Development of a Web-based Transport Management System of a Company

by

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POST GRADUATE DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

Institute of Information and Communication Technology

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

December, 2009

The project report titled "Development of a Web-based Transport Management System of a Company" submitted by Muhammad Edi Amin, Roll No: DP0731006, Session 2007-2008 has been accepted as satisfactory in partial fulfillment of the requirement for the Post Graduate Diploma in ICT held on 19th December, 2009.

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CANDIDATE'S DECLARATION

It is hereby declared that this project report or any part of it has not been submitted elsewhere for the award of any degree or diploma.

diamin
19-12-09

Muhammad Edi Amin

Dedicated

to

My Parents and My Brother

Table of Contents

List of Tables:

List of Figures:

List of Abbreviations:

ERD	Entity Relationship Diagram
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
PHP	Personal Home Pages
UML	Unified Modeling Language
XML	Extensible Markup Language
DBMS	Database Management System

Acknowledgement

First of all, I would like to thank Almighty Allah for giving me the strength and patience for carrying out this work and to complete this project.

I would also like to thank Mr. Md. Rubaiyat Hossain Mondal, Assistant Professor, Institute of Information and Communication Technology, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh for his valuable suggestions and constant encouragement throughout the whole period of the work, which inspired and guided me in each and every step of the project.

I would like to acknowledge the efforts given by my family members especially my parents for their continuous support and inspiration, which helped me to complete the project successfully.

I would also like to remember the contributions and support given by my relatives and friends for completing the project in time.

Abstract

The use of different types of vehicles in organizations has drastically increased over the years. Consequently the management of these vehicles has become more complicated than ever. The combined or stand alone use of spreadsheets and word software have reduced the level of complexity in dealing with the transport system. However, these traditional tools do not provide the interlinked information in precise and usable way. So, there is a need for a development of complete transport management software that will overcome the limitations of using discontinued software and paper works. In this work, a complete web-based system has been developed to keep records and track of vehicles in any organization. The developed scheme keeps records of vehicles and their time to time maintenance. In addition, the software provides fuel usage information, and also enables a complete requisition system. Data related to tax, fitness and insurance of vehicles are also maintained in the software. Moreover, different records regarding drivers, workshops, pump-stations can also be viewed. As a result, the tracking of vehicles becomes easier. The scope of irregularities in the usage of vehicles cost of maintenance and fuel consumption reduces significantly.

Thousands of industries and offices have been established in Bangladesh in the last decade. Unfortunately these organizations are still working with the traditional paper based system to manage the transport section. They often decline to buy high cost software from abroad. This developed software is of low cost and can be easily adopted by Bangladeshi offices. Therefore, this web-based system can play a vital role in removing the ongoing difficulties and irregularities in the transport management in Bangladesh.

Chapter 1

Introduction

1. 1 Introduction

Any web-based system is defined as a system that can be accessed via web browsers within a network [1]. Web-based systems need only to be installed on the server placing minimal requirements on the end user workstation. This makes maintaining and updating the system much simpler as it can be done on the server [2]. Most web based applications are far more compatible across platforms than traditional installed software [3]. Web browsers are available for a multitude of operating systems. For these reasons, many of the management systems are now being developed as web-based systems.

Transport management system is used to keep records of vehicles and manage vehicles of any particular organization [4]. In Bangladesh most of the organizations are dependent on different vehicles of their own for transport purposes. It is very difficult to maintain this large number of vehicles that are spread and used by different branch or site offices every day. It needs man power and hours to maintain these vehicles. Some of these organizations already use desktop based software and others use web-based software with limited functionalities, So, they require a complete low cost system.

In Bangladesh many organizations have branch offices in different places over the country. Many of them maintain their own LAN either through permanent connections or through leased lines. They can use web-based vehicle management software to maintain and collect information within their LANs. So, a web-based vehicle management system should be developed that can include different issues related to vehicles such as fitness, tax, insurance, scheduling, requisition etc.

1.2 Objectives with Specific Aims and Possible Outcome

The objectives of this project are to:

- ❖ Keep records of vehicle maintenance.
- ❖ Keep information about drivers.
- ❖ Track requisition of vehicles.
- ❖ Provide information about insurance, tax and fitness certificates.
- ❖ Enhance the availability of information collection through search options.
- ❖ Facilitate the management system and make it faster.
- ❖ Provide appropriate interfaces to the administrator and the users.
- ❖ Add new vehicle information.

1.3 Possibility/Scopes

Some scopes of this software are given below:

1. Any particular organization which has vehicles can use this software to keep records of vehicles and to manage vehicles.
2. An employee can have access via any browser within a network.
3. An employee will be able to know about requisition, service and management information.
4. An employee will be able to sign in into the system after sign up.
5. After signing in an employee will be able to
    - Edit personal information.
    - Change the password.
    - View vehicles and drivers information.
    - Submit requisition for a vehicle for specific time.
    - View requisition status.
    - Can cancel the requisition result if required.
6. An administrator will be able to log in into the system using given password.
7. After signing in an administrator will be able to
    - Change the password.
    - Add, view, edit and delete; vehicle, workshop, driver etc. information.
    - Keep record of repair work, insurance, tax and fitness certificate information.
    - Grant or cancel requisition request.
    - View distribution chart for specific date.
    - Print recorded allocation information.
8. This system will make sure that the specific time and date is free for allocation or not.

Chapter 2

Development Process of the System

2.1 Outline of Methodology

The project consists of the following stages:

1. Feasibility Study
2. System Study Stage
   - i. Requirement gathering
   - ii. Specification
   - iii. Planning
3. Design Stage
4. Coding Stage
5. Testing Stage
6. Operational Mode
7. Modification Stage

This process followed the "**Rapid Prototype Software Life Cycle Model**". The brief overview of the process is depicted below.

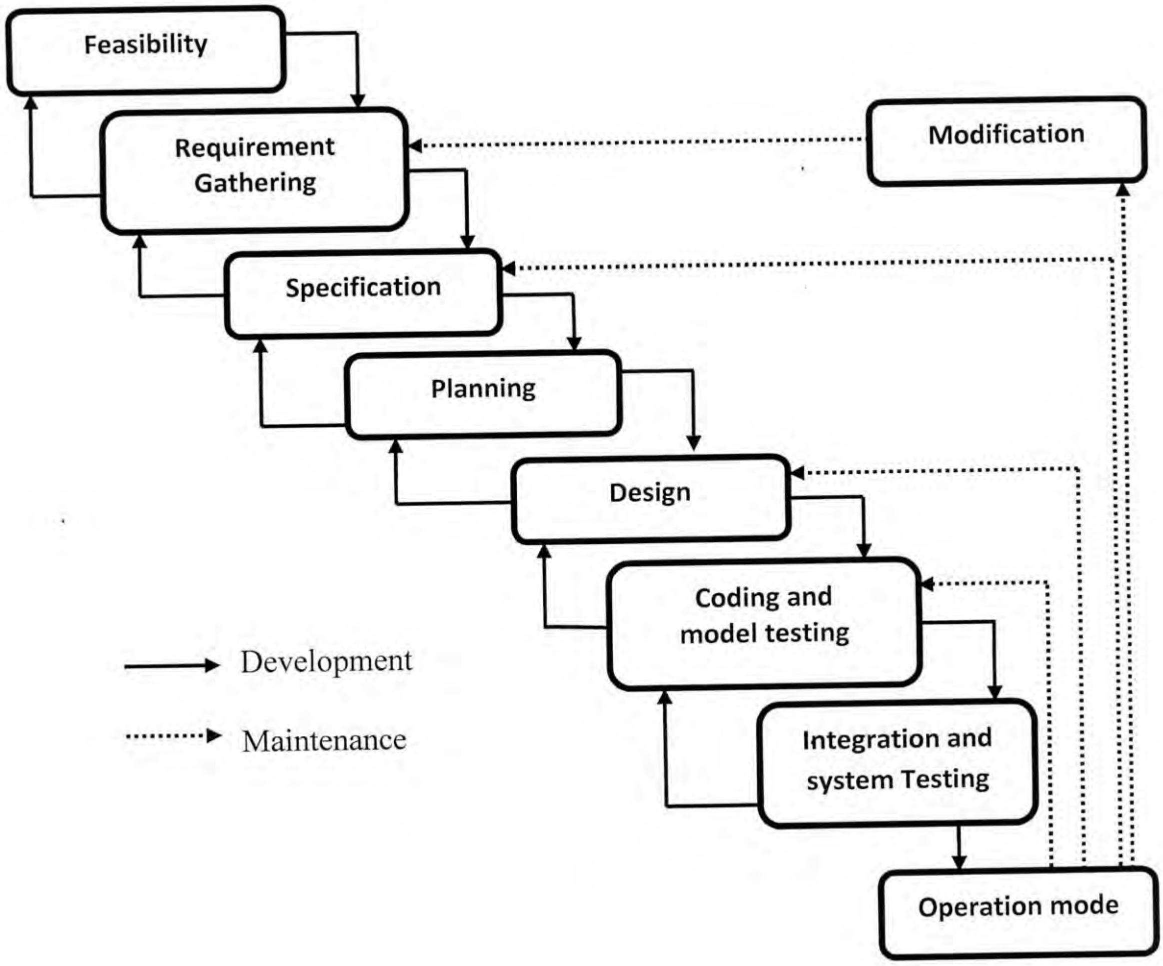


Figure 2.1 Rapid Prototype Software Life Cycle Model.

2.2 Feasibility Study

A project feasibility study is an exercise that involves documenting each of the potential solutions to a particular business problem or opportunity. The purpose of a Project Feasibility Study is to clarify the wanted outcome of the project. It is important to understand what the project will deliver. If a project is seen to be feasible from the results of the study, the project can be continued to the next stage.

For an organization without any software it is very difficult to maintain these large numbers of vehicle that are spread and used by different branch or site offices every day. Some of these organizations already use desktop based software and others use web-based software with limited functionalities. Some organizations maintain a section for vehicle management. So, a complete low cost system will be financially feasible. The system will reduce maintenance cost. The system will save employee's (user) time and give proper information when he/she wants.

2.3 Requirement Gathering, Specification and Planning

Requirement gathering, specification and planning are essential parts of any project and project management. During this process, different similar software are analyzed and discussions are made with different companies about the software. The software and hardware requirements are also studied and specified in this phase. Different types of idea about the development are written up. The requirement process is completed when the specifications for the new software product are written in a formal document called the requirements specification document. In planning phase, a plan is made to develop this software with requirement specification document.

2.3.1 Identify User

Identifying the administrator and the 'users' or 'customers' of a software is very important. The different categories of users of the software are as follows:

System Administrator: System administrator can do anything on the site, in all pages. System administrator is responsible for updating and maintaining the database and codes of the software.

Administrators: An administrator is a responsible person appointed by the organization, who can approve requisition, send vehicle to workshop and change his/her own password. The administrators can also view/edit/delete/insert vehicle, workshop, insurance, tax, fitness, pump station, and driver information. In this project the followings three administrative levels have been considered.

1. Admin (Administrative officer)
2. Head Admin (Head of the Administrator office section)
3. Director (Supreme higher authority)

Users: Users are employees of the organization who will use this software. To use this service, an employee should have the basic computer using ability. By signing in user can see all general information and can also apply for vehicle requisition, can update personal information etc.

2.3.2 Analysis of Main Features

The Transport Management System software is designed to manage its fleet of vehicles more effectively and efficiently. An operator can monitor vehicle distribution, retrieve any vehicle's historical information using this software. Some key features of Transport Management System are discussed bellow.

Requisition process

Any employee can apply for a vehicle. All personal information of the employee will be displayed in the requisition form. User can apply for a specific type of vehicle in a specific time. User can view his requisition status up to the last ten applications. An administrator can approve/cancel a requisition. There will be an automatic checkup, so that allocated times are not intersected for a specific vehicle at a specific time and date. Administrator can see the distribution chart of vehicle requisition.

Control Information

The administrators can control different information such as vehicles, workshop, insurance, tax, fitness, pump station, and driver information. Users have no power to view other user's information. Users can only view limited information.

Search Records

Administrators have power to search previous information from database by date, id or name. Administrator can search and select different records related to vehicle, workshop, insurance, tax, fitness, pump station, and driver information.

Sending to Workshop

Administrator can select specific vehicle and add the information regarding sending of it send to specific workshop. Administrator can also keep information about problems, repair work, expense and present conditions of a vehicle.

Print Option

Users can print their approved requisition form which contains the information about user, vehicle, time, date, venue, etc. Administrator can print logbook of a specific requisition for a driver which contains the information about user, vehicle, time, date and venue. Administrator can keep hard copies of requisition record through print option.

2.3.3 Web-based Software Architecture

The developed Web-based Transport Management System works within a network (Intranet). The architecture for the web based system contains three necessary components [11]:

- The Data and Data Server
- The Web Application and Web Server
- . The Client Application and Client.

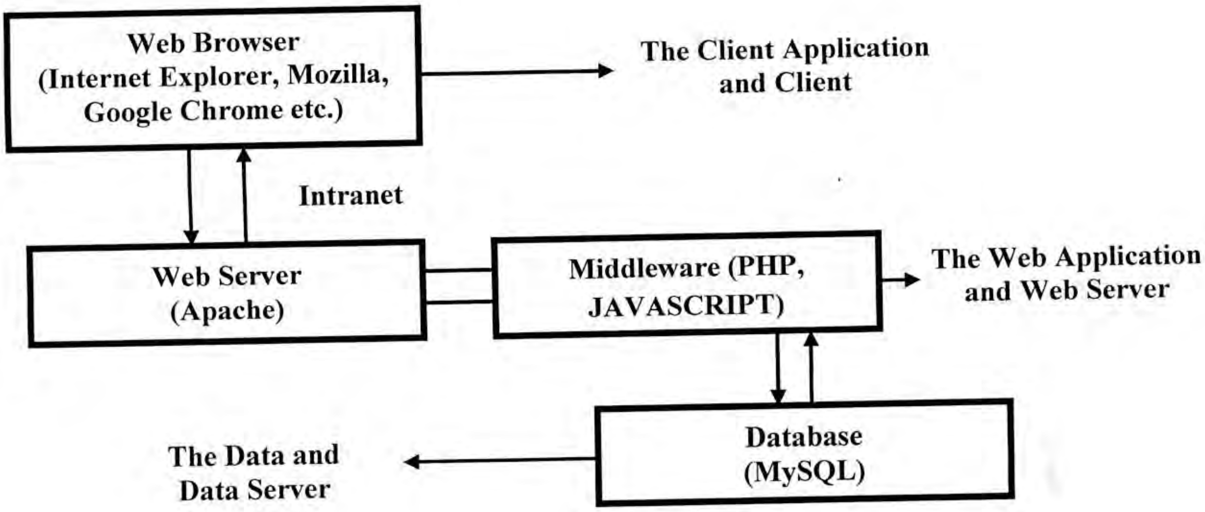


Figure 2.2: Web-based Software Architecture.

2.3.4 Hardware Interfaces

Now a days, every company have computer and printers. This system is developed for the organizations which have their own network. So, there is no need of extra computer or internet connection. Printer is necessary for printing the documents generated from the system.

2.3.5 Software Interfaces

In this project the following tools software are used:

Microsoft Internet Explorer	
Version number:	6 or later.
Source:	Microsoft Corporation.
Purpose:	To display the information on the website in a neat and organized way. And also to help one navigate around the web easily.
Definition of the Interface:	The Microsoft Internet Explorer is the software, which provides a flexible and reliable browsing experience with enhanced Web privacy features for all users.
PHP: Personal Home Pages	
Version number:	5.2.6.
Source:	PHP Group.
Purpose:	To build web pages, this works with MySQL database and Apache server.
Definition of the Interface:	PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.
Apache HTTP Server	
Version number:	2.0.5.5.
Source:	The Apache Software Foundation.
Purpose:	In order to execute the client site of this software, the web server specified above is required as the provider of the client software at the server site.

Definition of the Interface:	The Apache HTTP Server Project is an effort to develop and maintain an open-source HTTP server for modern operating systems including UNIX and Windows NT. The goal of this project is to provide a secure, efficient and extensible server that provides HTTP services in sync with the current HTTP standards.
Macromedia Dreamweaver MX	
Version number:	8.
Source:	Macromedia Inc.
Purpose:	The web development tool specified above is helpful for designing and coding the project.
Definition of the Interface:	Macromedia Dreamweaver is the industry-leading web development tool, enabling users to efficiently design, develop and maintain standard based websites and applications.
MySQL: My Structured Query Language	
Version number:	5.0.
Source:	MySQL.
Purpose:	Required as database server.
Definition of the Interface:	MySQL is the world's most popular open source database software. With superior speed, reliability, and ease of use, MySQL has become the preferred choice of corporate IT Managers because it eliminates the major problems associated with downtime, maintenance, administration and support.
JavaScript/ECMAScript	
Version number:	1.6.
Source:	ECMA organization.
Purpose:	For opening or popping up a new window, Validation of web form (input values to make sure that they will be accepted before they are submitted to the server) etc.
Definition of the Interface:	JavaScript is an object-oriented scripting language used to enable programmatic access to objects within both the client

	application and other applications. It is primarily used in the form of client-side JavaScript, implemented as an integrated component of the web browser, allowing the development of enhanced user interfaces and dynamic websites.
CSS: Cascading Style Sheets	
Version number:	CSS 2.1.
Source:	World Wide Web Consortium.
Purpose:	To enable the separation of document content from document presentation, including elements such as the colours, fonts, and layout.
Definition of the Interface:	Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation semantics (that is, the look and formatting) of a document written in a markup language.

2.3.6 Security Requirements

Most IT departments have security requirements for applications. Web applications are not exceptional. The requirements are often written as checklists.

- Requires password and have options to change password.
- Web and database servers should be physically secured.
- Username and password will be checked before starting every page.
- Use a secured password for the SQL Server administrator, SA.

2.3.7 Easy to Use

This system is self explanatory. So, minimum computer knowledge is required by the employee to use this software at ease.

2.4 Design

The design phase describes how the software is constructed so that it fulfills the specifications agreed upon in the requirements specification document. It explains required features and operations in detail, including database design, software design, screen layouts and other documentation. When the design is completed it is recorded in the design specification document. There are different types of design to develop this software like ERD, UML etc. Design stage is described in details in Chapter 3.

