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# Web Based Procurement Information System Design ( case study: PT. Restindo Dayatama)

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**ABSTRACT**

PT. Restindo Dayatama is a manufacturer company engaged in the car body industry which concentrates on seat products, especially bus seats. PT.Restindo Dayatama in procuring goods cannot be separated from computerization. When the stock of goods in the warehouse runs out, the warehouse clerk submits a request for goods to the procurement by providing a letter of request for goods made through Microsoft Excel.This process is constrained by efficiency, and there is often duplication ofdata on demand for goods which results in goods piling up inwarehouses. Therefore, PT. Restindo Dayatama requires a procurementinformation system that can assist in carrying out procurementtransactions, calculating and storing more data, accessing data faster and making time more efficient. The development method uses DFD(Data Flow iagram) and system development that will be built using awaterfall so as to roduce a procurement information system.

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## 1. Introduction

An information system is an organized collection of data and its usage procedures that cover further than just presentation. The term implies a purpose that is to be achieved by choosing and organizing data and compiling the procedure of use. The success of an information system as measured by its purpose of manufacture depends on three main factors, namely: compatibility and quality of data, data organizing, and usage procedures. To meet a specific usage request, the structure and workings of information systems vary depending on the type of need or the type of request that must be met. A prominent equation is that an information system combines a variety of data collected from various sources. To be able to combine data derived from various sources of a data transformation system so that it becomes combined. Whatever its size and whatever its scope an information system needs to have compatibility of the data it stores. [1]

Procurement of goods is a way to obtain goods, quickly, effectively and efficiently according to the needs of each company. In the process of procurement of warehouse admin goods are responsible for all goods in the company. When the goods in the warehouse run out the warehouse admin makes a submission of goods order to the procurement party [2]. The system according to Jogianto in the book Rusdiana and Irfan. A system is a collection of elements that interact to achieve a specific goal. This system describes a real event and unity, such as places, things, and people that exist and occur. [3]

According to Hesty puspita et al. A system is a series of subsystems that are interrelated and dependent on each other, working together to achieve previously defined goals and objectives. [4] According to Eko Budi Setiawan. Information is data that is processed into a more useful and more meaningful form for those who receive and need it. [5]According to Raymond Mc.leod. Information is data that has been processed into a form that has meaning for the recipient and is useful for current or future decision making. [6] According to Jogiyanto in Haryanto Dadang et al, information systems are a system within an organization that brings together the needs of daily transaction processing, supporting operations, managerial and strategic activities of an organization and providing certain outside parties with the necessary reports. [7]

Meanwhile, according to Nina Rahayu et al., information systems are systems that can be defined by collecting, processing, storing, analyzing, disseminating information for a specific purpose. [8] Procurement



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of goods and services or procurement is an activity to obtain goods and services needed by the company in terms of its needs and use, and seen from the quality, quantity, delivery time and affordable price. [9]According to Budiharjo Hardjowijono and Hayie Muhammad, the procurement of goods and services must be carried out based on the principles of procurement that are practiced internationally efficiency, effectiveness, healthy competition, openness, transprarantion, not discrimination and accountability. [10]

Understanding the website according to Hakim Lukmanul is an internet facility that connects documents in the local and remote scope. Documents on the website are called web pages and links in the website allow users to move from one page to another (hyper text), both between pages stored on the same server and servers around the world. Pages are accessed and read through browsers such as Netscape Navigator, Internet Explorer, Mozila Firefox, Google Chrome and other browser applications. [11]

A database is a collection of data items that are interconnected with each other. Data is organized based on a particular schema or structure, stored on computer hardware using software to manipulate certain uses. Hiraki data in the database is described as follows[12]

## 2. Method

The method used in the study uses the waterfall method which includes two main parts, namely the data collection method and the application creation method. Here's an explanation for these methods:

