INFORMATION SYSTEMS DATA PROCESSING SERVICE VEHICLES IN AGUNG PERKASA MOTOR WORKSHOP

Minggus Freddy Tambunan

Universitas Komputer Indonesia (UNIKOM)
Jl. Dipati Ukur No. 112-116, Bandung 40132
Email : gus87@ymail.com

ABSTRACT

In the dynamic and very competitive world of commerce or business, the people involved have to be fully prepared of the ways to surviving and developing their business range.

Ultradisc is a franchise company that is engaged in rental or lease of Original Movies. In recommending movies to its members, officers Ultradisc still use manual way by considering the rental history of each members.

In order to face the competition of business and increase revenue, related party within the company is required to make the right decision in determining marketing strategies to increase the rental transaction.

The availability of abundant data, the necessity of information (or knowledge) as the proponent to take the appropriate decision of establishing business solutions, and the infrastructure supports in information technology are the pioneers of data mining technology. Data mining purpose is to give the real solution for the decision maker of business, and to developing their business range.

Data mining is defined as one technique set that automatically used to explore comprehensively and bring the complex relations to the surface in the huge data set. The one of data mining method that used in this research is Association Rules Association rule is one of data mining techniques that work to find the association between variables, or a correlation structure among the items or objects in the database transactions database relational, and other information on the storage

The result of this research is an application that will make analyze of huge data set easier then helpful to give information as a basic feature of company's decision makers.

Keywords: information technology, data mining, association rules, business competition.

1. INTRODUCTION

1.1 Background

In any use of motor vehicles, to further optimize the performance of the vehicle in the process required a kind of treatments and remedies provided in these vehicles. In particular, this system is called by service / service. Agung Perkasa Motor is an authorized dealer who is engaged in the motor distribution. Activities undertaken by this authorized dealer, include sales, maintenance, and spare parts.

Data processing service vehicles in the garage Supreme Cikarang Perkasa Motor branch has used a system in the form of Microsoft Excel. Microsoft Excel is used just for data reporting service, so that the system is running now, there are still shortcomings include input data-lawyer service and spare parts to the service invoice is done manually. This resulted in a lack of effective data processing services and the process of adding data of vehicle spare parts, which complicates the administration of the lawyer-data input service and spare parts are needed, especially when it involves a number of services in a large scale.

In addition, based on the results of this research is that supply / stock of spare parts in the garage Supreme Cikarang Perkasa Motor branch was sometimes have run out of stock spare parts in each year when the holiday. Request that a lot of customers cause parts at Auto Motor branch Cikarang Perkasa

Agung experience out of order / out of stock. Spare parts are commonly used spare parts spare parts that are in routine. Parts of this routine include canvas brakes, tune ups etc.. These problems occur because of less accurate determination of the stock of spare parts inventories. Where, in data processing spare parts stock in the Great Workshop Cikarang Perkasa Motor branch is still not available the system in determining the stock of spare parts inventories for each period in the future.

Based on existing problems, then made an application of Information Systems Data Processing Service Vehicles in Great Perkasa Motor Repair. This application is expected to reduce existing problems and help improve performance of the data processing service vehicles in the garage Supreme Cikarang Perkasa Motor branch.

1.2 Problem Identification

How to build a data processing information system applications in vehicle servicing workshops Grand Cikarang Perkasa Motor branch.

1.3 The Aim and The Purpose

The purpose of writing this final task is to build an application service data processing information system of vehicles in the Great Workshop Cikarang Perkasa Motor branch.

While the goal to be achieved in this research are:

1. Improving the effectiveness of data processing servicing vehicles in the garage Agung Perkasa Motor for more optimal.
2. Help determine the supply of spare parts stock in the Great Workshop Cikarang Perkasa Motor branch in every period in the future by using Method Forecasting / Forecasting Simple Linear Regression

2. MODEL, ANALYSIS, DESIGN, AND IMPLEMENTATION

2.1 Model

Data analysis technique of software construction using software modeling with waterfall paradigm as shown in Picture 1, consist of several process which are:

a. System / Information Engineering

It is a part of the biggest system in a project construction, begin with determine various requirement from the entire element that necessary for the system and allocated it into software construction.

b. Analysis

It is analysis stage of materials that necessary to perform the software construction project.

c. Design

It is translation stage of analyzed data into comprehensible form for user.

