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Web-based Parts Inventory Information System at Rizal Auto Workshop Palembang

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Abstract

This study aims to make it easier to find the availability of spare parts, after using the inventory information system can facilitate employees in collecting data on purchase transactions, can help in documenting indent data and consumer data information, data entry goods, transaction data, streamline time and provide solutions and accuracy in the report on incoming and outgoing goods. This system development method uses the Waterfall method, while it uses the system design method of Data Flow Diagrams (DFD), the test system used is a graphical user interface (GUI). The system is made based on web, using the PHP programming language. The results of this study can help leaders and employees to facilitate transaction activities and recap the report at the Rizal Auto Workshop Palembang.

Kata kunci: *Inventory Information Systems, Waterfall, Data Flow Diagrams (DFD), Web.*

Abstrak

Penelitian ini bertujuan untuk mempermudah dalam mencari ketersediaan suku cadang, setelah menggunakan sistem informasi persediaan dapat memudahkan karyawan dalam mengumpulkan data tentang transaksi pembelian, dapat membantu dalam mendokumentasikan indent data dan informasi data konsumen, entri data barang, data transaksi, streamline waktu dan memberikan solusi dan akurasi dalam laporan tentang barang yang masuk dan keluar. Metode pengembangan sistem ini menggunakan metode Waterfall, sementara itu menggunakan metode desain sistem Data Flow Diagram (DFD), sistem pengujian yang digunakan adalah Graphical User Interface (GUI). Sistem dibuat berdasarkan web, menggunakan bahasa pemrograman PHP. Hasil penelitian ini dapat membantu para pemimpin dan karyawan untuk memfasilitasi kegiatan transaksi dan rekap laporan di Rizal Auto Workshop Palembang.

Kata kunci: *Sistem Informasi Persediaan, Air Terjun, Data Flow Diagram (DFD), Web.*

1 Introduction

Spare parts or spare parts are a tool that supports the procurement of goods for the purposes of equipment used in the production process. Spare parts are the main factors that determine the course of the production process in a company. So it can be said that these parts have a significant role in a series of company activities. Auto parts are very important in the automotive industry, because every vehicle owner must at some point in time replace the damaged car parts. spareparts are parts of tools, machinery or vehicles that are provided for replacement. Replacement of these parts is necessary or must be done because of the damage. Damage due to external causes or not the supply of spare parts is a must to guarantee under machine tools (Eko, R.I dan Djokopranoto, R, 2011 : 6).

Web-based information systems as one representation of the field of information systems technology. Web-based information system is a medium of information that is growing rapidly today. With a web-based information system, everyone can display information that can be enjoyed by all internet users. One of the workshops that provide service for car vehicles is Auto Rizal's auto repair shop, in carrying out sales transactions, especially for spare parts inventory, there are still problems because they still use the ledger to be recapitulated to the computer using Microsoft Excel, namely the officers in serving the sales process still get a lot constraints include making a sales memorandum often varying between store clerks and administration, providing inventory information or spare parts stock by looking at the warehouse still available or not the items desired by consumers. This results in the processing of data or the addition of data on spare parts, where the administration is often wrong about incoming and outgoing goods due to ineffectiveness and errors in making daily, weekly and monthly reports as well as an annual recap of the spare parts data needed.

The opposite also happens when the spare parts inventory at the Auto Rizal Car Workshop sometimes runs out of spare parts inventory every year, especially when approaching the holiday. The large demand from customers caused parts at the Rizal Auto Repair Shop to experience out of order. Parts that are commonly used are parts that are in routine parts. These routine parts include air filters, oil, front brake linings, rear brake linings, packing drain, balance weight, spark plugs, brake fluid, gasoline filters, oil filters, tires, suspensions, car horns, front and rear car light bulbs, car battery batteries, and car nuts. This problem occurs because of the ineffective determination of inventory of spare parts. Where, in the processing of spare parts inventory data at the Rizal Auto Car Workshop, there is still no system in determining spare parts inventory for each future period.

In this case to be more efficient and effective processing of data and information about the existing stock of goods as well as arranging spare parts every period is systematically repaired, the authors took the initiative to create a "Web-Based Spare Parts Inventory Information System at Rizal Palembang Auto Workshop".