### 2.1 Data Collection Methods

The data collection method in this study aims to analyze needs, identify problems, and infer problems. The techniques for data collection are as follows: Data collection conducted by communicating or interviewing directly with the procurement party, warehouse and parties who are able to provide more detailed information or data on procurement problems The collection of data carried out by the author in this case is by conducting a direct review of the objects that are determined by observing and studying the procurement system of goods that are running at PT. Restindo Dayatama. Some of the data obtained include, Data Purchase Request, Data Purchase Order, Data warehouse, Data Supplier and Data Invoice. Literature Studies To obtain data that is theoretical, the author collects data by reading and studying books, journals or other references related to research objects.

### 2.2 System Development Methods

The method of system development in this study uses the waterfall method. The stages of system development methods applied are as follows:

1. Analysis
   At this stage, the process of collecting data by interviewing, observation and literature studies and conducting stages of system needs, including functional needs analysis, non-functional needs analysis, user needs analysis, input and output analysis, analysis of ongoing systems, analysis of proposed systems, and system design analysis.
2. Design
   At this stage, a new system design process is carried out based on data collected in the previous stage, namely the design of Context Diagrams, Data Flow Diagrams (DFD), Relationships between tables, Databases and Interface Design.
3. Coding
   At this stage the program design is translated into codes using a programming language. The programming languages used are PHP, Javasctipt, HTML, CSS, MYSQL as a database and Apache as a web server.
4. Testing
   At this stage, the unification of the program units is then tested in its entirety using the black box method to ensure that the inputs used produce the appropriate output. Where in this test will be detected module functions that are both functional or failed.

## 3. Result and Analysis

The results of this study include the results of system analysis conducted to define system needs, including functional needs analysis, non-functional needs analysis, analysis of ongoing systems, analysis of proposed systems, system design, and implementation of systems.

### 3.1 Functional Needs Analysis

System Needs define the things needed by the system to be built, among others:

1. The ability to make purchase requests.



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2. Create a Purchase Order
3. Ability to create delivery orders
4. Create an Invoice Order
5. Manage warehouse stock data

### 3.2 Non-Functional Needs Analysis

Built applications require other devices as support to run according to their function. These needs are:

1. This application will operate if used by the administration and each administration must have a user and password to login first.
2. The system can be accessed outside the office/business hours.
3. The system has convenience for administration, is easy to operate and not confusing.

### 3.3 Analysis of Running Systems

The analysis of the ongoing system systematically describes the activities that occur in the procurement transaction process at PT. Restindo Dayatama. Analysis of the current system can be seen in Figure 2:

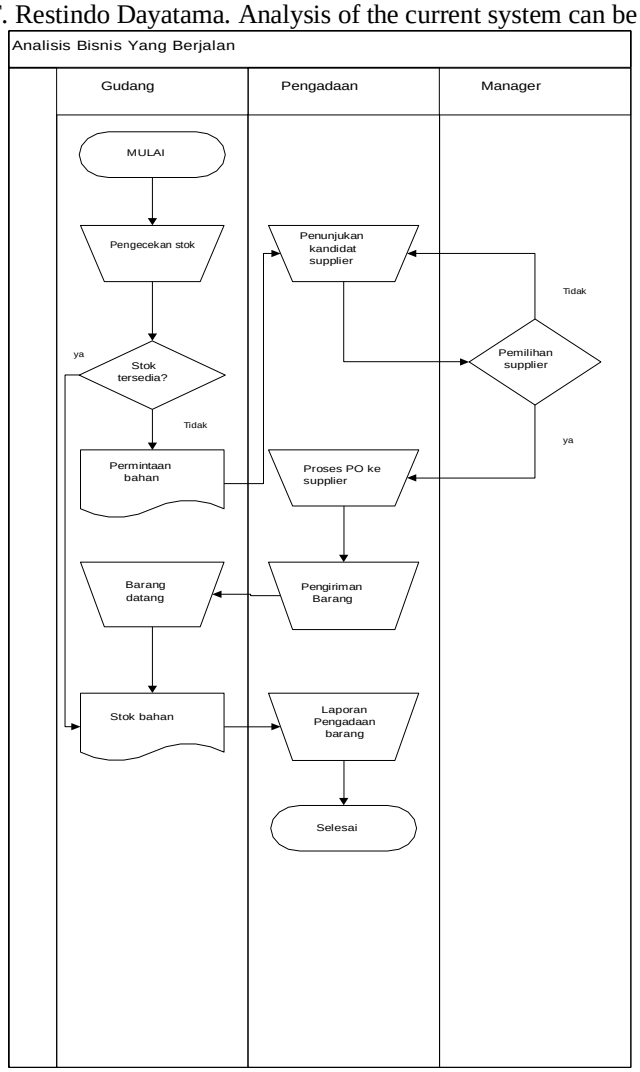


**Figure 2**. Analysis of Running Systems

### 3.4 Analysis of the Proposed System

The analysis of the proposed system is expected to facilitate PT. Restindo Dayatama in carrying out procurement transactions. Analysis of the proposed system can be seen in Figure 3:



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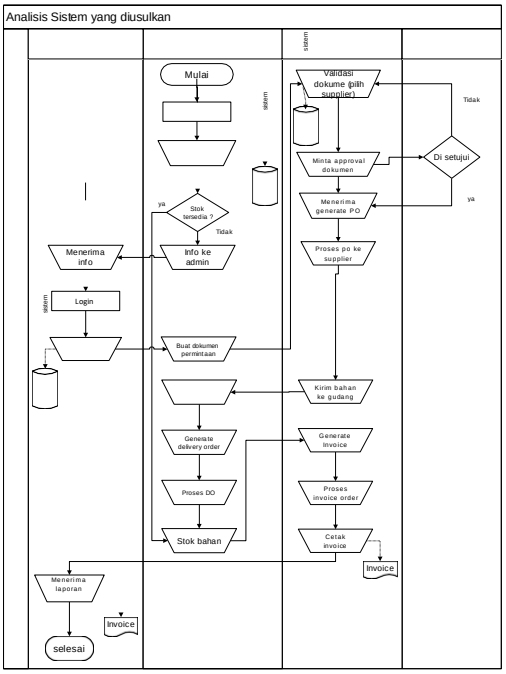


**Figure 3**. Analysis of Proposed Systems

### 3.5 Context Diagram

This context diagram illustrates the scope of a system. This context diagram shows all the outside entities that receive information from or provide information to the system, here is a context diagram of the proposed system in Figure 4 :

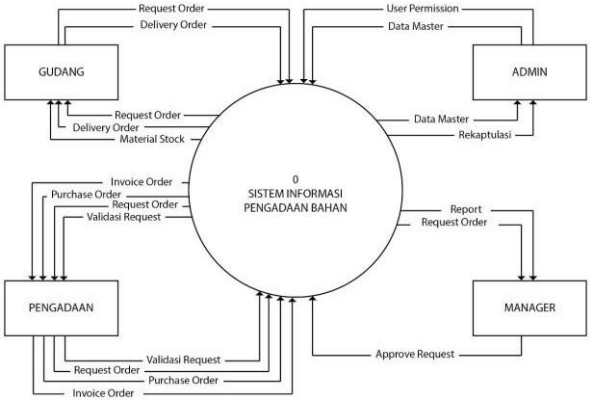


**Figure 4**. Context Diagram

### 3.6 Relationships Between Tables

The relationship between tables is a link between tables with other tables where the table has real- world related data to organize the operation of a database. In a database, a relationship is linked by giving a column with the same value as the corresponding table, this is called a foreign key. Foreign key itself is a column that can only store the same data as the primary key associated with the table. This means that the foreign key can only be filled with data that is already in the primary key. The relationship between tables can be seen in Figure 5 :