2.5 Coding and Model testing

In this stage, the designs are translated into code. The software is divided into separate units called modules, in order to handle the complexity of the programming process. All rules and regulations of programming language are maintained properly. Computer programs are written using Dreamweaver tool. According to the type of application, the right programming language is chosen. Different high level programming languages like PHP [6], MySQL [7], Apachė [8], JavaScript [9], AJAX [9], HTML [9], XML [9], CSS [9] etc. are used for coding.

2.6 Integration and System Testing

During this stage, the individual modules of the software product are combined to form the integrated software product. A special testing environment is created to check for errors, bugs and interoperability.

2.7 Operational mode

At this stage, the checked software is ready for use. If required, the modification stage will modify and enhance the system according to the difficulty.

2.8 Modification and Maintenance

After the system is in operation, various changes are made in order to fix bugs, to add new functionality, to port the software to new platforms, or to adapt the software to new technologies during the modification and maintenance phase of the system. Although it may seem that the development of the software is finished after its delivery, this is far from true. Even a successful software product need to be developed/modified to meet the changing needs of the clients.

Chapter 3

System Design

3.1 Introduction

The software system design describes the desired software features in detail, including database design (ER diagram), software design (UML is produced here), screen layouts and other documents. In system design, the software's overall structure is defined with a full data dictionary. These design elements are intended to describe the software in detail that helps to develop the software with minimal additional input.

3.2 Database Design

A database is a collection of information, organized in such a way that a computer program can quickly select desired pieces of data. The computer program used to manage and query a database is known as a database management system (DBMS). Databases are designed to offer an organized mechanism for storing, managing and retrieving information. This includes detailed specification of data elements, data types, indexing options and other parameters residing in the DBMS data dictionary. Many models and languages are used for design of the database. To design the database the Entity-Relationship (ER) Diagram is used.

3.2.1 E-R Diagram

An entity-relationship (E-R) diagram is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems. There are three basic elements in E-R diagram:

- ❖ Entities (tables) are the elements about which one seek information. Boxes are commonly used to represent entities.
- ❖ Attributes are the data one collect about the entities. Ovals are used to represent attributes.
- ❖ Relationships provide the structure needed to draw information from multiple entities. Diamonds are normally used to represent relationships.

Figure 3.1 shows entire an E-R diagram. There are 16 entities. Some of them are given in detail in figure 3.1; others will be given in the later figures. The description of these entities is given bellow.

1. **Vehicle Information:** The name of this entity set is vehicle_info_form. Due lack of space, this entity set will be displayed in figure 3.2.
2. **Workshop:** The name of this entity set is workshop_info. Workshop id, name, contact no, address, identification no and no of vehicles are attributes of this entity set.
3. **Fitness:** The name of this entity set is fitness_info. Due lack of space, this entity set will be displayed in figure 3.3.
4. **Workshop Vehicle:** The name of this entity set is workshop_vehicle_info_to. This entity set will be displayed in figure 3.4.
5. **Id generator:** The name of this entity set is idgenarate. Id generator consists of id, category and year of purchase date.
6. **Insurance:** The name of this entity set is insurance_info. Insurance entities consist of id, company name, company id, address and phone no.
7. **Tax:** The name of this entity set is tax_info. This entity set will be displayed in figure 3.5.
8. **Requisition:** The name of this entity set is requisition_info. This entity set will be shown in figure 3.6.
9. **Driver:** The name of this entity set is driver_info. Due lack of space, this entity set will be displayed in figure 3.7.
10. **Insurance vehicle:** The name of this entity set is insurance_vehicle_info. This entity set will be displayed in figure 3.8.
11. **Pump Station:** The name of this entity set is pump_station_info. Pump Station entities consist of id, company name, company id, address and phone no.
12. **Pump Station Fuel:** The name of this entity set is pump_station_fuel. Due lack of space, this entity set will be displayed in figure 3.9.

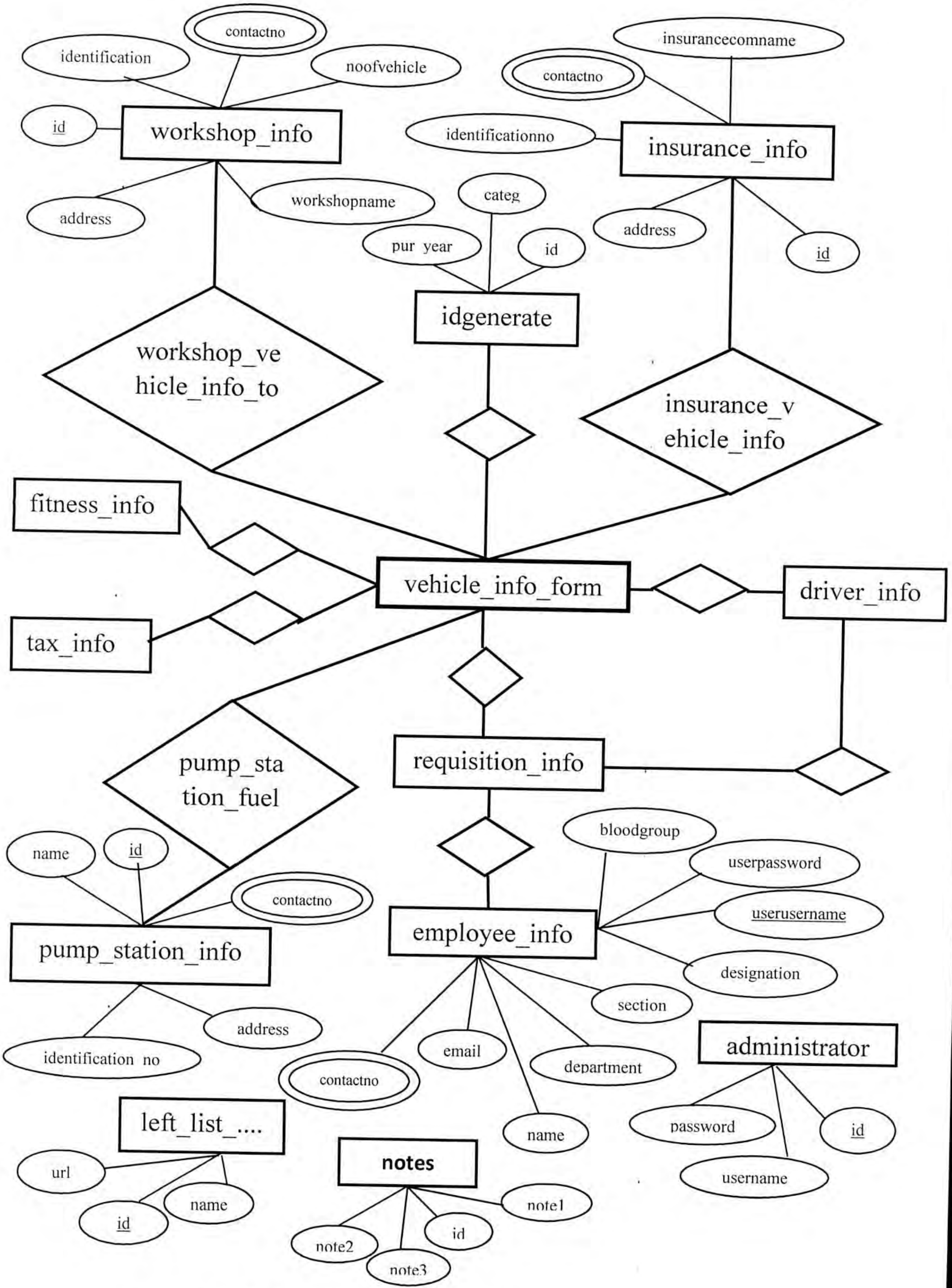


Figure 3.1: E-R Diagram of Transport Management System.

13. **Employee:** The name of this entity set is employee_info. Employee entities consist of employee name, username, password etc.
14. **Administrator:** The name of this entity set is administrator. Administrator entities consist of administrator username and password information.
15. **Note:** The name of this entity set is notes. Note entities consist of note1, note2 and note3. Administrator can write down their personal note here.
16. **Left List:** The name of this entity set is left_list. Left List entities consist of id, name and url. There are twelve entities, each page left list link is taken from corresponding entity set.

2.8.1.1 E-R Diagram of Vehicle Information Table

Figure 3.2 shows the entire E-R diagram of vehicle information. Admin users can add vehicle information in this table.

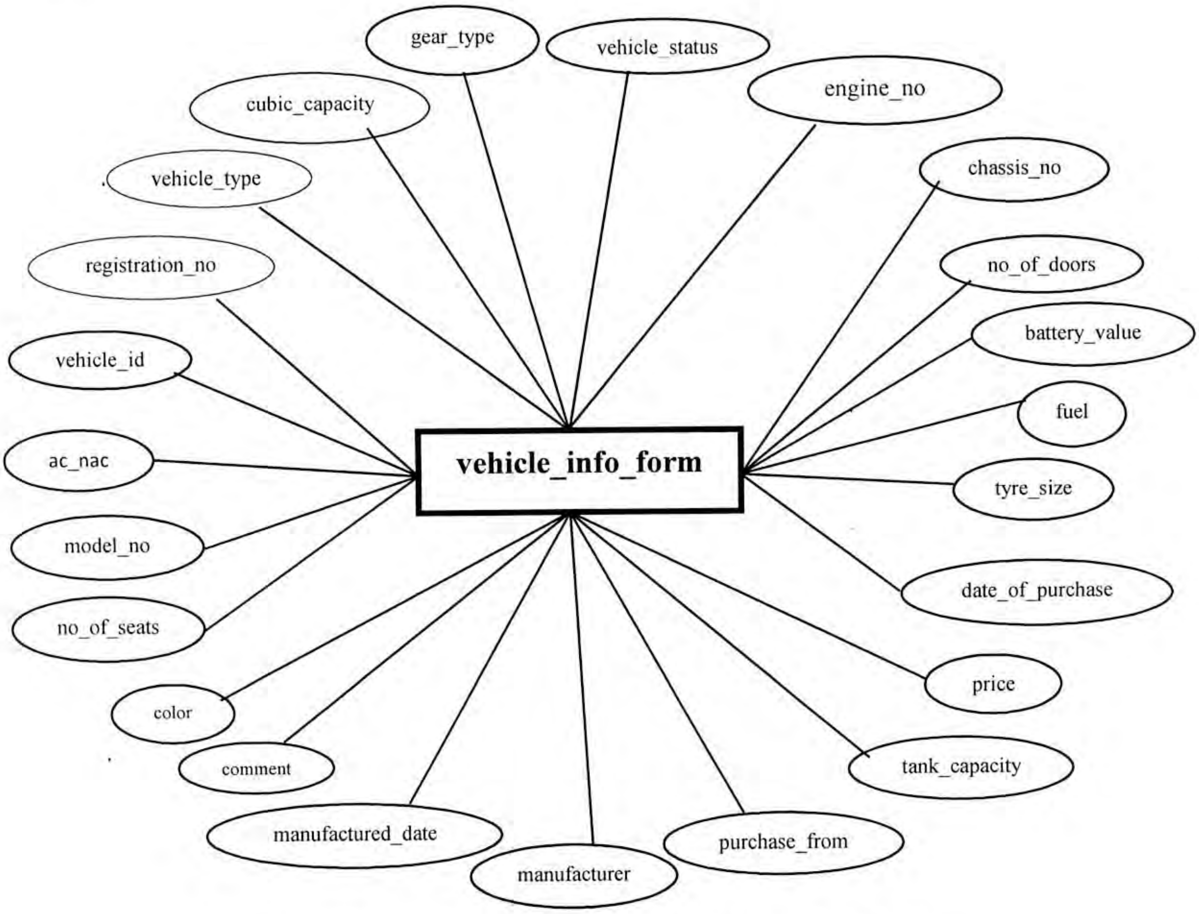


Figure 3.2: E-R Diagram of Vehicle Information Table.

3.2.1.2 E-R Diagram of Fitness Information Table

Figure 3.3 shows the entire E-R diagram of fitness information of a vehicle. Admin users can add fitness information in this table.

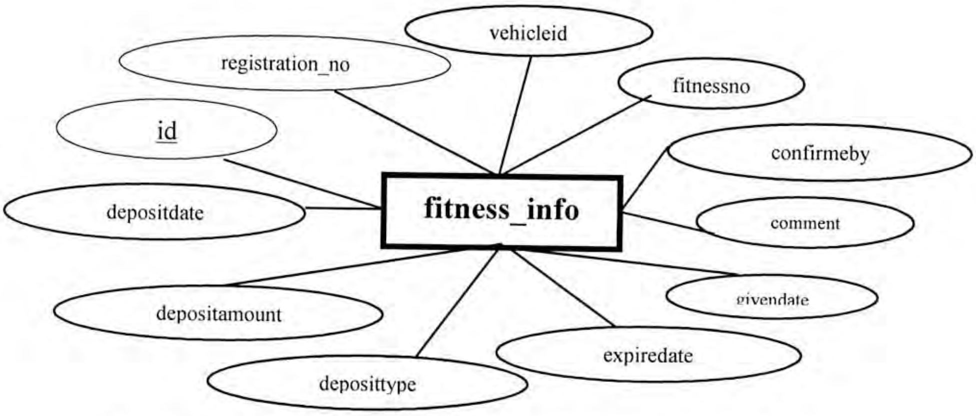


Figure 3.3: E-R Diagram of Fitness Information Table.

3.2.1.3 E-R Diagram of Workshop Vehicle Table

Figure 3.4 shows the entire E-R diagram of workshop vehicle. Admin users can add problems of vehicle, vehicle and workshop information in this table. After returning admin can add repair work, expense, current status etc. information.

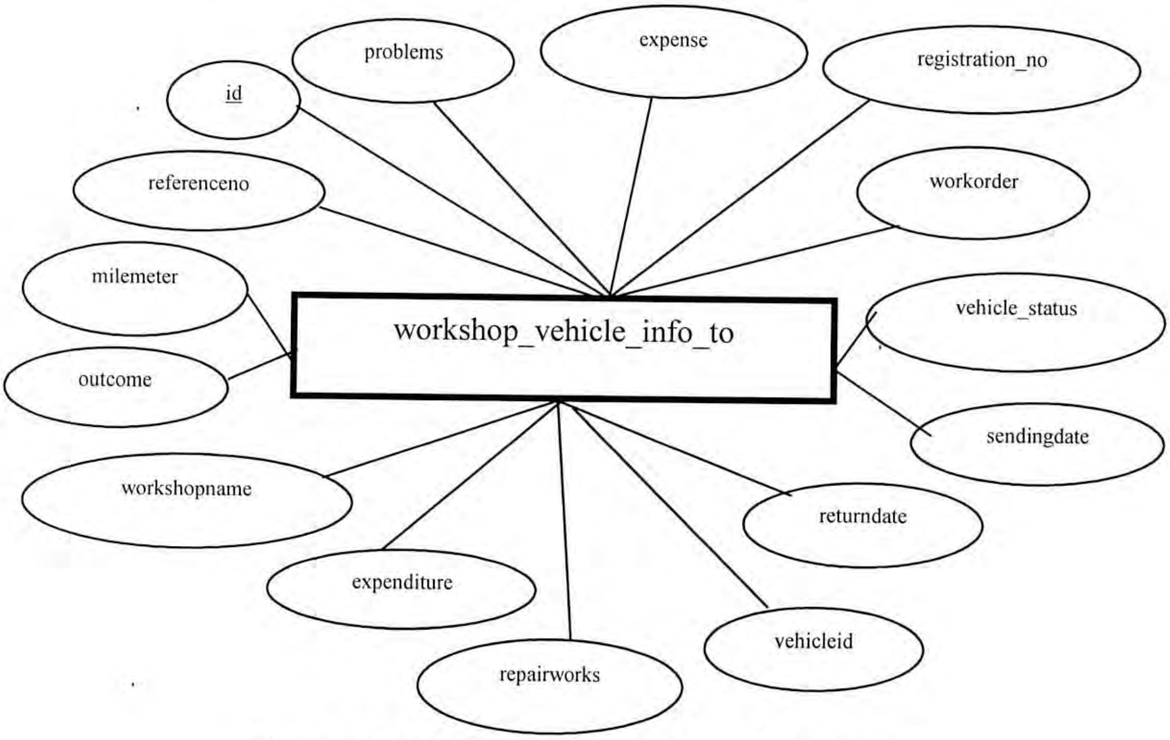


Figure 3.4: E-R Diagram of Workshop Vehicle Table.

3.2.1.4 E-R Diagram of Tax Information Table

Figure 3.5 shows the entire E-R diagram of tax information of a vehicle. Admin users can add tax information in this table.

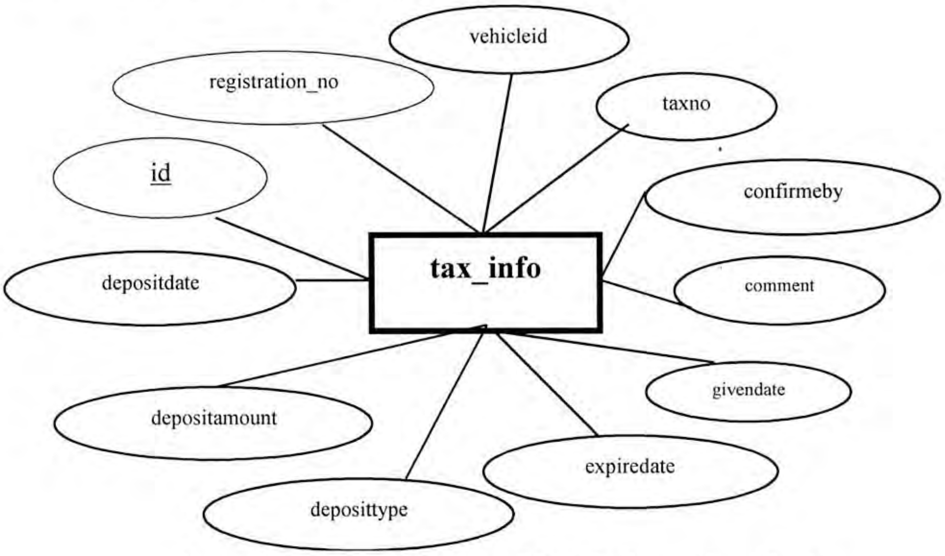


Figure 3.5: E-R Diagram of Tax Information Table.