d. Coding

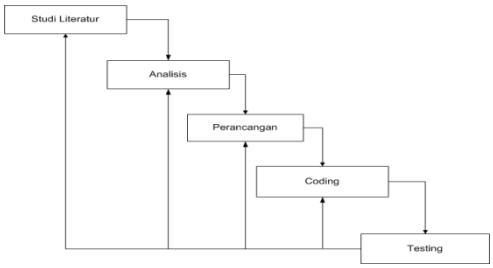
It is a stage of translation data or problem solving that has been designed into specific programming language.

e. Trial

It is a trial of the constructed software.

f. Maintenance

It is a final stage where the settled software may have any modification or addition congruent with the user demand.



Picture 1. Waterfall Paradigm

2.2 Analysis

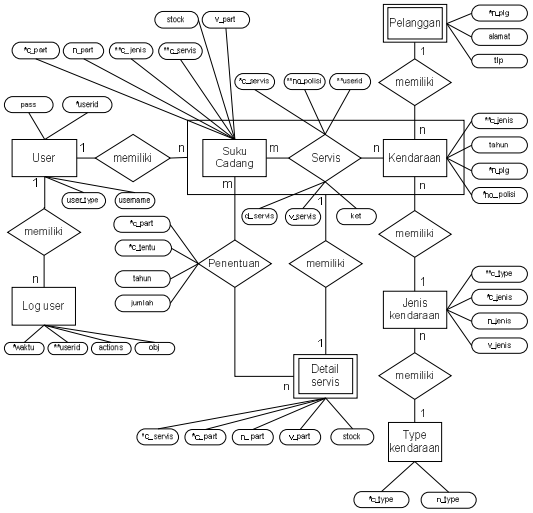
A. System Analysis

System analysis defines as disperse of an intact information system into parts of its component as the objective is to identifying and evaluating the problems, opportunities, obstructions that happened and the requirements so the improvements can be suggested. Or in easy way, system analysis is a research on the existed system with purpose is to design a new system or renew it. This analysis system stage is a very critical stage and very important, because any mistake in this system will also causes mistake in the next stage. The main task of analysis system is to find the weakness of performing system so the improvement can be suggested.

B. Basis Data Analysis

The logic structure of basis data is drawn into a graphic using Entity Relationship Diagram (ERD). ERD is a relationship between entities that used in the system to describe the relationship between entities or data structure and relation among files.

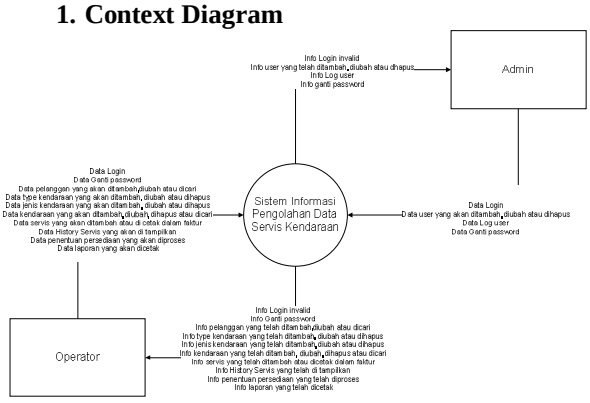
The main component ERD formation are Entity and Relation then in this item ERD are components of entity complex and relation complex that showed more specific by several properties describing the entire facts of the following system. The ERD of constructed application are below:



Picture 2. Entity Relationship Diagram (ERD) Information Systems Data Processing Service Vehicles in Bengkel Agung Perkasa Motor

