

**ONLINE VEHICLE SERVICE STATION  
MANAGEMENT SYSTEM  
FOR  
K.B MOGUL**

Thanusiya B

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# **Online Vehicle Service Station Management System for K.B Mogul**

Thanusiya B

BIT Registration Number: R141408

Index Number: 1414089

Name of the supervisor

Mr K.Venugoban

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**This dissertation is submitted in partial fulfilment of the requirement of the  
Degree of Bachelor of Information Technology (external) of the  
University of Colombo School of Computing**

# DECLARATION

## DECLARATION

I certify that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any university and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and abstract to be made available to outside organizations.

.. *B.Thanusiya* .....

Date: *04/11/2017*

B.Thanusiya

(Name of Candidate)

Countersigned by:

.. *[Signature]* .....

Date: *04/11/2017*

Mr.K.Venugoban

(Name of Supervisor)

# ABSTRACT

“K.B Mogul” is one of the major vehicle service stations in Sri Lanka. Nowadays many people do not spend more time to purchase services and goods for their daily life. Therefore the buyers would like to purchase services and goods through online based system. To fulfill that kind of consumers need and to make improvements on company’s business activities, K.B Mogul decided to improve the business trend through online medium. Because the company is keeping their company records in printed papers and they have found some inconveniences on the traditional paper system to maintain their business.

The “Online Vehicle Service Station Management System for K.B Mogul” is to provide customers to online booking for their vehicle from their places. With the help of this online system “K.B Mogul” can able to maintain their relationship with their customers through this online system and they are able to maintain their day to day activities such as calculating income and purchase details, staff details, customers details, customer’s vehicle details, employees details repair and service details.

So they wish to introduced the Web based Vehicle Service Management System to solve above problems. This Web based Vehicle Service Management System was mostly been developed using some modern open sourced tools and software. Hypertext Pre-Processor (PHP) which is a powerful server side scripting language that has been used for server side scripting along with the Apache web server and MySQL which is relational database management system. The management likes to save the time and decrease the work load by using this system and may help them to achieve their goal.

This dissertation described about this system and illustrates all the work carried out during the each phase of the project. This system makes a change in the official environment of the K.B Mogul by providing more efficient and effective system handling.

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I would like to express my special thanks of gratitude to Owner of K.B Mogul Mr.S.T.Kuganesan who grant me permission to undertake the software project and also who are cooperate and give all the instructions of the Online Vehicle Service Station Management System.

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# LIST OF ACRONYMS

AJAX	- Asynchronous JavaScript and XML
CD ROM	- Compact Disc Read Only Memory
CSS	- Cascading Style Sheet
DBMS	- Database Management Systems
GB	- Gigabyte
GHz	- Gigahertz
HTML	- Hypertext Mark- up Language
NIC	- National Identity Card
PHP	- Hypertext Pre- processor
RAM	- Random Access Memory
SMS	- Short Message Service
SQL	- Structured Query Language
URL	- Uniform Resource Locator
WWW	- World Wide Web

# **CHAPTER 1: INTRODUCTION**

## **1.1 INTRODUCTION**

Jaffna district is situated in the Northern most part of Sri Lanka. K.B Mogul is one of the major leading vehicle service stations in Jaffna. All their documentation and information processes were manually handled and they were looking forward to moving into a computer based systems in order to upgrade efficiency and service level. Internet tends to be the backbone of all the technologies. The purpose of this project is to provide car or any other automobile servicing system more effectively than the existing system. There are some disadvantages of the existing service station management systems. These disadvantages are overcome by the Online Vehicle service station management system.

## **1.2 MOTIVATION**

A vehicle service is a series of maintenance procedures carried out at a set time interval or after the vehicle has travelled a certain distance. Vehicle servicing is a specialized task in which it should be executed precisely with a great deal of care. KB Mogul offers modern facilities in servicing and repairing the vehicle for customers in around the Jaffna Peninsula.

Presently, all the administrations works are handled manually and used paper based work to store and processes their operations. The Management faces difficulties to manage customers, employee and staff details, maintain their day to day activities such as manage income and preparing the billing summary details for vehicle service and repairing, pay hours, daily and monthly salaries for employees and prepare quotation for service and repair to government and private organizations.

There are two different ways to solve this issue, such as develop and implement web based or window based management system. The users of this system such as manager, staffs and customers are located in different geographic locations. So the online management system is most suitable for KB Mogul. Hence thus motivated to develop the system for KB Mogul. The purpose of this project is to provide customers to view available time and reserve time to their vehicle service. With the help of this

online system “KB Mogul” can able to maintain their relationship with their customers through this online system and they can able to maintain their day to day activities such as manage income, item with sales and purchase item, generate service and repair bills and manage vehicle details.

If they make that online management system, they can able to overcome their problems on the manual system and manage their company’s day to day, monthly and annual activities such as booking and synchronization, and maintaining good customer relationship.

## 1.3 OBJECTIVES AND SCOPE OF PROJECT

### 1.3.1 OBJECTIVES

These are the main objectives of the proposed web based management system

- The staff of the K.B Mogul can able to manage the customer details, vehicle details and financial details. This is easy to find information and generate the reports
- The staff can able to manage vehicle service reservation and confirmation message with date and time through sms.
- The staff can able to manage employee attendance and easy to calculate their hourly, daily and monthly salary.
- The manager or staff can able to find the daily, monthly and annual cash flow and activities through this system and they can generate timely reports.
- The customers or government institutions can able to get quotation through this online system.
- The customers can able to reserve for their vehicle service through this online system on their suitable date and time.
- The customers can able to find the next service time from their pervious service record and get timely alert from this system.
- The staff can able to generate bills for vehicle service and repair and make printout.

### 1.3.2 SCOPE

The scope of this project is to develop an online vehicle service management system for KB Mogul which supports the core functions of manage customers, employees and staff details, maintain their day to day activities such as manage income and preparing the billing summary details for vehicle service and repairing, pay hours, daily and monthly salaries for employees and prepare quotation for service and repair to government and private organizations and reduce the workload and updating data in order to carry out the day to day activities effectively and efficiently.

### 1.3.3 LIMITATIONS

- People may not able to use this system without having less knowledge on using computer and Internet facility
- Sri Lanka still improving in IT & Internet fields but those facilities are not available on all parts of the country

## 1.4 STRUCTURE OF THE DISSERTATION

The rest of this dissertation is organized as follows. Chapter 2 provides the analysis; this chapter describes the existing system, requirements and feasibility study for the proposed system and the process model used to develop the system. Chapter 3 provides the design including Use Case diagram, ER diagram, Activity diagram Sequence diagram of the online reading materials delivery systems and their description, chapter 4 provides information about implementation, chapter 5 illustrate about testing, chapter 6 talks about conclusion about this project, appendix annexed additional details about this project and finally glossary included.



# CHAPTER 2: ANALYSIS

System analysis is an important part of software development life cycle. During this analysis chapter will specialize in this scenario of K.B Mogul. It focuses that requirement gathering techniques used to gather issues of current manual system of the company and deliver the goods the project goal. Finally it will compare the existing system with the functional and non-functional requirement of the system.

## 2.1 EXISTING MANUAL SYSTEM

In existing manual system of the company maintains their records in log book. The company divided their manager level into two top level management. They are administrator level, and Regional level management. The customers make booking through telephone and the branch managers and staff of the company manages their booking record in manually. Then they gave the information about booking to Regional manager.

### 2.1.1 DRAWBACKS OF THE EXISTING MANUAL SYSTEM

The following major drawbacks are known within the existing manual management system.

- Hand written contract documents (booking list, payment vouchers, etc.)
- Inflexibility of finding details of booking.
- Confidential data is recorded in a log book.
- No proper customer history and documentation.
- Calculations are done manually.
- Complex monitoring of business progress.
- Poor communication methods with the customers in business.
- Time wasting by paper work.

This Existing manual system use-case diagram shown in following Figure 2.1:

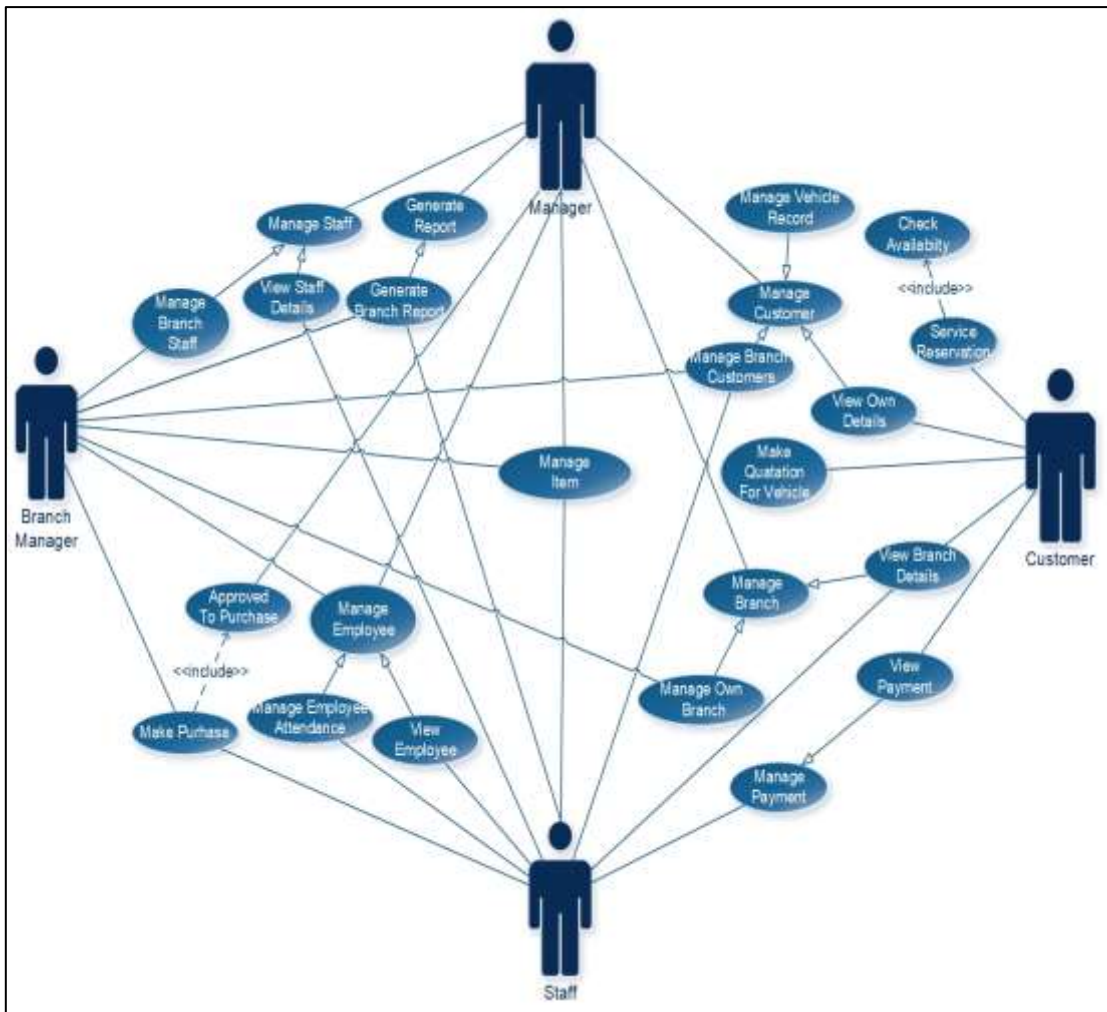


Figure 2.1: Use Case for Existing Manual system

## 2.2 REQUIREMENT GATHERING TECHNIQUE

In the software development, analysis part is very important to collect correct and accurate requirements for this system and analysis the requirements and identify the solution. Some information gathering techniques use for collect the requirements are available such as, interviews, observation, questionnaires, site visit and etc. but in this study used the interviews, observation and site visit to find requirements.

