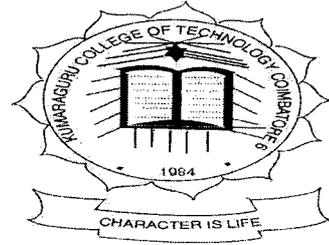
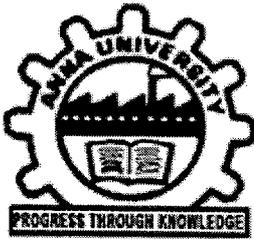


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MOTOR SERVICING SYSTEM

By

Anbumani A

Reg. No: 71202621004

of

Kumaraguru College of Technology



A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

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for the award of the degree*

Of

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Kumaraguru College of Technology

Coimbatore – 641006

Department of Computer Science and Engineering

BONAFIDE CERTIFICATE

Certified that this project report titled **MOTOR SERVICING SYSTEM** is the bonafide work of **Mr. ANBUMANI .A. (Reg No. 71202621004)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


GUIDE
HEAD OF THE DEPARTMENT

Submitted for the University Examination Held on 23/6/05


Internal Examiner
External Examiner 23/6/05

ABSTRACT:-

The project titled "Motor Servicing System" has been developed a fully computerized system that has to record and maintain the overall activities of this service center.

To provide a complete secured system across the enterprise that has to uphold all the information in more secured mode. This system comprises the creation, approval, deployment of jobs. While managing all associated digital assets such as documents, applets, multimedia and graphics, and process the workflow-in a single ,easy-to-use, integerated environment.

This application has to maintain the service and repair particular of all two wheelers of one particular brand.

In this application the customers who come for service or repair will place their request in the job application form. The job takers initially take a record of the customers.

The system is designed using Java (front end) with oracle8 (back end). The operating system under which the package developed in windows 98.

ACKNOWLEDGEMENT

I praise the Lord, the **Almighty** for he has shown Thy Grace and led me throughout my life and during this project work, to finish this in a successful way.

I would like to express my heart felt thanks to **BDPS** for giving me a valuable experience in working with them for an excellent project.

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A.Anbumani,
71202621004

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CHAPTER – 1

INTRODUCTION:-

1.1 OVERVIEW OF THE PROJECT:-

This application has to maintain the service and repair particular of all two wheelers. The main aim of the project is to develop a fully computerized and secured system.

The vehicles are taken for service in two ways. They are

- 1.Free Service
- 2.Paid service

Free Service:-

This service is done without pay having duration of one year from the date of purchase. There are various mandatory check ups during the free service period. Under the free service the administrator can do the following operations.

- ❖ Add a new customer details.
- ❖ Edit the customer details.
- ❖ Delete a customer details.
- ❖ List/view customer details.

Paid service:-

The paid service are done for the customer after the free service or if the above given criteria doesn't match. The customers have to pay for all the replacements whatever done.

Then the job takers enquire about the troubles caused by the vehicle. Which are noted in the job application form. Under the paid service the administrator can do the following operation.

- ❖ Add a new customer details.
- ❖ Edit the customer details.
- ❖ Delete a customer details.
- ❖ List/view customer details.

This information whatever received has to be updated in the system. Once the updating is made, then it is the responsibility of internal user to allot the job to the workers. Some of the responsibilities of internal user are:

- ❖ View the job details on the current date.
- ❖ Allot the job to the workers.
- ❖ Time has to be recorded
- ❖ Worker name has to be recorded.
- ❖ Checking the work process.

After the servicing is completed the Quality has to be checked. Whether the work done was up to the expectations of the customer or not. He has to check the job systematically. If any pending is there then it has to be completed. The details have to be sending to the supervisor who is in charge of the total service. He has to analyze the job. After examining the total job, the data will be updated in the system. Now the completed job will be sent to the Quality Control sheet, which contains the entire details of the job and its servicing.

The billing is the part of the system which contains the details about the,

- ❖ Type of services done.

- ❖ Parts Rate.
- ❖ Delivery date.
- ❖ Remarks.

To improve the servicing Customer advice has to be mentioned in the bill. This information is about the problem, which may arise in future.

Highlights of Motor Servicing System:-

Graphical User Interface:-

This application is graphical user interface which can be used by any non technical user also. It avoids lengthy commands and type of data types used.

Multitasking:-

MSS makes use of “Multitasking” capability of windows, thus enabling the user to open multiple screens simultaneously and to toggle between different screens in the application.

Flexibility:-

All the possible changes with regard to the future requirements are incorporated into MSS. This ensures continuity of operations.

1.2 OBJECTIVE OF THE PROJECT:-

Existing System:-**Overview:-**

- ◆ Manual entry of transaction
- ◆ No proper authorization
- ◆ Mishandling of data
- ◆ Inaccuracy of data
- ◆ More Clerical labor
- ◆ Difficult to take business decisions
- ◆ No proper availability of reports
- ◆ Chances of theft of the records

Proposed System:-**Salient features of Motor servicing system:-**

- ◆ Modular Structure
- ◆ Structure design
- ◆ Maximum Parameterization
- ◆ Multiple Level Of Security
- ◆ Y2K Compliance
- ◆ Object Oriented Programming

Special Features:-

- The reports needed by the administrator for analysis, and decision-making will be readily available.
- To make the screen user friendly and completely menu driven so that the users have no problem in using the system.
- To make the system efficient and fast responding by careful programming.
- The data security checks are made to prevent unauthorized access by other users.
- Since database is fully normalized, memory usage is very less compared to the existing manual system.
- To make the processing very fast and accurate.
- To make the system user friendly.
- Maintaining backup copies is much more easier.

Special Features of Motor Servicing System:-

- ◆ Only the employees of MSS, who are authorized to access the system are allowed to login to the system.
- ◆ Separate login-ids are provided to identify the person operating on the system who are given access to delete customer details.
- ◆ Password is encrypted.
- ◆ Manipulation of the database is restricted to MSS application software.
- ◆ Disk mirroring is enabled as a safety measure.
- ◆ The proposed system is more user friendly. A non-technical person can be able to work with the proposed system. A fully secured and fast transaction is made possible with the help of proposed system which is the main requirement of the target.

Highlights of Motor Servicing System:-**Graphical user interface:-**

The application has graphical user interface so just point and click to do various operations. No need to remember and type lengthy commands.

Multitasking:-

MSS makes use of "Multi-tasking capability of windows, thus enabling the user to open multiple screens simultaneously and to toggle between different screens in the application.

Flexibility:-

All the possible changes with regard to future requirements are incorporated into MSS. This ensures continuity of operations.

1.3 BACKGROUND STUDY:-

1.3.1 Company profile:-

As a software consulting company based in Mumbai, BDPS Consulting Ltd (Formerly known as Bureau of Data Processing System Ltd.) provides total solution, not just manpower. With dedicated teams working at offices Mumbai, Chennai and Bangalore, they provide a complete range of services, beginning with requirements, collections, and analysis and continuing through data modeling, design, application maintenance, networking, web designing and hosting.

Being initiated as a training center in 1967, which was the early entrance into the software training segments, today with three decades of expertise, BDPS has strong foundation in both software development and training divisions with perfection not only in software development process or training methods, but also in key areas and markets they select.

In the current age of advanced computer technologies, BDPS Consulting Ltd has a talented pool of professionals comprising of certified professionals in Microsoft technologies, experts in web based application, professionals in system side programming. BDPS extend their services to New Jersey, USA targeting the USA market and also in Singapore focusing on Asia Pacific operation. All these makes BDPS not just a software company, but an Integral part of India's IT future.

The business model of this company includes not only in application service provided, but also business to business initiatives, Web performance, Strategic outsourcing.

1.3.2 Study of the Existing system:-

It is the inefficiency of the existing system which leads to explore the new idea and to create new languages which is mainly proposed to act better. Some of the problems faced by the users in the existing system are as follows:

Manual entry of transaction:-

Maintaining large amount of data manually is a tedious process. It results in time consumption and more investment for man power.

Security problem:-

To make the data secure and safe is a important task. But in the existing system there are very less probability to implement security.

Non-aviliability of records:-

As when needed the extraction of single record from a large maintained file is difficult. This leads to non-aviliabilty of the record or loss of data.

Difficulty in making updation:-

As there is no authorized linkage between the records and files,the updation will be difficult.

Mishandling of data:-

There are chances of mishandling the data by the intruders.The existing system has certain drawbacks that led to the proposal of the new package. Due to manual process, the existing system is not efficient and time consuming.

CHAPTER – 2

SYSTEM ANALYSIS:-

2.1 DEFINING THE PROBLEM:-

Existing System:-

It is the inefficiency of the existing system which leads to explore the new idea and to create new languages which is mainly proposed to act better. Some of the problems faced by the users in the existing system are as follows:

Manual entry of transaction:-

Maintaining large amount of data manually is a tedious process. It results in time consumption and more investment for man power.