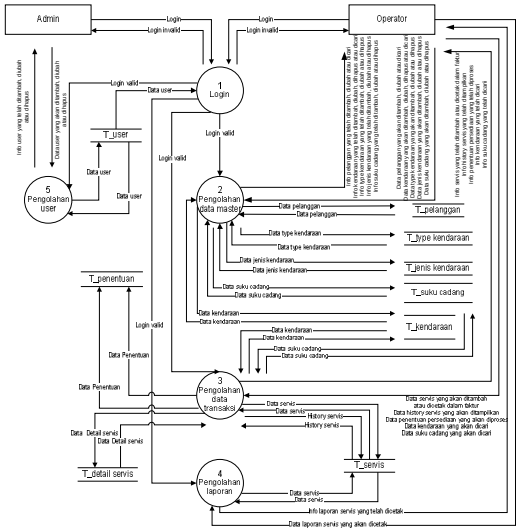
C. Functional Requirement Analysis

1. Context Diagram



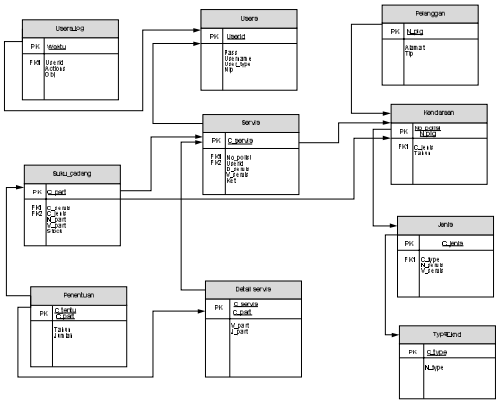
Picture 3. Context Diagram

2. DFD Level 1



Picture 4. DFD Level 1

3. Relation Scheme

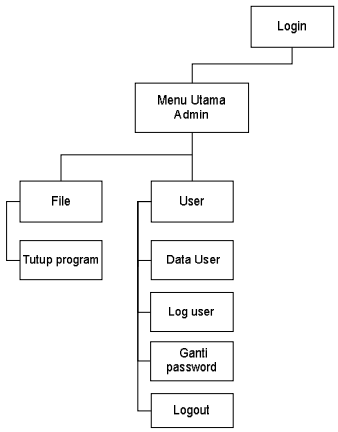


Picture 5. Relation Scheme

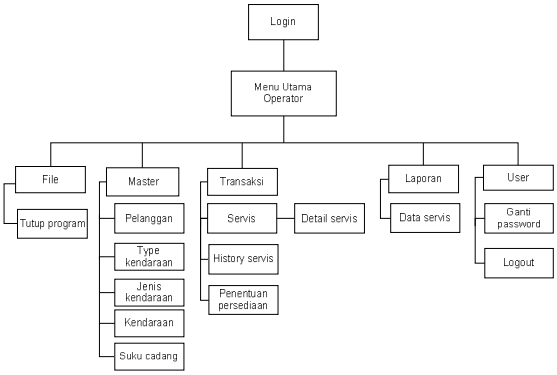
2.3 Design

A. Menu Structure Design

Designing an application need a menu structure contains of menu and submenu with function is to make user applying the application easier. Below is showing of menu structure of this application:



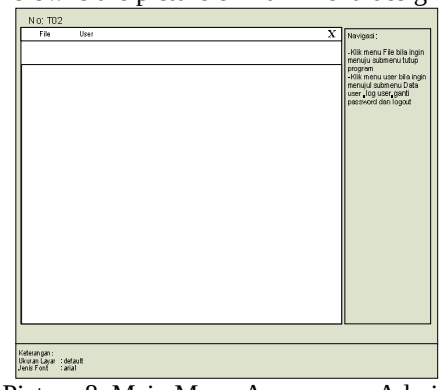
Picture 6. Menu Structure Design Admin



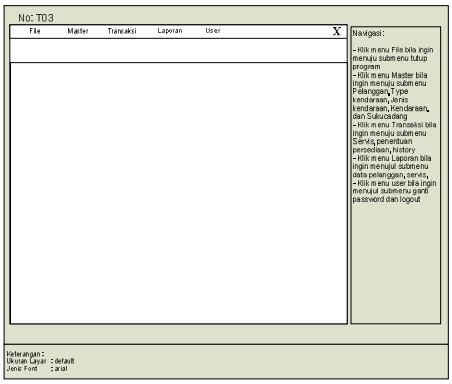
Picture 7. Menu Structure Design Operator

B. Application Main Menu Design

Below is the picture of main menu design.



Picture 8. Main Menu Appearance Admin

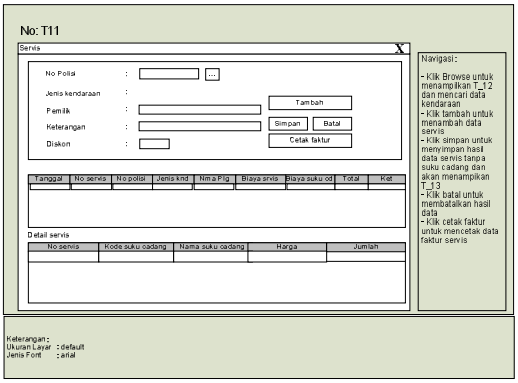


Picture 9. Main Menu Appearance Operator

C. Services Sub Menu Appearance Design

Below is the picture of services sub menu appearance design.