An interview is a formal face to face meeting with two or more peoples. It is primary technique for information gathering during the system analysis, met the client to interview with them and asking about the manual system of their company. From this technique user involvement is high and they easily interact with the system and collect the clear business objectives. A questionnaire is mostly used to collect information from large number of people for same questions, this approach not necessary to this system.

Direct observe of work performance is an excellent means gathering data. It is useful if the user is not able to clearly explain what they do or their requirements can see ideas for improving process from their work. From site visit, directly got to work place and observe their work and ask questions about their work, discuss the problems of their system and gather information. From these techniques clearly identify the requirements, problems of the current manual system.

## 2.3 REQUIREMENTS GATHERING

Requirements gathering are the process of addressing the needs and conditions of the new system.

### 2.3.1 REQUIREMENTS ANALYSIS FOR THE SYSTEM

As mentioned earlier, from information gathering techniques analysis their process, inquires the order and deliver, maintained the data, manager level details and etc. The management responsible for the customer booking. When they receive booking from customers via telephone or personally have inquiry about the booking and send the information to the regional manager. Then they assigns the particular date and time to customers. Cash payments, booking details, customer data recorded on paper and stored in the system based on file.

In their manual system they have manager level department. All the records stored in papers by manual. There is data duplication, not sure about correct data such as staff details, salary details and etc. If they do not have accurate information it is very difficult to manage their records. From evaluate their current manual system they spent waste of time to their work.

### 2.3.2 FUNCTIONAL REQUIREMENTS

Functional requirements capture the intended behaviour of the system. This behaviour may be expressed as services, task or functions the system is required to perform. In product development, it is useful to distinguish between the baseline functionality necessary for any system to compete in that product domain and features that differentiate the system from competitors.

### **Service station management can able to:**

- Manage customer and vehicle details with their services history.
- Inform service date and time to customers via mobile SMS.
- Manage daily, monthly and annual cash flow by day to day activities.
- Manage hours, day and monthly based employees salary and easy to generate salary slip and salary report.
- Manage employees work record and easy to calculate their working time.
- Manage parts items with repairs and purchase and maintain stock.
- Easy to generate service bills with service charge and repairing items charge.
- Create quotation for government and private sector through online.
- Easy to communicate with customers through message and SMS through system.
- Generate daily, monthly, annual and timely report.
- Send alert message to customer when the vehicle service is over.

### **Customers can able to:**

- Find the available date and time to service or repair their vehicle
- Search available time to service their vehicle and then reserve that date and time for vehicle service through online from their place.
- Generate quotation for government and private sector through online.
- Get SMS alert for service time, after service finished, etc.

### **2.3.3 NON FUNCTIONAL REQUIREMENTS**

Non-functional requirements in system engineering and requirements engineering, a non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors.

- Accuracy and consistency, these are very important non-functional requirements that should be considered when storing the details of customers and company calculating values.
- Reliability, this is a non-functional requirement of the system users. There should be trustworthiness between the users and the system.
- Usability should be very much important in this project when developing the online user profile to the customers.

- Reusability and maintainability, in a case where the system needs any changes in the future, it should not be a tricky task. Proper documentation and using standard methods when developing the system will ensure this non-functional requirement.
- Security, there should be superior security mechanisms since the system stores very confidential information such as details of user profile, password of the customers and company account.
- Authorized person only login into our system.
- Easy to access the system.
- Reduce the labour cost and time.
- Increase the sales and marketing.
- Reduce the labour cost and time.

## 2.3.4 RESOURCE REQUIREMENTS

### **Hardware Requirements**

- Pentium 4 computers or above
- Basic Printer for report printing

### **Software Requirements**

#### **For implementation purpose:**

- Any operating system
- Any browsers

#### **For development purpose:**

- Any operating system
- Any browsers
- Xampp/ Wamp Server
- Apache Web Server
- PHP Script Language
- HTML
- CSS
- JavaScript
- MySQL Database

- Notepad++
- MySQL Workbench
- Microsoft Visio
- Microsoft word
- Adobe Dreamweaver
- Adobe Photoshop

### **Special Requirements**

- Internet Facility
- Web hosting and Domain registration

## **2.4 FEASIBILITY STUDY FOR THE PROPOSED SYSTEM**

Feasibility study is a process, in order to discover the strengths, weaknesses, opportunities and threats of a proposed system to full fill the main business needs. A detailed study of feasibility has been made regarding this system following facts.

### **2.4.1 LEGAL FEASIBILITY**

Since the system is a customer booking through the online system, by K.B Mogul, it has been analyzed to ensure that the system is in accordance to the customer act of Sri Lanka.

### **2.4.2 OPERATIONAL FEASIBILITY**

The proposed system functions were analysed to see whether they accomplish the business requirements.

### **2.4.3 MARKET FEASIBILITY**

The proposed system will operate in K.B Mogul situated in Jaffna district where there is a huge demand for their business. The system is capable of facing the market demand.

### **2.4.4 FINANCIAL FEASIBILITY**

The system is fully web based with very low hardware, maintenance and IT costs.

## 2.5 SIMILAR SYSTEMS

This section summarizes various techniques that have been employed closely related with our web based system. This system has some literature reviews that are on sale and services. They gives services through online when make some booking. They are dealing with services such as, “United Motors”, “Toyota Lanka”, “TVS Motor” and etc.

The “Toyota Lanka” [1] also facilitates online booking for vehicles services. They have facilitated select service type, location selection, select date, select time and make online payment facility using credit card only. The “Toyota Lanka” online booking page shown following Figure 2.2:



Figure 2.2: TOYOTA

The “United Motors” [2] give facilitate online booking for vehicles services. They have facilitated select date, select time and make online payment facility using credit card only.

The “United Motors” online booking page shown following Figure 2.3:

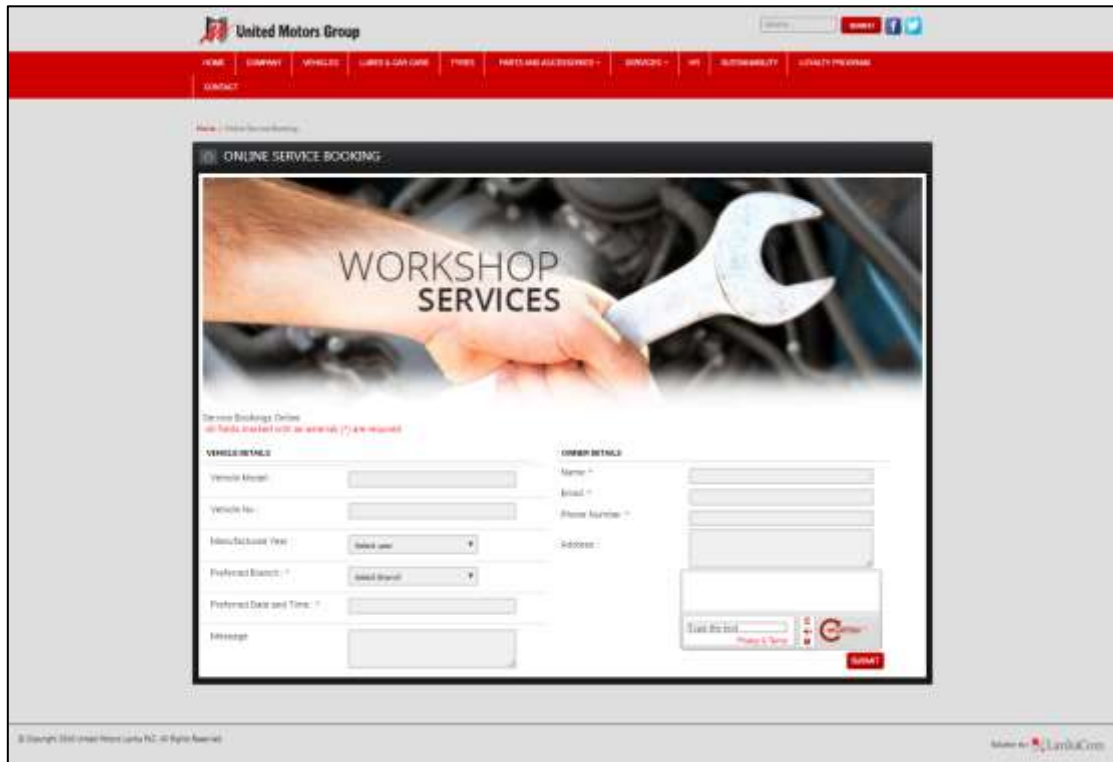


Figure 2.3: United Motors

The “TVS Motor” [3] give facilitate online booking for vehicles services. They have facilitated select date, select time and make online payment facility using credit card only. The “TVS Motor” online booking page shown following Figure 2.4:



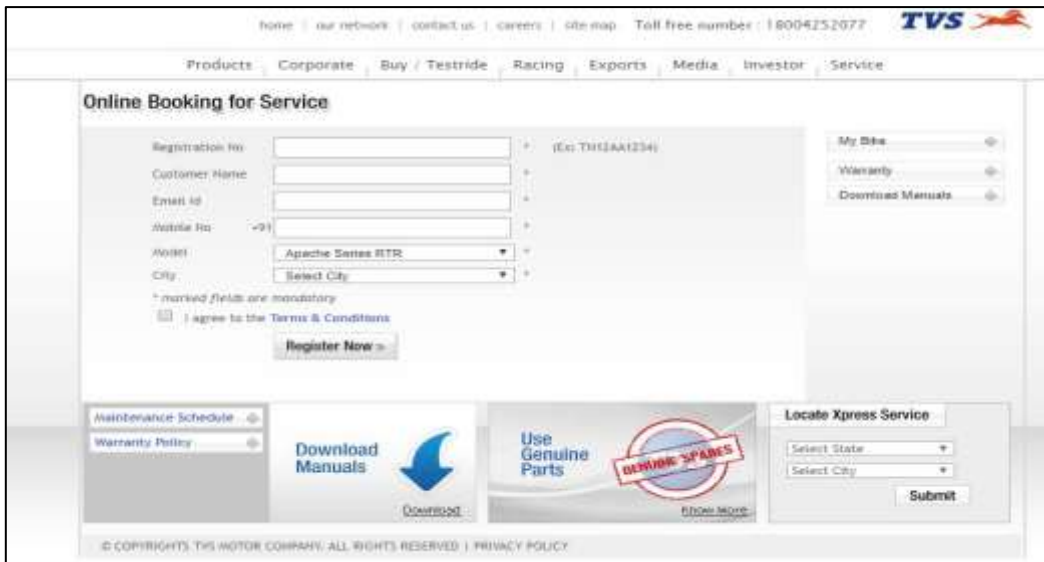


Figure 2.4: TVS Motor

In my best of knowledge, these three systems are not fitted with K.B Mogul service station functionality. So this is motivate to me to develop “online Service management system for K.B. Mogul”.

# CHAPTER 3: DESIGN OF SOLUTION

In the phase of design the system architecture has been developed. The design phase has been initialized with the required document delivered by the information or requirement gathering phase and map the gathered requirements in the information gathering phase into architecture. This architecture defines the components, their interfaces and behaviors of that particular newly developing system. The architecture is describes a plan of the system using by diagrams.