Security problem:-

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Non-aviliability of records:-

As when needed the extraction of single record from a large maintained file is difficult. This leads to non-aviliabilty of the record or loss of data.

Difficulty in making updation:-

As there is no authorized linkage between the records and files,the updation will be difficult.

2.2 STUDY OF PROPOSED SYSTEM:-

To overcome the problems in the existing system, a new system is proposed. The proposed system will be based on the following features:

1. User friendly.
2. Multiple level of security.
3. To make fast and accurate process.

Based on the above features a two-tier architecture is proposed. In two-tier model, a Java application takes directly to the database. This is accomplished through the use of a JDBC driver, which sends commands directly to the application. The results of these commands are then sent back from the database directly to the application. Using the above architecture the Motor servicing system will have the following features:

- To avoid the difficulties in handling huge amount of data.
- To obtain maximum accuracy in all processes.
- To reduce the man-hour spent on manual processing.
- High speed processing and information retrieval is made possible.
- Developed system effective and functioning.
- To produce robust, reliable solution for setup.
- To maintain the backup copies of all registration.

Special Features of Motor Servicing System:-

The proposed system is more user friendly. A non-technical person can be able to work with the proposed system. A fully secured and fast transaction is made possible with the help of proposed system which is the main requirement of the target.

System Analysis:-

System analysis is an activity which includes computer system engineering. The objectives of system analysis are:

- ◆ Identifying the customer's need.
- ◆ Evaluating the system concept for feasibility.
- ◆ Performing economical and technical analysis.
- ◆ Allocating functions to hardware,software,people,database and other system elements.
- ◆ Establishing cost and schedule constrains.
- ◆ Creating a system definition.

2.3 DEVELOPING SOLUTION STRATEGIES:-**Steps of System Analysis Process:-****Identification of need:-**

The first step of the system analysis process involves identification of need. The analyst(System engineer) meets the customer so that the following questions can be answered.

- ◆ Desired function and performance.
- ◆ Reliability and quality issues.
- ◆ Overall system goals.
- ◆ Cost/schedule constraints.
- ◆ Manufacturing requirements.
- ◆ Markets and competitions.
- ◆ Available technology.
- ◆ Future extensions.

The above information are gathered during the needs identification and documented in a system concept document.

2.3.1. Feasibility Study:-

Feasibility study ensures whether to proceed the development of the project or to stop by conducting study on five primary areas such as,

2.3.1.1. Technical Study:

A minimum of one person and computer with specified and an 80 column printer is required for the project.

The current level of technology can support the proposed system. BDPS already has and hardware installed. They have agreed to spare one terminal to administration department during the processing time. The current setup is sufficient for the banking software modalities and even for the adhoc reports.



2.3.1.2. Economical Feasibility:-

The analyst measures the cost effectiveness of the project, so that he did not invest in the hardware, as it is already available. He will still need to consider the time spend by the system analysis team. The cost of doing the full system study, cost of employee time involved in study, cost of development of the software which has been entrusted to "success consultant ". He has to decide whether the software will be helpful and effective.

2.3.1.3. Operational Feasibility:

In a small software development project a single person can analyze requirements, perform design, generate code and conduct tests. As the size of the project increases, more people must become involved.

There is a common myth is still believed by many managers who is responsible for software development effort “ if we fall behind schedule, we call always add more programmers and catch up later in the project”. Unfortunately, adding people late in a project often has a disruptive effect, causing scheduling to slip even further. People who are added must learn the system and the people who teach them are the same people who were doing the work. While they are watching no work is done and the project falls further behind. Considering the above points the project management divides the developers in to various teams, each teams is assigned a particular module.

2.3.1.4. Management feasibility:-

The management of the company is responsible for the various operations involved in its day to day functioning. The various levels in an organization take care of various business related problem, at various levels to attain certain standards and certain quality level. To maintain and to increase the quality level, it is always good to have third part opinion but at the same time the information given to this outsider must be in total confidence. This is where students who have to do project comes into picture. Not only does the management help them in the course of project it also gets an review as how effective the various levels of a management at given target achievement.

2.3.1.5 Legal Feasibility:

Every company has a set of rules and legal responsibilities to its employees. People wanting to benefit from it and to the system. A complete asset of instructions is given to a student who makes him/her self-familiar of this instruction, which could be of high legal importance to the company. adhering to this instruction while doing an analysis is absolutely important and in this a way of meticulous process reinvented both by the student and the company also re-familiarizes itself with any loop holes existing in the system which student is not

informed of any change thus in the legal aspect of the company is informed to the student who analyses on his own as to how and why the particular change was brought about thus benefiting to the company and the individuals.

2.3.2 System Specification:-

2.3.2.1 Hardware Specification:

| | |
|----------------------|---------------------|
| MAIN PROCESSOR | INTEL PENTIUM III |
| RAM | 128 MB |
| BASE MEMORY SIZE | 640 K |
| EXTENDED MEMORY | 9720 K |
| HARD DISK CAPACITY | 40 GB |
| FLOPPY DISK CAPACITY | 1.44 MB DD |
| MONITOR | 14-INCH COLOR |
| MOUSE | ATTACHED (LOGITECH) |
| KEYBOARD | 104 TVS KEYBOARD |

2.3.2.2 Software Requirements:-

The software features required for developing this software are follows

| | |
|-------------------------|-------------------|
| Front End | Java |
| Back End | Oracle 8 |
| Operating System | Windows 98 |

2.3.2.3 Software Environment:-

Java was conceived by James Gosling, Patrick Naughton, Chir Warth, Ed Frank and Mike Sheridan at Sun Microsystems in 1991. The language originally named as "oak" but was renamed as Java in 1995. Now Java is one of the most widely used language in the world of Internet and programming.

Computer languages evolve for two reasons: to adapt to changes in environment and to implement advances in the art of programming. The environmental change that prompted Java was the need for platform independent programs for distribution on the Internet. This was not supported by the languages like FORTRAN and C++ which are highly efficient and stylish languages.

Java was designed by keeping the concepts of C and C++. Java was tested and refined by real working programmers. It is a language grounded in the needs and experiences of the people who devised it. Thus Java is a programming language, Second, Java is a cohesive and logically consistent. Third, except for those constraints imposed by the Internet environment, Java is a programmer-controlled language.

The original impetus for Java was not the Internet; instead the primary motivation was the need for a platform-independent language that could be used to create software to be embedded in various electronics devices.

The second force was, the World Wide Web. Java might have remained a useful but obscure language for programming consumer electronics. However, with the emergence of the World Wide Web, Java was propelled to the forefront of computer language, as the Web also demanded for a portable system.

◆ **Java Virtual Machine (JVM):-**

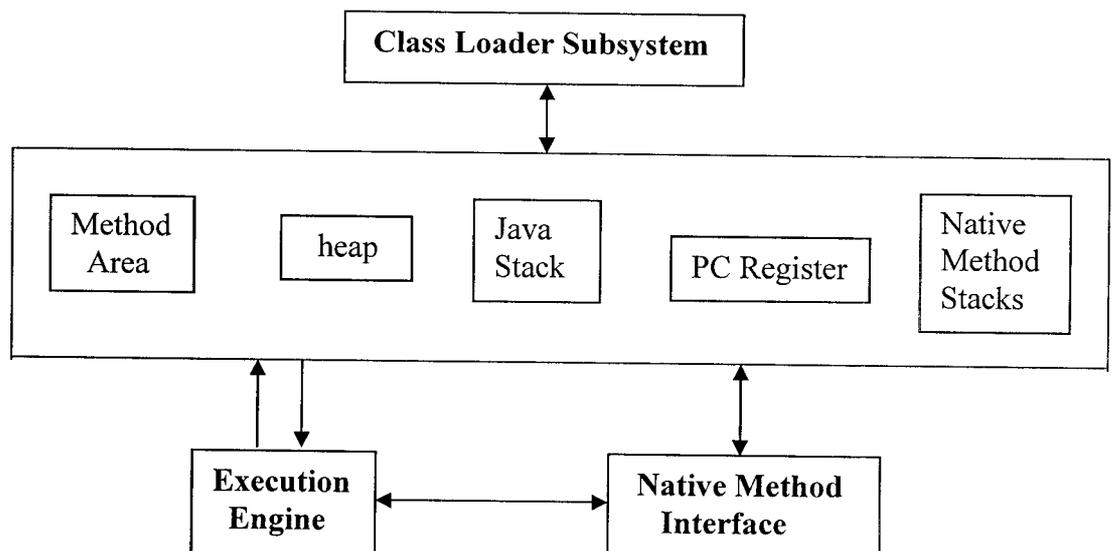
To solve both the security and portability problems the output of a java compiler is in bytecode. Bytecode is a highly optimized set of instructions designed to be executed by the Java Run Time system, which is called Java Virtual Machine (JVM).

