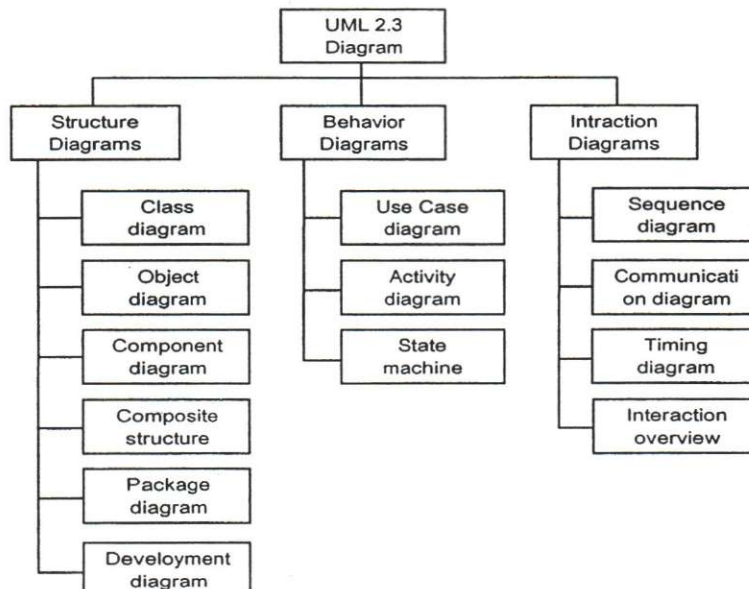


Figure 1. UML Diagram

Sumber : (Rekayasa Perangkat Lunak, Rosa A.S-M Shalahuddin 2011)

1. Structure diagrams which are collections of diagrams are used to describe the static structure of the system being modeled.
2. Behavior diagrams which are collections of diagrams are used to describe the behavior of the system or a series of changes that occur in a system.
3. Interaction diagrams are a collection of diagrams used to describe the interaction of the system with other systems and interaction between subsystems in a system.

### 2.3 PHP

PHP is officially an abbreviation of PHP (HyperText Preprocesso), It is a scripting language that is put into the HTML (embedded). PHP syntax is similar to Perl, but simpler. Currently PHP is one of the most popular, equal amounts of usage with mod\_perl, CGI and ASP. PHP is a scripting programming language most widely used today. PHP is widely used to program dynamic web sites, although it was likely used for other uses.

PHP can fundamentally do all that can be done by CGI programs, such as getting the data from the form, resulting in a dynamic web page content and accept cookies. PHP has capabilities in the count and the most significant in the support for multiple databases.

Every single statement (command) is usually ended with a semicolon (;) CASE SENSITIVE for the name identifier created by the user (such as variables, constants, functions, etc.), but NOT CASE SENSITIVE for the identifier of a built-in PHP.

### 2.4 My SQL

SQL language is one program that is built for designing the database, in general, the information stored in the database tables that are logically two-dimensional structure composed of rows (rows or records) and columns (column or field). A database can consist of several tables.

## 2.5 WEB

### 2.5.1 Web Server

Web servers have programme that is the most widely used for the Internet such as Apache. The program was first designed for the UNIX operating system environment. However, in the

next few versions of Apache UNIX issued a program that can be run on Windows NT. Apache has considerable support programs. This provides a fairly comprehensive service for its users (Aji Suprianto, 2005).

### 2.5.2 Dreamweaver

Macromedia Dreamweaver is a professional web editor that is very powerful for debugging capabilities where it tested and easy to use for designing and managing Web sites or Web pages. Dreamweaver is most commonly used by Web designers or Web programmers in developing a Web site. This is due to its work area, facilities, and capabilities are more powerful. Dreamweaver and its support increased productivity and effectiveness for designing or building a website. Dreamweaver is also equipped with facilities for the management of the site, so it is quite comprehensive (Stendy B.Sakur, 2010).