Sariatul Masrifa, Septia Lutfi in a journal with the title "Inventory Information System Spare Parts Air Conditioner (AC) PT. Web Based Rembang Mandiri Innovation Work" from the results of research the existing problems are information systems that use web-based applications, then this system can record, and record inventory data in the form of both income and expenditure. Data processing in this system will be more able to improve work efficiency, the accuracy of the output data so as to produce a good inventory data processing management with quality information. PHP programming language and MySQL database. which is used in the development method is to use the waterfall method.

Dinata in a journal with the title "Goods Inventory Information System At Semarang Above Store Distro" from the results of the research the problem obtained is the data collection on the inventory and inputting sales transactions are still done manually. So that errors often occur in the recording of reports that will be made. Microsoft Visual Basic 6.0 and MySql programming languages, system design using Data Flow Diagrams (DFD) Development Method that is the Waterfall Method.

Wijaya in the thesis with the title "Inventory Warehouse Inventory Information System at Arema Honda Official Workshop Motor With Delphi 2007 and SQL Server 2008" from the results of research the problems found because they have to search one by one the archives that have been stored, it will require quite a long time. In addition, mechanics who also act as supervisors in checking spare parts inventory in warehouses, often find discrepancies in the data contained in documents with those in the warehouse. Delphi 2007 and Sql Server 2008 programming languages, system design using Data Flow Diagrams (DFD), the development method used is the Waterfall Method.

Nugrahanti in the thesis with the title "Design of Inventory Information System for Photocopier Spare Parts Using Visual Delphi 7 (Case Study in UD Eka Taruna Madiun)" from the results of this study produced an application program that can control spare parts inventory and provide stock update reports. With this research, it will facilitate the process of monitoring the stock of goods entering and exiting. DELPHI 7 and MySQL programming languages as a database. Modeling that uses Data Flow Diagrams (DFD) and relationships between entities (EDR).

Rahmad dan Setiady in a journal with the title "Designing of Electronic Web-Based Electronic Inventory Spare Part Information System (Study of CV. Human Global Service Yogyakarta)" from the results of this study the information system needed by this company is making applications in the processing and data collection of inventory data (inventory) especially spare part inventory and computerized reports so that the flow of goods into service and finish service can be recorded quickly, accurately, and accurately. The information system uses the FIFO (Firts In Firts Out) Method, the PHP programming language and MySQL as the database. Modeling that uses Data Flow Diagrams (DFD).

2 Metode Penelitian

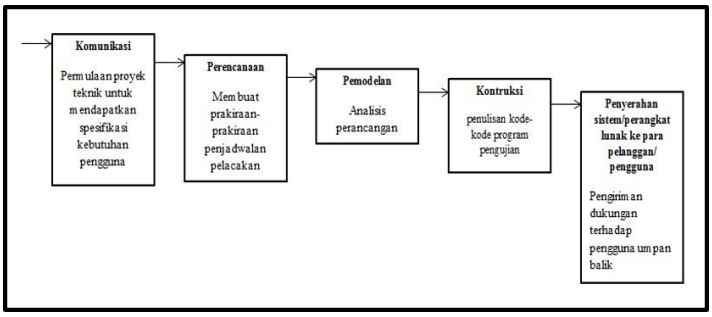
According to Roger S. Pressman (2012 : 46). The waterfall model is sometimes called the classic life cycle, in which it implies a systematic and sequential approach to software development, which starts with the specification of user needs and continues through the stages of planning, modeling, construction and delivery of the system / software to the customer / user, which ends with ongoing support for the complete software that is produced that is found in Figure 2.1:

The following is an explanation of the stages in the waterfall Model method:

1. Communication

   This is the first stage, which is carried out outlining the results of the interview. At this stage the data is collected, a meeting with the user, where the user here is the admin, and the owner of the workshop at Rizal Palembang Auto Car Workshop

2. Planning



Gambar 1: Waterfall Model (sumber: Roger S, Pressman, (2012:46))

Is a continuation of the communication stage. At this stage will produce data related to the desire in making software, including plans to be carried out

3. Modeling

   Is a continuation after the communication and planning stages. At this stage the software analysis and design can be estimated before coding is made where the design is made using DFD (Data Flow Diagrams). At this stage it focuses on system design and interface design. This stage will produce a document called software requirements (software requirements).