Translating a java program into bytecode helps making it much easier to run a program in wide variety of environment. Although the details of the JVM differs from platform to platform, all interprets the same bytecode. Just-In-Time (JIT) compiler supplied by Sun is a part of JVM which compiles bytecode into executable code in real time.

In JVM Architecture class loader subsystem imports the binary data for the clients. Its main function is to load, link and initialize the data to the destination. Method area is the place where the type information of the data is stored. Java programs are stored in heap. Java class files are in byte code format, which supports the platform independence and network mobility.

◆ **Java Applets and Applications:**

In Java we can create two types of programs.



Applications:

Application is a program that runs on our computer under the operating system of that computer. When used to create applications, java is not much different from any other computer language.

Applets:

An applet is an application designed to be transmitted over the Internet and executed by a java compatible web browser. An applet is a tiny java program, dynamically downloaded across the network just like an image. Application is a program that can react to user input and dynamically change.

Security:

Prior to java, all the programs downloaded through Internet are scanned for viruses before execution. When we use a java-compatible web browser we can safely download java applets without the fear of viral infection or malicious intent. Java achieves this protection by confining java program to the java execution environment and not allowing it access to other parts of the computer.

Portability:

Java is portable because the output of a java program is not executable code rather it is a byte code. Byte code is highly optimized set of instructions designed to be executed by the java run time system, which is called the Java Virtual Machine. JVM is an interpreter for byte code. Transmitting java program into byte code helps to run a program in wide variety of environments easier.

Features:-**JAVA is Simple:-**

Java was deigned to be easy for the professional programmer to learn and used effectively. If we are an experienced C++ programmer, then java will be easy for us. Java inherits C / C++ syntax.

JAVA is Object-Oriented:-

Java was not designed to be source code compatible with any other language. Java team gave a clean, usable, realistic approach to objects. The object model in java is simple and easy to extend, while simple types, such as integers are kept as high performance non-objects.

JAVA is Robust:-

The multiplatform environment of the web places extraordinary demands on a program, because the program must execute reliably in a variety of systems. Thus, the ability to create robust programs was given a high priority in the design of java.

To better understand how java is robust, consider two of the main reasons for program failure, memory management mistakes and mishandled exceptional conditions. In C and C++ the programmer must manually allocate and free all dynamic memory. If the programmer forgets to free memory then it will be a problem. Java virtually eliminates these problems by managing memory allocation and deallocation automatically. In a well-written java program, our program using the object oriented exception handling can manage all run time errors.

JAVA is Multithreaded:-

Java supports multithreaded programming, which allows us to write programs that do many things simultaneously. Multithreading enables us to construct smoothly running interactive systems.

JAVA is Architecture-Neutral:-

Operating System upgrades, processor upgrades and changes in core system resources can all combine to make a program malfunction.

Java designers made several hard decisions in the java language and the virtual machine in an attempt to alter this situation. The goal accomplished by the java designer is "Write-Once; run anywhere, anytime, forever".

JAVA is distributed:-

Java is designed for the distributed environment of the Internet, because it handles TCP/IP protocols. Java allows objects on two different computers to execute procedure remotely. Java accomplishes this remote execution of objects using a package called Remote Method Invocation.

JAVA is Dynamic:-

Java programs carry with them substantial amounts of runtime type information that is used to verify and resolve access to objects at run time. This makes it possible to dynamically link code in a safe manner. This is crucial to the robustness of the applet environment in which small fragments of byte code may be dynamically updated on a running system.

Garbage collector:-

It is not needed to explicitly allocate or deallocate memory in java. Memory is allocated as needed, both on the stack and the heap, and reclaimed by the garbage collector when it is no longer needed. There's no malloc(), free() or destructor methods. There are constructors and these do allocate memory on the heap, but this is transparent to the programmer.

Object-Oriented Programming:-

Object Oriented programming is at the core of java. In fact, all java programs are object-oriented. All computer programs consist of two elements.

- Code
- Data

Furthermore, a program can be conceptually organized around its code or data. Some programs are written around “what is happening” and others are written around “who is being affected”.

Process Oriented model :-

This approach characterizes a program as a series of linear steps. It can be thought of as code acting on data.

Object Oriented model :-

To manage increasing complexity, the second approach called object oriented programming, was conceived. This approach organizes a program around its data and a set of well-defined interfaces to that data. An object-oriented program can be characterized as data controlling access to code.

Principles:-**Encapsulation:-**

Encapsulation is the mechanism that binds together code and the data it manipulates, and keeps both safe from outside interference and misuse. One way to think about encapsulation is as a protective wrapper that prevents the code and data from being arbitrarily accessed by other code defined outside the wrapper. Access to the code and data inside the wrapper is tightly controlled through a well-defined interface.

Inheritance:-

Inheritance is the process by which one object acquires the properties of another object. This is important because it supports the concept of hierarchical classification. As mentioned earlier, most knowledge is made manageable by hierarchical classification.

Polymorphism:-

Polymorphism is a feature that allows one interface to be used for a general class or actions. For example, if we want to handle stacks of type integer, float and character then we should write three different programs in non-object –oriented programming language. Because of polymorphism, in java we can specify a general set of stack routines that all share the same names.

JAVA DATABASE CONNECTIVITY (JDBC)

Java Database Connectivity is a standard SQL database access interface, providing uniform access to wide range of relational databases. In other words, JDBC interface is a pure Java API used to execute SQL statements. JDBC provides a standard API for database developers and makes it possible to write database applications using pure Java API. The JDBC two-tier model is explained below.

Two Tier Model:-

In two-tier model, a Java application takes directly to the database. This is accomplished through the use of a JDBC driver, which sends commands directly to the application. The results of these commands are then sent back from the database directly to the application.

Working Of a JDBC:-

JDBC provides application developers with a single API that is uniform and database independent. The API provides a standard to write to, and a standard takes all of the various application designs into account. The solution is a set of Java interfaces that are implemented by a driver. The driver translates the standard JDBC calls into the specific calls required by the database it supports. The application can be written once and moved to the various drivers. The application remains the same but the drivers change.

Operating System-WINDOWS 98

Windows 98 was built on customer feedback and with the goal of delivering a simple, easy-to-use operating system. This focus combined with the rapid growth of the Internet over the past three years has resulted in a operating system designed with the consumer and the Internet in mind.

Windows 98 integrates both the navigation paradigm of the web and graphical nature of HTML to provide users with a much richer and simpler experience. Windows 98 SE delivers a simpler, easier experience that allows users to find information regardless of where it is located, get help, keep their system updated and install new hardware.

Key benefits of improved ease of use an Internet integration include the following:

Consistent navigation paradigm provides users with a consistent way of finding and navigating to information regardless of where it lives-on the hard drive or the Internet.

Richer information is delivered through support for HTML and Dynamic HTML in Windows 98. for example, user go to My Computer and clicks on the Control Panel Folder to get text that describes the contents of the folder.

Enhanced Internet browsing functionality with Internet Explorer includes ease-of-use and personalization innovations such as Explorer Bars, improvements in security, and new search capabilities. Conferencing and multimedia technologies in Windows NetMeeting 3 and Windows Media Player 6.1 provide a faster and easier way to take advantage of all that the Internet has to offer.

Dial-up networking improvements provides users with faster remote network and Internet connections as well as an automated connection to online services.

HTML-based Help along with Troubleshooting Wizards and Web Help makes it easier than ever to trouble=shoot problems and dramatically simplifies finding help information online.

ORACLE 8i

ORACLE is a fourth generation relational database management system. In general, a database management system (DBMS) must be able to reliably manage a large amount of data in a multi-user environment so that many users can concurrently access the same data. All this must be accomplished while delivering high performance to the users of the database. A DBMS must also be secure from unauthorized access and provide efficient solutions for failure recovery. The ORACLE Server provides efficient and effective solutions for the major database features.

ORACLE consists of many tools that allow you to create an application with ease and flexibility. You must determine how to implement your requirements using the features available in ORACLE, along with its tools. The features and tools that you choose to use to implement your application can significantly affect the performance of your application.

Several of the more useful features available to ORACLE application developers are integrity constraints, stored procedures and packages, database triggers, cost-based optimizer, shared SQL, locking and sequences.

