PROCUREMENT INFORMATION SYSTEM USING SINGLE EXPONENTIAL SMOOTHING FORECASTING METHOD IN THE LABORATORY PRAMITA

Rully Agusta Prautama

Universitas Komputer Indonesia (UNIKOM)
Jl. Dipati Ukur No. 112-116, Bandung 40132
Email : if.10106146x@yahoo.co,id

ABSTRACT

One application of software at the central warehouse Pramita Laboratory that can display items of data information in determining when to conduct the procurement of goods and how many items should be added to ensure the existence of stocks of goods to warehouse branch, in addition to it avoids the delay in procurement of goods, so as not consumer service activities.

System development method used by the writer uses the method waterfall. This system development method is a sequence of events / activities undertaken in the development starts from the formulation of systems problems, needs analysis, design process procurement software in Laboratory Pramita using Entity Relationship Diagram and Data Flow Diagram. Design a program using Borland Delphi 7 with database SQLServer 2008. The software is built to produce information that can be utilitized by the staff of the Laboratory Pamita Warehouse's.

From research conducted with thw purpose of building this software, the information on the procurement of goods expected no more delays and misdelivery to any warehouse branches so as to ensure the availability of goods to support the activities of service to the community who use the services of Pramita Laboratory.

Keyword: System, waterfall, information

1. PRELIMINARY

1.1 Background

Laboratory health clinic is one company engaged in the ministry of health services has been much in use by the public services, therefore health clinic laboratory is required to improve services kesahatannya so it can expand its branches in every island in Indonesia. Based on interviews with the head of the warehouse staff in one health clinic laboratory, that the frequent occurrence of delays in ordering goods to the supplier. This is because there is no method that can help in deciding to place an order goods to the supplier. Each branch of this company has a high demand of different goods, the central warehouse is still not guarantee the availability of goods for distribution of goods to every warehouse branch. In addition, susceptible of mis-delivery of goods to the warehouse branch, the last item entered into the warehouse, shipped to the warehouse first branch leading to some expired goods can not be used again and the company suffered losses. With the existing problems found after wawancaran with warehouse staff in the Laboratory of this medical clinic, the proposed solution is in the procurement process uses forecasting methods to determine when an order of goods, because with this method can estimate the needs of stock at the central warehouse with the necessary goods orders branch warehouse. And for the distribution of

using FIFO (First In First Out) to set up a branch warehouse services and deliveries of goods, because the First In First Out method is to set the warehouse first order goods will be served first and the first incoming goods will first be sent to customer. Desktop-based chosen because this application is only used in the central warehouse as a regulator and provider of goods to the warehouse branch for sustainability of production is not hampered and the public / consumers can still be served as a company engaged in the health clinic services.

1.2 Formulation of the problem

Looking at the phenomenon that has been described in the background, then the problem is as follows:

1. Difficult to determine when to place an order goods to avoid delays in ordering goods and lack of collateral availability of goods to be distributed to every branch warehouse.
2. Error sending goods to the warehouse branch.

2.1 Aims and Objective

The purpose of this research is to establish a Procurement Information System and Distribution of Goods in the laboratory.

The purpose of this study is how membangunan Procurement Information System and Distribution of Goods in the laboratory that can solve problems that are translated as follows:

1. Can determine when to place an order goods to avoid delays in ordering goods and ensure the availability of goods to be distributed to every branch warehouse.
2. Tackling error in sending the goods **to the warehouse branch.**

3. MODEL, ANALYSIS, DESIGN AND IMPLEMENTATION

3.1 Model

Data analysis techniques in the manufacture of software using the modeling software with waterfall diagram as shown in Figure 1, which includes several processes including:

a. Needs Analysis
Gather complete requirements then analyzed and defined the needs that must be met by the application to be built. This phase should be done in full order to produce the complete design.

b. System Design
Translation stage of the purposes or analyzed data into a form that is easily understood by the user or users. The design software is actually a collection process that is focused on 4 (four) different attributes on the program, the data structure, software architecture, the details of procedures, and interface characteristics. The design process, translate the needs into a software representation that could be assessed quality before coding begins.

c. Implementation and Testing Unit
Translation Stage data or solving problems in the codes that have been designed into the computer programming language specified.

d. Testing System
Phase unification program units are built and then tested as a whole.

e. Maintenance / Maintenance
The last stage of a software that has been completed can undergo changes or additions such as adjustment for adaptation to the actual situation.