3.2.1.5 E-R Diagram of Vehicle Insurance Information Table

Figure 3.6 shows the entire E-R diagram of vehicle insurance information. Admin users can add insurance information of a vehicle in this table.

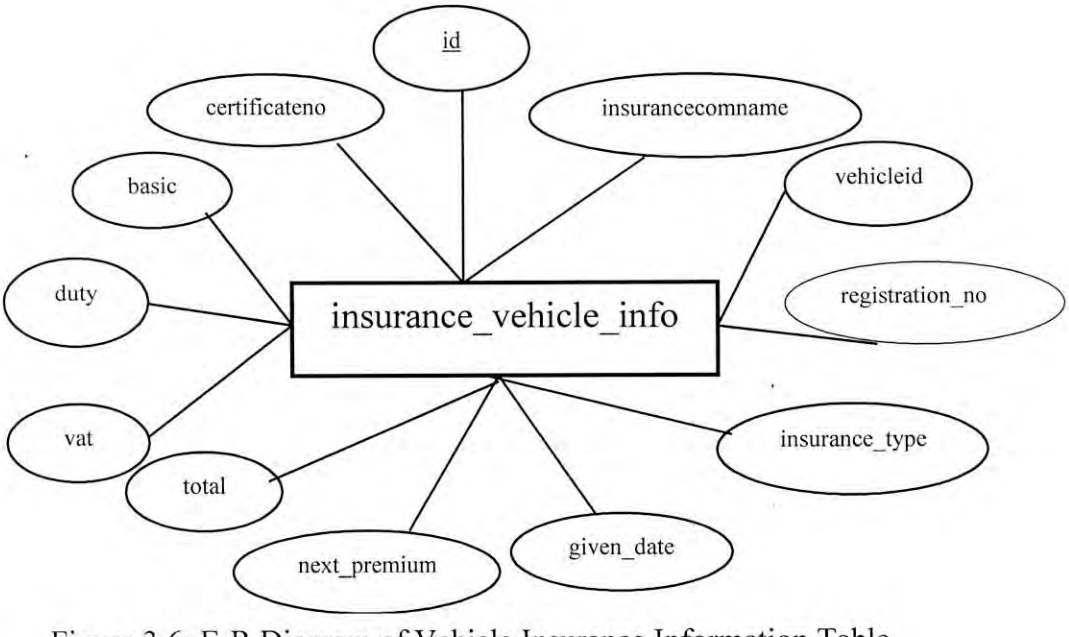


Figure 3.6: E-R Diagram of Vehicle Insurance Information Table.

3.2.1.6 E-R Diagram of Requisition Information Table

Figure 3.7 shows the entire E-R diagram of requisition information. Employee can add demand information in this table. Admin users can add approve or cancel information in this table.

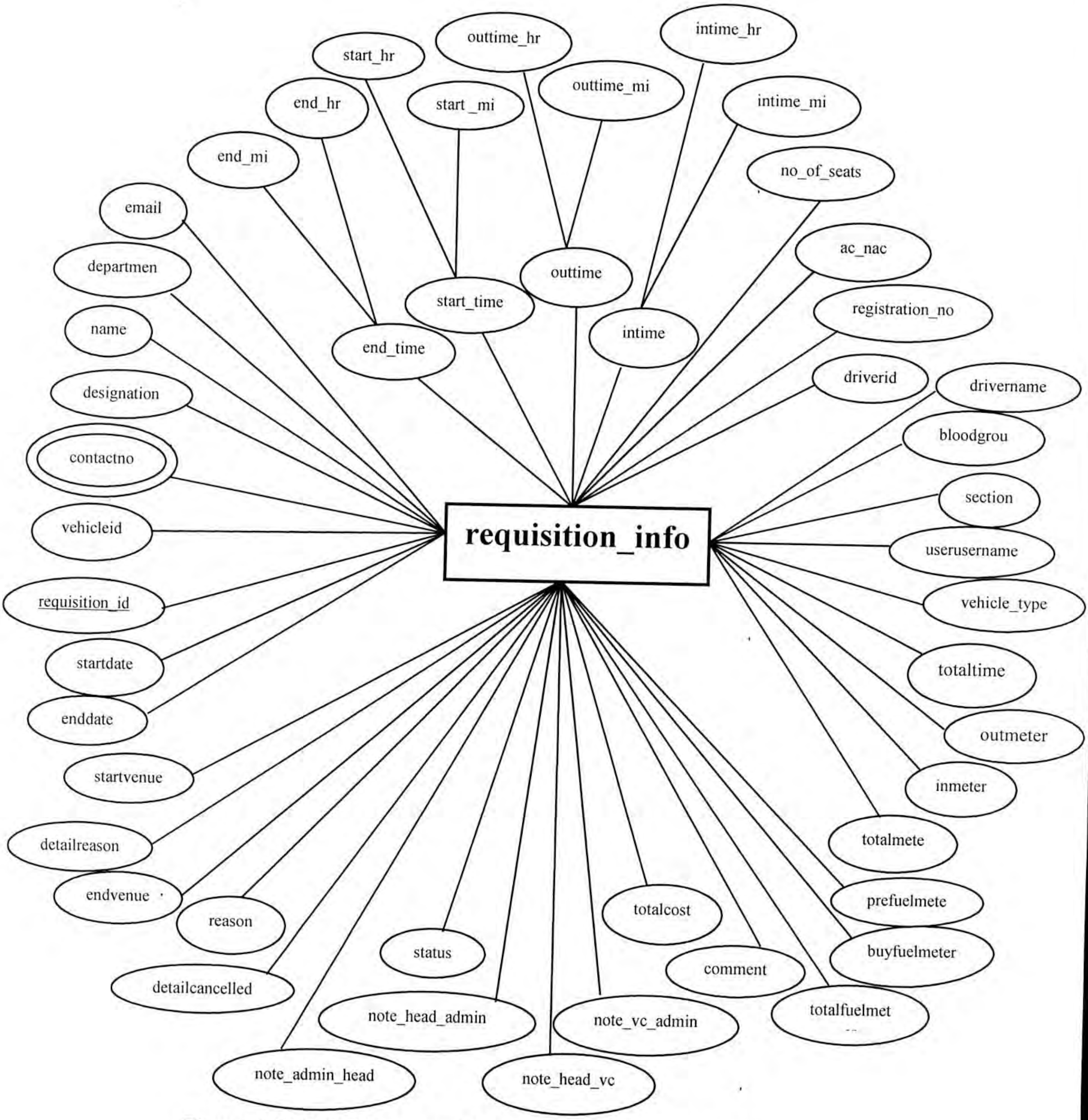


Figure 3.7: E-R Diagram of Requisition Information Table.

3.2.1.7 E-R Diagram of Driver Information Table

Figure 3.8 shows the entire E-R diagram of driver information. Admin users can add drivers' information in this table.

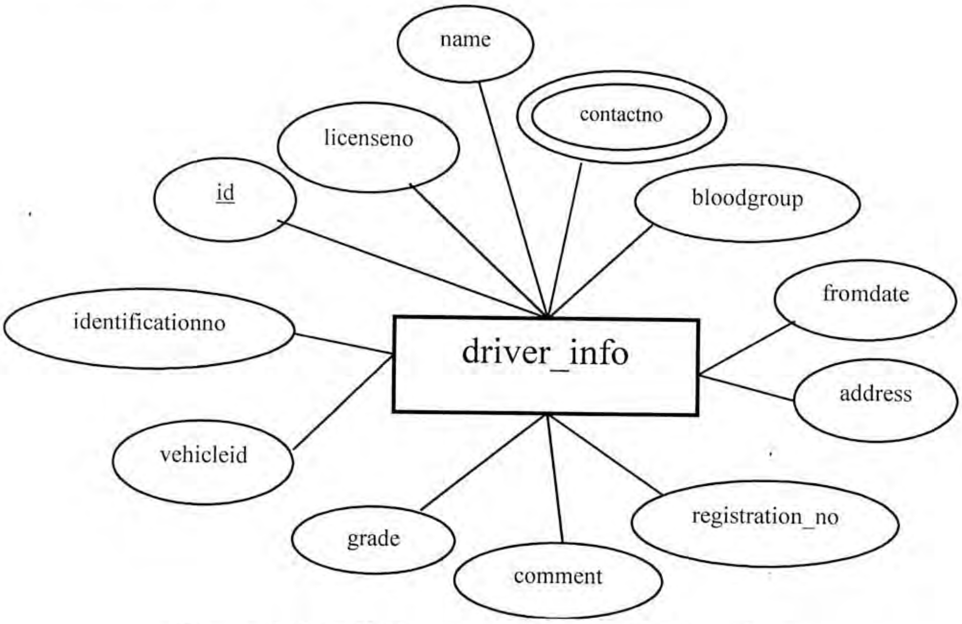


Figure 3.8: E-R Diagram of Driver Information Table.

3.2.1.8 E-R Diagram of Fuel Consumption Information Table

Figure 3.9 shows the entire E-R diagram of fuel taking information. Admin users can add fuel taking information of a vehicle in this table.

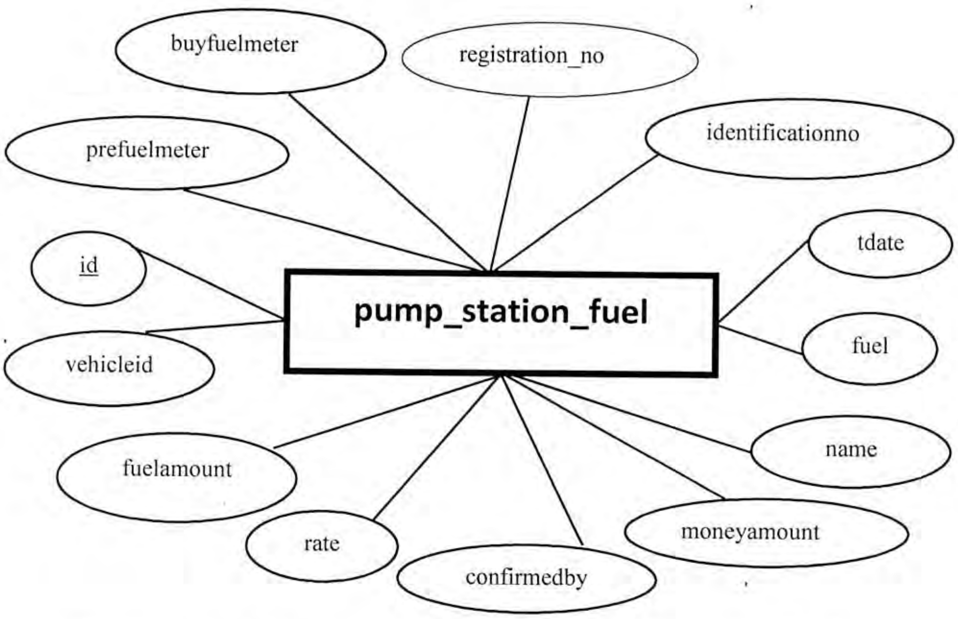


Figure 3.9: E-R Diagram of Pump Station Information Table.

3.3 Data Dictionary

Data Dictionary describes the table format which is used in database design. The following tables are used in database design.

Table 3.1: Vehicle Information

Fields	Domains	Constraints	Description
vehicle_id	varchar(25)	Not null	Vehicle Id*
vehicle_type	varchar(15)	Not null	Vehicle Type
ac_nac	varchar(10)	Not null	AC or Non AC
cubic_capacity	varchar(20)	Not null	Cubic Capacity
vehicle_status	varchar(10)	Not null	Condition
gear_type	varchar(10)	Not null	Gear Type
registration_no	varchar(40)	Not null	Registration No.
engine_no	varchar(42)	Not null	Engine No.
chassis_no	varchar(42)	Not null	Chassis No.
manufacturer	varchar(27)	Not null	Manufacturer
manufactured_date	Date	Not null	Manufactured Date
model_no	varchar(55)	Not null	Model No.
no_of_doors	int(5)		Number of Door
no_of_seats	int(5)		Number of Seat
fuel	varchar(50)	Not null	Fuel
tank_capacity	varchar(15)		Tank Capacity
color	varchar(15)	Not null	Color
battery_value	varchar(50)		Battery Value
tyre_size	varchar(10)		Tyre Size
purchase_from	varchar(50)		Purchase Form
price	int(10)	Not null	Price
date_of_purchase	Date	Not null	Date of Purchase
comment	varchar(502)		Any Comment.

*Vehicle Id will be generated by Vehicle Type, Purchase year and a four digits auto increment number started with 1001.

Table 3.2: Workshop Information

Fields	Domains	Constraints	Description
id	int(10)	Primary key	Auto Increment
identificationno	varchar(20)		Workshop Id.*
workshopname	varchar(50)	not null	Name of Workshop.
contractno	varchar(100)	not null	Contract No.
address	varchar(500)	not null	Address of Workshop
noofvehicle	int(5)	not null	No. of vehicle in the workshop.**

*Workshop Id will be generated by "Workshop"-id.

** Plus or minus number of vehicle of the workshop will be shown automatically.

Table 3.3: Vehicle Workshop Information

Fields	Domains	Constraints	Description
Id	int(10)	Primary key	Auto increment
vehicleid	varchar(20)	Foreign Key	Vehicle Id*
registration_no	varchar(20)	Foreign Key	Vehicle Registration No*
workshopname	varchar(50)	Foreign Key	Workshop Name**
workorder	varchar(26)		Work Order
milemeter	varchar(20)		Mile Meter
problem1	varchar(111)		Problem
problem2	varchar(111)		Problem
problem3	varchar(111)		Problem
problem4	varchar(111)		Problem
problem5	varchar(111)		Problem
problem6	varchar(111)		Problem
problem7	varchar(111)		Problem
problem8	varchar(111)		Problem
problem9	varchar(111)		Problem
problem10	varchar(111)		Problem

Fields	Domains	Constraints	Description
repairwork1	varchar(111)		Repair Work
repairwork2	varchar(111)		Repair Work
repairwork3	varchar(111)		Repair Work
repairwork4	varchar(111)		Repair Work
repairwork5	varchar(111)		Repair Work
repairwork6	varchar(111)		Repair Work
repairwork7	varchar(111)		Repair Work
repairwork8	varchar(111)		Repair Work
repairwork9	varchar(111)		Repair Work
repairwork10	varchar(111)		Repair Work
expance1	varchar(10)		Expanse
expance2	varchar(10)		Expanse
expance3	varchar(10)		Expanse
expance4	varchar(10)		Expanse
expance5	varchar(10)		Expanse
expance6	varchar(10)		Expanse
expance7	varchar(10)		Expanse
expance8	varchar(10)		Expanse
expance9	varchar(10)		Expanse
expance10	varchar(10)		Expanse
sendingdate	date	Not null	Sending Date
returndate	date	Not null	Return Date
referenceno	varchar(50)	Not null	Reference No***
expenditure	int(20)		Total Expanse
outcome	varchar(1000)		Outcome
vehicle_status	varchar(10)	Not null	Condition (Default: bad)

*Foreign keys are taken from "Vehicle Information" table.

**Foreign key is taken from "Workshop Info" table.

***Reference no is made by "workshop id-id" workshop id from "Workshop Info" table.

Table 3.4: Insurance Company Information

Fields	**Domains**	**Constraints**	**Description**
id	int(10)	Primary key	Auto Increment
identificationno	varchar(20)		Insurance Company Id.*
insurancecomname	varchar(50)	not null	Name of Insurance Com.
contractno	varchar(100)	not null	Contract No.
address	varchar(500)	not null	Address of Insurance Com.

*Insurance Company Id will be generated by "InsuranceCom"-id.

Table 3.5: Vehicle Insurance Information

Fields	**Domains**	**Constraints**	**Description**
id	int(10)	Primary key	Auto increment
vehicleid	varchar(20)	Foreign Key	Vehicle Id*
registration_no	varchar(20)	Foreign Key	Vehicle Registration No*
insurancecomname	varchar(50)	Foreign Key	Insurance Company Name**
certificateno	varchar(50)	Not null	Certificate No.
insurance_type	varchar(50)	Not null	Insurance Type
basic	int(12)	Not null	Basic (Tk)
duty	decimal(12,2)	Not null	Duty
vat	decimal(12,2)	Not null	Vat
total	decimal(12,2)	Not null	Total
givendate	date	Not null	Date
next_premimum	date	Not null	Next Premium Date.

*Foreign keys are taken from "Vehicle Information" table.

**Foreign key is taken from "Insurance Info" table.

Table 3.6: Employee Information

Fields	Domains	Constraints	Description
name	varchar(50)	Not null	Employee name
designation	varchar(50)	Not null	Designation.
contractno	varchar(100)	Not null	Phone no.
section	varchar(20)		Section.
department	varchar(20)		Department.
bloodgroup	varchar(10)		Blood group.
userusername	varchar(20)	Primary key	Username
userpassword	varchar(20)	Not null	Password
email	varchar(50)		E-mail address.

Table 3.7: Requisition Information

Fields	Domains	Constraints	Description
requisition_id	int(20)	Primary key	Requisition ID (auto increment)
userusername	varchar(20)	Foreign Key	User Username*
name	varchar(50)	Foreign Key	Name of user*
designation	varchar(50)	Foreign Key	Designation of user*
contactno	varchar(100)	Foreign Key	User phone no*
section	varchar(20)	Foreign Key	User section*
department	varchar(20)	Foreign Key	User department*
bloodgroup	varchar(15)	Foreign Key	User blood group*
email	varchar(50)	Foreign Key	User email*
reason	varchar(20)	Not null	Reason
vehicleid	varchar(25)	Foreign Key	Vehicle Id**
registration_no	varchar(20)	Foreign Key	Vehicle Registration no.**
vehicle_type	varchar(20)	Not null	Vehicle Type**
no_of_seats	varchar(15)	Foreign Key	No of seats**

Fields	Domains	Constraints	Description
ac_nac	varchar(10)	Foreign Key	AC or Non AC**
start_hr	int(5)	Not null	Starting hour
start_mi	int(5)	Not null	Starting minute
end_hr	int(5)	Not null	Ending hour
end_mi	int(5)	Not null	Ending minute
startdate	date	Not null	Starting date
enddate	date	Not null	Ending date
startvenue	varchar(50)	Not null	Starting venue
endvenue	varchar(50)	Not null	Ending venue
detailreason	varchar(500)		Detail reason
driverid	varchar(15)	Foreign Key	Driver id***
drivername	varchar(50)	Foreign Key	Driver name***
outtime_hr	int(3)		Out of garage(hr.)
outtime_mi	int(3)		Out of garage(mi.)
intime_hr	int(3)		In garage(hr.)
intime_mi	int(3)		In garage(mi.)
totaltime	varchar(15)		Total time needed
outmeter	int(21)		Meter when out
inmeter	int(21)		Meter when in
totalmeter	int(21)		Total distance
prefuelmeter	varchar(26)		Previous fuel meter
buyfuelmeter	varchar(26)		Buy fuel meter
totalfuelmeter	varchar(26)		Total fuel needed
totalcost	decimal(15,2)		Total cost.
dcomment	varchar(1000)		Comment
note_admin_head	varchar(1000)		Note from admin to head
note_head_admin	varchar(1000)		Note from head to admin.
note_head_vc	varchar(1000)		Note from head to director.

