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Implementation of Supply Chain Management in Managing Vehicle Spare Parts Using CodeIgniter Framework

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ABSTRACT

Company Z is a business entity engaged in the distribution of motorcycle parts in partnership with local shops in the supply chain. The process of recording parts distribution services, service returns and report services is still done manually. So this process is quite vulnerable to data loss that has been recorded. Therefore, a more effective and efficient recording system is needed. The system will be designed using the concept of Supply Chain Management which includes the process of purchasing goods, selling goods, managing suppliers, returning goods and managing reports. In this study the authors used a descriptive qualitative research method with interview, observation and document collection data collection techniques. The system is designed using a codeigniter framework and uses a MySQL database. The system that has been designed can provide solutions in recording the purchase, sales, management, product returns, and report management services that have been carried out based on the website so that it becomes more effective and efficient.

INTRODUCTION

Information system is the most important component for the business environment at the moment. Information system provides many benefits for a company; ability to collecting, processing, distributing, and sharing data in an integrated.

Inventory management could be illustrated as processes and procedures controlling the monitoring and maintenance of stocked products, which those products are company assets, raw materials and supplies, or finished products ready to be sent to end consumers.

Supply chain as an approach used to achieve efficiency from suppliers, manufacturers, distributors, retailers, and customers. This means that goods are produced in the right amount, at

the right time, and at the right place with the aim of incurring minimum cost and also reaching the desired service level (Simchi-levi *et al* 2000). This process includes design, planning, execution, control, and monitoring.

Based on previous research Patriana (2005), with title "Implementasi Supply Chain Management pada Sistem Pengelolaan Barang dengan Menggunakan Framework CI (Codeigniter) (Studi Kasus Bengkel Cahaya Motor Cikijing)" the result are the processes of recording inventory management has been advanced computerized, in the managing inventory reports, the sale and purchase of goods or returns is better than the previous report management which still uses manuals, the

development of an inventory management information system.

The importance of inventory problems need to be held a computerized information system to assist in analyzing and preparing reports, and also assisting in obtaining information on inventory data. Garage Z is a company engaged in the field of spare parts. There are many problems occur on buying, selling spare parts and managing inventory in a garage Z, regarding the amount of the inventory of goods does not match with the records that have been made. Purchase transaction, selling of goods still use manual recording, so very ineffective and inefficient.

This research aims to overcome the processing time and make easier archiving of data flowing upstream to downstream. This research use study literature method and interview with employee garage Z.

Murdick, R.G (1991:27), System is a set of elements that make up a collection or procedures processing that look for a part of goal. Benner (2010), system is a complex collection, and also interact with each other if the collection is combined int a unit. O'Briend and Markas (2008), system is a collection of components that are interconnected with each other, which have certain restrictions that are clear. Furthermore, it is also said, that the system can work together in achieving goals, by receiving input and producing output in an organized process.

Based on argument the conclusion system is a collection of elements or components that are organized to achieve a goal.

Gordon B. Davis, information is data that has been processed. Processing data committed so that the data becomes a form that has meaning and benefit to the recipient, both for decision making at this time or in the future.

Jogiyanto (2005), information is data that have been processed into a form that is meaningful to the recipient and useful the making current or future decisions.

Based on this understanding it can be concluded that information is the result of processing one or more data that provides meaning and benefits to be able to take a decision now and in the future.

Gordon B. Davis (1991:91), information system is a system that receives input or input data and instructions, processes data according to instructions and releases the results.

Tafri D. Muhyuzir (2001:8), information systems are data that collected, grouped and processed in such a way as to become unity of information that is interrelated and mutually supportive so that it becomes valuable information for those who receive it.

So, it can be concluded that the information system is a tool could be helped in providing information for the recipient and assist in decision-making for management in the daily operations of the company and appropriate information for parties outside the company.

Heizer & Rander (2004), supply chain management as the activity managing activities in order to obtain raw materials into process goods or semi-finished goods and finished goods then send these products to consumers through a distribution system.

Pires, et. al (2001), supply chain management as a network of suppliers, manufactures, assembly, distribution, and logistics facilities that make up the purchasing function of materials, transformation of materials into semi-finished goods and finished products, and the distribution process of these products to consumers.

Turban (2004), supply chain management consists of three components :

1. Upstream supply chain
   Upstream supply chain management deals with the relationship between the company and the vendor or other parties in the transfer of goods. So the goods produced by the company do not reach the consumers directly but are distributed to other distribution companies.

