Designing and building an information system for food distributor companies

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Abstract. Business developments demanded food distributor XYZ Company to change the management of data from manually recording to computerized. Company information data is stored on the computer so that the company can manage data effectively and quickly. The analysis is conducted on the company's data flow system and is depicted with the Data Flow Diagram. The data object relationships in the company are pointed through the Entity Relationship Diagram. The development of programming applications for companies is done on Windows platforms based on visuals and graphics. Identification of the registration of goods in the company's old system and presented with images and proposals covering the performance, information, economy, control, efficiency, and service sections of the company's old systems. The expected result of this research is that companies can obtain a more convenient data recording system, reduce errors in the data recording process. This application is expected to facilitate the reprocessing of sales and purchase data at food distributor companies.

1. Introduction

XYZ is a company engaged in the distribution of snacks around the area of Medan. In this company still use data logging manually that causes the occurrence of the common stock errors and also the long recording time [1, 2, 3].

The research aims to design a computerized database program based on the flow of information that has been collected at the time of observation. The purpose of this computerized design system is that the company can record the proper stock of goods and the time is relatively short [4, 5, 6].

A. Formulation of The Problem

1. What is the flow of information on the XYZ Company?
2. How to implement a computerized information system in the company so that the information system used is effective and efficient?

B. Problem Limits

The limitations of the problem in this research are:

1. The creation of computerized information systems using Visual Basic 6.0 and MySQL software
2. Data processing is filling the stock of goods by inputting the name of goods, suppliers, quantity, price, and also the entry date.
3. Periodic report of sales and purchase of goods
C. Research Purposes

The purpose of this study is to design a computerized information system to facilitate the process of replenishing stock items, purchase reports, and sales reports at XYZ companies.

2. Method and Analysis

A. System Weakness Analysis Results

After identifying the inventory system of goods at XYZ, pictures, and proposals from the inventory system presented as follows:

1. Performance

| Benchmark      | Analysis                                                                 |
|----------------|--------------------------------------------------------------------------|
| Recording      | Recording data manually can cause misperceptions for people who read it because someone's writing cannot all be read correctly |
| Data Checking Speed | The inspection still has to go through a secretary because the warehouse head does not store historical data in and out of goods in the warehouse |

2. Information

| Benchmark | Analysis                                                                 |
|-----------|--------------------------------------------------------------------------|
| Storage   | The recording of warehouse stock information is still manual so that data that been matched with the amount of stock in the secretary's computer will not be stored by the warehouse head. So the head of the warehouse does not have historical data on the stock of goods in the warehouse |

3. Economy

| Benchmark | Analysis                                                                 |
|-----------|--------------------------------------------------------------------------|
| Cost      | Costs incurred to purchase equipment that supports the calculation of the stock of goods in warehouses such as pens, paper, and correction tape. The overall price to purchase the equipment can reach IDR 50,000 per month. |
4. Control

**Table 4. Analysis of old system control [10]**

| Benchmark          | Analysis                                                                 |
|--------------------|--------------------------------------------------------------------------|
| Accessibility      | Supervision of the old system inventory is calculated by the head of the warehouse and is matched with the data contained in the secretary's computer. If there is an inventory mismatch, the warehouse head must recalculate. Inventory data on the computer only can be access by the secretary. |

5. Efficiency

**Table 5. Analysis of old system efficiency [11]**

| Benchmark          | Analysis                                                                 |
|--------------------|--------------------------------------------------------------------------|
| Human Resources    | From the results of interviews with the warehouse head and secretary, the time needed to calculate and check inventory in the warehouse is 2-3 days. The time need is very long since the secretary is responsible for processing the company's administrative activities so that it cannot directly check the inventory calculation results from the warehouse head. |

6. Service

**Table 6. Analysis of old system service [12]**

| Benchmark          | Analysis                                                                 |
|--------------------|--------------------------------------------------------------------------|
| Duration           | The information processing that is carried out manually causes the information delivery process to take place over a long time because the administration must find the data one by one manually. |

B. Data Flow Diagram (DFD)

The data flow contains in XYZ can be described by data flow diagrams (DFD). This DFD consists of several external entities, namely salesman, administration, secretary, head of warehouse, driver, and helper [13]. DFD XYZ saw in Figure 8. ERD on XYZ addresses the relationship of involvement between entities in XYZ warehousing information systems. ERD XYZ saw in Figure 9.

3. Result and Discussion

A. Program Implementation

In creating this warehousing database done by the Visual Basic 6.0 application where the database storage MYSQL application is used. In addition to connecting MYSQL with Visual Basic 6.0, the XAMPP application is used. This system has three databases, namely the stock goods database, the goods sales database, and the goods purchasing database. The program used to run this program is the Visual Basic 6.0 application where data inputted in Visual Basic 6.0 will automatically be stored in the database in the MYSQL application.
B. Entity Relationship Diagram (ERD)

Figure 1. Data flow diagram

Figure 2. Entity relationship diagram
C. Program Display
In this program, there are 8 forms to run the warehousing database program, which is as follows.

- Login Form Display
Login Form is a form that uses for the program can only be opened by program users.

![Login form](image)

**Figure 3. Login form**

- Initial Menu Form Display
This display is a display where when you first log in, you will be shown the initial menu. In this initial menu we can input the sale of goods, purchase of goods and customer names. We can also choose the menu to view sales and purchase reports as well as databases.

![Initial menu form](image)

**Figure 4. Initial menu form**

- Input Purchased Form Display
In this form we can input the data we buy. When the add menu is clicked the items and quantities will be automatically updated in the warehousing database.

![Input purchased form](image)

**Figure 5. Input purchased form**
• Input Sale Form Display
In this form we can input sales data. The items sold will automatically be stocked down in the warehousing database.

![Figure 6. Input sale form](image)

• Input Customer Name Form Display
This form is used to input the customer's name along with the address and telephone number.

![Figure 7. Input customer name form](image)

• Purchase Report Form Display
This display form is to provide information about items that have been purchased and entered in the warehousing database so that it is easy to get information about purchase warehousing.

![Figure 8. Purchase report form](image)
- Sale Report Form Display
  This display form is to provide information about goods that have been sold so that it can be easier to check the number of items sold at the warehousing.

![Figure 9. Sale report form](image)

- Database Form Display
  This display form to provide information about the amount of stock available at the warehouse.

![Figure 10. Database form](image)

4. Conclusion
From the results of the above research, it can be concluded that with this program the company will be facilitated in managing data on warehousing work systems, managing data in checking the availability of goods and assisting in computerized recording of buying and selling data in the company.

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