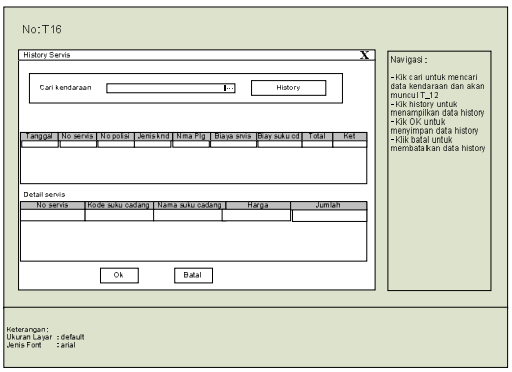
A.



Picture 8. Services Sub Menu Appearance Design

B. Services Sub Menu History Appearance Design

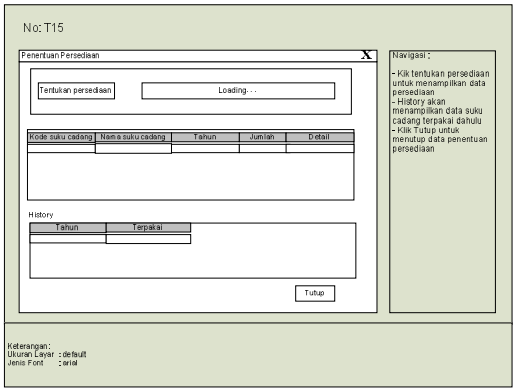
Below is the picture of services sub menu history appearance design.



Picture 8. Services Sub Menu History Appearance Design

A. Sub Menu Detemination Of Inventory Appearance Design

Below is the picture of sub menu determination of inventory appearance design.



Picture 8. Sub Menu Determination of Inventory Appearance Design

2.4 Implementation

The implementation of the constructed system will be done in this stage after analyzing and designing has been finished. Then will be implemented to the utilized programming language.

A. System Implementation

The implementation purpose is to confirm the designing program module to the performer system so that user can give the input to the system builder.

B. Hardware Implementation

The hardware that used to implementing the system are below:

1. *Processor* : Pentium 4 1,8 GHz
2. *Harddisk* : 80 Gb
3. *Memory* : 1Gb
4. *Monitor , keyboard, mouse*

C. Software Implementation

The software that used to implementing the system are below:

1. *Windows XP service pack 1*
2. *Borland Delphi 7.0*
3. *MYSQL*
4. *Component Delphi 7*

D. Form Implementation

Form implementation is performed to know each program page that has been made. Below is the form implementation:

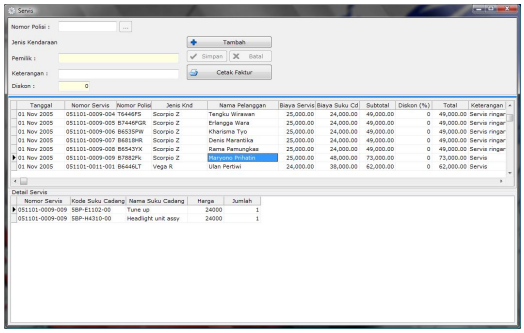
Table 1. Form Implementation

Menu	Deskripsi	Nama File
User Login	File program to handle user login	ULogin.pas
Main	Process of the whole system	UMain.pas
User Data	Processing user data by adding, modifying, and deleting data	UUser.pas
User Log	File program to display the user log	ULogUser.pas
Change Password	File program change user passwords	UGantipass.pas
Customer Data	Processing customer data by adding, modifying, and search data	UCariplg.pas, UPelanggan.pas
Data Type Vehicle	Type vehicle data processing by adding, modifying, and deleting data	UJenis.pas