2. Intern supply chain
   Part of the internal supply chain includes all processes of importing goods into warehouses that are used in transforming input from suppliers into the organization's output. This extends from the time of entry into the organization. In the internal supply chain, the main concern is production management, manufacturing, and inventory control.

3. Downstream supply chain
   Downstream supply chain includes all processes that involve shipping products to the last customer. In the downstream supply chain, attention is focused on distribution, transportation storage and after-sale service.

Hakim (2010:8), codeigniter is a PHP framework that can help developers in developing PHP-based web applications compared to write the code from beginning.

Codeigniter was first created by Rick Ellis, CEO of Ellislab, Inc. (http://ellislab.com), a company that manufactures CMS (Content 24 Management System). At present, codeigniter is developed and maintained by the Expression Engine Development Team.

MATERIALS AND METHODS

The research held on November 2019 at Garage X Margorejo, Surabaya. This type of research is qualitative descriptive study. The research method used is study literature by

finding references and theories related to case and related problems. Study literature is carried out to obtain relevant data from valid sources. The data is taken from published journals and theses.

Data collection techniques carried out, includes :
1. Observation, observation method is data collection which is done by observing and recording systematically the symptoms being investigated (Supradi, 2006:88).
2. Interview, the question and answer process in research that takes place orally where two or more people face to face listen to informations (Supradi, 2006:99).
3. Documentation is looking for data about thigs in the form of notes, files, photos, books, agendas, recordings and so on.

RESULTS AND DISCUSSION

In the operational activities at the Garage X currently still using manual recording by using a notebook so that in the management of operational activity reports are currently experiencing difficulties. For that case, the authors makes information system based on website.
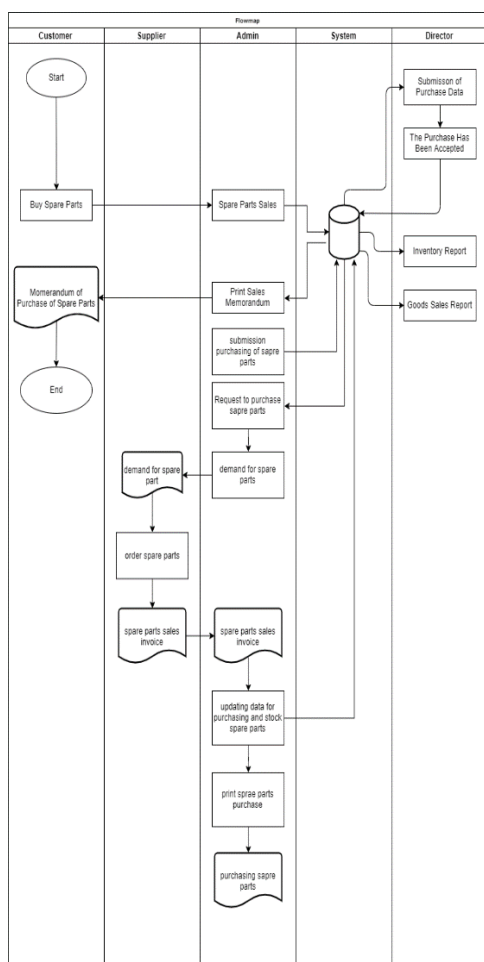
Figure 1. Flowmap System

System Login

Figure 2. Login

Explanation :
1. Username input functions to enter the username that is already registered on the system.
2. Input password functions to enter a password from an account that is already registered.

In this system there is no register, because the account is only managed by the admin and employee, not for the customer.

Homepage
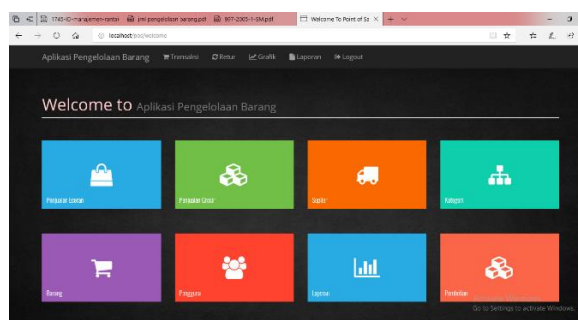
Display the main menu after logging into the system.