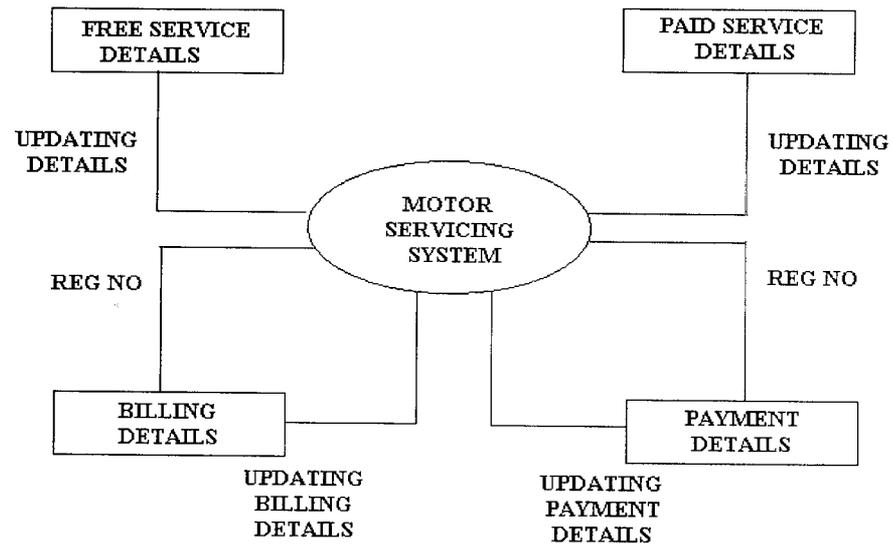
CHAPTER – 3

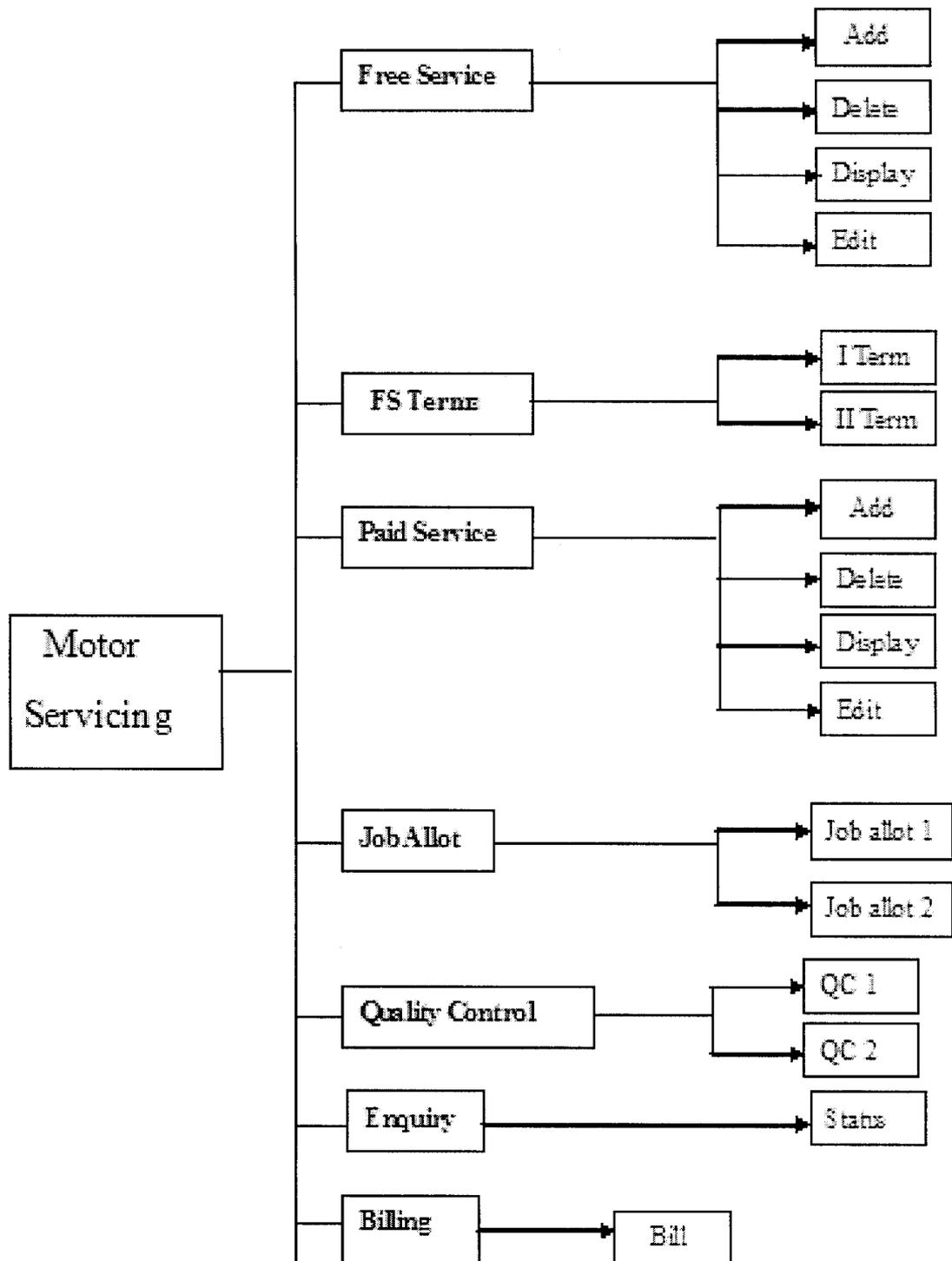
SYSTEM DESIGN AND DEVELOPMENT:-

3.1 DESIGN CONCEPTS:-

Design is the first step in the development phase for any engineered product or system . The process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization.

Context Flow Diagram:-



**SYSTEM DESIGN AND DEVELOPMENT:-
System Flow Chart**

3.2 INPUT DESIGN:-

The most important feature of this input design is that it is meant for a casual customer, but regular customer, who are not a computer professional. Hence, the first feature of importance is that, the input fields should be easy to enter. Input design is a part of overall system design, which requires very careful attention. The objective of input design is to make data entry as easy, logical and free from errors as possible. The formatted form approach is adopted for capturing input data.

A formatted form is a template that requests the user to enter data in appropriate locations. Selecting the menus is very easy. Mouse is very useful for selecting the menu.

The cursor moves to the next position automatically, once the user selects the appropriate information. Inaccurate input data are the most common cause of errors in data processing. Erroneous data can be prevented from entering the system through proper input design.

3.3 DATABASE DESIGNING:-

Free_Entry_Master

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|------------|------------|
| DAT | VARCHAR | 12 |
| TIM | VARCHAR2 | 15 |
| MTYPE | VARCHAR2 | 15 |
| CLR | VARCHAR2 | 15 |
| KNO | VARCHAR2 | 15 |
| KIL | VARCHAR2 | 20 |
| RNO | VARCHAR2 | 20 |

| | | |
|-------|----------|-----|
| ENO | VARCHAR2 | 20 |
| FNO | VARCHAR2 | 20 |
| DDATE | VARCHAR2 | 12 |
| NAM | VARCHAR2 | 200 |
| DOS | VARCHAR2 | 12 |
| DTIM | VARCHAR2 | 15 |
| PNO | VARCHAR2 | 15 |
| COM | VARCHAR2 | 200 |

Free_Entry

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|------------|------------|
| DAT | VARCHAR | 12 |
| TIM | VARCHAR2 | 15 |
| MTYPE | VARCHAR2 | 15 |
| CLR | VARCHAR2 | 15 |
| KNO | VARCHAR2 | 15 |
| KIL | VARCHAR2 | 20 |
| RNO | VARCHAR2 | 20 |
| ENO | VARCHAR2 | 20 |
| FNO | VARCHAR2 | 20 |
| DDATE | VARCHAR2 | 12 |
| NAM | VARCHAR2 | 200 |
| DOS | VARCHAR2 | 12 |
| DTIM | VARCHAR2 | 15 |
| PNO | VARCHAR2 | 15 |
| COM | VARCHAR2 | 200 |

Paid_Entry_Master

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|------------|------------|
| DAT | VARCHAR | 12 |
| MTYPE | VARCHAR2 | 15 |
| CLR | VARCHAR2 | 15 |
| KNO | VARCHAR2 | 15 |
| KIL | VARCHAR2 | 20 |
| RNO | VARCHAR2 | 20 |
| ENO | VARCHAR2 | 20 |
| FNO | VARCHAR2 | 20 |
| DDATE | VARCHAR2 | 12 |
| NAM | VARCHAR2 | 200 |
| COM | VARCHAR2 | 200 |