Fields	Domains	Constraints	Description
note_ve_admin	varchar(1000)		Note from director to admin.
detailcancelled	varchar(1000)		Details reason for cancelled.
status	int(11)	Not Null	Default is 1****

*User information is taken from "Employee Info" table.

**Vehicle information is taken from "Vehicle info form" table.

***Driver information is taken from "Driver info" table.

Table 3.8: Tax Information

Fields	Domains	Constraints	Description
id	int(10)	Primary key	Auto increment
vehicleid	varchar(20)	Foreign Key	Vehicle Id*
registration_no	varchar(20)	Foreign Key	Vehicle Registration No*
deposittype	varchar(50)	Not null	Type of deposit.
depositamount	decimal(12,2)	Not null	Deposit amount.
taxno	varchar(52)	Not null	Tax number.
givendate	date	Not null	Given date.
depositedate	date	Not null	Deposit date.
expiredate	date	Not null	Expire date.
comment	varchar(1000)	Not null	Comment.
confirmedby	varchar(50)	Not null	Name, who confirm tax information.

*Foreign keys are taken from "Vehicle Information" table.

Table 3.9: Fitness Information

Fields	Domains	Constraints	Description
id	int(11)	Primary key	Auto increment
vehicleid	varchar(20)	Foreign Key	Vehicle Id*
registration_no	varchar(50)	Foreign Key	Vehicle Reg. No*
deposittype	varchar(50)	Not null	Type of deposit.
depositamount	decimal(12,2)	Not null	Deposit amount.
fitnessno	varchar(52)	Not null	Fitness number.
givendate	date	Not null	Given date.
depositedate	date	Not null	Deposit date.
expiredate	date	Not null	Expire date.
comment	varchar(1000)	Not null	Comment.
confirmedby	varchar(50)	Not null	Name, who confirm fitness information.

*Foreign keys are taken from "Vehicle Information" table.

Table 3.10: Driver Information

Fields	Domains	Constraints	Description
id	int(11)	Primary key	Auto increment
identificationno	varchar(15)		Driver id*
name	varchar(50)	Not null	Driver name
licenseno	varchar(42)	Not null	Driver license no.
grade	varchar(5)	Not null	Driver grade.
vehicleid	varchar(20)	Foreign Key	Vehicle id**.
registration_no	varchar(20)	Foreign Key	Vehicle Reg. No**
contractno	varchar(100)	Not null	Phone no.
bloodgroup	varchar(10)		Blood Group.
formdate	date	Not null	Joining date.
comment	varchar(1000)		Any comment.

*Driver id will be generated by "Drive-joining year-id"

**Foreign keys are taken from "Vehicle Information" table.

Table 3.11: Pump Station Information

Fields	Domains	Constraints	Description
id	int(10)	Primary key	Auto increment
identificationno	varchar(20)	Not null	Pump station id*
name	varchar(50)	Not null	Name
address	varchar(500)	Not null	Address.
contractno	varchar(100)	Not null	Phone no.

*Pump station id will be generated by "Pumpstation-id"

Table 3.12: Fuel Consumption Information

Fields	Domains	Constraints	Description
id	int(8)	Primary key	Auto increment
vehicleid	varchar(20)	Foreign Key	Vehicle Id*
registration_no	varchar(50)	Foreign Key	Vehicle Reg. No*
identificationno	varchar(20)	Not null	Pump station id**
name	varchar(50)	Not null	Pump station Name**
fuel	varchar(50)	Not null	Fuel type
prefuelmeter	varchar(25)	Not null	Meter reading
buyfuelmeter	varchar(25)	Not null	After taking meter reading
tdate	date		Taking date
rate	varchar(40)	Not null	Rate per unit.
fuelamount	varchar(40)	Not null	Amount of fuel
moneyamount	int(25)	Not null	Total amount of money
confirmedby	varchar(50)	Not null	Name of Officer.

*Foreign keys are taken from "Vehicle Information" table.

**Foreign keys are taken from "Pump Station" table.

Table 3.13: Administrators

Fields	Domains	Constraints	Description
id	int(5)	Primary key	Auto increment
username	varchar(64)	Not null	Username
password	varchar(64)	Not null	Password

*username is fixed. Password can be changed by corresponding administrator.

Table 3.14: Notes

Fields	Domains	Constraints	Description
id	int(11)	Default 1	Number.
note1	varchar(2500)	Default 'Write here'	Admin can write important note here.
note2	varchar(2500)	Default 'Write here'	Head of admin can write important note here.
note3	varchar(2500)	Default 'Write here'	Director can write important note here.

Table 3.15: Left List

Fields	Domains	Constraints	Description
id	int(5)	Primary key	Auto increment
name	varchar(20)	Not null	Left link list name
url	varchar(100)	Not null	Hyperlinks.

*Every table consider as left list hyperlinks for corresponding page.

3.4 Software Design

Software design is a process of problem-solving and planning for a software solution. Object-oriented analysis and design (OOAD) are implemented during the software design. Each object represents some entity of interest in the system being modeled, and is characterized by its class, its state (data elements), and its behavior. Various models can be created to show the static structure, dynamic behavior, and run-time deployment of these collaborating objects. There are a number of different notations for representing these models, such as the Unified Modeling Language (UML). Different diagrams are used to help visualizing the whole development process.

3.4.1 UML Diagram

The Unified Modelling Language (UML) is graphical notation system for Object-Oriented analysis and design. UML is the industry-standard language for the specification, visualization, construction, and documentation of the components of software systems. UML helps to simplify the process of software design, making a model for construction with a number of different views. One of the great merits of UML is the way it helps open up the development process which is called use cases. These serve to identify principal roles (actors) in the system, boundaries, actions, and so on. UML Use Case Diagrams can be used to describe the functions of a system in a horizontal way.

3.4.1.1 Use Case Diagram

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. It is a set of scenarios that describes an interaction between a user and a system. The two main components of a use case diagram are use cases and actors. It can be shown by the figure 3.10.

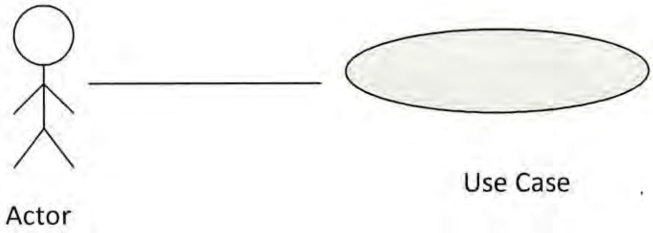


Figure 3.10: Actor and Use Case.

An actor represents a person, organization, or external system that will interact with this system. The symbols of actors are drawn as stick figures. A use case is an external view of the system that represents some actions the user might perform in order to complete a task and is drawn as a horizontal ellipse. Lines are used to represent the relationships between these elements.

3.4.1.1.1 Use Case Diagram of User (Employee)

Figure 3.11 shows the use case diagram for employee (user).

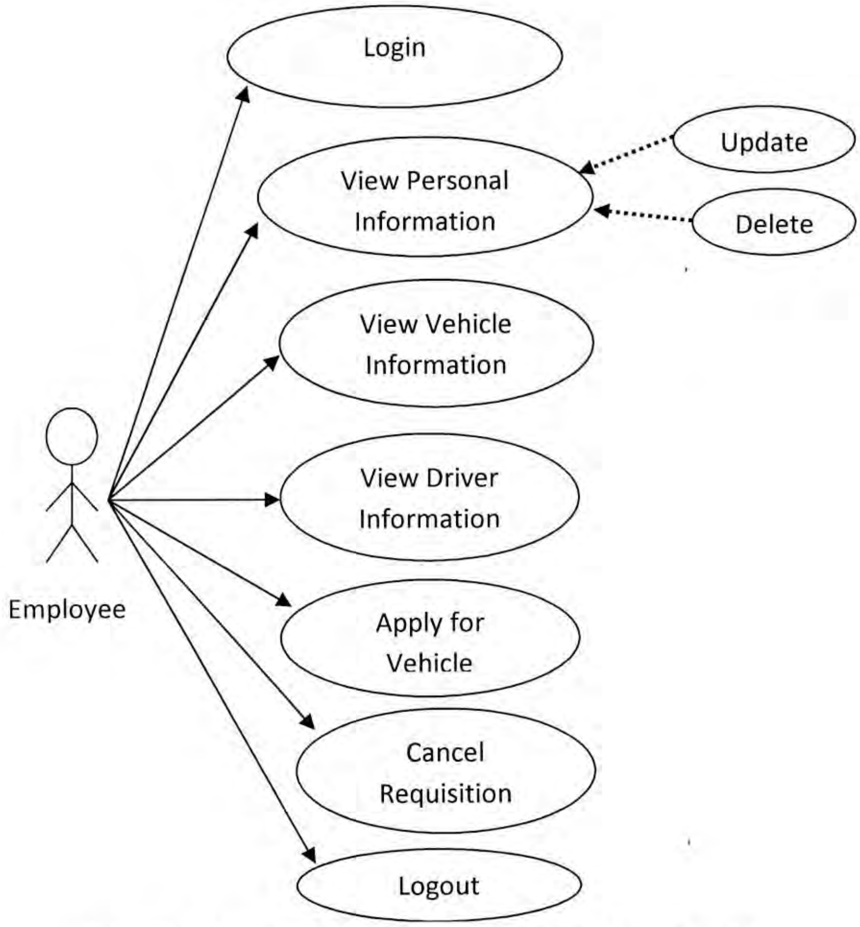


Figure 3.11: Use Case Diagram of User (Employee).

3.4.1.1.2 Use Case Diagram of Administrators

Figure 3.12 shows the use case diagram of administrators. Admin can log in his/her account and can insert, update and delete the required information for the system. He/she can also logout from the account.

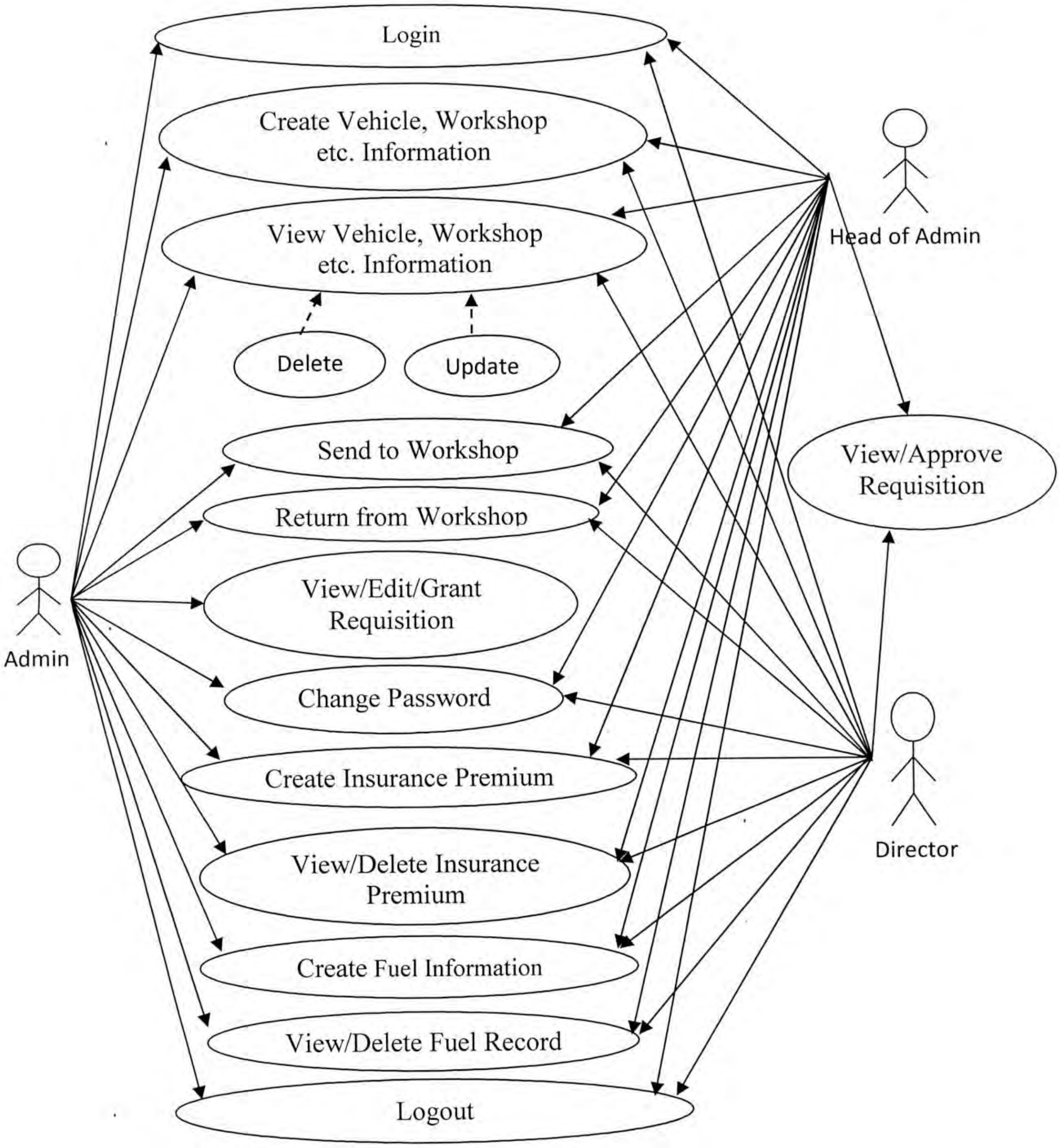


Figure 3.12: Use Case Diagram of Administrators.

3.4.1.2 Activity Diagram

An activity diagram illustrates the dynamic nature of a system by modeling the flow of control from activity to activity. An activity represents an operation of some classes in the system that results in a change in the state of the system. Typically, activity diagrams are used to model workflow or business processes and internal operation. Activity diagrams can show activities that are conditional or parallel.

3.4.1.2.1 Activity Diagram of Requisition

Figure 3.13 shows the activity diagram of requisition. In this case, employee applies for requisition, administrator can check demand and his/her ability to fulfill demand, then choose to give the allocation, cancel or forward to higher authority for recommendation.

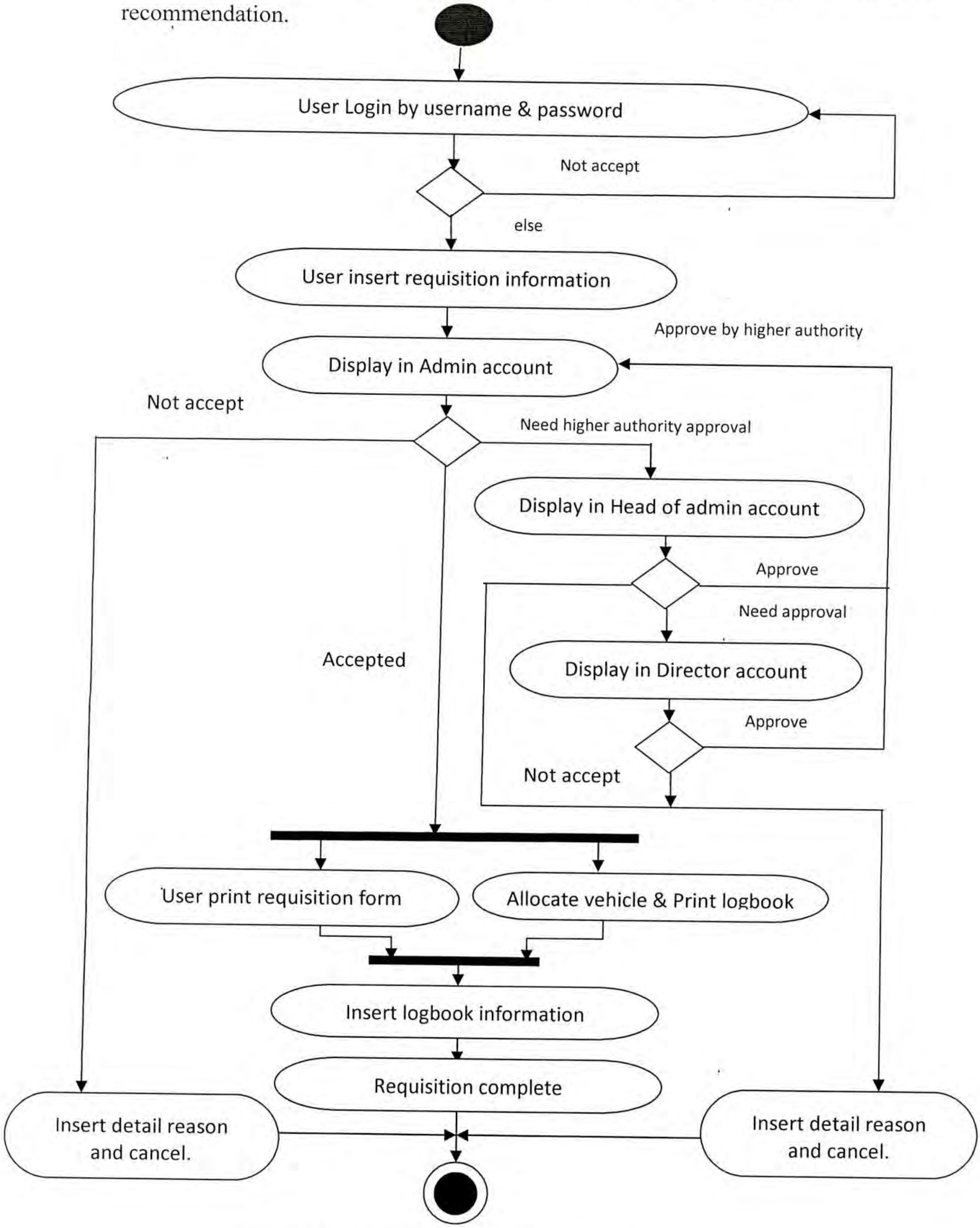

User Login by username & password
Not accept
else
User insert requisition information
Approve by higher authority
Display in Admin account
Not accept
Need higher authority approval
Display in Head of admin account
Approve
Need approval
Accepted
Display in Director account
Approve
Not accept
User print requisition form
Allocate vehicle & Print logbook
Insert logbook information
Requisition complete
Insert detail reason and cancel.
Insert detail reason and cancel.