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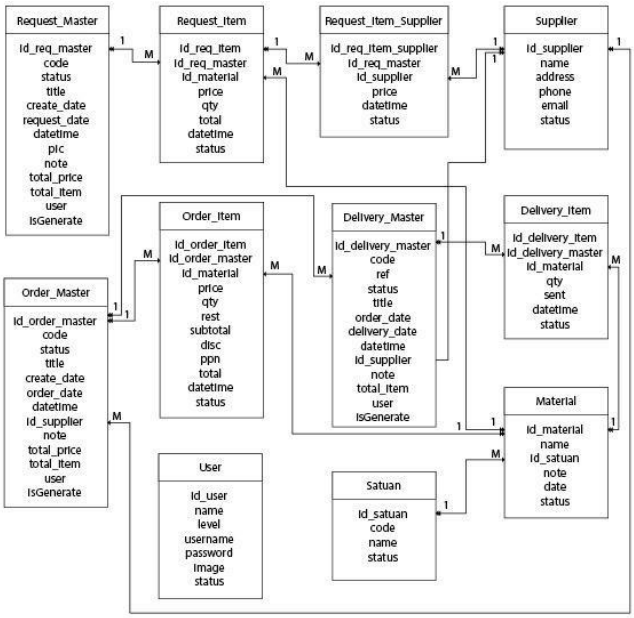


**Figure 5**. Relationships Between Tables

### 3.7 Implementation System

The login page is the page used to login to the system. If the username and password are typed correctly it will enter the system. The login interface page can be viewed in figure 6 .

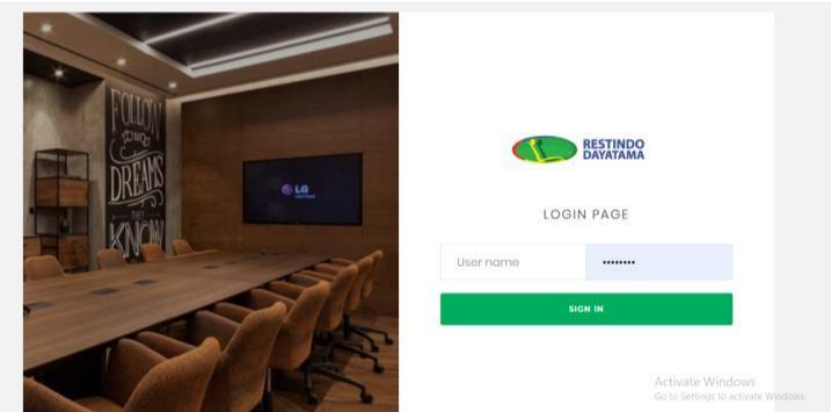


**Figure 6**. Login Page

Dashboard page is a page that displays transaction activities that have been made including requests, orders, delivery and invoices. Dashboard page can be viewed in figure 7.

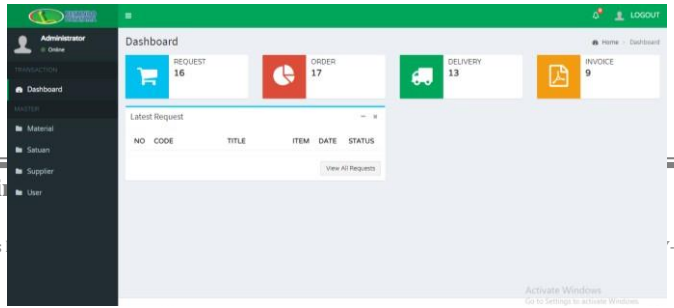




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**Figure 7**. Dashboared Page

This page serves to display the purchase request list data that has been submitted by the warehouse. on this page can be seen code, title, item, date, and status. The List Purchase Request page can be viewed at figure 8.