Paid_Entry

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|------------|------------|
| DAT | VARCHAR | 12 |
| MTYPE | VARCHAR2 | 15 |
| CLR | VARCHAR2 | 15 |
| KNO | VARCHAR2 | 15 |
| KIL | VARCHAR2 | 20 |
| RNO | VARCHAR2 | 20 |
| ENO | VARCHAR2 | 20 |
| FNO | VARCHAR2 | 20 |
| DDATE | VARCHAR2 | 12 |
| NAM | VARCHAR2 | 200 |
| COM | VARCHAR2 | 200 |

Allot Table

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|--------------|------------|
| SNO | NUMBER(3) | 3 |
| RNO | VARCHAR2(20) | 20 |
| BNAME | VARCHAR2(15) | 15 |
| BCLR | VARCHAR2(15) | 15 |
| TOS | VARCHAR2(15) | 15 |
| SPID | NUMBER(4) | 4 |
| SPNAME | VARCHAR2(20) | 20 |
| SUPNAME | VARCHAR2(20) | 20 |
| COM | VARCHAR2 | 200 |

Employee Table

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|--------------------|------------|
| SPID | NOT NULL NUMBER | 4 |
| SPNAME | VARCHAR2 | 20 |
| SUPNAME | VARCHAR2 | 20 |

Payment

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|---------------|------------|
| RNO | VARCHAR2(20) | 20 |
| TOS | VARCHAR2(15) | 15 |
| REM | VARCHAR2(200) | 200 |
| DOS | VARCHAR2 | 15 |
| TOTAL | NUMBER | 4 |

Billing

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|------------|------------|
| INAME | VARCHAR2 | 100 |
| RATE | NUMBER | 4 |

Quality Control Table

| FIELD NAME | FIELD TYPE | FIELD SIZE |
|------------|---------------|------------|
| SNO | NUMBER(3) | 3 |
| RNO | VARCHAR2(20) | 20 |
| BNAME | VARCHAR2(15) | 15 |
| BCLR | VARCHAR2(15) | 15 |
| TOS | VARCHAR2(15) | 15 |
| SPID | NUMBER(4) | 4 |
| SPNAME | VARCHAR2(20) | 20 |
| SUPNAME | VARCHAR2(20) | 20 |
| COM | VARCHAR2 | 200 |
| REM | VARCHAR2(200) | 200 |
| STATUS | VARCHAR2(20) | 20 |

3.4 OUTPUT DESIGN:-

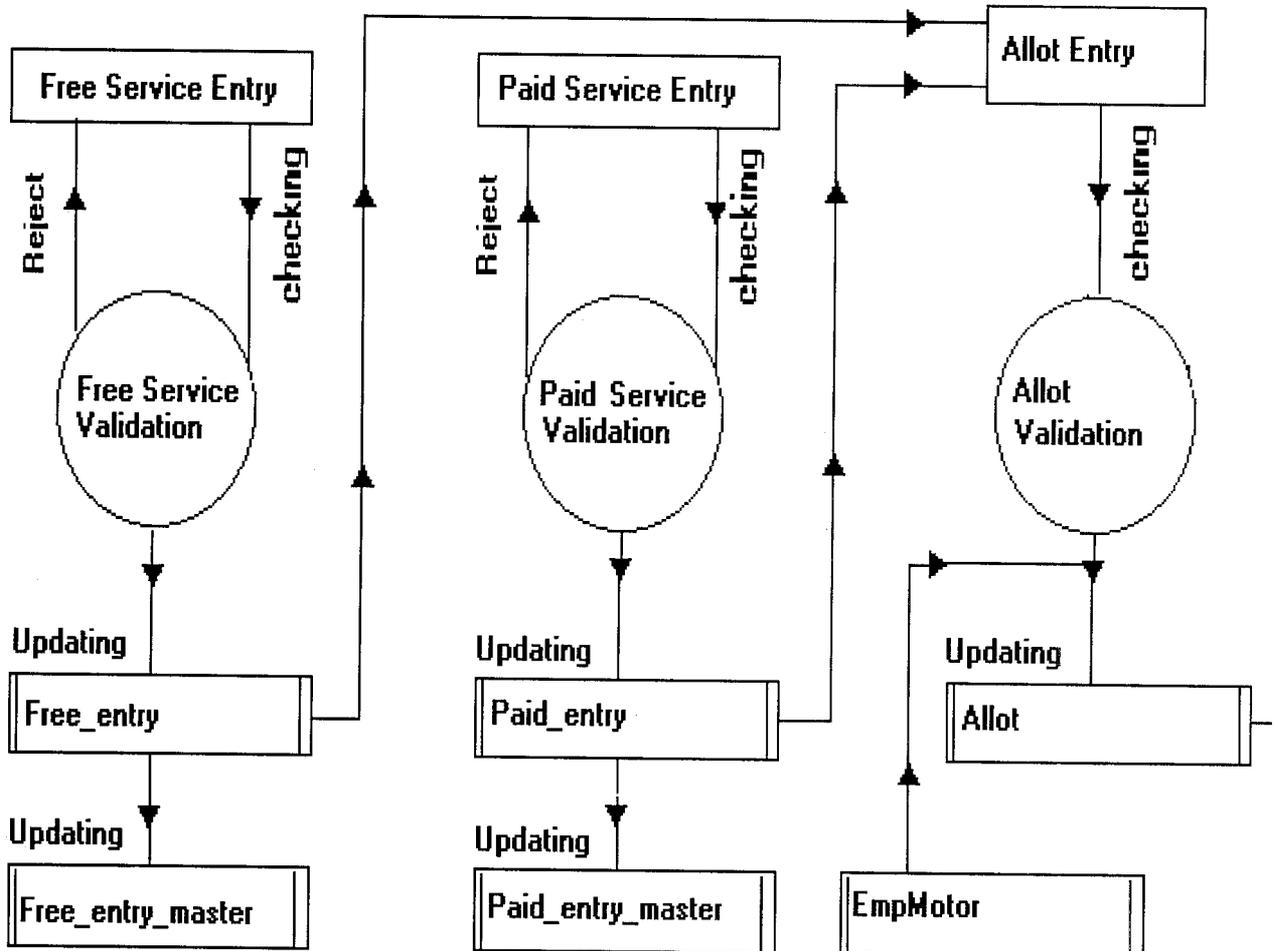
Output could be designed to get the report on any particular details, as the Free Servicing Details, Paid Servicing Details, Quality Control Details, Allot Details, Status, Payment details, Billing Details, of all the Operation Entries performed in a Motor Servicing System.

All the output should be available for a particular date. Once the free servicing complete with remove the free servicing details. But, for future records, a backup file need not have any provisions for options. With a proper password provision, we can maintain the security measures, so that no outsider should have an access and delete the files.