### 3. RESEARCH METHODOLOGY

Here is a model of problem-solving methodology that will be used in this paper

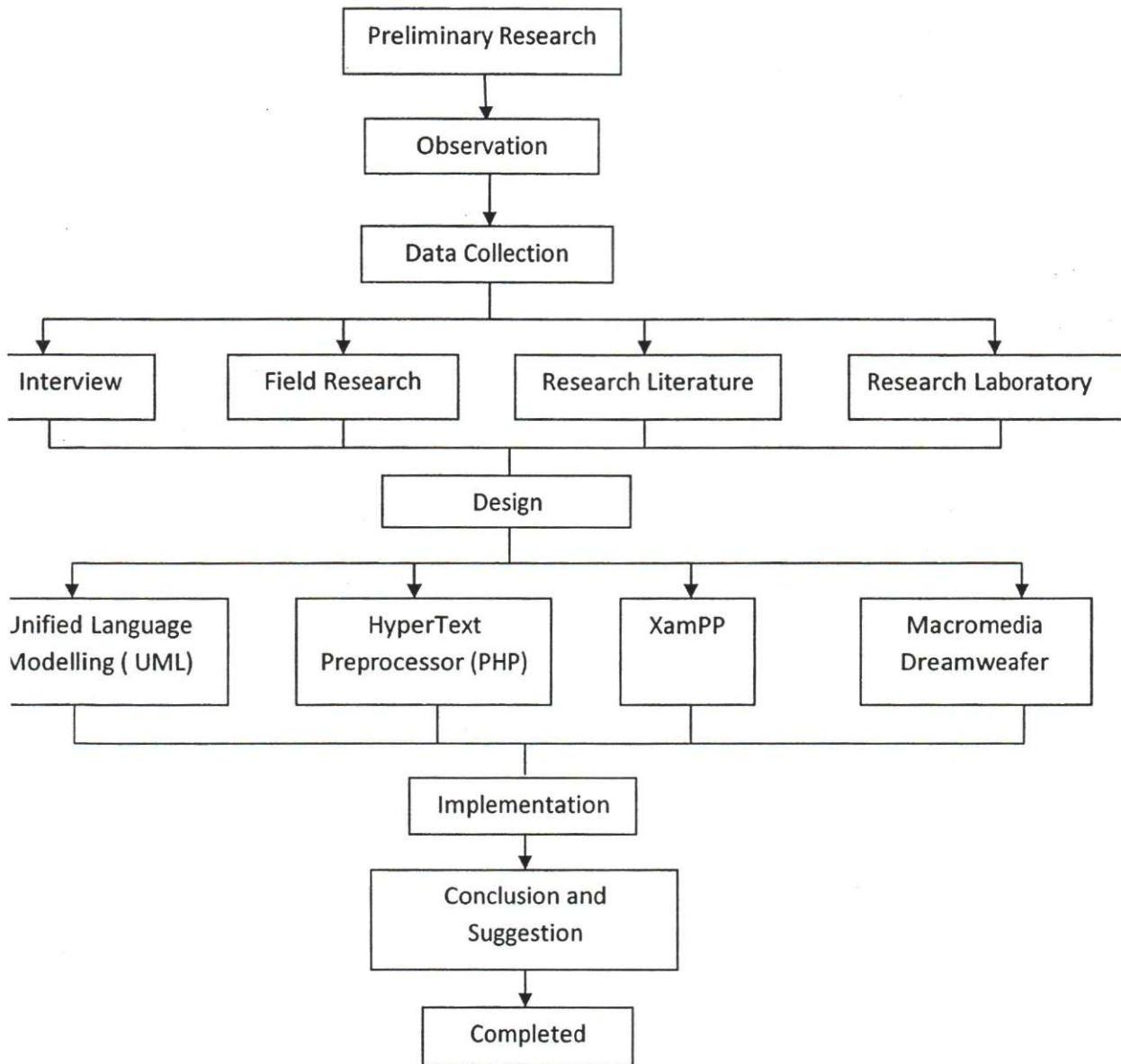


Figure 2. Research Methodology

#### 4. ANALYSIS AND DESIGN

##### 4.1 Use Case Diagram

In this design, usecase diagram can be divided into two parts, the client module and server module. Use case diagram shown aims to explain what the user can do and what the system can do, at this point the actor user

(client) is faced with several features menus that can be used, serves on the actor to seek information and manage data.