## 3.1 DIFFERENT MODELS IN SOFTWARE ENGINEERING

The Software Development Methodology (SDM) to be used in this project is the Software Development Life cycle (SDLC). Where there is a structured set of activities required to develop a software system required to develop a software system.

- Specification
- Design
- Validation
- Evolution

### 3.1.1 WATERFALL MODEL

Waterfall model is an example of Sequential model. In this model, the software development activity is divided into different phases and each phase consists of series of tasks and has different objectives.

The proposed system is an average complex system. The owner of the K.B Mogul is not familiar with online management system or any automatic system. So functional requirements of this system is difficult to define in early stage of this development. So the waterfall model is most suitable for this system. The water fall is shown in the following Figure 3.1:

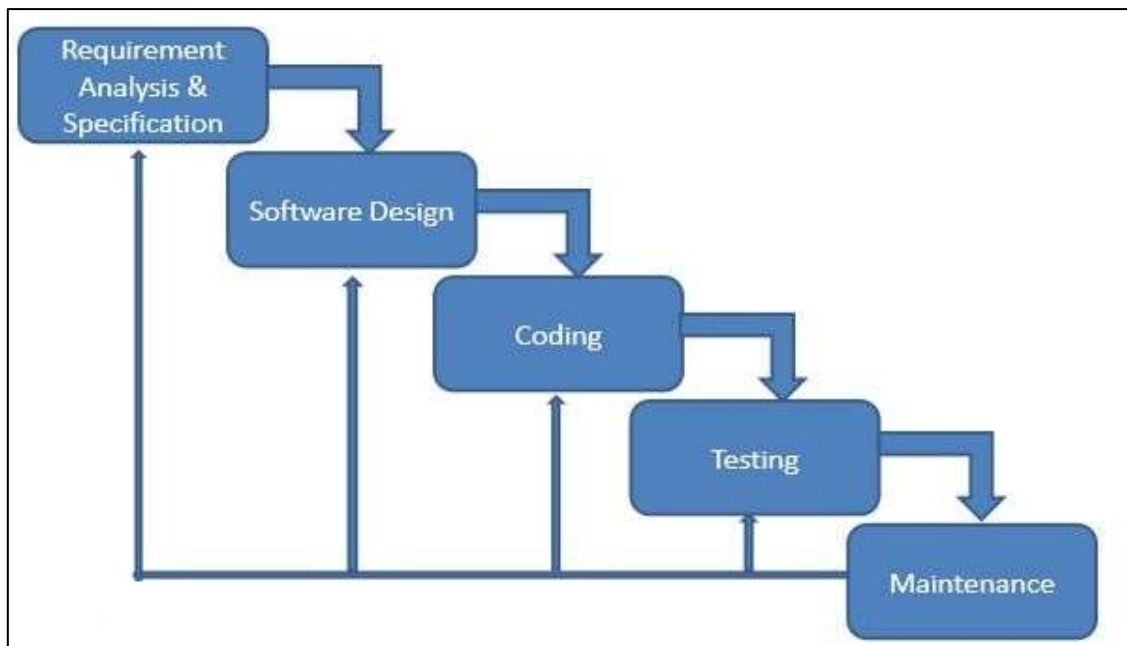


Figure 3.1: Waterfall Model

- Requirement analysis: The first phase involves understanding what you need to design and what is its function, purpose etc. All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification doc.
- Software Design: The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.
- Coding/Implementation: With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.
- Testing: All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- Maintenance: There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

## 3.2 ALTERNATE SOLUTIONS

In software development all the system basically divided into three categories that are standalone, network based and web based system. Alternate Solution is shown in the following Table 3.1:

Alternate solutions	Standard alone	Web based	Network based
Access form anywhere	X	√	Limited
Graphical user interface	√	√	√
Multiple users	X	√	√
Find overall management from one place	X	√	Limited
Sharing facilities	X	√	√

Table 3.1: Alternate Solution

In this system the web based Vehicle Service Station Management System for K.B Mogul has many branches, customers and etc. The purpose of this project is to provide customers to view available time and reserve time to their vehicle service. In various place, they want to access the system from their places. They like to centralized the backend (database) and provide the system to all users in simultaneously. For these reasons the company has decided to develop the system in web based.

## 3.3 PROCESS DESIGN OF THE SYSTEM

The design gives the solution for requirements analysis, based on this design to develop the system. This design was divided into three stages:

- Database design
- Application architecture design
- Interface design

### 3.3.1 DATABASE DESIGN

Database design is done through data modeling. The database designing is done to specify the structure of the object of the system. To avoid the data redundancies the every table of the database were normalized to third normal form.

In normalization there are several levels of normal form but mostly used first three normal forms. First normal form (1NF), eliminate duplicative columns from the same table and create separable tables for each group and identify the unique column or set of columns it is called as primary key for that table. Second normal form (2NF), if any non-key attributes are functionally depended on just a part of the key was remove and create separate table and connect both table with foreign key. Thus 2NF can only be violated only when a key is composite key. Third normal form (3NF), remove columns that are not depend upon the primary key.

After third normal form most of the table mostly avoids the data redundancy, if any additional other normal form will be used. The ER diagram drew by MySQL Workbench 6.0.8 CE shown following Figure 3.2:

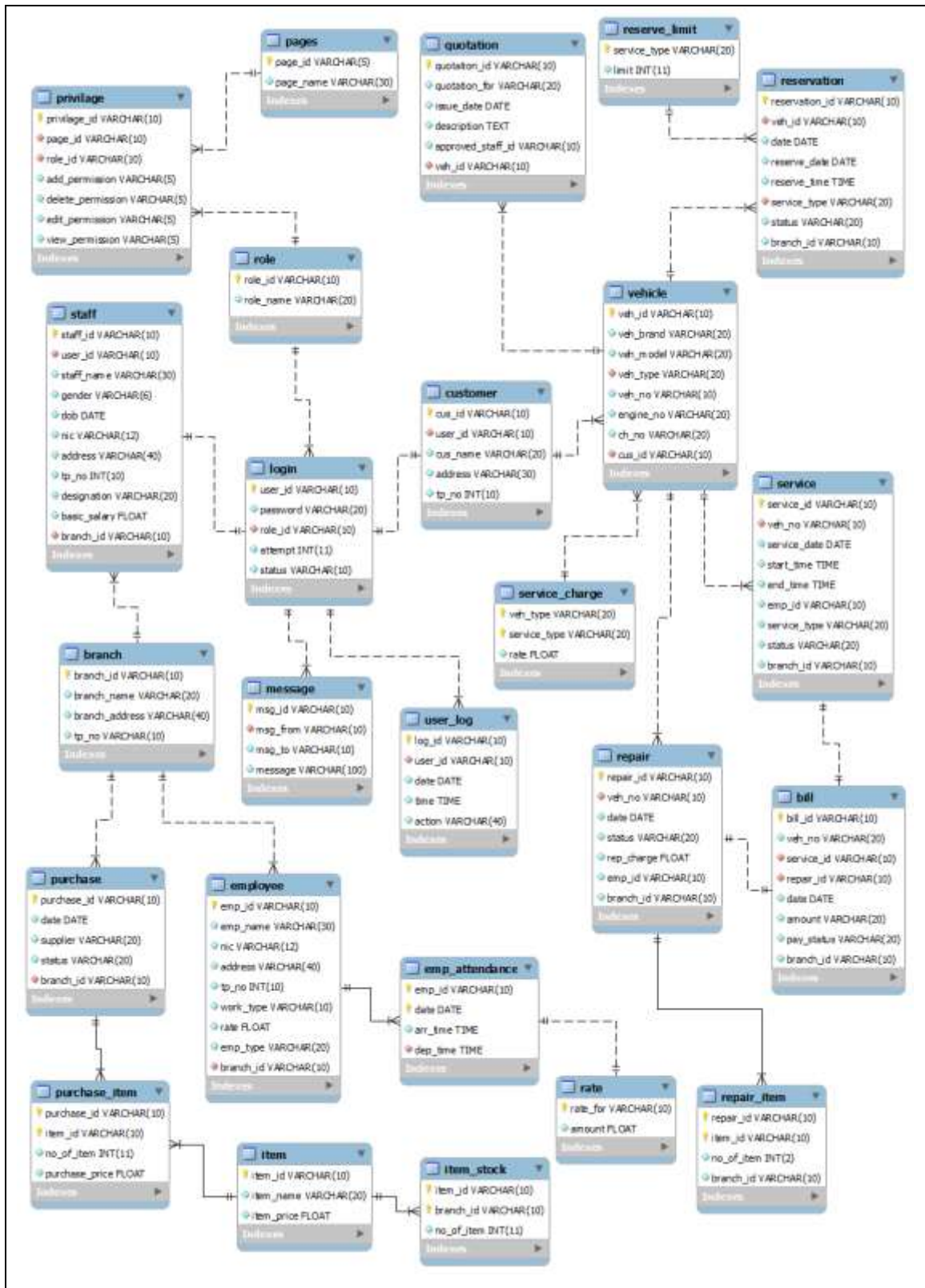


Figure 3.2: ER Diagram for K.B Mogul

### 3.3.2 APPLICATION ARCHITECTURE DESIGN

This design describes the functionality and task of the system are connected into sub system. In this design draw activity, class, sequence and use-case diagram. Other use case, class, activity and sequence diagrams are drew using the Microsoft Visio Professional 2013. Please refer Appendix B for detailed information of diagrams.

#### Use-case diagram:

It is simply represent the user's interaction with the system, summarized the relationship between use-cases, actors (users) and systems. This system use-case diagram shown in following Figure 3.3:

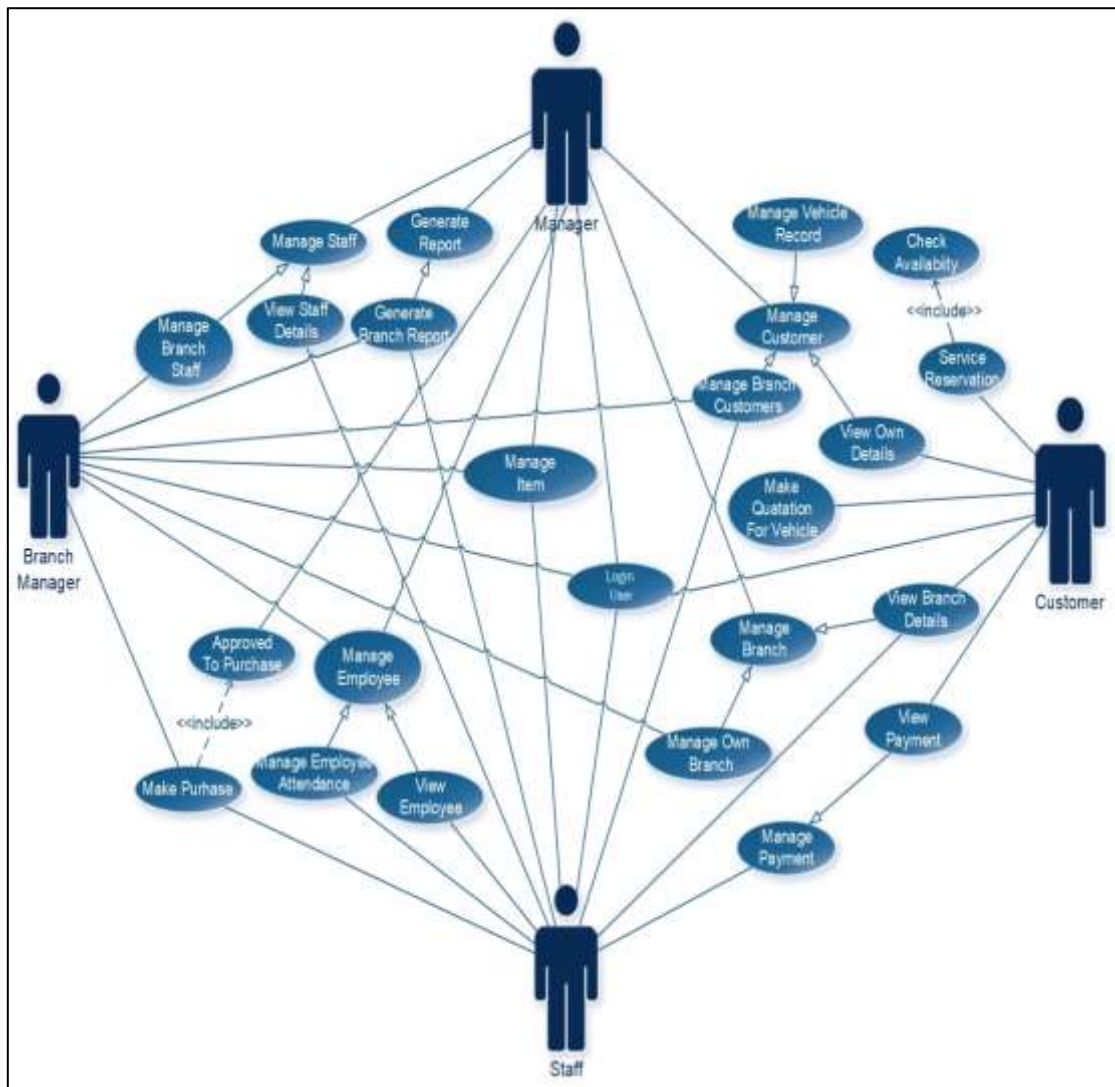


Figure 3.3: Use-Cases Diagram

Use-Case Narrative for login user and Service are shown in the following Table 3.2 and 3.3:

Use-case	Login User
Actor	Branch Manager, Manager, Staff, Customer
Description	Only already registered users can access the system. Others cannot, if they want to access; want register to this system. Registered users when login; system validate the username and password; and authorized that is legal or illegal; if correct authorized user system allowed to access the system.

Table 3.2: Use-Case Narrative for login user

Use-case	Service Reservation
Actor	Customer
Description	All the users can search service details, service time, available details and etc, when they make booking they want login into this system; after login they can make reservation and system will confirm their appointment.

Table 3.3: Use-Case Narrative for Service

**Activity diagram:**

This diagram represents the graphical view of workflows of stepwise activities in the system.



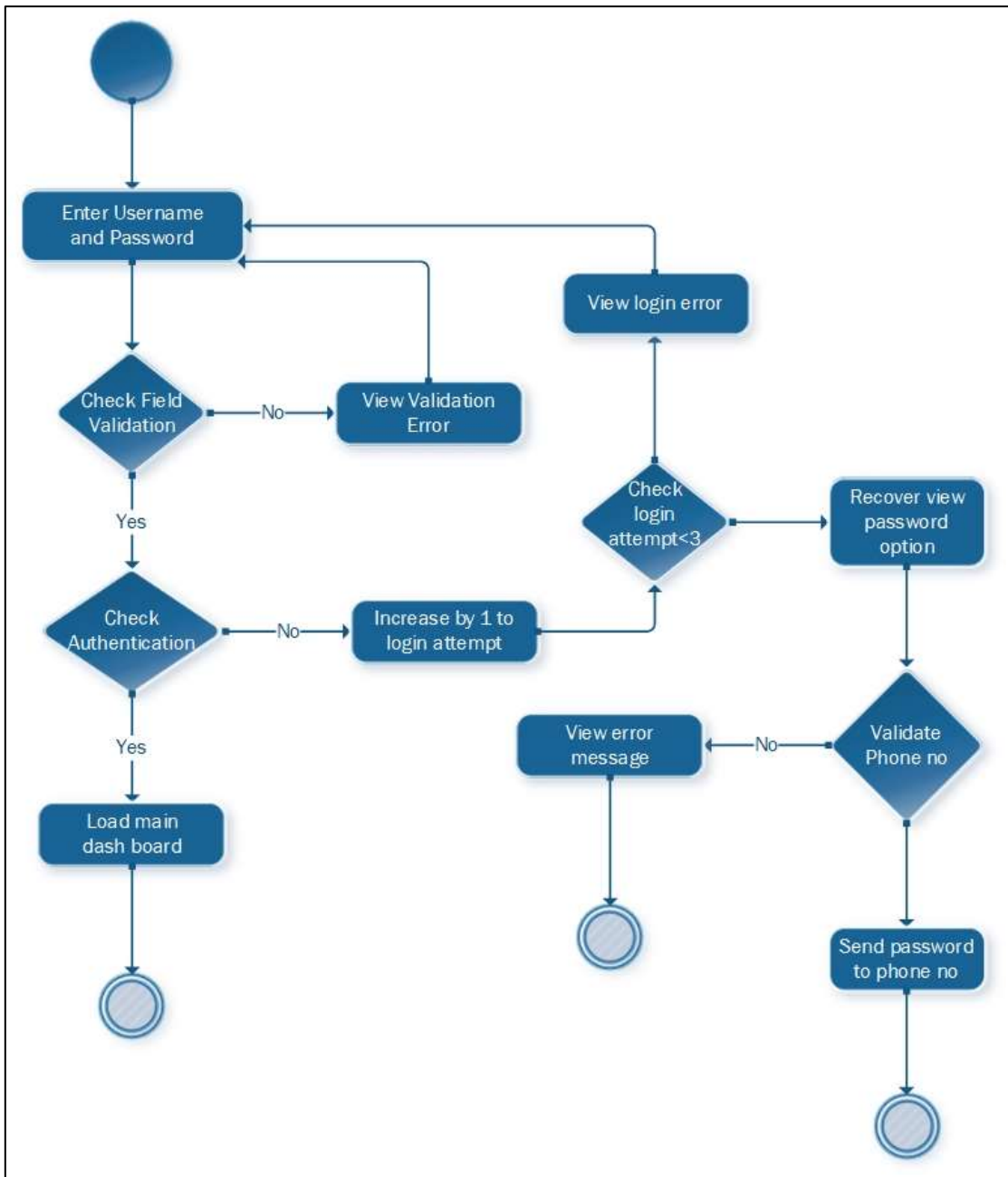


Figure 3.4: Activity Diagram for Login

**Sequence diagram:**

This diagram represents how objects interact in given situation or activity. The sequence diagram drew for vehicle service reservation and payment.

Sequence diagram for vehicle service reservation is shown on Figure 3.5:

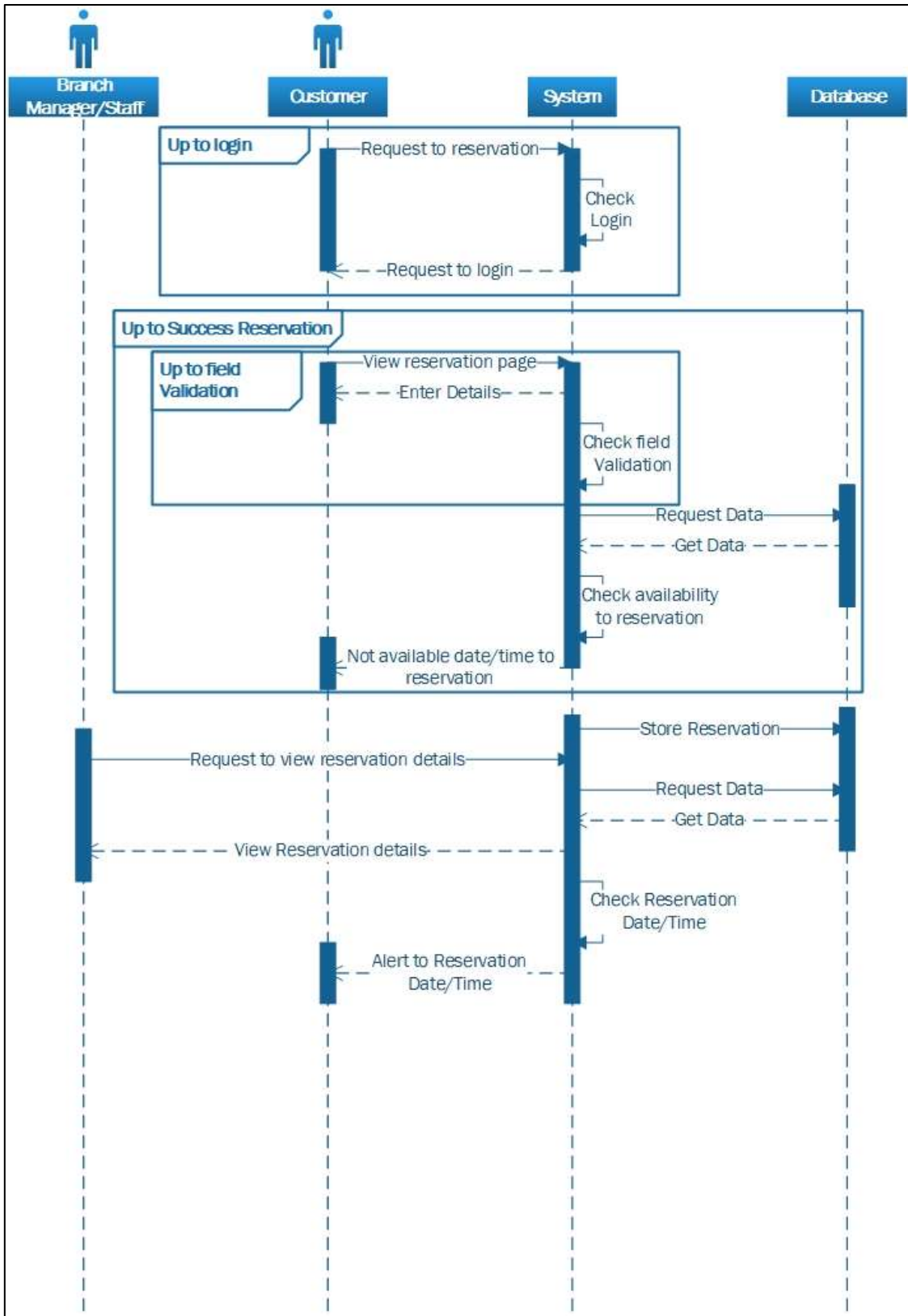


Figure 3.5: Sequence Diagram for Reservation

Sequence diagram for Payment is shown on Figure 3.6

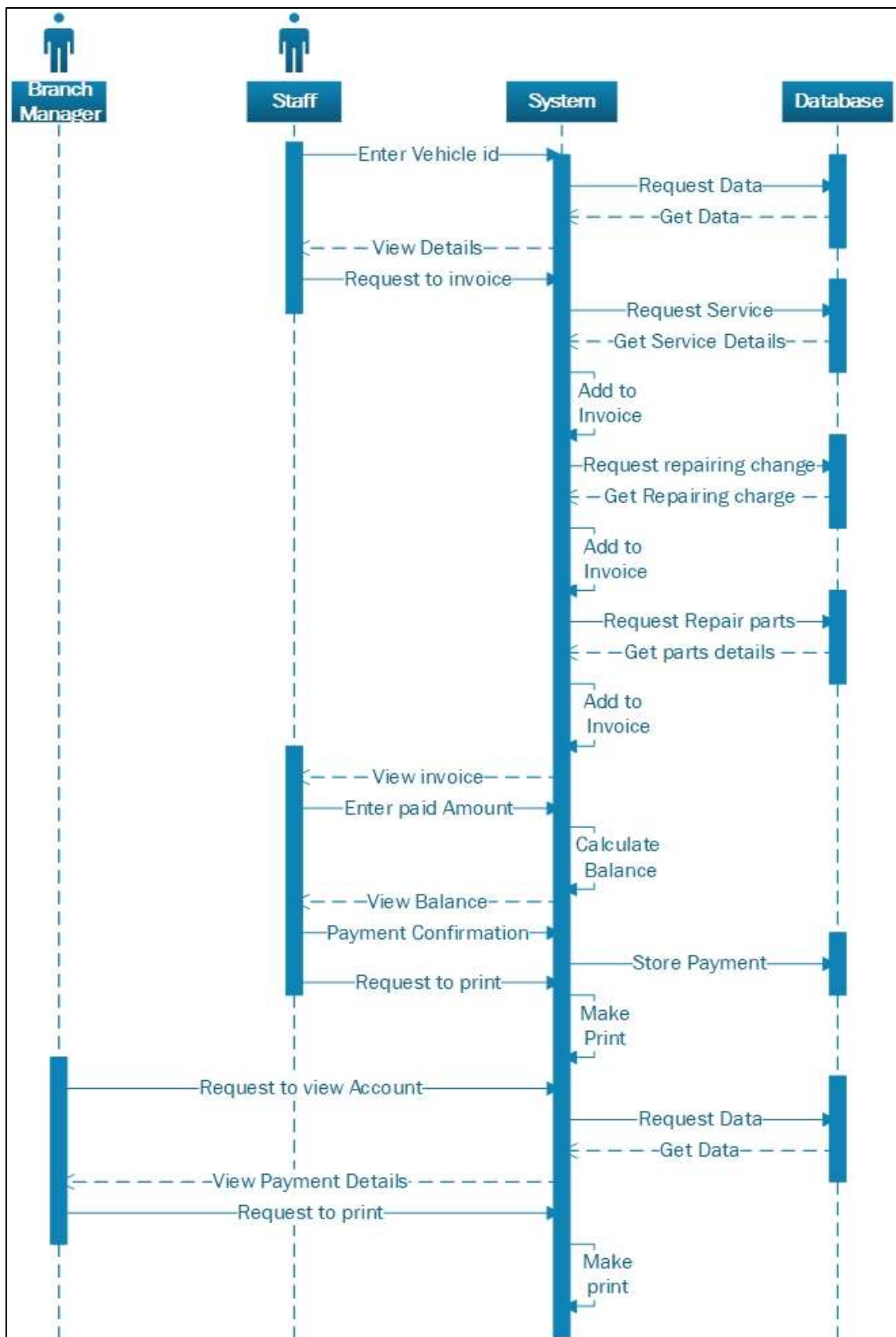


Figure 3.6: Sequence Diagram for Payment

## Class diagram:

In object oriented design, class diagram view the structure of a system by system's class and illustrate relationship between classes. Our system class diagram shown following Figure 3.7 Class Diagram:

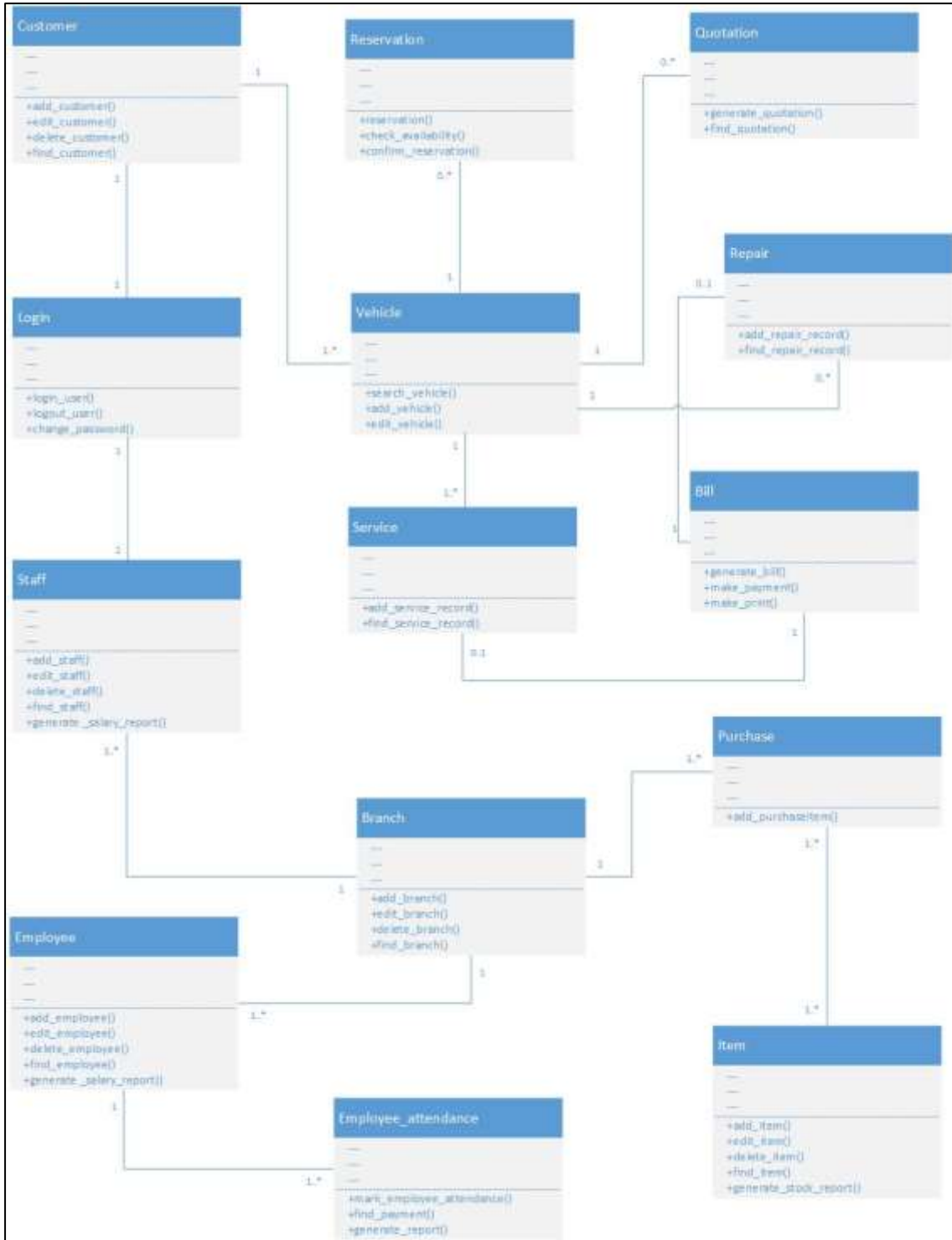


Figure 3.7: Class Diagram

### 3.3.3 INTERFACE DESIGN

User Interface Design is the design of websites, computers, appliances, machines, mobile communication devices, and software applications with the focus on the user's experience and interaction. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user's goals what is often called user-centered design.

Main user interfaces online vehicle service station management system for K.B Mogul to provide the structure and design of the system. Please refer Appendix C – User Documentation for the rest of the interface designs.

**Login Page** - This page allows users who are properly registered in this system to login and also this page gives authority for a password if the users find difficult by forgetting their password.

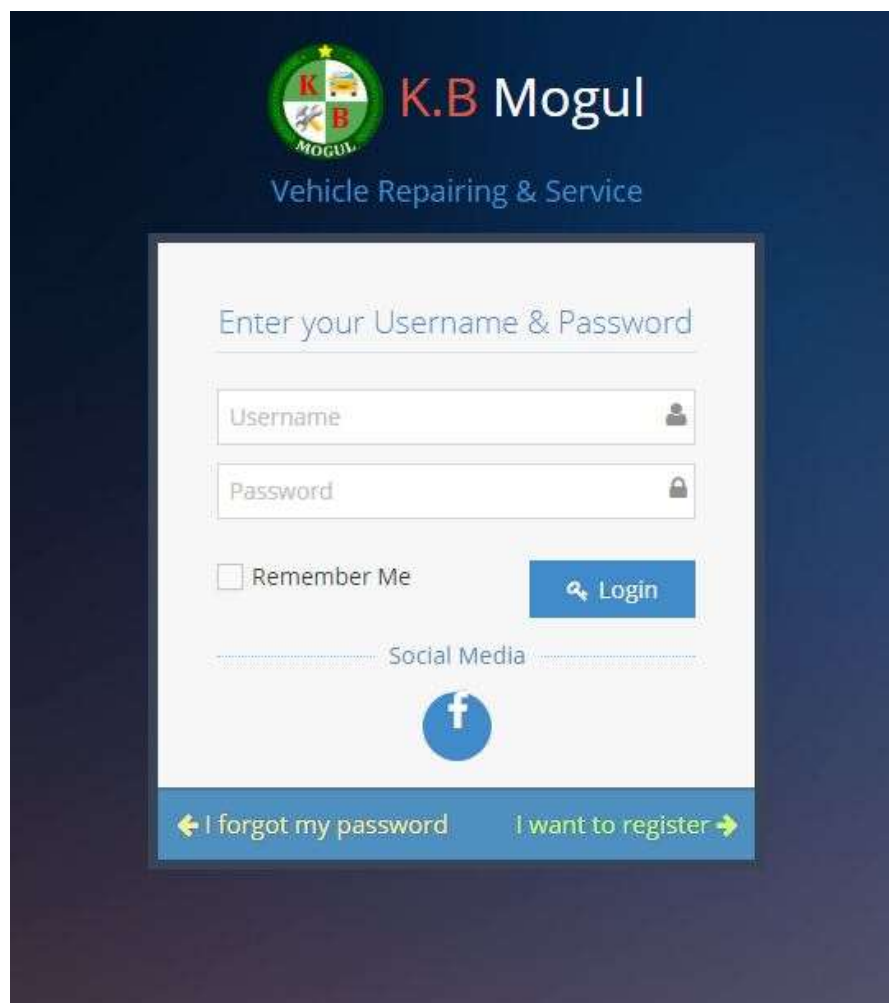
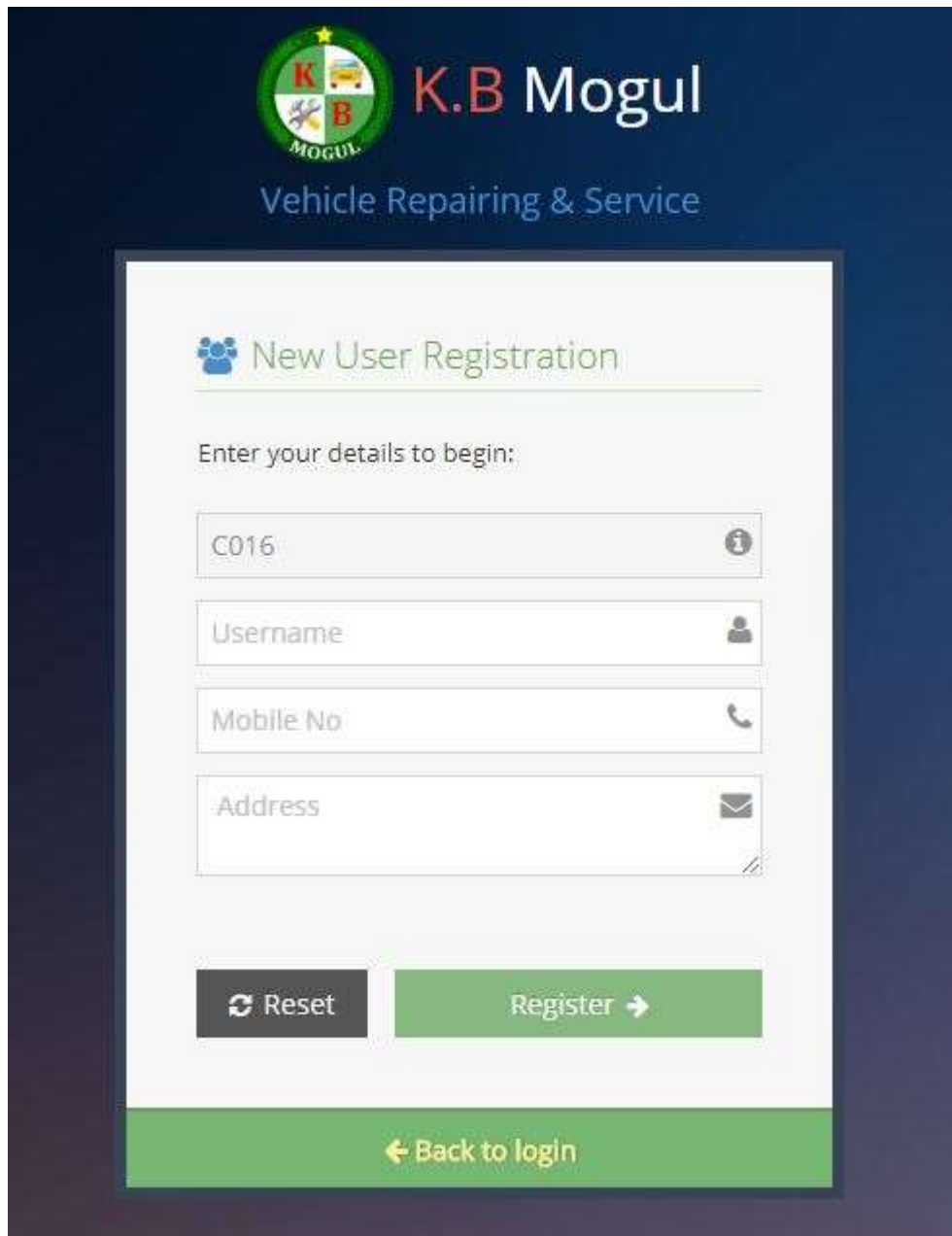