3.5 DATA FLOW DIAGRAM:-

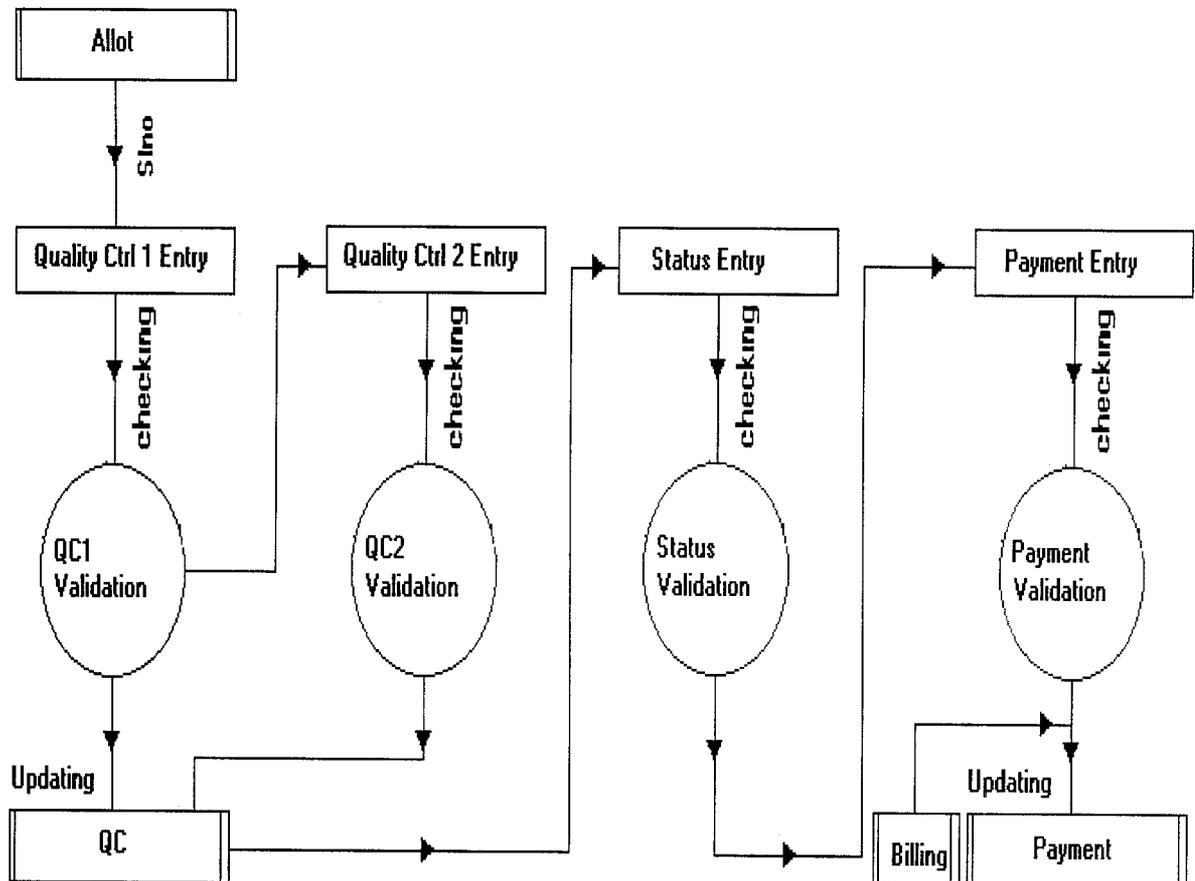
DATA FLOW DIAGRAM

First Level

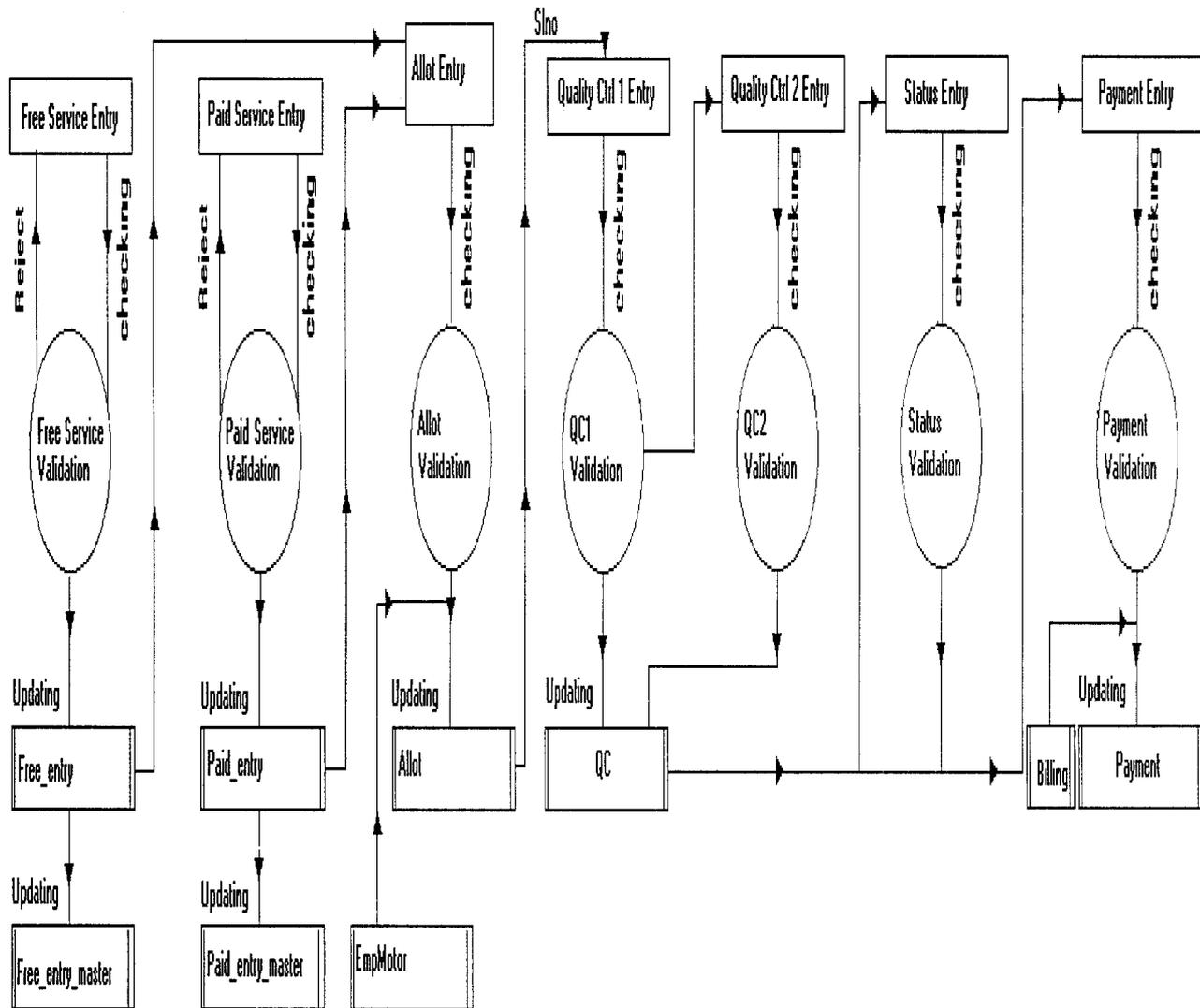


DATA FLOW DIAGRAM

SECOND LEVEL



DATA FLOW DIAGRAM



CHAPTER – 4

SYSTEM TESTING AND IMPLEMENTATION:-

4.1. System Testing:-

Testing plays a vital role to reach the perfect ness in any system. It is a major quality control measure used to determine the status and usefulness of the system.

The objectives of testing are:-

- Testing is the process of executing a program with the intention of finding an error.
- A good test is one that has a high probability of finding an undiscovered error.
- A successful test is one that covers an undiscovered error.

4.1.1. Unit Testing:-

Unit testing focuses verification effort on the smallest unit of software design the software component or module. Using the component level design description as a guide, important control paths are tested to uncover errors with in the boundary of the module. In unit testing the each and every small software components and the controls like text fields are validated for errors.

In Motor Servicing System the Unit Testing is done on all the modules. Each and every fields are checked for example the date field is filed to get only date values. The name,address,complaints are filed to accept charter values. Phone number has to be filed as numeric.

4.1.2. Module Testing:-

In module testing the main modules are tested for errors and failures. After the unit testing the modules, which contain the small software component, which are, validates already for errors are tested. Giving the data to check whether the data are stored in the relevant database and to check whether the data are stored in the relevant database and to check whether the data type in the database and the relevant programming variable are compatible tests in the modules.

In MSS the data of one database is linked to many modules. each time the data is fetched from the database the modules are been checked whether it is accepting the data or not. Data types and number of parameters passed is validated for all the modules . This process is done in order to check whether the data is stored in the database and fetched from the database without any type mismatches. Likewise all modules in this project is checked for its performance.

4.1.3. Integration Testing:-

Integration testing is a systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing, The objective is to take unit tested components and build a program structure that has been dictated by design.

There are two types in integration testing:-

- Top-Down approach
- Bottom-Up approach

“Motor Servicing System” is revealed as top-down approach. all the modules are linked together in a sequential manner. Here, the interfaces among the modules are tested. Index page is tested for its navigation to other page. For example the testing is done to find out the sequence of the modules are as free service, paid service, job allotment, quality control and billing.

Once the time period of free service is over the registration automatically shifts to paid service. Similarly it is for the next modules.

4.1.4. Verification And Validation

To put it into simple words, verification speaks on “Are we building the right System?” and validation speaks on “Are we building the System right?” .

The goals of verification and validation activities are to assess and improve the quality of the work products generated during development and modification of the software. This involves assessments of work products to determine conformance to specification.

Verification:-

Verification is the fundamental concept in software design. Design is the bridge between customer requirements and an implementation that satisfies those requirements. A design is verifiable if it can be demonstrated that the design will result in an implementation that satisfies the customer’s requirements. This is typically done in two steps.

- Verification that the software requirements definition satisfies the customers needs.
- Verification that the design satisfies the requirements definition.

Validation:-

The experts generally carry out validation. The various validation techniques are used to check each and every part of the system.

Quality assurance is “a planned and systematic pattern of all actions necessary to provide adequate confidence that the item or product conforms to establish technical requirements.

” The organization experts carry out quality assurance of MSS by giving different parameters, attributes, arguments and built-in functions.

Inspection can be used throughout the software life cycle to assess and improve the quality of the various work products.

This inspection includes:-

- Are the number of actual parameters and the formal parameters in argument.
- Do the type attributes of actual and formal parameters matches.
- Are the number, attributes and ordering of arguments to built-in-functions are correct.
- Are constants passed are modifiable argument.
- Are global variables definition and usage consistent among modules.