A description of how the actors interact with the system can be seen in the image below:

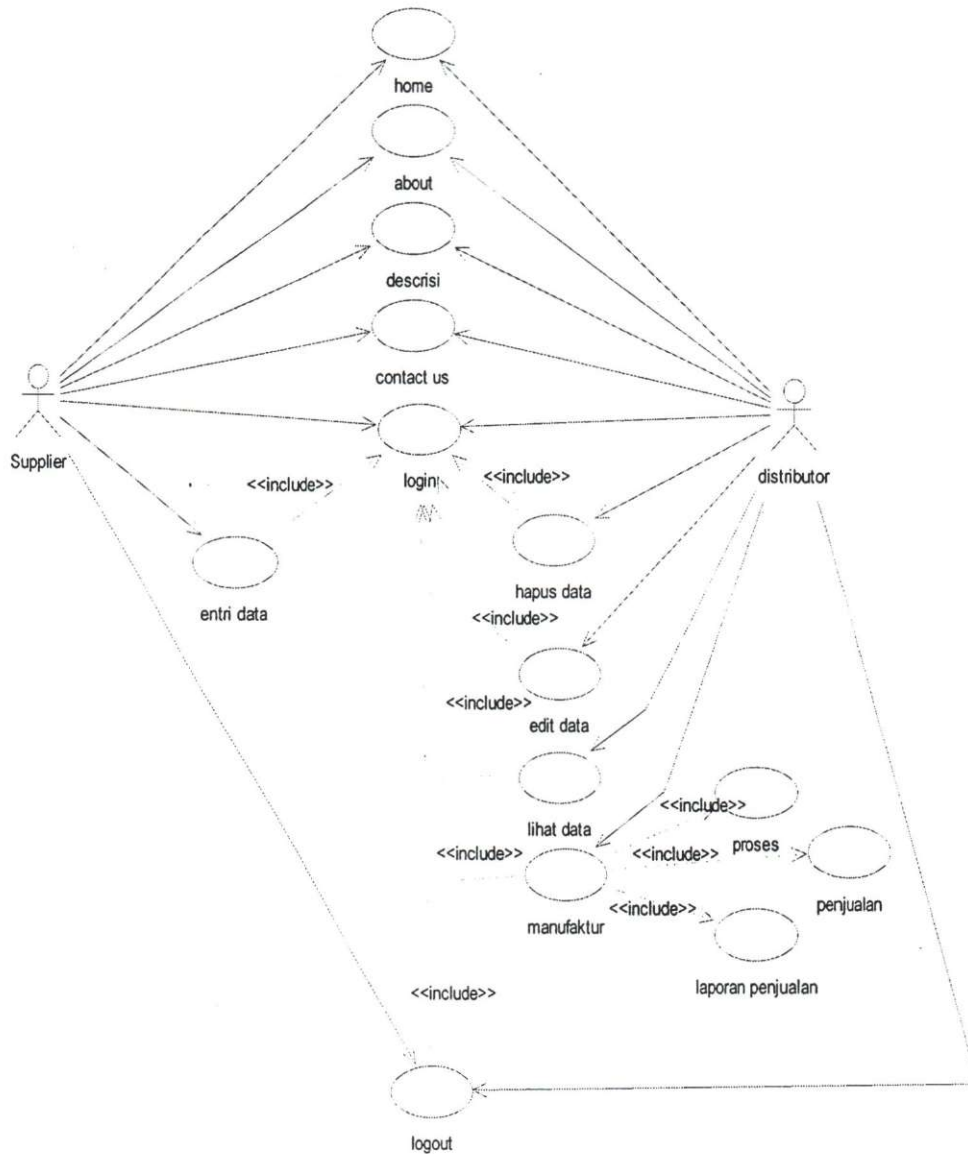


Figure 3. Usecase Diagram

A supplier can view the menu of home, about description and contact us. Supplier is only able to access login supplier data. A distributor can also do data processing on the database provided so that the actor has to be registered and login first. Data processes this form to add data, edit, delete and view reports of incoming goods, in the form of manufacturing.

Distributors can also see the process, sales, and sales of the report.

#### 4.2 Preparation Class Diagram

Basically the class diagram is intended to show the main parts and the relationship of each parts that exist in a system. This is a picture of the class diagram of file system designed.