Figure 3.13: Activity Diagram of Requisition.

Chapter 4

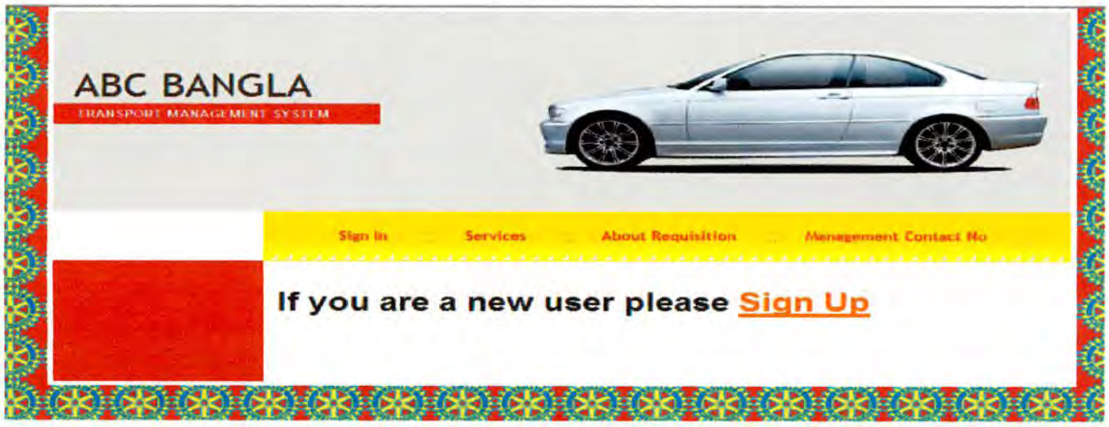
Functionalities of the Web Site

4.1 System Features

The developed Transport Management System has different essential features codes. Screen shot of some of the main features are explained below.

4.1.1 Home Page

The home page is very simple. It contains sign up page link and the menu. The user can find service, management contact information, requisition information and sign up information. User or Admin can also sign in by clicking in the corresponding link of the menu. The following figure 4.1 shows the home page.

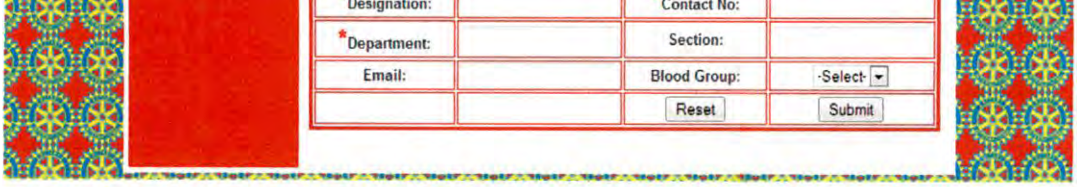


If you are a new user please Sign Up

Figure 4.1: Home Page.

4.1.2 Sign Up Page

New user (Employee) can fill up the employee information form. Username must be unique. After clicking the submit button user can find his/her given information. He can delete or continue. The following figure 4.2 shows the sign up page.



Employee Information Form

* Employee Name :			
*Username:			
*Password:		*Confirm password:	
*Designation:		*Contact No:	
*Department:		Section:	
Email:		Blood Group:	-Select- ▾
		Reset	Submit

Figure 4.2: Sign Up Page (User).

4.1.3 Empowered User Home Page

After signing in, user move to this page. This page contains two menus. Left menu from data base contains Requisition, Vehicle and Drivers. The user can view all vehicle and driver information by clicking Vehicle and Drivers respectively. Other menu contains Service, About Requisition, Management Contact No, Personal and Log Out. The user can edit personal information by clicking in the link name Personal. Log Out button is used to sign out. The following figure 4.3 shows the user home page.

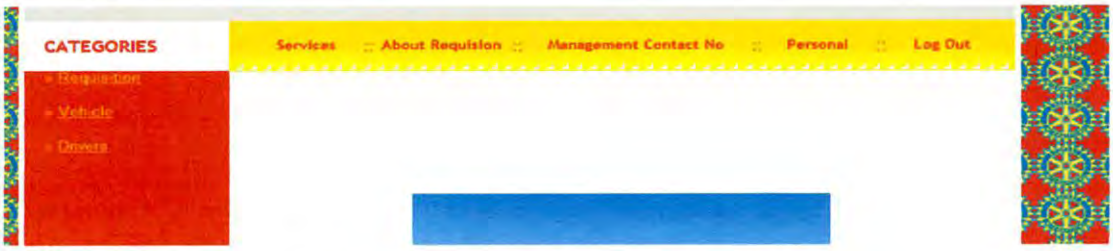
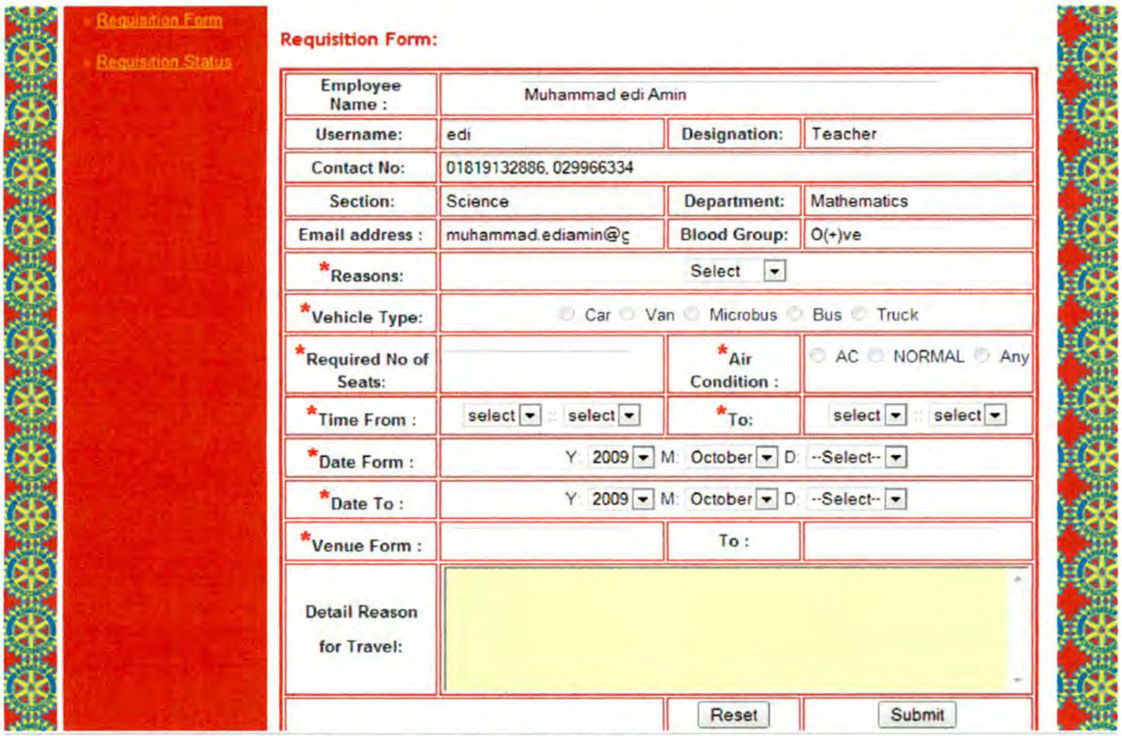


Figure 4.3: Index of User (Employee).

4.1.4 Requisition Form

User can apply using this form. All user information is shown automatically in this form. After filling up, all other information user can apply for specific type of vehicle in specific time. The following figure 4.4 shows the requisition form.



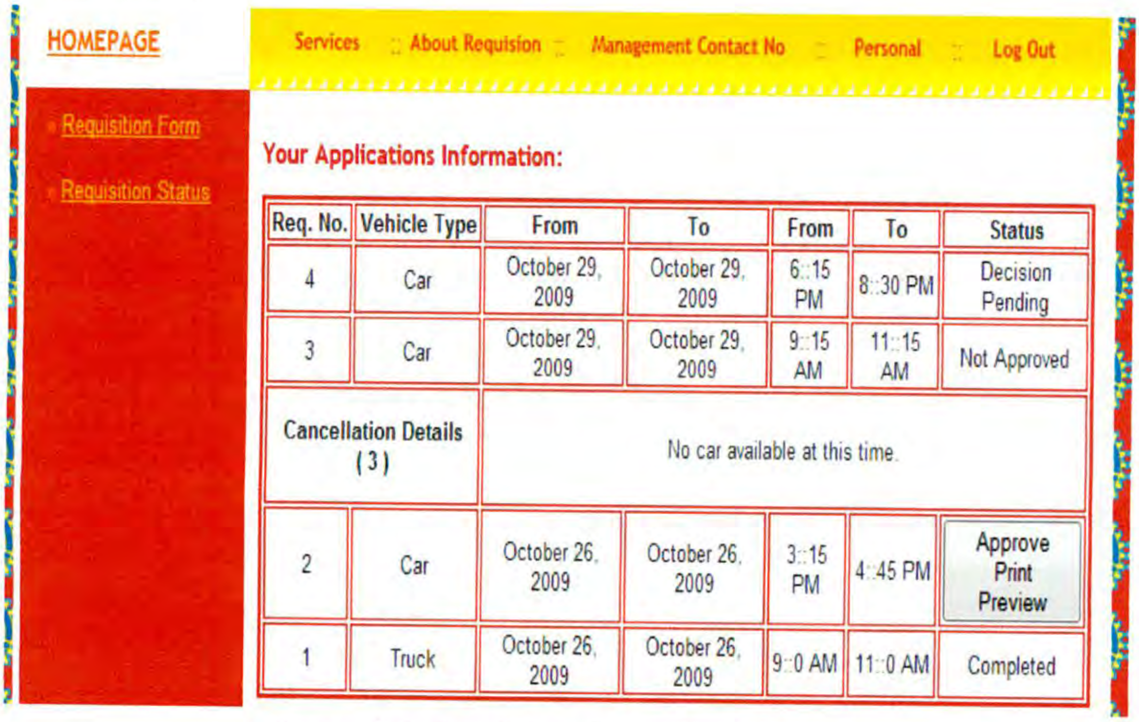
Requisition Form:

Employee Name :	Muhammad edi Amin		
Username:	edi	Designation:	Teacher
Contact No:	01819132886, 029966334		
Section:	Science	Department:	Mathematics
Email address :	muhammad.ediamin@ç	Blood Group:	O(+)ve
*Reasons:	Select ▾		
*Vehicle Type:	○ Car ○ Van ○ Microbus ○ Bus ○ Truck		
*Required No of Seats:		*Air Condition :	○ AC ○ NORMAL ○ Any
*Time From :	select ▾ :: select ▾	*To:	select ▾ :: select ▾
*Date Form :	Y: 2009 ▾ M: October ▾ D: --Select-- ▾		
*Date To :	Y: 2009 ▾ M: October ▾ D: --Select-- ▾		
*Venue Form :		To :	
Detail Reason for Travel:			
		Reset	Submit

Figure 4.4: Requisition Form.

4.1.5 Requisition Status

User can view his/her requisition status up to last ten applications. If any demand is approved, user can click the Approve button and can print accepted application. If it is not accepted it will be shown with reasons. The following figure 4.5 shows the requisition status.



Your Applications Information:

Req. No.	Vehicle Type	From	To	From	To	Status
4	Car	October 29, 2009	October 29, 2009	6::15 PM	8::30 PM	Decision Pending
3	Car	October 29, 2009	October 29, 2009	9::15 AM	11::15 AM	Not Approved
Cancellation Details (3)		No car available at this time.				
2	Car	October 26, 2009	October 26, 2009	3::15 PM	4::45 PM	Approve Print Preview
1	Truck	October 26, 2009	October 26, 2009	9::0 AM	11::0 AM	Completed

Figure 4.5: Requisition Status for Specific User.

4.1.6 Administrative Index Page

After signing in, administrators move to this page. Administrators can sign out when access is no longer needed, by using Logout button. This page contains two menus. Left menu from data base contains Requisition, Vehicles, Workshop, Insurance, Tax, Fitness, Pump_Station, Driver and Change_Password. The administrators can approve requisition. Add, view, and delete vehicles, workshop, insurance, tax, fitness, pump station, and driver information are seen by clicking respective link. Administrators can change password by the link Change_Password. Other menu contains Homepage, Note Down, Employee and Log Out. Administrators also can write down necessary notes by clicking Note Down link. Administrators can view or delete listed employee information by clicking Employee link. Figure 4.6 shows the administrative index page.

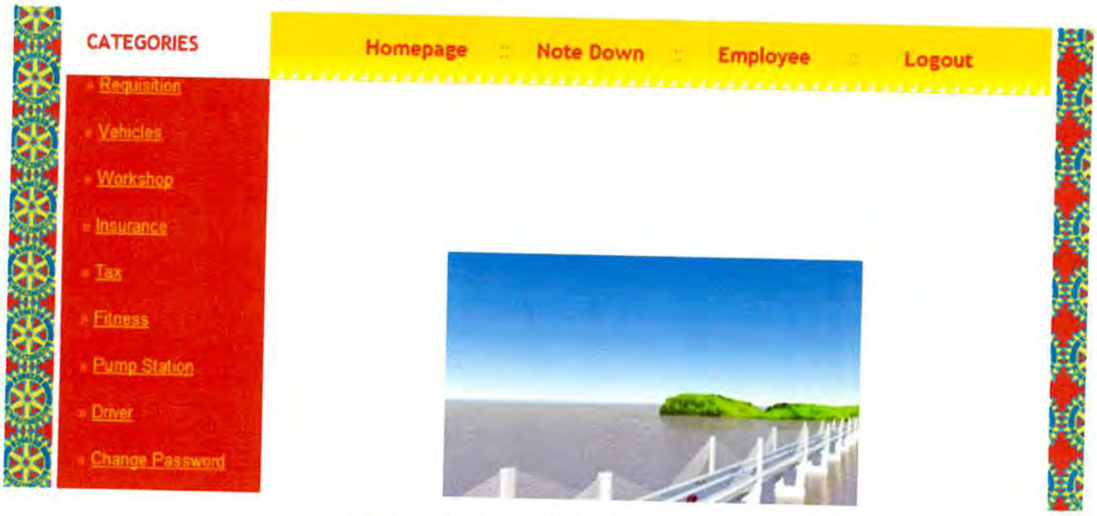
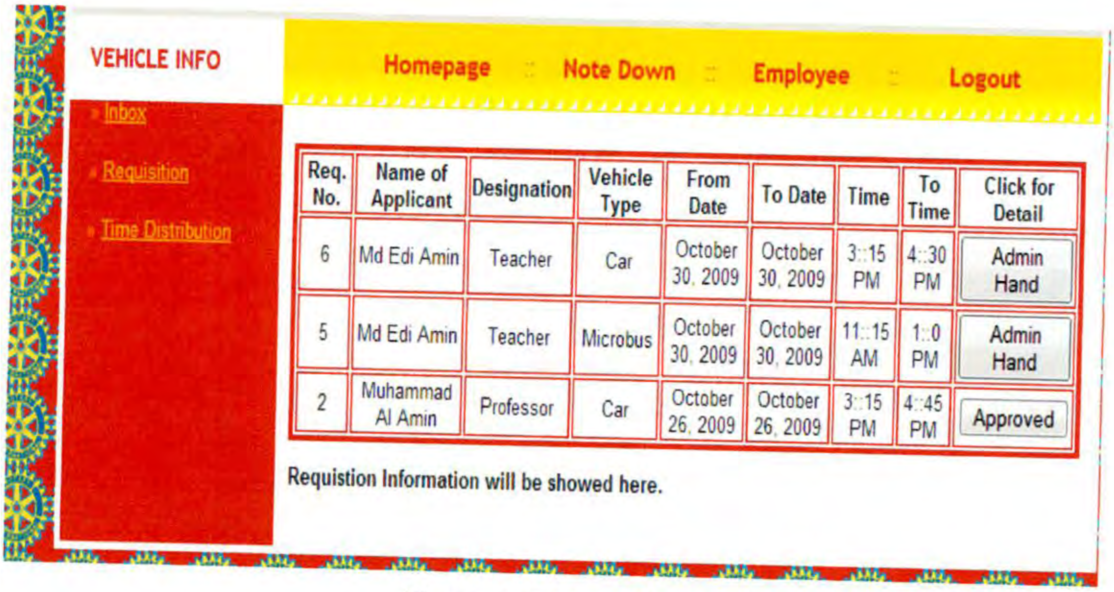


Figure 4.6: Admin Index Page.

4.1.7 Inbox Page

This is an inbox for administrators. There are three administrative levels; Admin, Head of Admin and Director. When any user applies for a vehicle, admin officer (Admin) gets this application in his/her inbox. Admin can see specific application by clicking specific button. Admin can grant it or forward to second level administrator, Head of Admin. Head of Admin can approve or forward to third level administrator, Director. Director can approve it. All administrators have power to cancel the application. Only Admin can grant the application and allocate vehicle. If any requisition is approved, administrator can print logbook by clicking Approved button. The following figure 4.7 shows the inbox page.