Verification and validation is carried out by the organization, by giving sample data as well as by giving actual data. And hence, as per the requirement, a user friendly and secure system was approved by the organization.

4.2 System Implementation:-

System implementation is the process of making the newly designed system fully operational. The system is implementation after careful testing. This is also the phase where there is maximum interaction between system personnel and the user departments. The most crucial stage is delivering a successful system and in giving confidence on the users, that it will work efficiently and effectively.

CHAPTER – 5

CONCLUSION:-

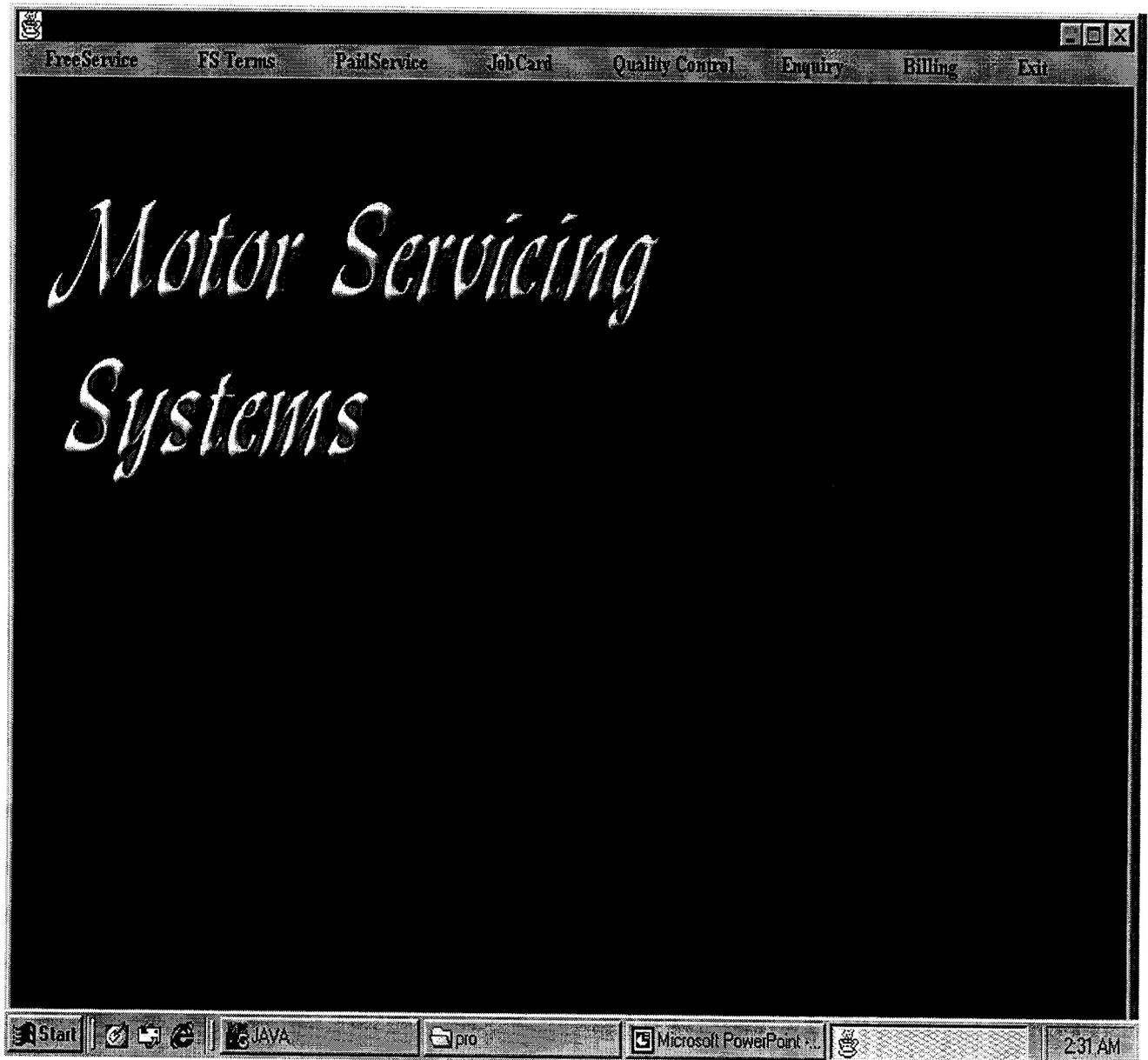
Project is developed on the requirements of the customer.

This project “Motor Servicing System ” is helpful for efficient and faster computation of any kind of service for the officials and effective service for the customers of the insititution to which the software is targeted. Reliable and accurate reports would be available within a short time which is not possible if done manually. Automatic calculation of billing and payment details would be possible.

This project is a sincere attempt to computerize the data incurred by a project by recording all the necessary information-using computer. This increases the smooth availability of reports and related information at the right time and it considerably reduces the workload incurred by the organization and also renders a timely service to the customers.

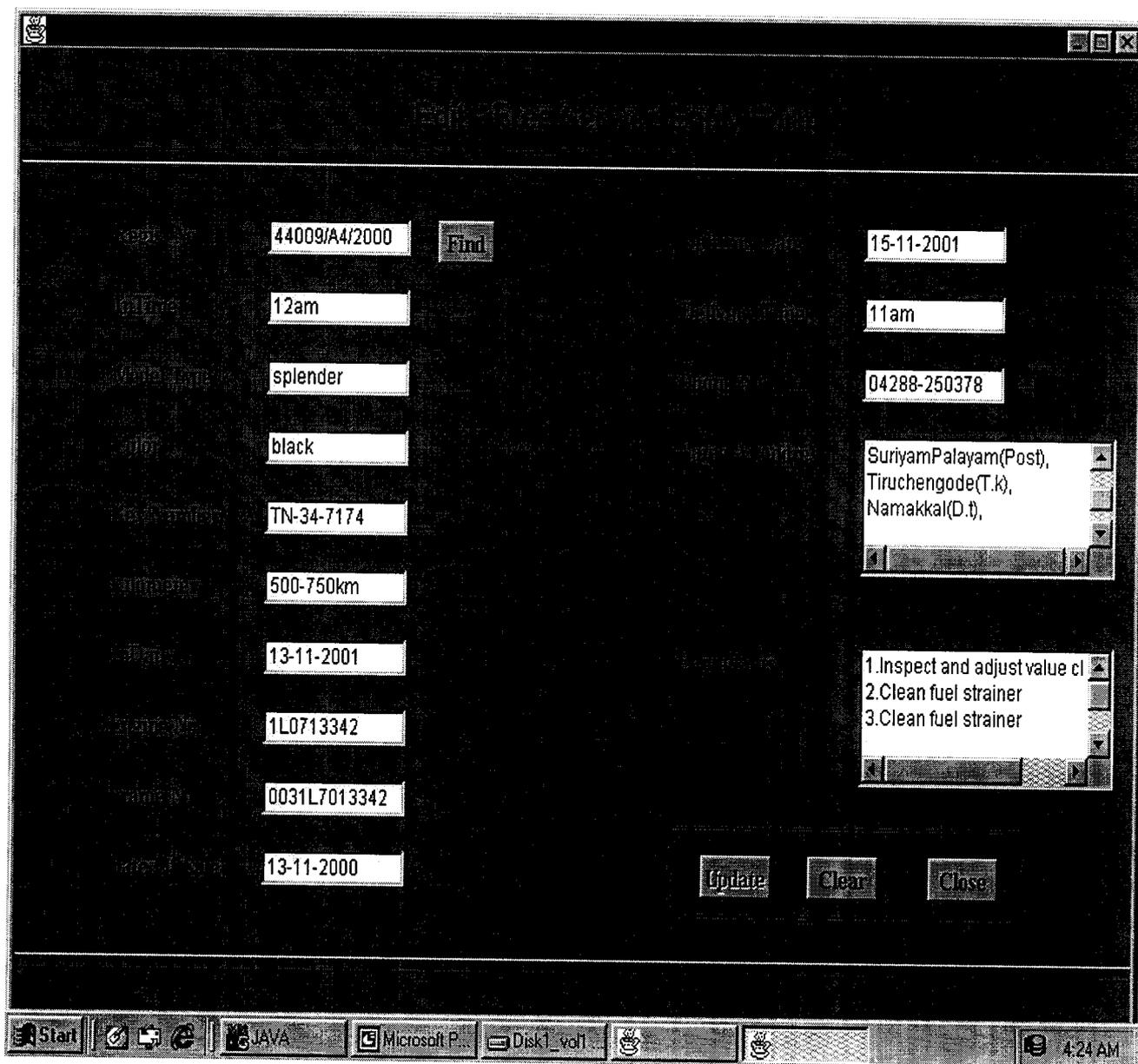
This project is developed in a user-friendly manner in GUI software. It is developed in a manner that without any prior knowledge, the user can handle with a perfect training. The tables are normalized to reduce memory usage. The user can handle with a perfect training. The tables are normalized to reduce the memory usage. The user can perform the operation such as addition, deletion and modification of the database very easily but in a specified manner.