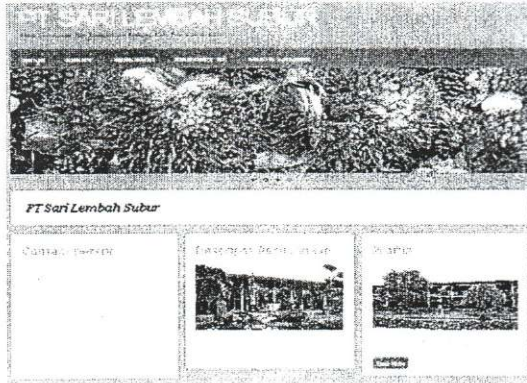


Figure 4. Class Diagram

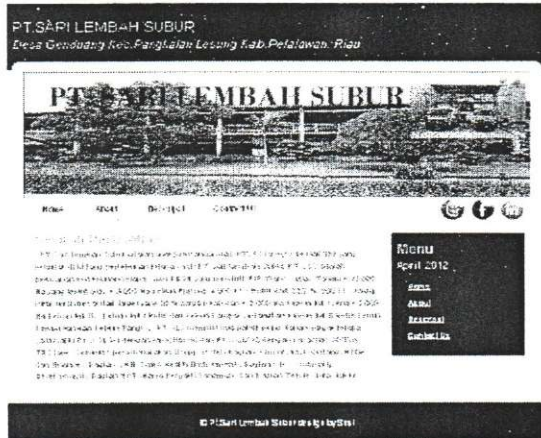
## 5. IMPLEMENTATION AND TESTING

Testing and implementation of the system are important to see whether the designed system is in accordance to what is desired or not. Following the result of testing and implementation, quality system will be known.

### 5.1 Form The Main Menu



### 5.2 Form About



### 5.3 Form Contact Us



### 5.5 Form Login

## PT SARI LEMBAH SUBUR

Anda harus terdaftar pada data kami.