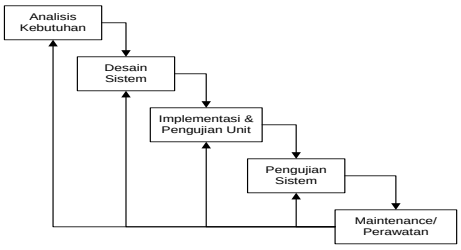


Figure1. *Waterfall diagram*

3.2 Analysis

A. Analysis System

Systems analysis can be defined as the decomposition of a system of full information into their component parts in order to identify and evaluate problems, opportunities, barriers that occur and needs, so it can be proposed improvements. Phase analysis of this system is a very critical stage and is very important, because errors in this stage

will cause an error also in the next stage. The main duties of system analyst in this phase is to find the weaknesses of the system running so that could be proposed improvement.

B. Analysis Database

Logical structure of the database can be described in a graph using the Entity Relationship Diagram (ERD). ERD is a relationship between entities that are used in the system to describe the relationship between entities or data structures and relationships between files.

The main components namely the formation of ERD Entity (entity) and Relation (relation), so in this case the ERD is the entity set components and a set of relations which are described further through a number of attributes (properties) that describe all of the facts of the system being simulated. The ERD of the application to be made are as follows:

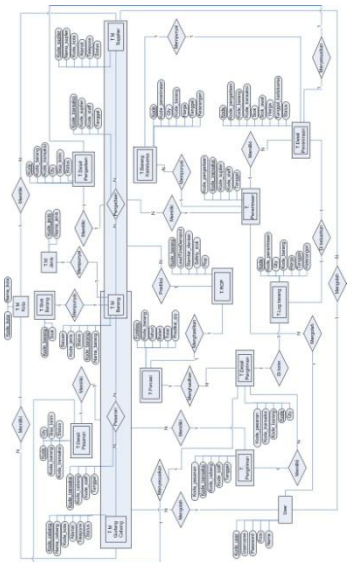


Figure 2. *Entity Relationship Diagram* (ERD)

C. Functional Needs Analysis

1. Context diagram

Context diagram for this software can be seen in figure 3:

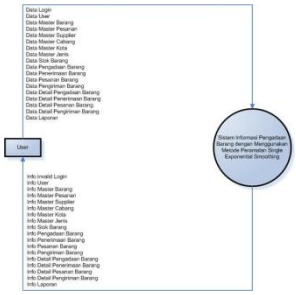


Figure 3. Context Diagram

2. DFD Level 1

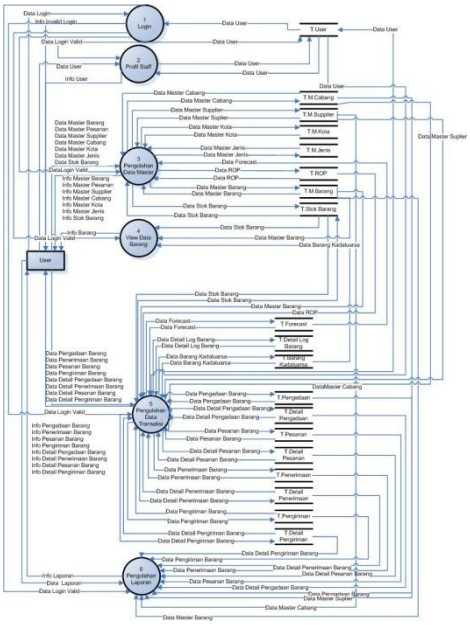


Figure 4. DFD Level 1

3. Relationship Diagram

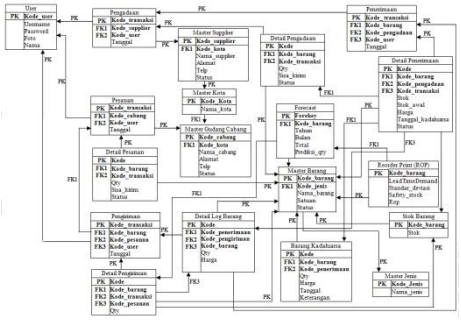


Figure 5. Relationship Diagram

3.3 Design

A. Menu Structure Design

In designing an application that contains the menu structure required menus and submenus that serves to facilitate users in using the application. Explanation of the menu structure can be

seen in thethe following image :

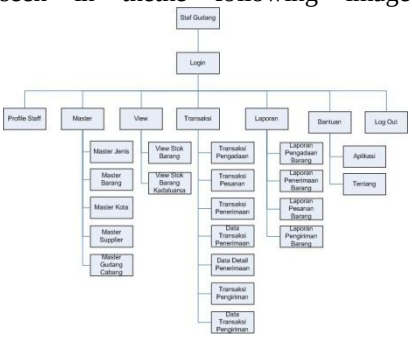


Figure 6. Menu Structure

B. Home Design Applications

Here is a picture design of the main menu.