Figure 3. Homepage

Explanation :
1. Sales (retail) menu to access goods (retail) purchase transactions.
2. Sales (wholesale) menu to access goods (wholesale) purchase transactions.
3. Supplier menu to manage supplier data.
4. Category menu for grouping items by type and brand.
5. Item menu for managing existing items and items to be purchased.
6. User menu for managing users on this system.
7. Report menu to make the process of making a report, be it sales, purchases and goods.

8. Purchase menu used to record the items that have been sold.

Sales Transaction Menu (Retail)
Display list of items sold at retail that match the data.

Figure 4 Sales Transaction Menu (Retail)

Explanation :
Sales transaction displays all data of goods sold in retails.

Sales Transaction Menu (wholesale)
Display list of items sold wholesale in accordance with the data.

Figure 5 Sales Transaction Menu (Wholesale)

Explanation :
Sales transactions display all data of items sold wholesale.

Supplier Menu
Display that manages data suppliers of goods that have been registered in the system.

Figure 6 Supplier Menu

Explanation :

Supplier data displays all suppliers that have been registered in the system and can be managed as needed.

Category Menu
Display list of items that have been grouped according to the type and brand of goods.

Figure 7 Category Menu

Explanation :
Category displays the name of the category that has been adjusted from the name, type and brand.

Item Menu
Display information list of items that have been entered or available from the store.

Figure 8 Item Menu

Explanation :
1. Goods data serves to display the goods that have been recorded in the system.
2. Stock of goods serves to provide information to users about the availability of goods.
3. Unit of goods functions to informs the user about the quantity of goods sold.
4. Retail prices and wholesale prices function to provide information to users regarding wholesale and retail prices.
5. The item code serves to facilitate the searching and classification of goods data.

User Menu
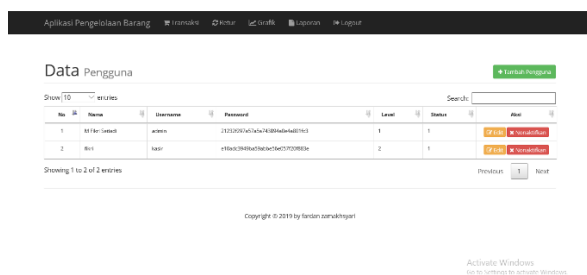This menu serves to display user data that manages the system.

Figure 9 User Menu

Explanation :
This menu displays user data and manages the data as needed.

Report Menu
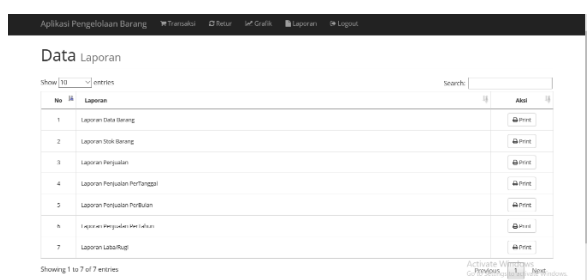This view shows a list of reports that have been managed by the system.

Figure 10 Report Menu

Explanation :
1. Display report data that has been processed by the system from various sources.
2. Data that has been processed and entered into the system can be printed.

Purchase Menu
This display menu contains data on the purchase of goods from suppliers.
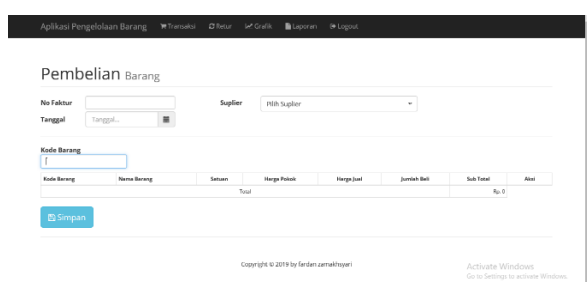

Figure 11 Purchase Menu

Explanation :
1. Data on the purchase of goods from suppliers.
2. Supplier from serves to show information supplier of goods.
3. The purchase invoice is used as proof of purchase and can be printed.
4. Item code functions for grouping goods.
5. Cost of goods and purchase price to provide sales information.

CONCLUSIONS AND SUGGESTION

Based on the results of the description that the author has done relating to the implementation of supply chain management in the goods management system at Garage X by using Codeigniter framework :
1. Recording goods management carried out based on website.
2. Goods management information system has been developed.
3. Goods management information system makes it easier for admin in operations at Garage X.

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