Figure 3.8: Login Page

**Customer Registration Form-** customer Registration form of service station Management System includes the customer personal details. Customer id should not Change. After that registration customer will get his user name and password through sms.



The image shows a screenshot of a web application interface for 'K.B Mogul Vehicle Repairing & Service'. At the top, there is a logo with a green circle containing a yellow star, a red 'K', a blue 'B', and a yellow car icon, with the word 'MOGUL' below it. To the right of the logo, the text 'K.B Mogul' is displayed in a large, bold font, and 'Vehicle Repairing & Service' is written below it in a smaller font. The main content area is a white box with a dark border. It features a heading 'New User Registration' with a blue gear icon. Below the heading, the text 'Enter your details to begin:' is displayed. There are four input fields: 'C016' (with an information icon), 'Username' (with a person icon), 'Mobile No' (with a phone icon), and 'Address' (with an envelope icon). At the bottom of the form, there are two buttons: a dark grey 'Reset' button with a circular arrow icon, and a green 'Register →' button. Below the form, there is a green bar with the text '← Back to login'.

Figure 3.9: Customer Registration



**Home Page** -.The default homepage makes adequate to search for available vehicle service in the company, register with the system, and login to the system, make a reservation, and get the details of service in the system. This home page will be changed after a user logged in to the system according to the user type. Following figure (Figure 3.9) show the interface.

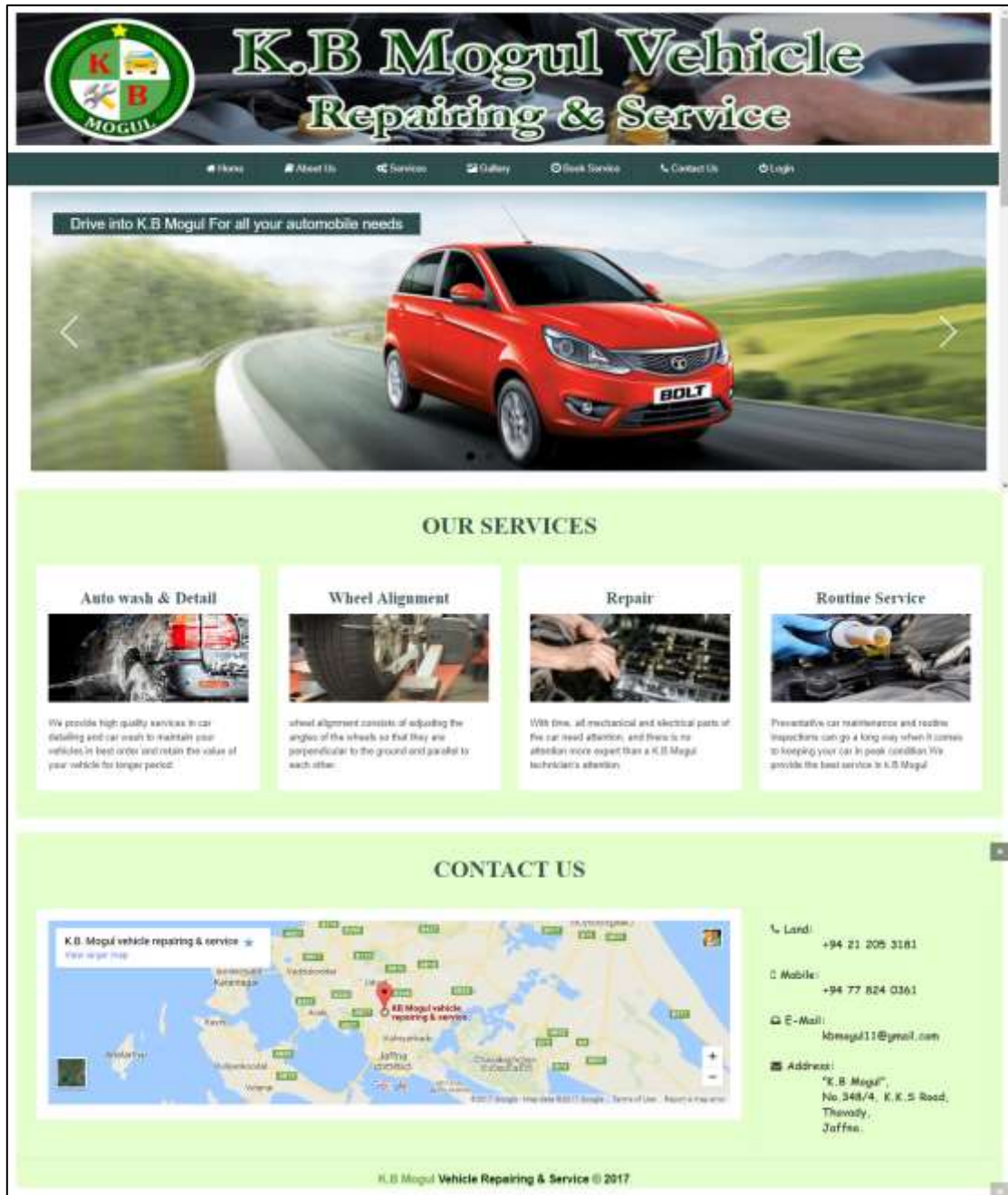


Figure 3.10: Home/Index page

**Staff Registration Form-** Staff Registration form of service station Management System includes the staff personal details and their designation. Staff id should not Change.

The image shows a web form titled "Add Staff Details" with a green header. The form contains the following fields and controls:

- Staff Id: Text input field containing "S006".
- User Id: Text input field containing "S006".
- Staff Name: Text input field with placeholder "Enter Staff Name".
- Gender: Radio buttons for "Female" and "Male".
- Date of Birth: Text input field with placeholder "yyyy-mm-dd".
- NIC: Text input field with placeholder "Enter NIC".
- Address: Text input field with placeholder "Enter Address".
- Telephone No: Text input field with placeholder "Enter Phone No".
- Designation: Dropdown menu with "Select Designation" and a downward arrow.
- Basic Salary: Text input field with placeholder "Enter Basic Salary".
- Branch Id: Dropdown menu with "select Branch" and a downward arrow.
- Buttons: Three buttons at the bottom: "Save" (green), "Reset" (purple), and "Cancel" (red).

Figure 3.11: Add Staff details



# CHAPTER 4: IMPLEMENTATION

In this chapter implementation we describe what activities were carried out during the development of our online vehicle service station management system. After completion of the design stage, the result of the design stage is transformed into physical design and we implemented that result of design stage.

This chapter mainly discuss about the implementation environment, the tools and techniques as well as reusable components used to implement the system. The major code segment have been included to help the process functionalities of the system in this chapter.

## 4.1 IMPLEMENTATION ENVIRONMENT

Hardware Environment	Software Environment	Other
Pentium 4 or above computer.	Windows operating system	Internet connection
2GB or higher RAM	WampServer (PHP 5.4.12, MySQL 5.6.12, Apache 2.4.4)	
160GB or above Hard disk		

Table 4.1: Implement Details

## 4.2 SYSTEM DEVELOPED TOOLS AND TECHNOLOGIES

When developing the system, the following tools and technologies were used and the following bullet points briefly discussed them:

- Adobe Photoshop CS5: Photo retouching, interface designing had done by using this software.
- PHP: This is a server side object oriented scripting language which used when developing the system.
- MySQL: This is the Database software which used to handle the database of the system.
- HTML This is the basic web related language and it helps to keep the system structure clear and conscious.

- JavaScript: This is a Scripting language and this helps for client side validation and to dynamic the system components.
- Ajax: Ajax is a JavaScript based technology and it supports updating the system components without refreshing the whole system page.
- CSS: This is used for the styling of the system.
- Notepad ++: This software used for the coding of the system

### 4.3 REUSED MODULES AND COMPONENTS

The following pre-coded modules were used while developing the system. Ace admin template is a pre developed template. This tool used for designing of page, forms, interfaces, button designing and table for filtering, searching and pagination.