4. Construction

   It is continued after the communication, planning and modeling stages. This stage is writing program codes and testing programs. previously created designs must be implemented into a software program. The result of this stage is a computer program in accordance with the design that was created at the previous design stage. The test used is a graphical user interface (GUI) because the reuse component is now a common part of the GUI development environment, making the user interface shorter and more precise. Roger S, Pressman, (2012: 606).

5. Submission of software systems to customers / users

   At this stage does not rule out the possibility of a software change when it has been sent to the user. Changes can occur because of errors that arise and are not detected when testing or the software must adapt to the new environment.

3 Results and Discussion

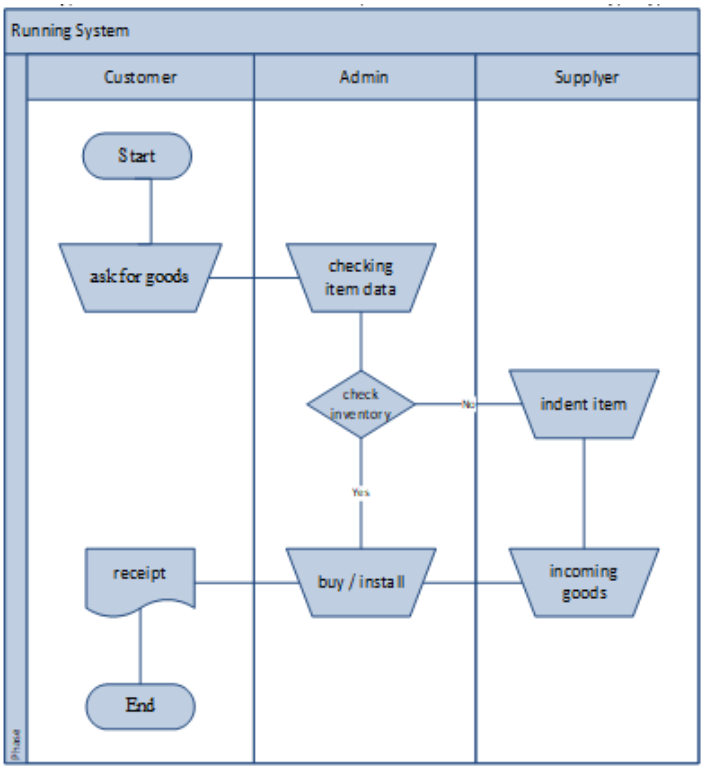
3.1 System Planning

3.1.1 Communication

After observing and analyzing the Auto Rizal car repair shop, it can be seen that the current system is still ineffective, if the consumers want to know the spare parts that consumers want. Consumers must ask the admin first. Then the admin checks what items the consumer wants is available or not. If the item is available or not, the admin notifies consumers about the condition of the item. If the item is available, the item is immediately installed.

If the item is not available, the admin will ask the consumer whether to indent or not? If the consumer agrees the item is immediately noted by the admin in the indent ledger and ordered.

The following is an overview of the current system flow in Auto Rizal's garage:



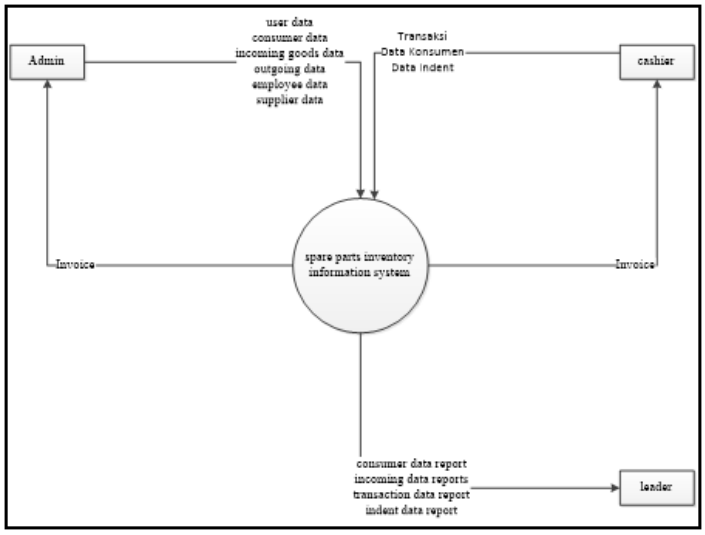
Gambar 2: Current system flowchart

3.1.2 The Planning

Clear scheduling is needed in planning to make the system, so that stages the process of making a system that can run well and smoothly, not only that scheduling also affects the length of time the process of processing and cost requirements, scheduling is arranged in detail, according to the system development methods used starting from the communication stage, planning stage, modeling stage, construction stage , and finally the submission stage.