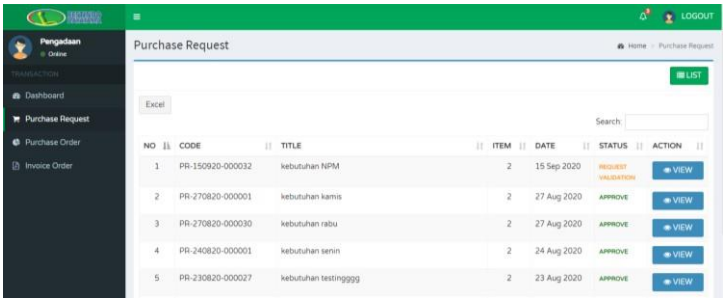


**Figure 8**. List Purchase Request page

This page serves to display data on the names of items or materials. The material data page can be viewed at figure 9.

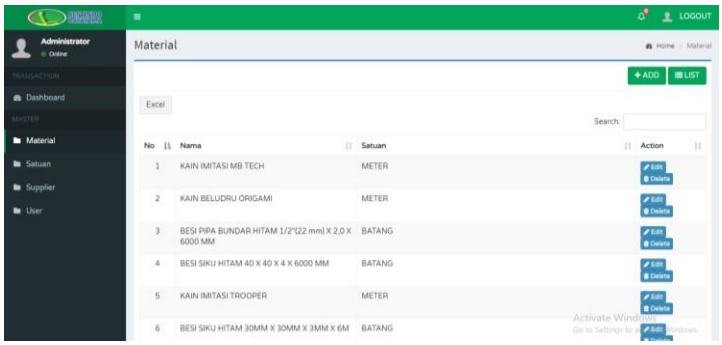


**Figure 9**. Material Data Page

This page serves to display the material list data of material stocking materials in the warehouse. on this page can be seen the name of the goods, the stock of goods and units. The Stock Materials List page can be viewed at figure 10.

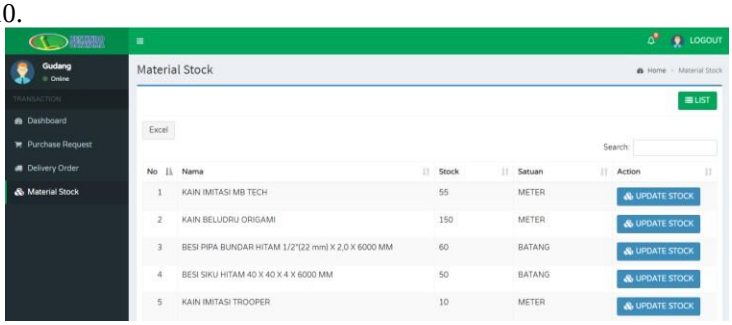


**Figure 10**. Stock Material List page

This page serves to display the Delivery Order list data and on this page can be seen the name of the supplier and the date of delivery of the goods. The List Delivery Order page can be viewed in figure 11.



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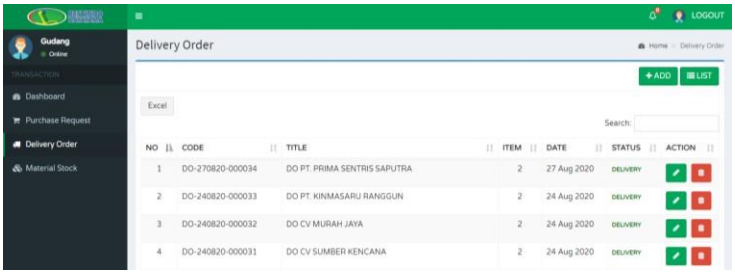


**Figure 11**. List Delivery Order page

## 4. Conclusion

The procurement information system is used to support the procurement process and facili ate PT. Restindo Dayatama in conducting procurement transactions, calculating and storing more data, accessing data faster and making time more efficient. Errors caused by limitations such as human error or accident can be reduced by the existence of a website-based procurement information system at PT. Restindo Dayatama

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