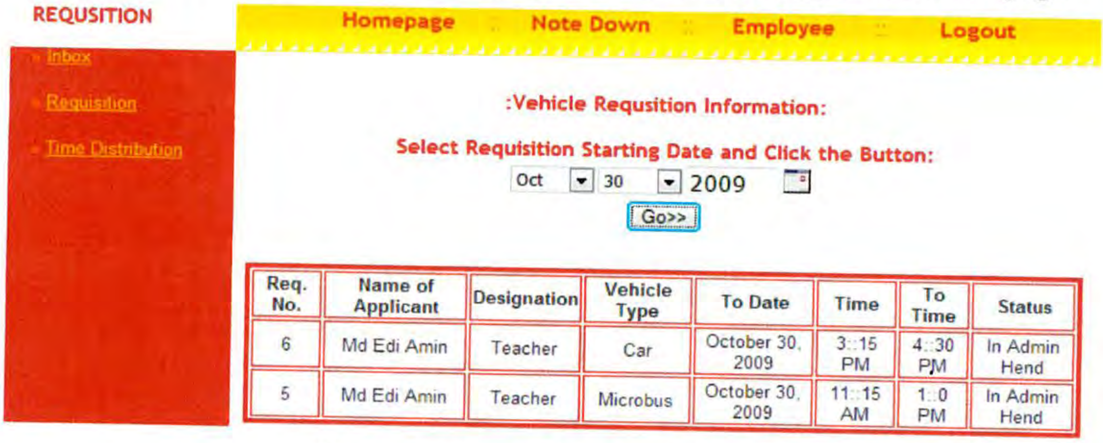
Req. No.	Name of Applicant	Designation	Vehicle Type	From Date	To Date	Time	To Time	Click for Detail
6	Md Edi Amin	Teacher	Car	October 30, 2009	October 30, 2009	3::15 PM	4::30 PM	Admin Hand
5	Md Edi Amin	Teacher	Microbus	October 30, 2009	October 30, 2009	11::15 AM	1::0 PM	Admin Hand
2	Muhammad Al Amin	Professor	Car	October 26, 2009	October 26, 2009	3::15 PM	4::45 PM	Approved

Requistion Information will be showed here.

Figure 4.7: Inbox Page.

4.1.8 Requisition Status Page

Any administrator can see requisition status at a specific date. At first, he/she has to select a date (requisition starting date) and click the button 'Go', then he/she can see requisition status at that date. If any application is approved at that date, administrator can see a button named "Approved Add Logbook Info" in status column; by clicking that button administrator can insert logbook information. After adding logbook information administrator can view a button named "Completed Print Preview" for this application. By clicking this button the administrator can print complete requisition information. The following figure 4.8 shows the requisition status page.



REQUSITION

:Vehicle Requsition Information:

Select Requisition Starting Date and Click the Button:

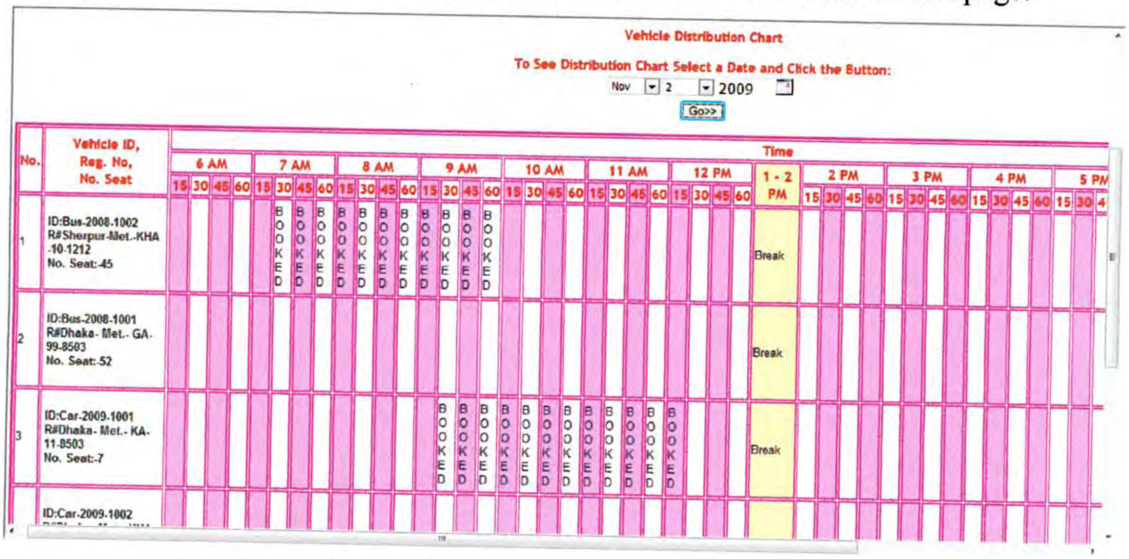
Oct 30 2009

Req. No.	Name of Applicant	Designation	Vehicle Type	To Date	Time	To Time	Status
6	Md Edi Amin	Teacher	Car	October 30, 2009	3::15 PM	4::30 PM	In Admin Hend
5	Md Edi Amin	Teacher	Microbus	October 30, 2009	11::15 AM	1::0 PM	In Admin Hend

Figure 4.8: Requisition Status Page.

4.1.9 Distribution Chart Page

By selecting a date, administrator can view distribution chart at that date according to the given schedule. The following figure 4.9 shows the distribution chart page.



Vehicle Distribution Chart

To See Distribution Chart Select a Date and Click the Button:

Nov 2 2009

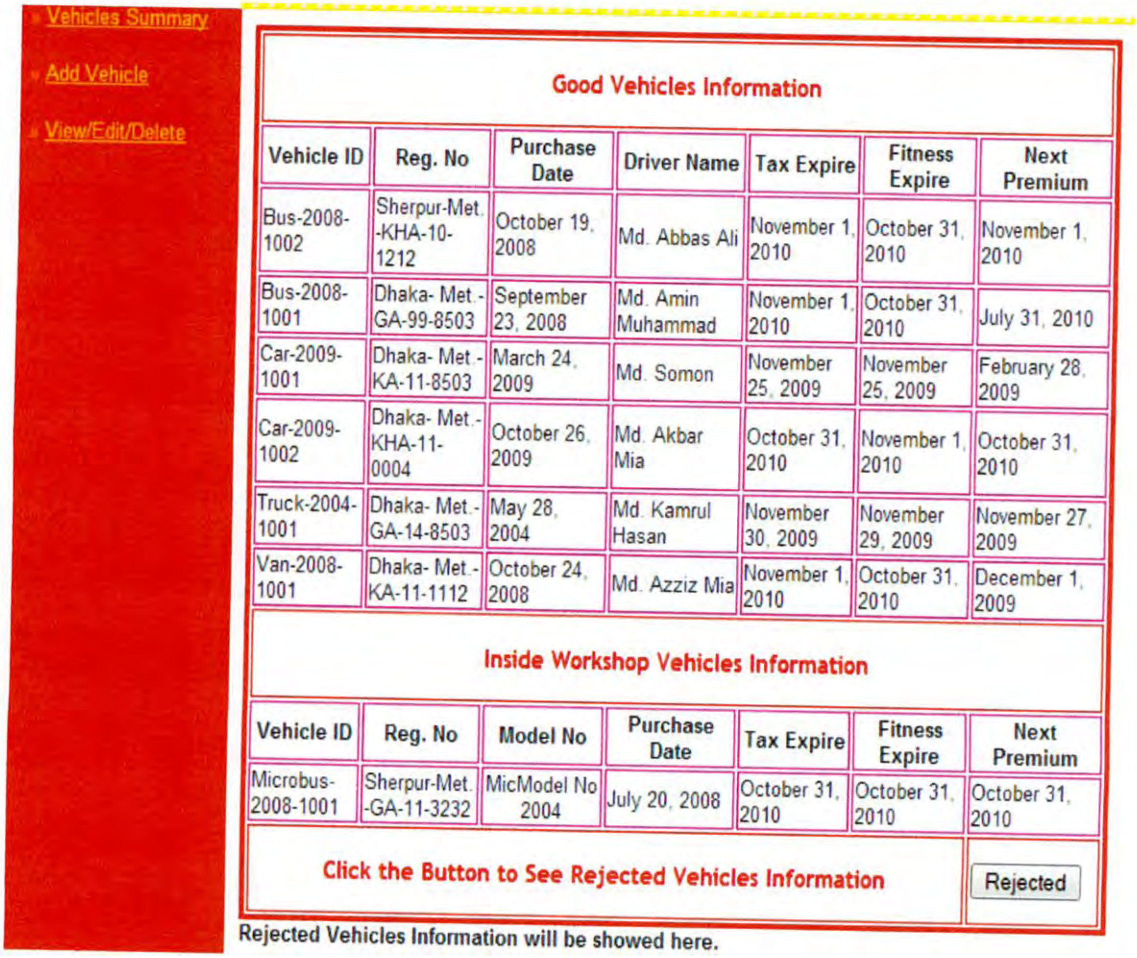
No.	Vehicle ID, Reg. No, No. Seat	Time																							
		6 AM				7 AM				8 AM				9 AM				10 AM				11 AM			
		15	30	45	60	15	30	45	60	15	30	45	60	15	30	45	60	15	30	45	60	15	30	45	60
1	ID:Bus-2008-1002 R#Sherpur-Met.-KHA -10-1212 No. Seat:-45						BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED								
2	ID:Bus-2008-1001 R#Dhaka- Met.- GA-99-8503 No. Seat:-52																								
3	ID:Car-2009-1001 R#Dhaka- Met.- KA-11-8503 No. Seat:-7														BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED	BOOKED
	ID:Car-2009-1002																								

No.	Vehicle ID, Reg. No, No. Seat	Time																			
		12 PM				1 - 2 PM	2 PM				3 PM				4 PM				5 PM		
		15	30	45	60		15	30	45	60	15	30	45	60	15	30	45	60	15	30	4
1	ID:Bus-2008-1002 R#Sherpur-Met.-KHA -10-1212 No. Seat:-45					Break															
2	ID:Bus-2008-1001 R#Dhaka- Met.- GA-99-8503 No. Seat:-52					Break															
3	ID:Car-2009-1001 R#Dhaka- Met.- KA-11-8503 No. Seat:-7	BOOKED				Break															
	ID:Car-2009-1002																				

Figure 4.9: Distribution Chart Page.

4.1.10 Vehicles Summary Page

Administrator can see vehicle id, registration no, Purchase date, driver name, expire date of tax and fitness, and next premium date according to vehicle's condition in this page. By clicking the button, "Rejected" administrator can see list of rejected vehicles. The following figure 4.10 shows the vehicles summary page.



Good Vehicles Information

Vehicle ID	Reg. No	Purchase Date	Driver Name	Tax Expire	Fitness Expire	Next Premium
Bus-2008-1002	Sherpur-Met.-KHA-10-1212	October 19, 2008	Md. Abbas Ali	November 1, 2010	October 31, 2010	November 1, 2010
Bus-2008-1001	Dhaka- Met.-GA-99-8503	September 23, 2008	Md. Amin Muhammad	November 1, 2010	October 31, 2010	July 31, 2010
Car-2009-1001	Dhaka- Met.-KA-11-8503	March 24, 2009	Md. Somon	November 25, 2009	November 25, 2009	February 28, 2009
Car-2009-1002	Dhaka- Met.-KHA-11-0004	October 26, 2009	Md. Akbar Mia	October 31, 2010	November 1, 2010	October 31, 2010
Truck-2004-1001	Dhaka- Met.-GA-14-8503	May 28, 2004	Md. Kamrul Hasan	November 30, 2009	November 29, 2009	November 27, 2009
Van-2008-1001	Dhaka- Met.-KA-11-1112	October 24, 2008	Md. Azziz Mia	November 1, 2010	October 31, 2010	December 1, 2009

Inside Workshop Vehicles Information

Vehicle ID	Reg. No	Model No	Purchase Date	Tax Expire	Fitness Expire	Next Premium
Microbus-2008-1001	Sherpur-Met.-GA-11-3232	MicModel No 2004	July 20, 2008	October 31, 2010	October 31, 2010	October 31, 2010

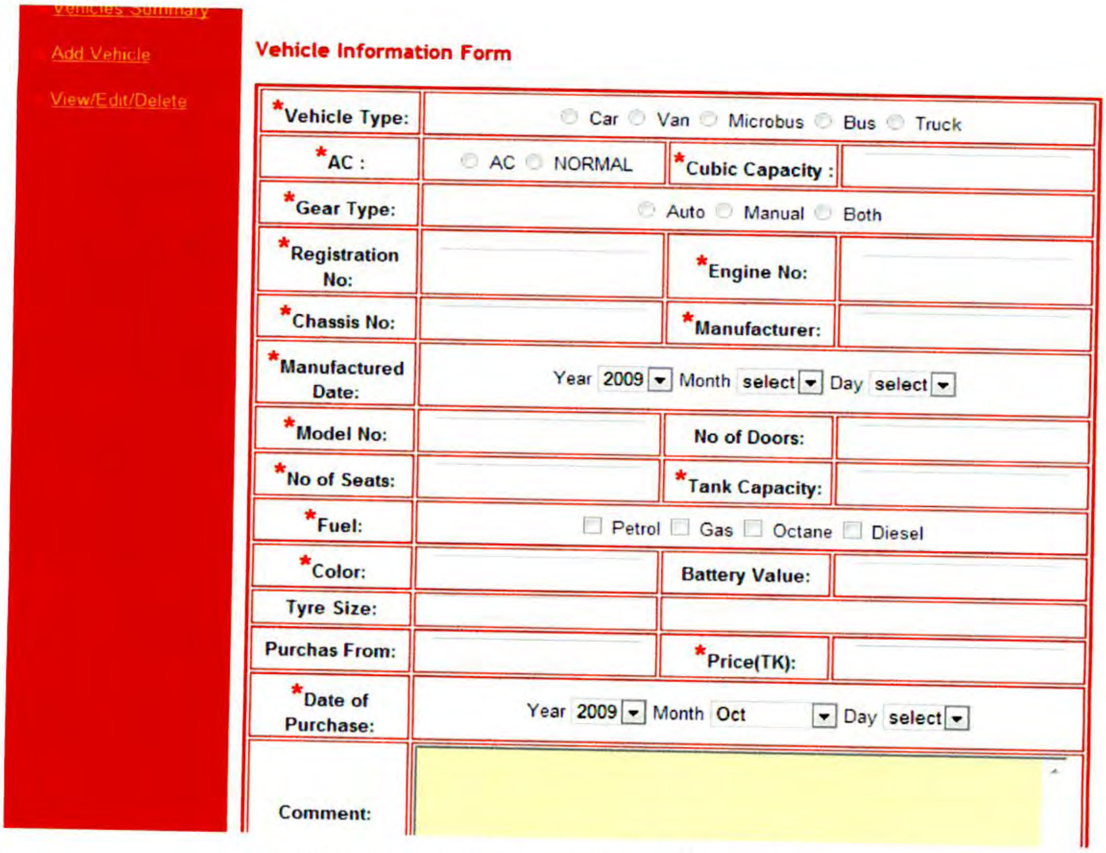
Click the Button to See Rejected Vehicles Information

Rejected Vehicles Information will be showed here.

Figure 4.10: Vehicle Summary Page.

4.1.11 Vehicle Information Form

Administrator can fill the form for specific vehicle and submit it. Vehicle id will be generated automatically. Vehicle id will be generated according to 'Type-YYYY-NNNN' where Type is vehicle type, YYYY is year part of purchase year and NNNN is auto increment number starts with 1001 for every purchase year and every type of vehicle. Figure 4.11 shows the vehicle information form.



Vehicles Summary

Add Vehicle

View/Edit/Delete

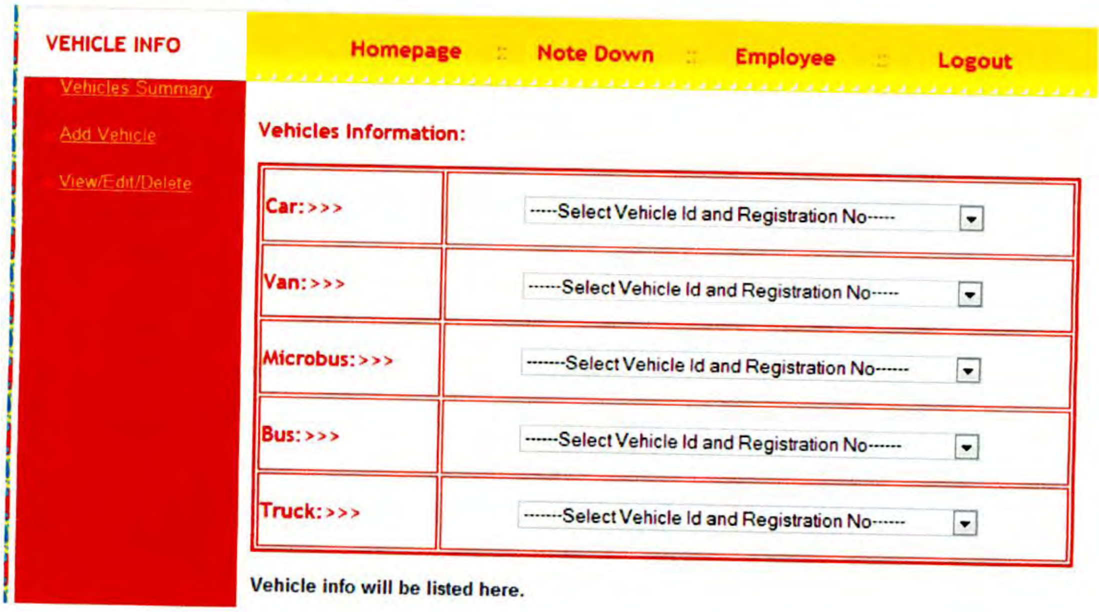
Vehicle Information Form

*Vehicle Type:	○ Car ○ Van ○ Microbus ○ Bus ○ Truck		
*AC :	○ AC ○ NORMAL	*Cubic Capacity :	
*Gear Type:	○ Auto ○ Manual ○ Both		
*Registration No:		*Engine No:	
*Chassis No:		*Manufacturer:	
*Manufactured Date:	Year 2009 ▾ Month select ▾ Day select ▾		
*Model No:		No of Doors:	
*No of Seats:		*Tank Capacity:	
*Fuel:	□ Petrol □ Gas □ Octane □ Diesel		
*Color:		Battery Value:	
Tyre Size:			
Purchas From:		*Price(TK):	
*Date of Purchase:	Year 2009 ▾ Month Oct ▾ Day select ▾		
Comment:			

Figure 4.11: Vehicle Information Form.