### 4.4 NETWORK IMPLEMENTATION

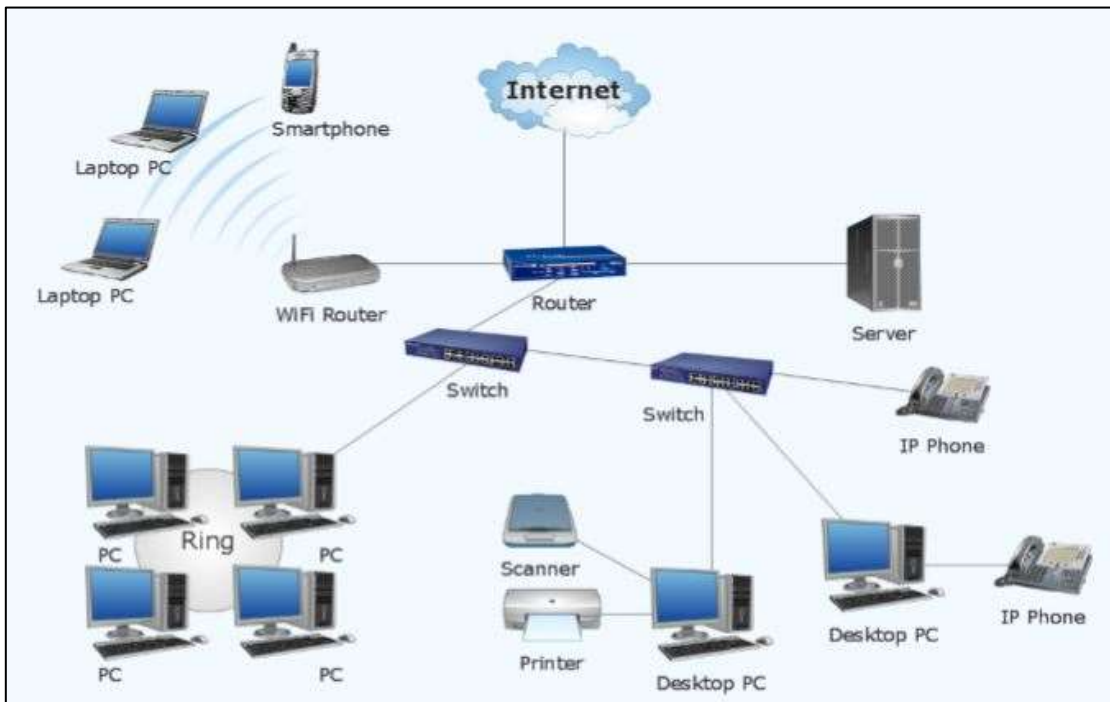


Figure 4.1: Network Implementation

Web applications run on the Web Server. This web based system is accessed through web clients. It could be installed on a web server and a dedicated database server is used to control the system’s database. The above Figure shows a Dedicated Web server and a Database Server are installed in the organization but public servers also can be used to implement the system. It will reduce much initial cost and maintenance host. Staff, manager and Customers are able to use the system through the Internet

connection. To carryout users requirements they need Personnel computer or Laptop with Internet connection without any interruption

#### 4.5 MAJOR CODE SEGMENTS

Online vehicle service station management system has many sub categories. There are staff management, vehicle, bill, employee, branch, customer, service, and login. Each category contain following items.

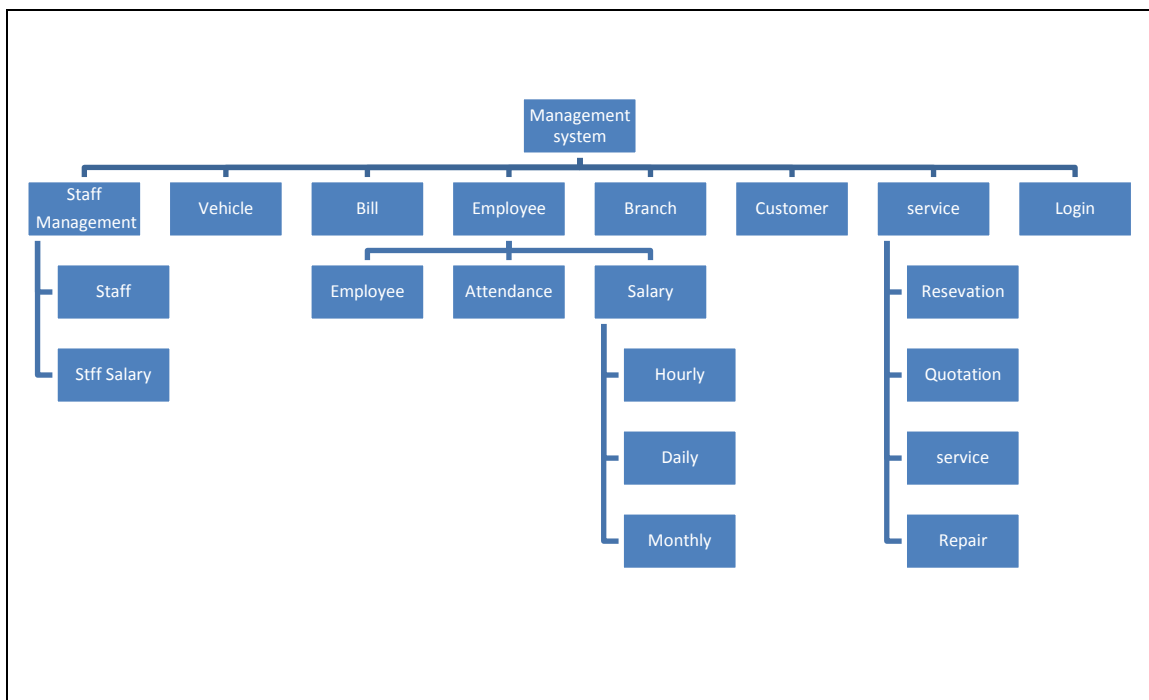


Figure 4.2: System Category

**WAMP Server:** WAMP is an acronym for Window, Apache, MySQL, and PHP. This is a software bundle consisting of the before mentioned four software. WAMP server is solid and stable high-performance platform for windows

**Ace admin Template:** it is used for designing of our web pages.

**Other Software:** Notepad++ used for the coding of the system, while phpmyadmin was used as the interface for interacting with MySQL. MySQL was used to create database. Adobe Photoshop was used to create some banner & photo editing.

The directory of this system is arranged like on Figure 4.3:

Name	Date modified	Type
assets	2017-08-29 5:13 PM	File folder
images	2017-11-04 12:27 ...	File folder
slider	2017-11-03 2:15 PM	File folder
temp	2017-08-29 5:13 PM	File folder
about_us.php	2017-11-04 12:37 ...	PHP File
ajaxpage.php	2017-11-04 2:13 PM	PHP File
bill.php	2017-11-01 4:47 PM	PHP File
branch.php	2017-10-31 5:10 PM	PHP File
changepassword.php	2017-11-04 12:47 ...	PHP File
config.php	2017-10-30 4:15 PM	PHP File
contact_us.php	2017-11-04 12:16 ...	PHP File
customer.php	2017-10-31 7:02 PM	PHP File
employee.php	2017-10-19 10:13 ...	PHP File
employee_attendance.php	2017-10-26 9:05 PM	PHP File
employee_salary.php	2017-11-01 1:39 PM	PHP File
forget_password.php	2017-11-01 10:45 ...	PHP File
gallery.php	2017-11-04 7:52 PM	PHP File
home.php	2017-11-03 6:52 PM	PHP File
index.php	2017-11-04 12:29 ...	PHP File
item.php	2017-10-26 9:29 AM	PHP File
login.php	2017-11-02 1:15 PM	PHP File
logout.php	2017-06-05 8:11 PM	PHP File
menu.php	2017-11-03 11:25 ...	PHP File
message.php	2017-11-02 10:39 ...	PHP File

Figure 4.3: Folder Structure

All core components separated from the style sheets, images and scripts. The Directories are arranged to the appropriate files according their file extension as Figure 4.3.

The functionalities of the index.php, menu.php plus the other pages are explained below Files are separated from images, programming files, CSS, JS. To make the system easily managed by anyone in the future CSS, JS, other tool files are located into the folder named as “assets”.

The important functionalities of the config.php, login.php, Add form and some other pages are explained below. Please refer Appendix F-code listings for the rest of the major code segments.

## Database Connection Page

Every web system as well as stand-alone system always deals with a database. If something is added, deleted or updated in the system, the system always connects with the related database. Code segment given below links the system to its database. Predefined MySQL function called “mysql\_connect()” helps to manage the connection by passing three parameters in its hostname, user name, and the password. “mysql\_select\_db()” function used to connect the database by passing database name and the connection.

```
<?php

$hostname='localhost';
$username='root';
$password='';
$dbname='kbmogul_db';

$con=mysql_connect($hostname,$username,$password);

if(!$con)
{
    echo"mysql database server coudn't
connected:".mysql_error();
}

$db=mysql_select_db($dbname);

if(!$db)
{
    echo"database coudn't select:".mysql_error();
}

?>
```

## Login page

Code segment given below connects all the required files and start the session

```
include('config.php');  
if(!isset($_SESSION))  
{  
    session_start();  
}
```

This login has to used authenticate the users. When we enter username and password correctly system displays their user interface. If we enter username or password wrong the system will provide a message box with meaningful message. If we enter wrong username or password more than three then systems automatically go to forget password page.

```
$msg="";
```

```
if(isset($_POST['btnlogin']))
```

```
{
```

```
    $user_id=$_POST['user_id'];
```

```
    $pw=$_POST['password'];
```

```
    $sql1="select * from login where user_id='$user_id';"
```

```
    $result1=mysql_query($sql1) or die("error in login  
part:".mysql_error());
```

```
    if(mysql_num_rows($result1)==1)
```

```
    {
```

```
        $row1=mysql_fetch_assoc($result1);
```

```
        $sql2="select* from login where user_id='$user_id' and  
password='$pw';"
```

```

        $result2=mysql_query($sql2) or die ("error in login
part:".mysql_error());

        if(mysql_num_rows($result2)==1)

        {

                $row2=mysql_fetch_assoc($result2);

                $_SESSION['user_id']=$user_id;

                $role_id=$row2['role_id'];

                $_SESSION['role_id']=$role_id;

//save staff's branch id in session

                if($role_id!="R04")

                {

                        $sqlbranch="SELECT `branch_id` FROM `staff` WHERE
user_id='$user_id'";

                        $resultbranch=mysql_query($sqlbranch) or die("error
in insert branch id:".mysql_error());

                        $rowbranch=mysql_fetch_assoc($resultbranch);

                        $branch_id=$rowbranch['branch_id'];

                        $_SESSION['branch_id']=$branch_id;

                }

                $sql3="update login set attempt=0 where user_id='$user_id'";

                $result3=mysql_query($sql3) or die ("error in login
part:".mysql_error());

                header('location:index.php');

        }

//if login attempt less than three

```

```

elseif($row1['attempt']<3)
{
    $msg="your password is incorrect, please try again";

    $sql4="update login set attempt=attempt+1 where
user_id='$user_id'";

    $result4=mysql_query($sql4) or die ("error in login
part:".mysql_error());

}

//if login attempt more than three then its view forget password
page

else
{

    header('location:forget_password.php');

}

}

// if enter wrong user name

else
{

    $msg="your username is not registered in our db";

}

}

```

### **New Register (INSERT) Page**

This is page also important in this system. It provides a chance to the staff and customer to feed their details in the system. Following code segment refers to the Insert Customer Information.



```

$sqlinsertcustomer="INSERT INTO `customer`(`cus_id`,
`user_id`, `cus_name`, `address`, `tp_no`)
VALUES ('".mysql_real_escape_string($_POST['cus_id'])."',
'".mysql_real_escape_string($_POST['user_id'])."',
'".mysql_real_escape_string($_POST['cus_name'])."',
'".mysql_real_escape_string($_POST['address'])."',
'".mysql_real_escape_string($_POST['tp_no'])."');

$resultinsertcustomer=mysql_query($sqlinsertcustomer) or
die("error in insert customer part:".mysql_error());

```

When we adding customer information, it will also add information into the login table.