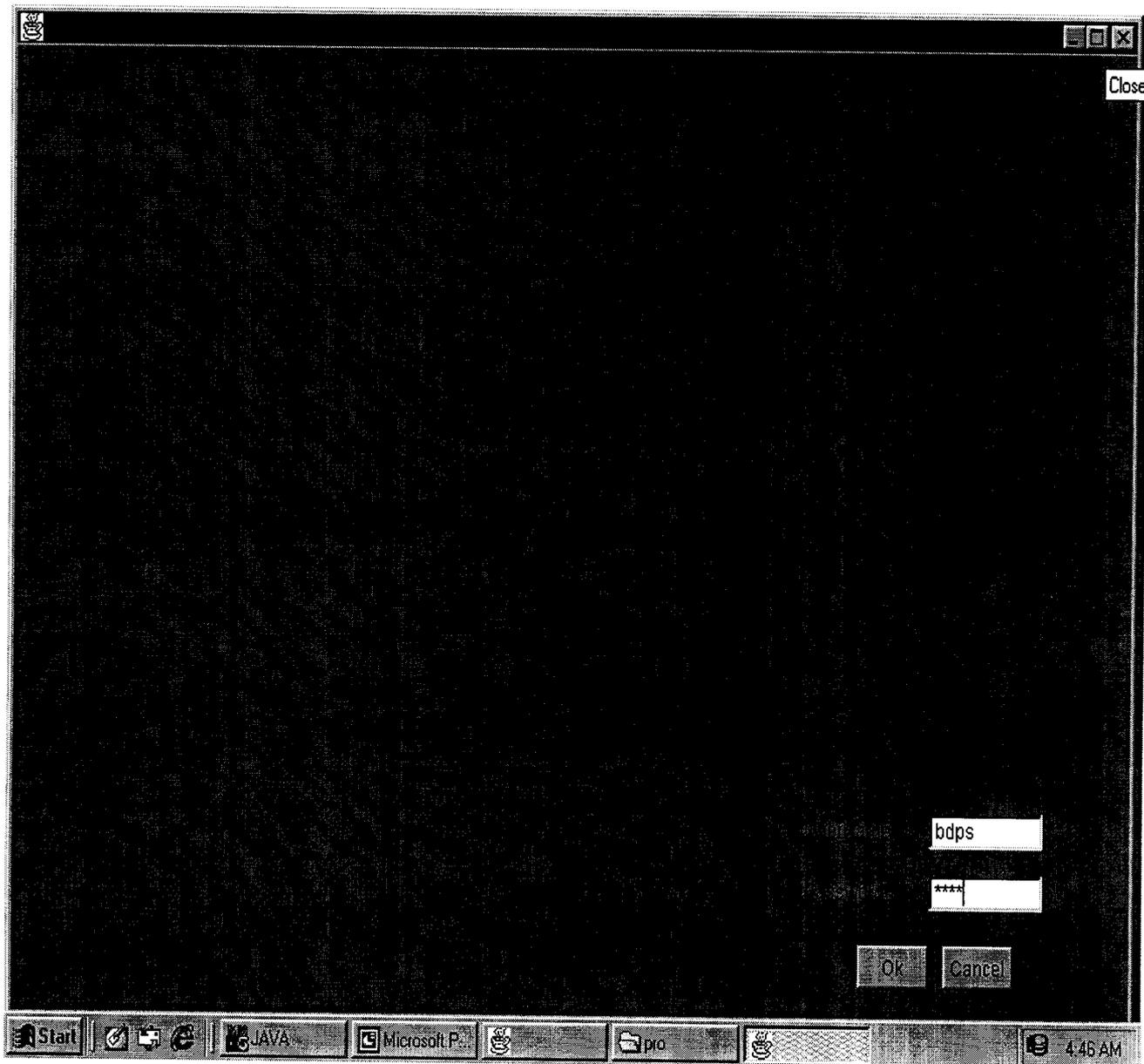
APPENDIX



| | | | |
|--------------------|---------------|-----------------|---|
| Registration No | 13-11-2001 | Registration No | 15-11-2001 |
| Time | 10am | Time | 11am |
| Model Name | Splender | Phone No | 04288-250378 |
| Color | Black | Owner Name | P.Arumugam Mudhaliyar, 25-4/Subramaniyar Kovil(S.t) SuriyamPalayam(Post), |
| Registration State | TN-34-7174 | Service Details | 1.Replaces Engine Oil, 2.Inspect Self-Starter, 3.Clean Float Chamber Of C |
| Registration Class | 500-750km | | |
| Engine No | 44009/A4/2000 | | |
| Chassis No | 1L0713342 | | |
| Frame No | 0031L7013342 | | |
| Date of Sale | 13-11-2000 | | |

Save Clear Close





| | | | | |
|---------------------|---------------|--------|-------------------|---|
| Registration No | 44009/A4/2000 | Find | Registration Date | 15-11-2001 |
| Registration | 12am | | Registration Time | 11am |
| Brand Name | splender | | Phone No | 04288-250378 |
| Color | black | | Vehicle Name | P.Arumugam Mudhaliyar, 25-4/Subramaniyar Kovil(S.t) SuriyamPalayam(Post), |
| Registration Number | TN-34-7174 | | | |
| mileage | 500-750km | | | |
| Issue Date | 13-11-2001 | | Remarks | 1. Inspect and adjust value cl 2. Clean fuel strainer 3. Inspect fuel lines |
| Issue No | 1L07013342 | | | |
| Issue No | 0031L7013342 | | | |
| Issue Date | 13-11-2000 | | | |
| | | Delete | Clear | Close |

Start | JAVA | Microsoft | pro | 5:01 AM

| Registration No | | Date of Birth | |
|-----------------|---------------|---------------|---|
| Registration No | 44009/A4/2000 | Date of Birth | 15-11-2001 |
| Time | 12am | Time | 11am |
| Model Name | splender | Phone No | 04288-250378 |
| Color | black | Address | P.Arumugam Mudhaliyar, 25-4/Subramaniyar Kovil(S.t) SuriyamPalayam(Post), |
| Reg Number | TN-34-7174 | Remarks | 1. Inspect and adjust value cl 2. Clean fuel strainer 3. Inspect fuel lines |
| Kilometers | 500-750km | | |
| Issue Date | 13-11-2001 | | |
| Engine No | 1L07013342 | | |
| Frame No | 0031L7013342 | | |
| Date of Sale | 13-11-2000 | Clear | Close |

The image shows a screenshot of a Java application window titled "Vehicle Information Entry Form". The form contains several input fields and dropdown menus for entering vehicle details. The fields are arranged in two columns. The right column has a text area for address and a list box for maintenance instructions. At the bottom right of the form are three buttons: "Save", "Clear", and "Close". The application is running on a Windows XP desktop, as indicated by the taskbar and system tray.

| | | | |
|-----------------|--------------|-----------------|---|
| Date | 13-11-2004 | Vehicle No | 0031L7013342 |
| Model | Splender | Registration No | 15-11-2004 |
| Color | Red | Address | P.Arumugam Mudhaliyar, 25-4/Subramaniyar Kovil(S.t) SuriyamPalayam(Post), |
| Registration No | TN-34-7174 | Maintenance | 1. Inspect and adjust valve cl 2. Clean fuel strainer 3. Inspect fuel lines |
| Mileage | 500-750km | | |
| Engine No | 44009/A4/200 | | |
| Chassis No | 1L07013342 | | |

Buttons: Save, Clear, Close

Taskbar: Start, JAVA, Microsoft P, pro, 5:18 AM

Modifying - Car Details Page

| | | | | |
|--------------------|---------------|------|-----------------|---|
| Registration No | 44009/A4/2004 | Find | Chassis No | 0031L7013342 |
| Model Name | Splendar | | Year | 1-1-2005 |
| Color | black | | Pin Location | P.Arumugam Mudhaliyar, 25-4/Subramaniyar Kovil(S.t) SuriyamPalayam(Post), |
| Registration State | TN-34-7174 | | | |
| Mileage | 500-750km | | Service History | 1. Inspect and adjust valve cl 2. Clean fuel strainer 3. Inspect fuel lines |
| Inspected | 13-12-2004 | | | |
| Inspected By | 1L07013342 | | | |

Update Clear Close

Start | JAVA | Microsoft P... | pro | 5:27 AM