4.1.12 Vehicles Information Page

Administrator can select specific vehicle and can edit, delete and view detail information about the status of the vehicle. The following figure 4.12 shows the vehicles information page.



VEHICLE INFO

Homepage :: Note Down :: Employee :: Logout

Vehicles Summary

Add Vehicle

View/Edit/Delete

Vehicles Information:

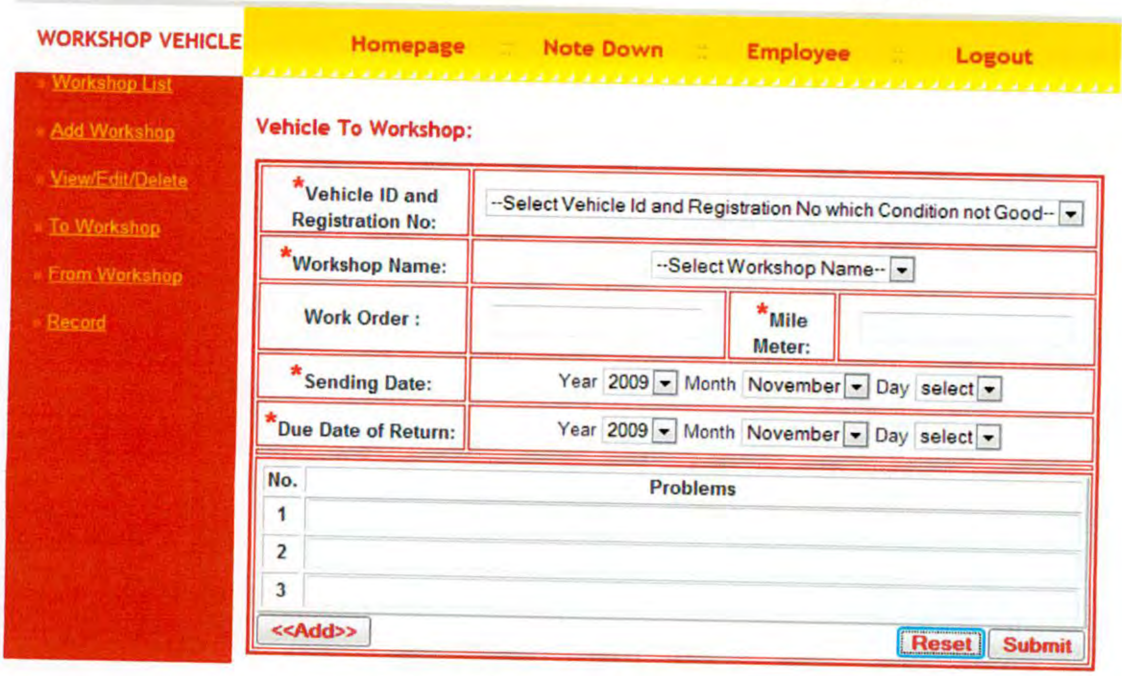
Car:>>>	-----Select Vehicle Id and Registration No----- ▾
Van:>>>	------Select Vehicle Id and Registration No----- ▾
Microbus:>>>	-------Select Vehicle Id and Registration No------ ▾
Bus:>>>	------Select Vehicle Id and Registration No------ ▾
Truck:>>>	-------Select Vehicle Id and Registration No------ ▾

Vehicle info will be listed here.

Figure 4.12: Vehicles Information Page.

4.1.13 Vehicle to Workshop Page

Administrator can select specific vehicle and enter its sending information sentence to specific workshop. Administrator can write problems, if problem is more than three, he/she can increase the number of rows by pressing 'Add' button to get up to ten rows. The following figure 4.13 shows the vehicle to workshop page.



Vehicle To Workshop:

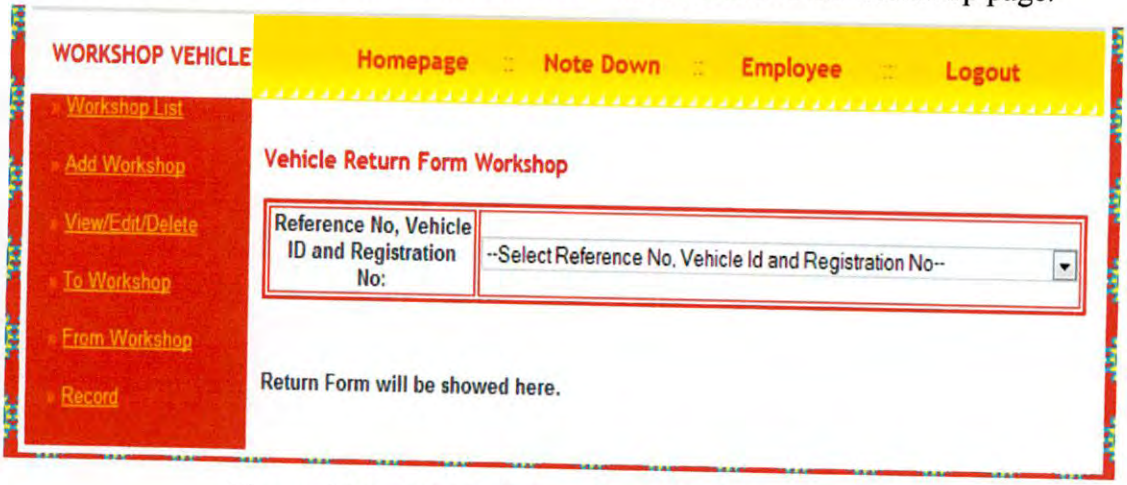
*Vehicle ID and Registration No:	--Select Vehicle Id and Registration No which Condition not Good--		
*Workshop Name:	--Select Workshop Name--		
Work Order :		*Mile Meter:	
*Sending Date:	Year 2009 Month November Day select		
*Due Date of Return:	Year 2009 Month November Day select		

No.	Problems
1	
2	
3	

Figure 4.13: Vehicle to Workshop Page.

4.1.14 Vehicle Return from Workshop Page

The information of the vehicles in workshop is shown in this page. Administrator can select specific vehicle and insert repair work, expense and present condition of vehicle. The following figure 4.14 shows the vehicle return from workshop page.



Vehicle Return Form Workshop

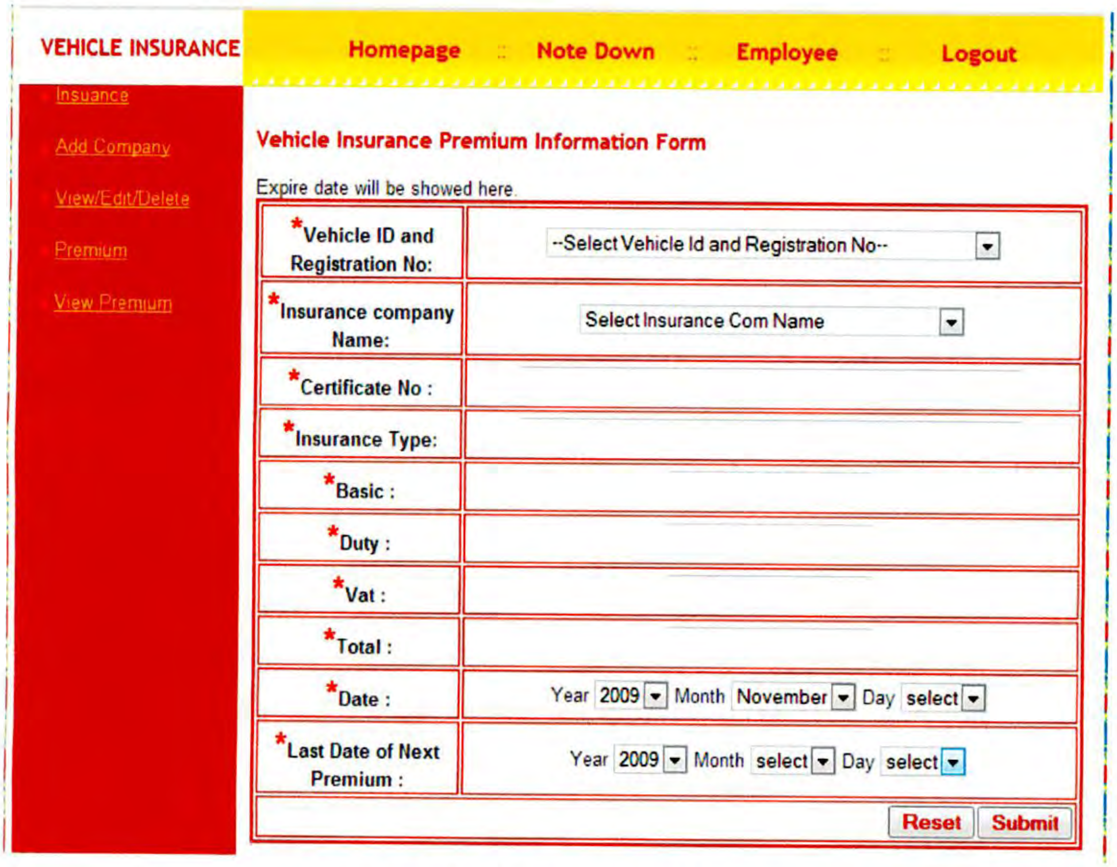
Reference No, Vehicle ID and Registration No:	--Select Reference No, Vehicle Id and Registration No--

Return Form will be showed here.

Figure 4.14: Vehicle Return from Workshop Page.

4.1.15 Vehicle Insurance Form

Administrator will fill the insurance form when the premium for insurance is given for a vehicle. In the form, if the vehicle id and registration no are selected from the dropdown list, expire date will be showed for this specific vehicle above the form. The following figure 4.15 shows the vehicle insurance form.



Vehicle Insurance Premium Information Form

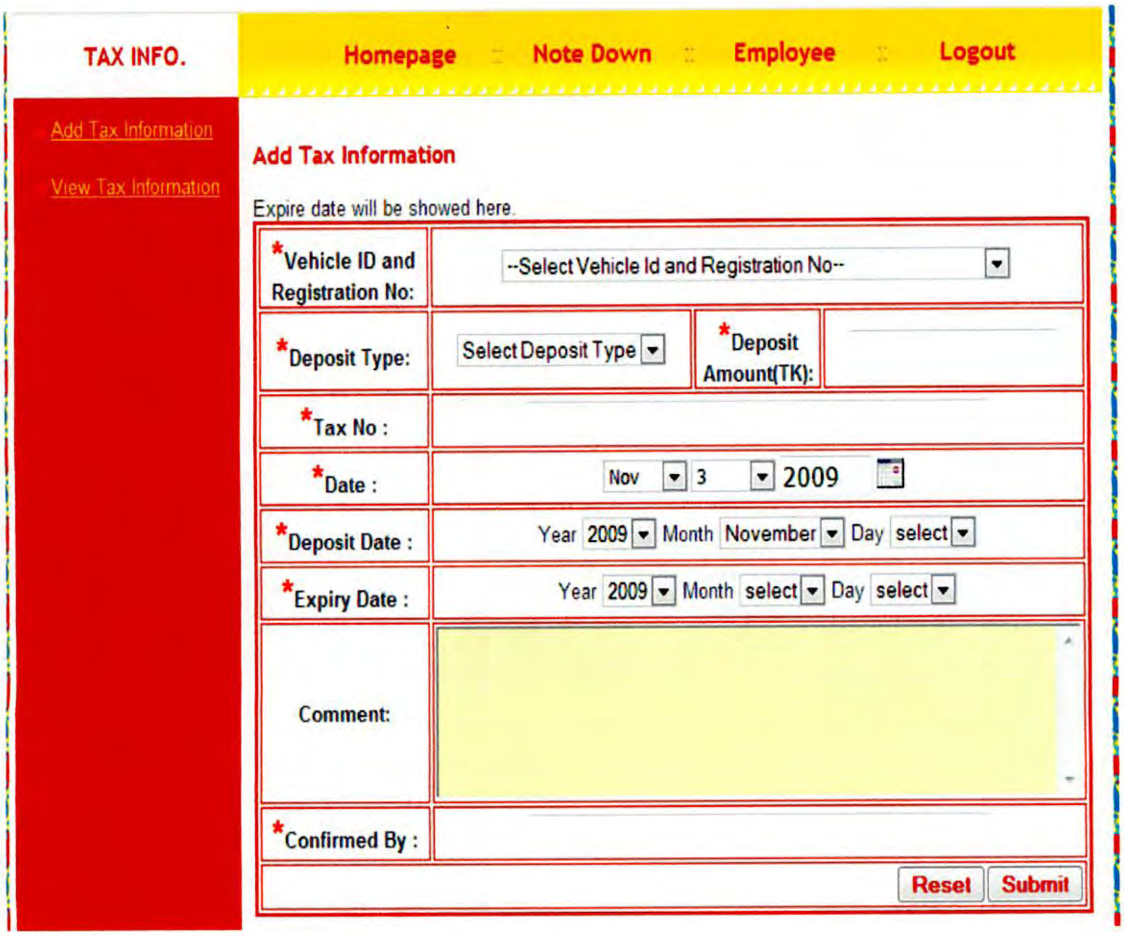
Expire date will be showed here.

*Vehicle ID and Registration No:	--Select Vehicle Id and Registration No--
*Insurance company Name:	Select Insurance Com Name
*Certificate No :	
*Insurance Type:	
*Basic :	
*Duty :	
*Vat :	
*Total :	
*Date :	Year 2009 Month November Day select
*Last Date of Next Premium :	Year 2009 Month select Day select

Figure 4.15: Vehicle Insurance Form.

4.1.16 Tax Information Form

Administrator will fill the form when tax is given for a vehicle. In the form if the vehicle id and registration no are selected from the dropdown list, expiry date will be showed for this specific vehicle above the form. The following figure 4.16 shows the tax information form.



Add Tax Information

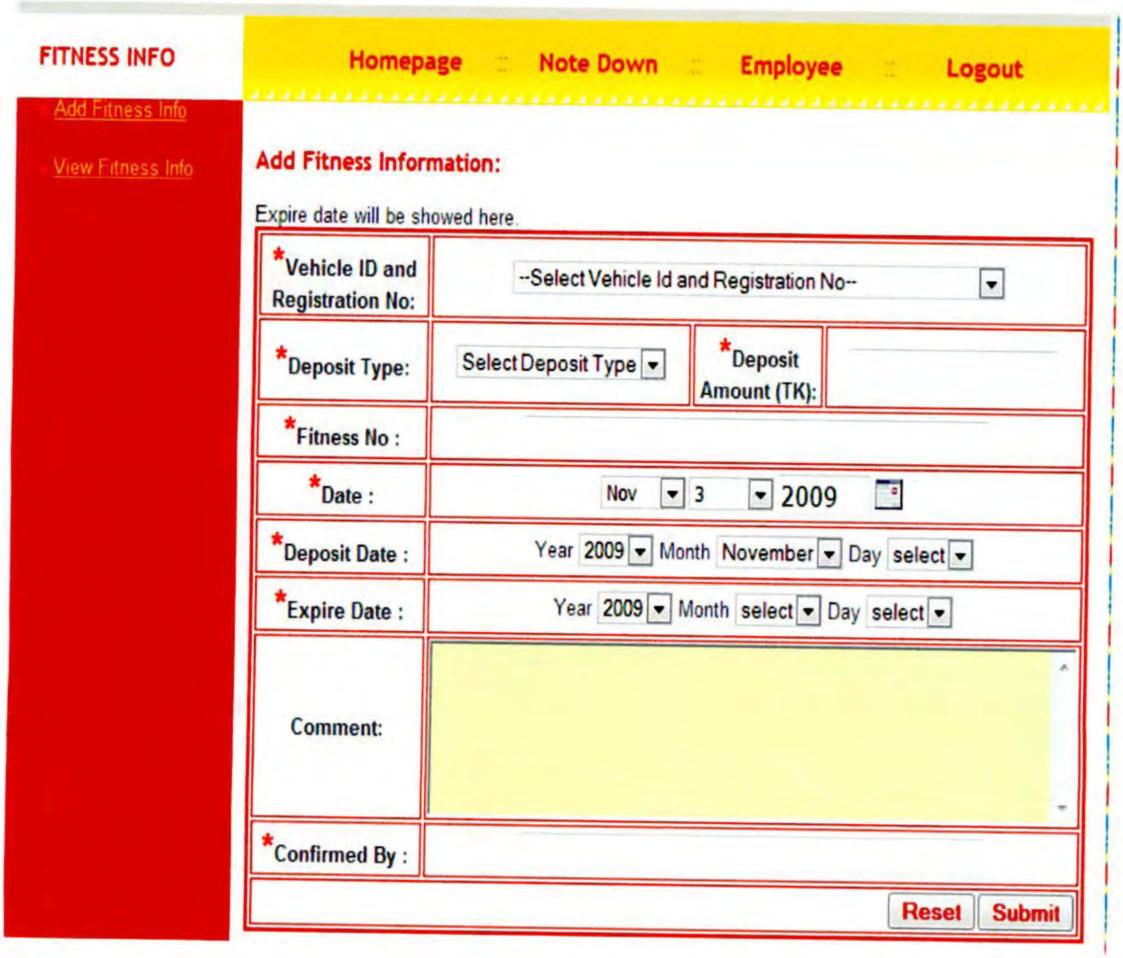
Expire date will be showed here.

*Vehicle ID and Registration No:	--Select Vehicle Id and Registration No-- ▾		
*Deposit Type:	Select Deposit Type ▾	*Deposit Amount(TK):	
*Tax No :			
*Date :	Nov ▾ 3 ▾ 2009		
*Deposit Date :	Year 2009 ▾ Month November ▾ Day select ▾		
*Expiry Date :	Year 2009 ▾ Month select ▾ Day select ▾		
Comment:			
*Confirmed By :			
	Reset Submit		

Figure 4.16: Tax Information Form.

4.1.17 Fitness Information Form

Administrator will fill the form when fitness charge is given for a vehicle. In the form if the vehicle id and registration no are selected from the dropdown list, expiry date will be showed for this specific vehicle above the form. The following figure 4.17 shows the fitness information form.