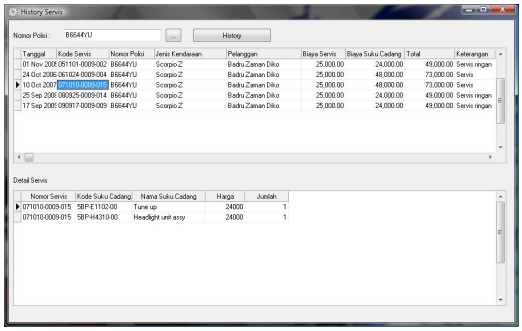
Vehicle Type Data	Type of vehicle data processing by adding, modifying, and deleting data	UTipe.pas
Vehicle data	Processing vehicle data by adding, changing and deleting data of vehicle and customer data search	UKendaraan.pas, UKendaraan_add.pas, UCariplg.pas
Parts of data	Processing parts data by adding, modifying, and deleting data	UPart.pas
Service data	Processing service data service by adding data, print invoices and look for the data service vehicles	UServis.pas, UCariknd.pas, UqrFaktur.pas
Detailed Data Services	Detail data processing services by finding and adding spare data	UDetserv.pas, UCaripaert.pas,
Determining Inventory	File program to perform the process of determining inventory of spare parts	UPenentuan.pas
Service History	File program to do the search for customer data and display the service history	UHistory.pas, UCariplg.pas
Report	Process print reports and invoices service data service	UqrServis.pas, UqrFaktur.pas
Module Data	Files program to collect the component connection, table, query, data source	UDM.pas

3. RESULT AND DISCUSSION

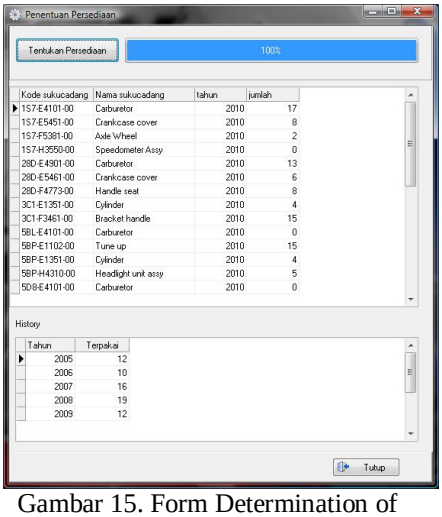
From the analysis and the designing that has been done, the result of the constructed application shown as these appearances below:



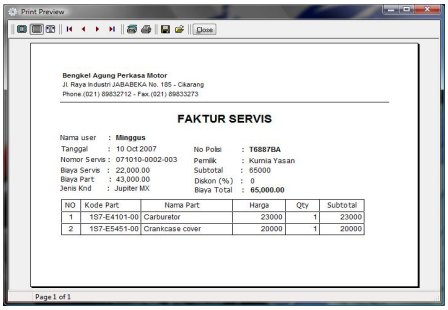
Gambar 13. Service Form



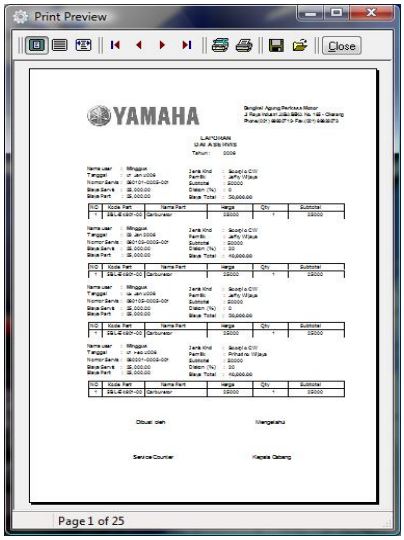
Gambar 14. History Form Service



Gambar 15. Form Determination of Inventory



Gambar 16. Invoice Format



Gambar 17. Report Format

4. CONCLUSION AND SUGGESTION

4.1 Conclusion

The conclusion that can be obtained after the analysis and testing of systems built are:

1. Applications built to enhance the effectiveness of data processing servicing vehicles in the Great Mighty Motor Repair to run more optimally.
2. Can help determine the supply of spare parts stock in the Great Mighty Motor Repair in every period to depannnya by using Method Forecasting / Forecasting Simple Linear Regression.

4.2 Suggestion

The advice is expected to do development of this application system. Forecasting Methods / Forecasting as a first step in anticipation of the volume of inventory / stock of spare parts should be able to develop more accurate for higher level.

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