3.1.3 Modeling

Data Flow Diagram (DFD) is a way or method for making the design of a system that is oriented to the flow that moves on a subsequent system. In making DFD information systems are often used. DFD was made by analysts to make a good system where DFD will later be given to programmers to do the coding process. Rosa and Saladin (2015: 70).



Gambar 3: Context Diagram

3.1.4 Construction

At this stage the test used is the GUI, the authors test the system that has been developed. The result of this stage is a computer program in accordance with the design that was created at the previous design stage. The test used is a graphical user interface (GUI) because the reuse component is now a common part of the GUI development environment, making the user interface shorter and more precise. (Roger S, Pressman, 2012:606).

Testing to find out the work performance of the application is done by testing the user application being developed. In this test 10 respondents were taken from the employees at the Rizal Auto Workshop. Respondents were given questions in the form of a questionnaire and the results of the questionnaire can be seen in the table.

Based on the results of the respondents' tests conducted, it can be concluded that:

1. Is the system interface created is user friendly (easy to use by users). Most respondents agreed with the details of the assessment: 2 answers strongly agree, 8 answers agree, 0 answers disagree and 0 answers disagree.

2. Viewing reports on the inventory information system for parts is faster and easier to remember compared to manual notification of reports. Most respondents agreed with the details of the assessment: 2 answers strongly agreed, 7 answers agreed, 1 answer disagreed and 0 answers disagreed.

3. Is the filling form on the add item in accordance with the manual filling form. Most respondents answered agree with the assessment details: 0 answers strongly agree, 8 answers agree, 2 answers disagree and 0 answers disagree.

4. Spare parts inventory information system can help branch heads and regional heads to get information about sales quickly and easily. Most respondents agreed with the

Table 1: Application User Questionnaire Results

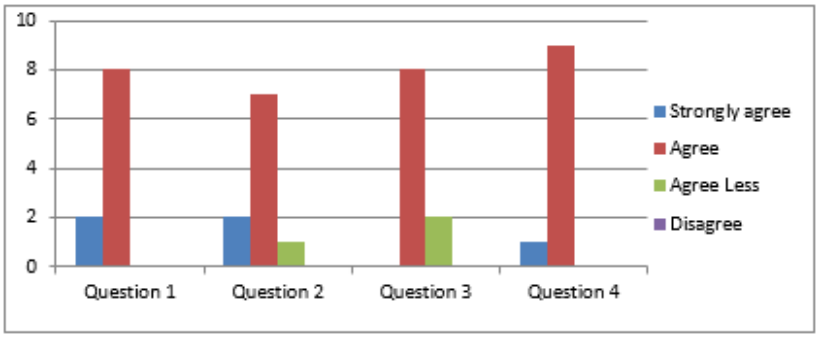
Number	Statement	Strongly Agree	Agree	Agree Less	Disagree
1	Is the system interface created is user friendly (easy to use by users)	2	8	0	0
2	Viewing reports on the inventory information system for parts is faster and easier to remember compared to manual notification of reports	2	7	1	0
3	Is the filling form on the add item in accordance with the manual filling form	0	8	2	0
4	Spare parts inventory information system can help branch heads and regional heads to get information about sales quickly and easily	1	9	0	0

details of the assessment: 1 answer strongly agree, 9 answers agree, 0 answers disagree and 0 answers disagree.

The graph of the results of testing the user can be seen in Figure below.

3.1.5 Surrender

Web-Based Parts Inventory Information System at the Rizal Auto Workshop Palembang which was designed had been submitted to the Rizal Auto Workshop Palembang received by the Chairman of the Rizal Auto Workshop, Mr. Ilham Pujiono.



Gambar 4: User Test Results Graph

4 Conclusion

Based on the results of the analysis and testing of the inventory information system for parts that have been carried out, a number of conclusions can be drawn. First, the system can help with transaction activities and recapitulate reports on Auto Rizal to facilitate leadership. Second, the information system for spare parts inventory is built using the waterfall model development system, PHP as a programming language, and uses a Data Flow Diagram (DFD) system design because the system is designed in a structured structure. And can provide online access to users with web-based.

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