Add Fitness Information:

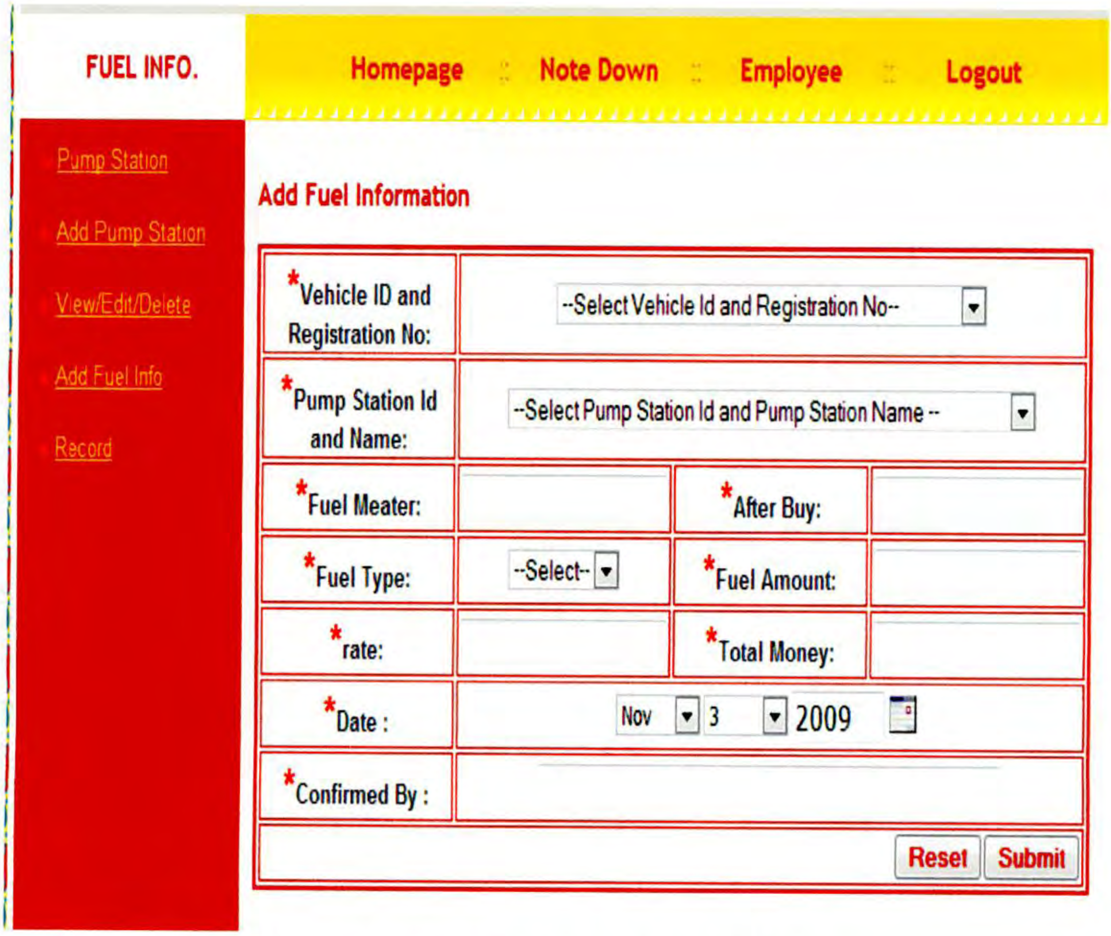
Expire date will be showed here.

*Vehicle ID and Registration No:	--Select Vehicle Id and Registration No--		
*Deposit Type:	Select Deposit Type	*Deposit Amount (TK):	
*Fitness No :			
*Date :	Nov 3 2009		
*Deposit Date :	Year 2009 Month November Day select		
*Expire Date :	Year 2009 Month select Day select		
Comment:			
*Confirmed By :			

Figure 4.17: Fitness Information Form.

4.1.18 Fuel Consumption Record Form

Administrator will fill the form when fuel is taken for a vehicle. All information stored in database can be seen and deleted by clicking left menu link record. The following figure 4.18 shows the fuel consumption record form.



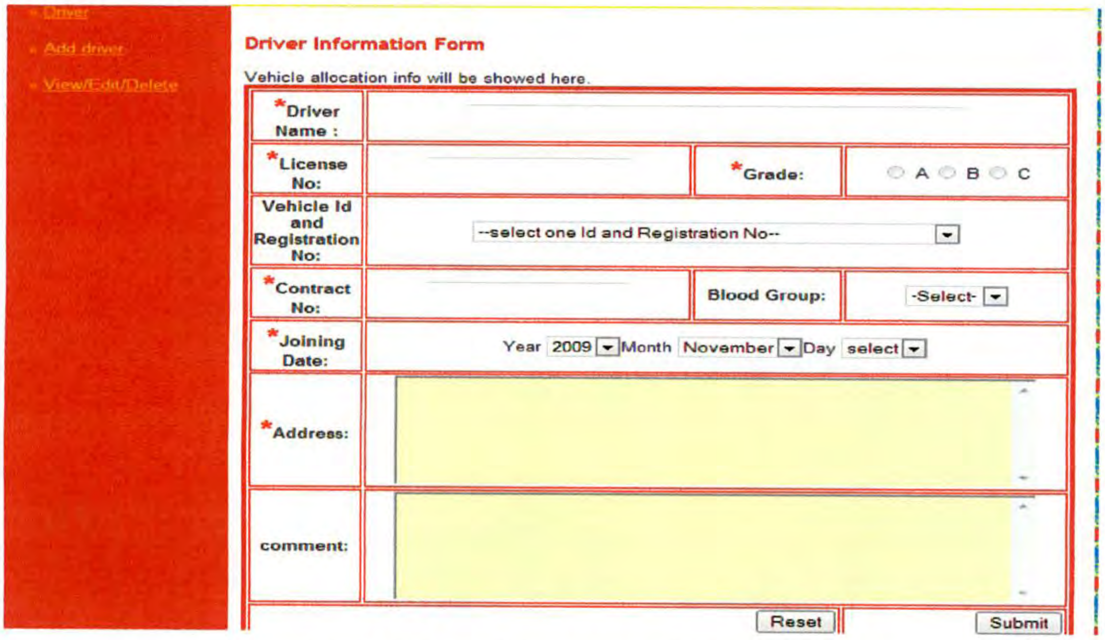
Add Fuel Information

*Vehicle ID and Registration No:	--Select Vehicle Id and Registration No--		
*Pump Station Id and Name:	--Select Pump Station Id and Pump Station Name --		
*Fuel Meater:		*After Buy:	
*Fuel Type:	--Select--	*Fuel Amount:	
*rate:		*Total Money:	
*Date :	Nov 3 2009		
*Confirmed By :			

Figure 4.18: Fuel Consumption Record Form.

4.1.19 Driver Information Form

Administrator will fill the form when new driver is appointed. In the form if vehicle id and registration no are selected from the dropdown list, vehicle allocation information will be showed for this specific vehicle above the form. The following figure 4.19 shows the driver information form.



Driver Information Form

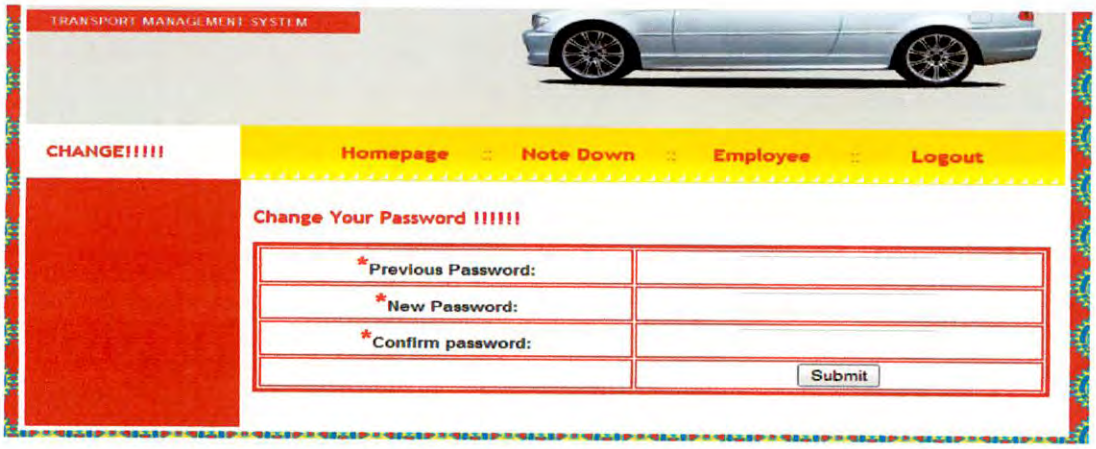
Vehicle allocation info will be showed here.

*Driver Name :			
*License No:		*Grade:	○ A ○ B ○ C
Vehicle Id and Registration No:	--select one Id and Registration No-- ▾		
*Contract No:		Blood Group:	-Select- ▾
*Joining Date:	Year 2009 ▾ Month November ▾ Day select ▾		
*Address:			
comment:			
	Reset		Submit

Figure 4.19: Driver Information Form.

4.1.20 Change Password Page

This page is made for security purpose. Any administrator can change his/her password from this page. The following figure 4.20 shows the change password page.



TRANSPORT MANAGEMENT SYSTEM
CHANGE!!!!!
Homepage :: Note Down :: Employee :: Logout

Change Your Password !!!!!!

*Previous Password:	
*New Password:	
*Confirm password:	
	Submit

Figure 4.20: Change Password Page.

Chapter 5

Conclusion

5.1 Conclusion

This software is developed with the help of different kinds of tools such as PHP, MYSQL, HTML, AJAX, JavaScript, CSS etc. The developed software is user friendly. The Administrators (Administrative officer, Head of the Admin section and Director) can approve/reject application for vehicle requisition with necessary notes. Only administrators can insert, delete and update vehicle, tax, insurance, workshop etc. information. Thus, the security of the system has been maintained.

It is also a multi-user system, which can be used by a number of users simultaneously. Personal information can be accessed by the particular user only. None can view other's information. General employee (user) can view/update his/her personal information by signing in and can apply for vehicle requisition.

The developed software can be implemented for commercial purpose. It also provides the general guidelines to the company owners who want to develop their own software for company's vehicle management. The companies in home and abroad can introduce this software for the betterment and comfort of their companies.

5.2 Future works

The developed project can be enhanced in a variety of ways. Firstly, the message alarm and sound alarm systems can be incorporated in the software. These alarms will be used to alert administrators of due dates of premium of insurance, fitness certificate, tax and other vital information of vehicles. The system may also be modified to provide appropriate messages when the administrator enters unrealistic maintenance information to the software. As for example, the system will restrict the user if the user changes the tyre of a vehicle every month.

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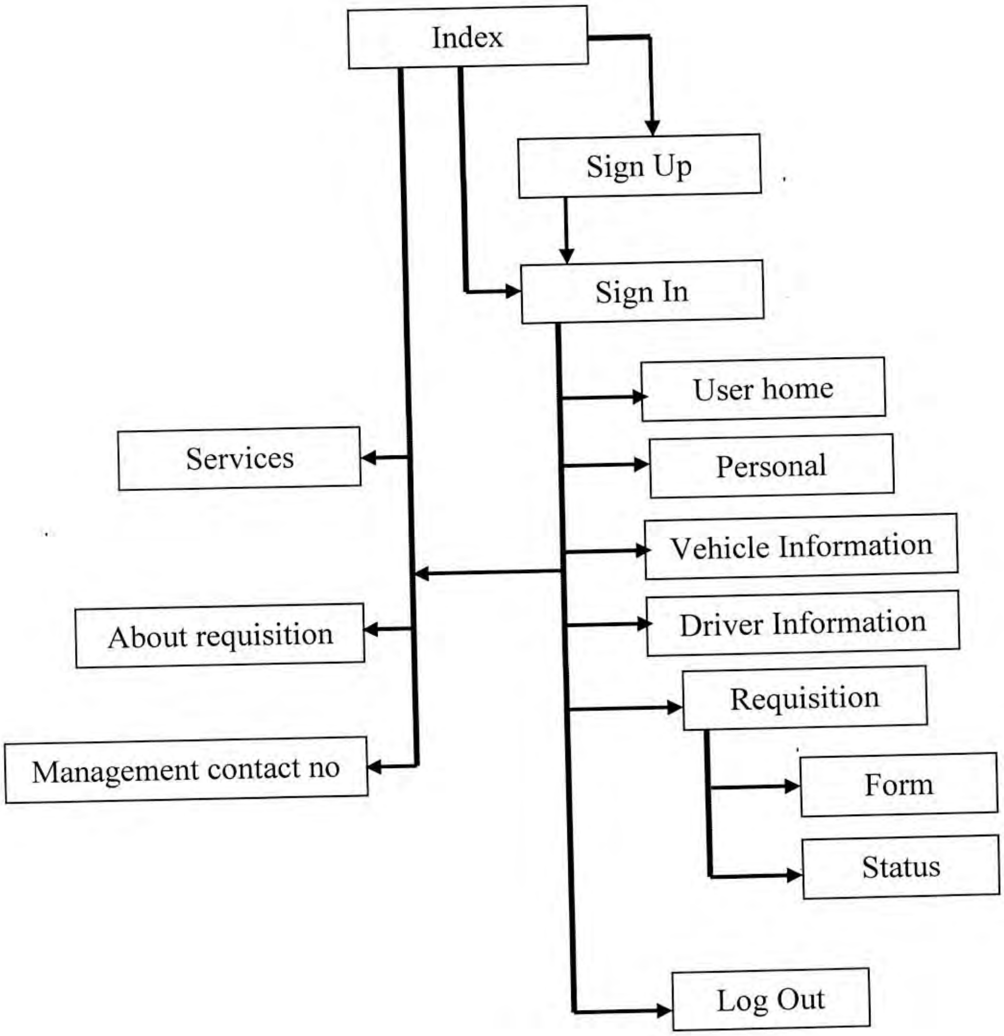
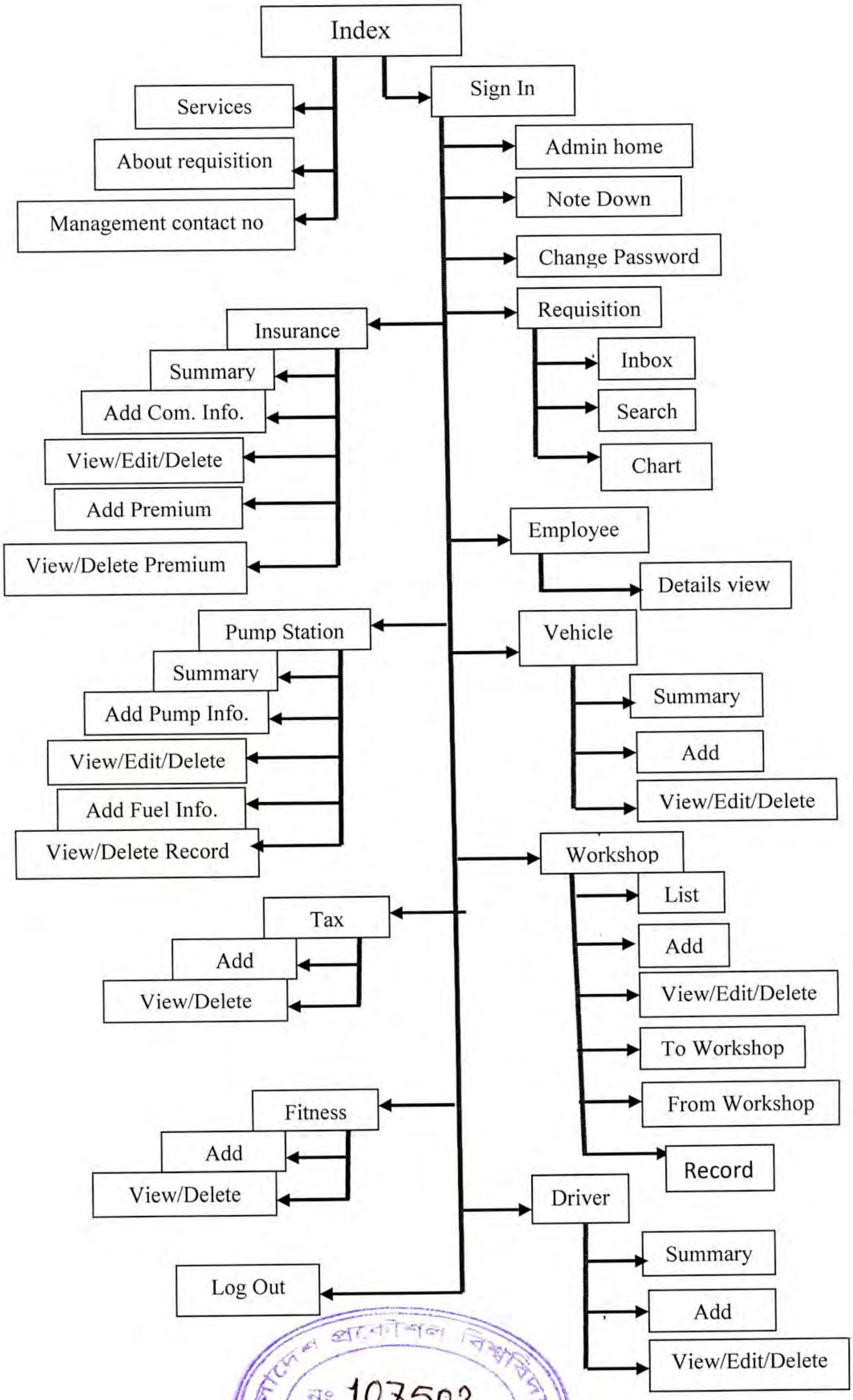
Appendix A

Sitemap for Employee (User)



Appendix B

Sitemap for Administrators


Index
Services
About requisition
Management contact no
Sign In
Admin home
Note Down
Change Password
Requisition
Inbox
Search
Chart
Insurance
Summary
Add Com. Info.
View/Edit/Delete
Add Premium
View/Delete Premium
Employee
Details view
Pump Station
Summary
Add Pump Info.
View/Edit/Delete
Add Fuel Info.
View/Delete Record
Vehicle
Summary
Add
View/Edit/Delete
Workshop
List
Add
View/Edit/Delete
To Workshop
From Workshop
Record
Tax
Add
View/Delete
Fitness
Add
View/Delete
Driver
Summary
Add
View/Edit/Delete
Log Out