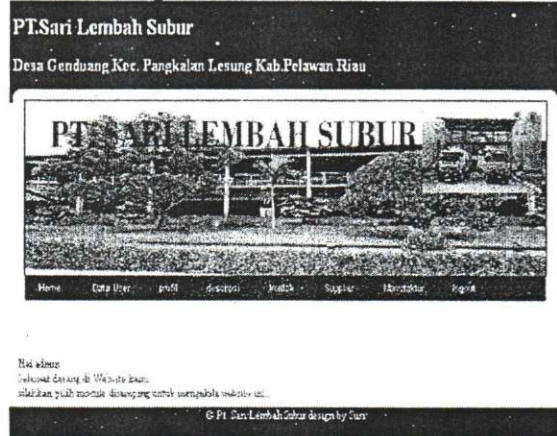
### 5.6 Form Login Level Supplier



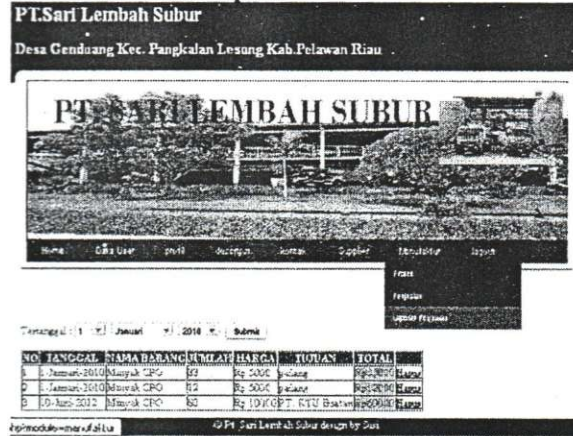
### 5.7 Form Supplier Entry Data



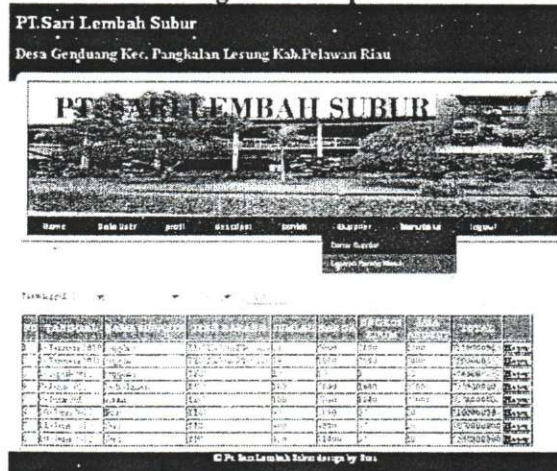
### 5.8 Form Login Level Distributor



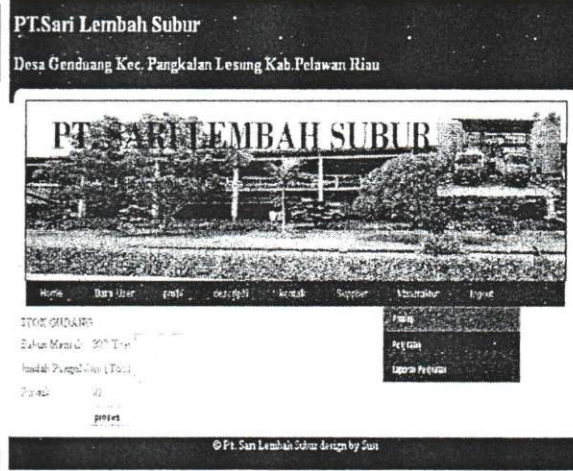
### 5.11 Form Sales Report



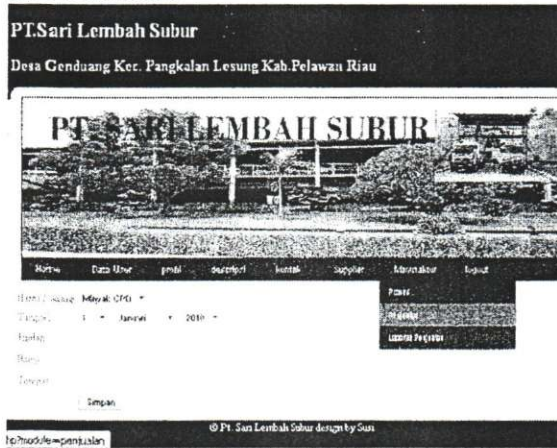
### 5.9 Form Incoming Goods Report



### 5.12 Form Proses



### 5.10 Form Sale



### 5.13 Form Long Out

Terimakasih Telah Mengunjungi Website Kami [LOGOUT]

## 6. CLOSING

### 6.1 Conclusion

After building system design and implementation of these applications, it can be taken several conclusions, including:

1. Method of Supply Chain Management of Fertile Valley PT.Sari is more organized in terms of minimizing the cost and improve the performance of palm oil production flow, the supply chain can facilitate afunction of giving input from raw materials. Semi-finished goods are available to suit the needs that exist in the system application. It is providing services



and receiving product orders from suppliers of raw materials that can be done online.

2. Applications which are applied to PT.Sari Fertile Valley can also facilitate suppliers to make deliveries of raw materials to the company by accepting online orders of raw materials, and requirements on the system application.
3. It can facilitate distributor in data processing, and sales data as well as data items stored in the database PT.Sari Fertile Valley and it can be used if necessary. For processing the data that has been backed up.
4. The whole system of control of the application is managed by a PC application using PHP programming language and MySQL supporting SCM applications.
5. The use of Supply Chain Management application of this method can facilitate the suppliers and distributors to determine and conduct transactions without having to visit the PT.Sari Fertile Valley.

## 6.2 Suggestion

Research has been done, so that author can provide some advices in the hope that it is useful for the reader. The suggestions that we put forward are follows:

1. Implement a computerized system which is more optimal for using the application in order to meet the challenges of the development of the current era.
2. Apply an application program through a process of testing and apply the process of adaptation of the old system into the new system to achive the increased performance.
3. Performance of this system has been assumed, should be utilized as much as possible by PT.Sari Valley Fertile so it can provide convenience in system sales and revenue from raw materials such PT.Sari Fertile Valley.
4. Build collaboration to improve the work efficiency, which is needed in order to achieve the goal.
5. The design of this application system can also be given some additional support from other applications that are designed for make applications become much more perfect.

## REFERENCES

- U.S, Rosa and M. Saladin. (2011). *Rekayasa Software (Structured and Object Oriented*. Modula: London
- B. Sakur, Stendy. , (2010). *PHP 5 Programming Concepts and Implementation-oriented attractions*. ANDI: New York
- Kadir, Abdul. (2009). *Membuat Web Applications with PHP and MySQL Database*. ANDI Offset C.V Publisher: New York
- Madison, Madcoms. ,(2011). *Web Database Applications With Dreamweaver and PHP*. Yogyakarta
- Simartama, Janner. , (2006). *Mobile Commerce Applications Using PHP and MySQL*. ANDI Offset: Yogyakarta
- S.Presman, Roger. (2001). *Software Engineering*. ANDI: New York
- Sommerville, Ian. (2003). *Software Engineering*. Erlangga: Jakarta
- Widodo, Pudjo Prabowo and Herlawati. , (2011). *Using UML*. Informatics : London
- Drs. Amin Ak Single Widjaja, CPA, MBA. (2011). *Dasar-Basic Integrated Supply Chain Management*. Harvarindo: Jakarta