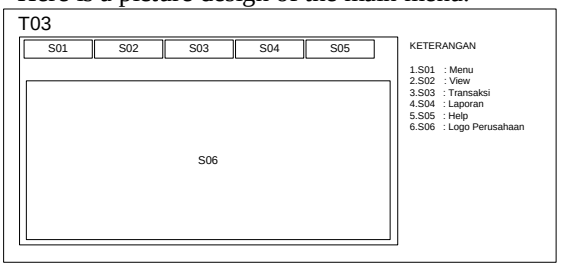


Figure 7. Main Menu

C. Display Design Transactions

Here is the design of the display transaction.

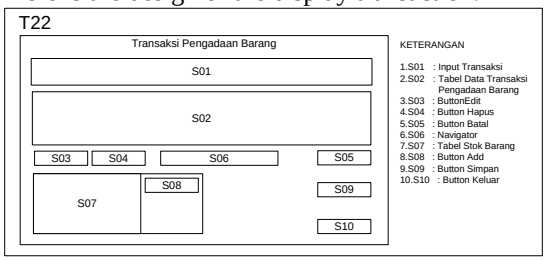


Figure 8. Display Design Transactions

3.4 System Implementation

Implementation is a continuation of the activities of system design and can be viewed as an attempt to realize the designed system. The steps of the implementation process is the sequence of events beginning to the end of activities to do in realizing the designed system. The results of this implementation phase is a data processing system that already can run well.

A. System Implementation Steps

The steps that need to be done on the application of data processing activity changes in power demand are as follows:

1.Formation of an application program
2.DatabaseImplementation
3.DisplayProgram
4.TestingSystem
5.EnvironmentalTesting
6. Testing Plan

B. Establishment of Application Programs

Activity program consists of pembuatn formation program in the form of program modules. The purpose of the establishment of program modules primarily to facilitate the correction of errors and simplify program modifications.

4. RESULTS AND DISCUSSION

From analysis and design that has been done, the results of the application that was built to look like the following view:



Figure 9. Main Menu

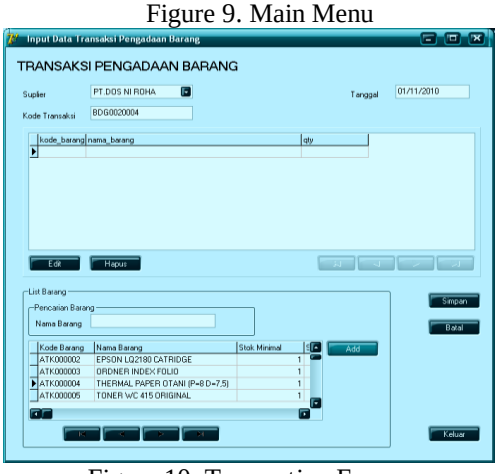


Figure 10. Transaction Form

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

After doing the analysis and system implementation and continuing with the testing system, the implementation and testing results can be drawn some conclusions as follows:

1. Making Procurement Information System Using Single Exponential Smoothing Forecasting Methods in Laboratory Pramita has been realized.
2. With Procurement Information System Using Single Exponential Smoothing Forecasting Method of Determination to procure information about the suppliers and the number of goods can be determined by this application.
3. With Procurement Information System Using Single Exponential Smoothing Forecasting Methods to ensure the availability of goods to the warehouse branch as supporting the activities of service to the community who use the services of Pramita Laboratory.
4. With Procurement Information System Using Single Exponential Smoothing Forecasting Methods to avoid errors in shipping goods to the warehouse branch.

1.2 Suggestins

Suggestions that could be offered based on the above conclusions are as follows:

1. Need any more information that can support this software to monitor the needs of every branch in every single area (the city).
2. Need additional methods to maximize the functions in this Information System.
3. perform maintenance software is expected to be done regularly.
4. In this information system development, developers are expected to improve the system of the deficiencies that exist in this system, so that later the software is able to answer the problem.

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