The following code segment belongs to the login inserting process.

```

$sqlinsertlogin="INSERT INTO `login`(`user_id`, `password`,
`role_id`, `attempt`, `status`) VALUES (

'".mysql_real_escape_string($_POST['user_id'])."',

'".mysql_real_escape_string($_POST['tp_no'])."',
'".mysql_real_escape_string("R04")."',
'".mysql_real_escape_string(0)."',
'".mysql_real_escape_string("active")."');

$resultinsertlogin=mysql_query($sqlinsertlogin) or
die("error in insert login part:".mysql_error());

```

After login insert, customer will receive username and password through sms.

```
//send username and password to customer
$user = "94769669804";
$password = "3100";
$msg='your customer registration confirmed, username
is '.$_POST['user_id'].' and password is '.$_POST['tp_no'];

$text = urlencode($msg);
$to = "94".$_POST['tp_no'];

$baseurl ="http://www.textit.biz/sendmsg";
$url
="$baseurl/?id=$user&pw=$password&to=$to&text=$text";
$ret = file($url);
```

### Validate Inputs when Adding New Users

Addition of users to the system is a major requirement identified at the requirement analysis stage. Code segments given below validate nic no using JavaScript technology and handles errors before it is transmitted to the server.

```
function checkicno()
{
    var icno=document.getElementById("nic").value;
    if(icno.length==10)
    {
        var icformat1=/^[0-9]{9}[a-zA-Z0-9]{1}$/;
        if(icno.match(icformat1))
        {
            var icformat2=/^[0-9]{9}[VvXx]{1}$/;
            if(icno.match(icformat2))
            {
```

```

        document.getElementById("icerrormsg").innerHTML="";
    }
    else
    {
document.getElementById("icerrormsg").innerHTML="last character
must be V or X";
        document.getElementById("nic").focus();
    }
}
else
{
        document.getElementById("icerrormsg").innerHTML="first 9
characters must be numbers";
        document.getElementById("nic").focus();
    }
}
else if (icno.length==12)
{
    var icformat=/^[0-9]{12}$/;
    if(icno.match(icformat))
    {document.getElementById("icerrormsg").innerHTML="";
    }
    else
    {
        document.getElementById("icerrormsg").innerHTML="All 12
character must be numbers";
        document.getElementById("nic").focus();
    }
}
else if (icno.length==0)
{
    document.getElementById("icerrormsg").innerHTML="";
}

```

```
}  
  
else  
  
{  
  
    document.getElementById("icerrormsg").innerHTML="Your Ic no  
must be 10 or 12 character";  
  
    document.getElementById("nic").focus();  
  
}  
  
}
```

## 4.6 SECURITY

Security is the degree of resistance to, or protection from, harm. It applies to any vulnerable and valuable asset. This system is a web based system and transactions also is done through the web site also. Since the system is also accessed by the public internet, high level security mechanism was implemented.

Any user can view the news without registering with the system. Registered users will be directed to the appropriate pages based on the user type. When the user tries to login to the system he/she will be asked to enter registered username and password. This login has to used authenticate the users. When we enter username and password correctly system displays their user interface. If we enter username or password wrong the system will provide a message box with meaningful message. If we enter wrong username or password more than three then systems automatically go to forget password page.

# CHAPTER 5: EVALUATION

“Evaluation is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards. It can assist an organization, program, project or any other intervention or initiative to assess any aim, realizable concept/proposal, or any alternative, to help in decision-making; or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed. The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change”

## 5.1 TESTING PROCEDURE

Testing procedures are the Testing is the process of evaluating a system or its component(s) with the intention to find whether it satisfies the specified requirements or not. In simple words, testing is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements. This involves testing the system using different types of system tests that were performed on these system. This is aimed at uncovering errors and measuring the system capability. The following system tests are do in this system.

### 5.1.1 UNIT TESTING

A unit is the smallest testable part of an application like functions, classes, procedures, interfaces. Unit testing is a method by which individual units of source code are tested to determine if they are fit for use. The goal of unit testing is to segregate each part of the program and test that the individual parts are working correctly.

### 5.1.2 INTEGRATION TESTING

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

### 5.1.3 COMPONENT INTERFACE TESTING

Component Testing is considered as the Module Testing, because we are testing each module or component differently and effectively. The data being passed can be

considered as "message packets" and the range or data types can be checked, for data generated from one unit, and tested for validity before being passed into another unit.

#### 5.1.4 SYSTEM TESTING

System Testing is usually carried out by a team that is independent of the development team in order to measure the quality of the system unbiased. It includes both functional and Non-Functional testing. For example, login interface, register details and printing function etc.

#### 5.1.5 ACCEPTANCE TESTING

The software has been tested with the realistic data given by the client and produced fruitful results. The client satisfying all the requirements specified by them has also developed the software within the time limitation specified. A demonstration has been given to the client and the end-user giving all the operational features.

### 5.2 TESTING PLANS AND TESTING CASES

Test case is only designed to test a particular scenario. A test plan is a comprehensive document that lays out all major activities associated with a particular testing project. Testing modules were designed as follows.

- User Authentication module (Table 5.1)
- Manager module (Table 5.2)
- Customer module (Table 5.3)
- Common Function Module (Table 5.4)

#### 5.2.1 USER AUTHENTICATION MODULE

Test No	Test Description	Steps to Test	Expected Result	status
01	Validate User Input Details.	Enter correct username Enter correct password	Successfully Login into the system	pass
02	Validate User Input Details.	Enter correct username Enter incorrect password	Display error message "your password is incorrect, please try again"	pass

03	Validate User Input Details.	Enter incorrect username Enter correct password	Display error message “your username is not registered in our db”	pass
04	Validate User Input Details.	Enter both username and password incorrectly	Display error message “your username is not registered in our db”	pass

Table 5.1: User Module

## 5.2.2 MANAGER MODULE

Test No	Test Description	Steps to Test	Expected Result	status
01	Add New Items	Enter parameters for the field	Manager should be able to Add new items	pass
02	Add New Branch	Enter parameters for the field	Manager should be able to Add new staffs	pass
03	Add New Staff	Enter parameters for the field	Manager should be able to create new staffs	pass
04	Add New Employee	Enter parameters for the field	Manager should be able to Add new Employee	pass
05	Add Employee Attendance	Enter parameters for the field	Manager should be able to Add employee attendance	pass
06	Generate purchase Details	Select purchase Details in the Report menu	Manager should be able to generate Report of the purchase details	pass
07	Generate salary Details	Select salary Details in the salary menu	Manager should be able to generate Report of the salary details	pass
08	Generate service details	Select service Details in the Report menu	Manager should be able to generate Report of the service details	pass
09	Generate stock details	Select stock Details in the Report menu	Manager should be able to generate Report of the stock details	pass
10	Generate repair details	Select repair Details in the Report menu	Manager should be able to generate Report of the	pass

			repair details	
11	Manage Items	Click Manage Items on Menu	Manager should be able to View, Edit, Delete items details	pass
12	Manage customer	Click Manage customer on Menu	Manager should be able to View, Edit, Delete customer details	pass
13	Manage vehicle	Click Manage vehicle on Menu	Manager should be able to View, Edit, Delete vehicle details	pass

Table 5.2: Manager Module

### 5.2.3 CUSTOMER MODULE

Test No	Test Description	Steps to Test	Expected Result	Status
01	View available Time for vehicle service	Select reservation date, time, branch, service type	The system display 'available' or 'not available message' in status field	Pass
02	Make reservation	Click submit button on reservation form	The system allowed to make reservation and staff will confirm or reject the reservation	Pass
03	View reservation history	Select reservation history in reservation menu	The system only display his vehicle reservation history	Pass

Table 5.3: Customer Module

### 5.2.4 COMMON FUNCTION MODULE

Test No	Test Description	Steps to Test	Expected Result	status
01	Forgot Password	Click forgot password on the login page	Ask user id and phone number for verification if provided correctly send password to registered phone number	Pass
02	Logout	Click logout link	Logout user and direct to index page (home page)	Pass



03	Form validation	Enter wrong parameters for the field	Display error message before submit the form using JavaScript	Pass
04	Send a small message	Set the recipient, Mention the content press Send	Display a message “Your message has been sent”	Pass
05	The browser support	Access and load system into various browsers (Internet Explorer, Firefox, Google Chrome)	The system should act and display well-formed in all browsers	Pass
06	Test Database connections	Import database into various system and change the values in config.php	System should able to connect to database	Pass

Table 5.4: Common Module

### 5.3 TEST DATA AND TEST RESULTS

The sample data were entered to the system to all modules need to be tested in order to test the function. Each data in the all forms were tested to find out whether the system will provide the appropriate error/success message according to the data is entered before submitting the form to avoid in-appropriate data to be entered into the database. Please refer Appendix E for all the test cases and results.

### 5.4 ACCEPTENCE TESTING

Online Vehicle Service Station Management System was tested in the client-side and system was implemented in webserver. The user acceptance testing was carried out with actual bookings with real data sets. Some users were selected from the company staff and some exclusively regular customers were asked to work with certain modules and their functionalities according to their privileges. The Selected users’ activities monitored while they were working with the system.

The final result of the test indicated that the system is easy to handle and work with, user friendly with pleasant working environment. In addition, it can be used to perform transactions in an efficient way. We also came across some bugs which were fixed

right away. Some feedbacks and suggestions given by the client were implemented to give better performance and acceptance. Finally, the overall achievement of this project was satisfying and considered that all the objectives of the project have been met. This result shown in the following Figures:

### **Users Acceptance Chart**

The system was tested by different types of users and got feedback from them. The user evaluation chart is shown in the following Figure 5.1:

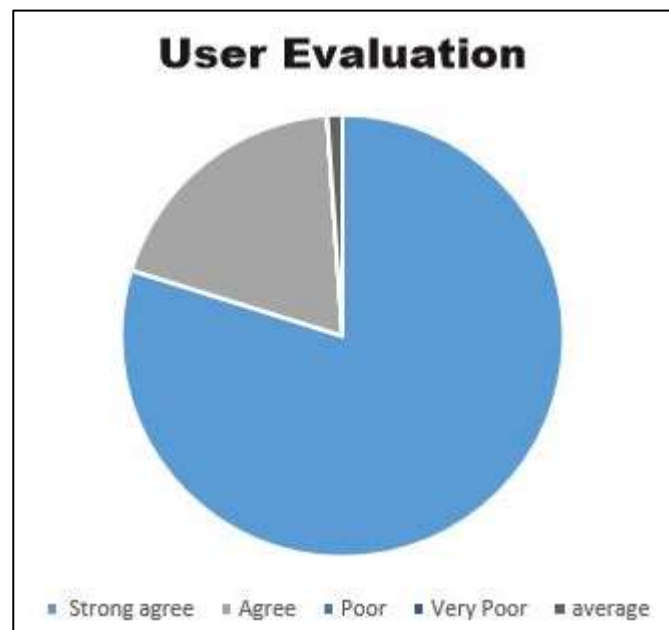


Figure 5.1: User Evaluation

### **CLIENT ACCEPTANCE REPORT**

The client acceptance test result is shown in the following Figure 5.2:



# K.B. Mogul

## Vehicle Repairing & Service

348/4, K.K.S.Road,  
Thavady

NAL/DS/1138

021 205 3181

077 824 0361

077 424 0030

### Manager Evaluation Report

Test Case Number	Test Case	Strong Agree	Agree	Average	Poor	Very Poor
01	New User Register Module	✓				
02	Manager Module	✓				
03	Branch manager Module	✓				
04	Staff Module	✓				
05	Customer Module	✓				
06	Common Function Module	✓				
07	User Friendly Of System		✓			
08	Clear of error message, Validation and Verification code	✓				
09	Access the system		✓			
10	Over all perform of the system		✓			

Evaluated By:

Signature:



**K.B. Mogul**  
Vehicle  
Repairing & Service  
348/4, K.K.S Road, Thavady.

Date:

Figure 5.2: Client Acceptance Result

## USERS ACCEPTANCE RESULT

Evaluation report about my system are obtain from the ten employers of the KMK Seafood export PVT (Ltd) company which indicates point Figure 5.3:

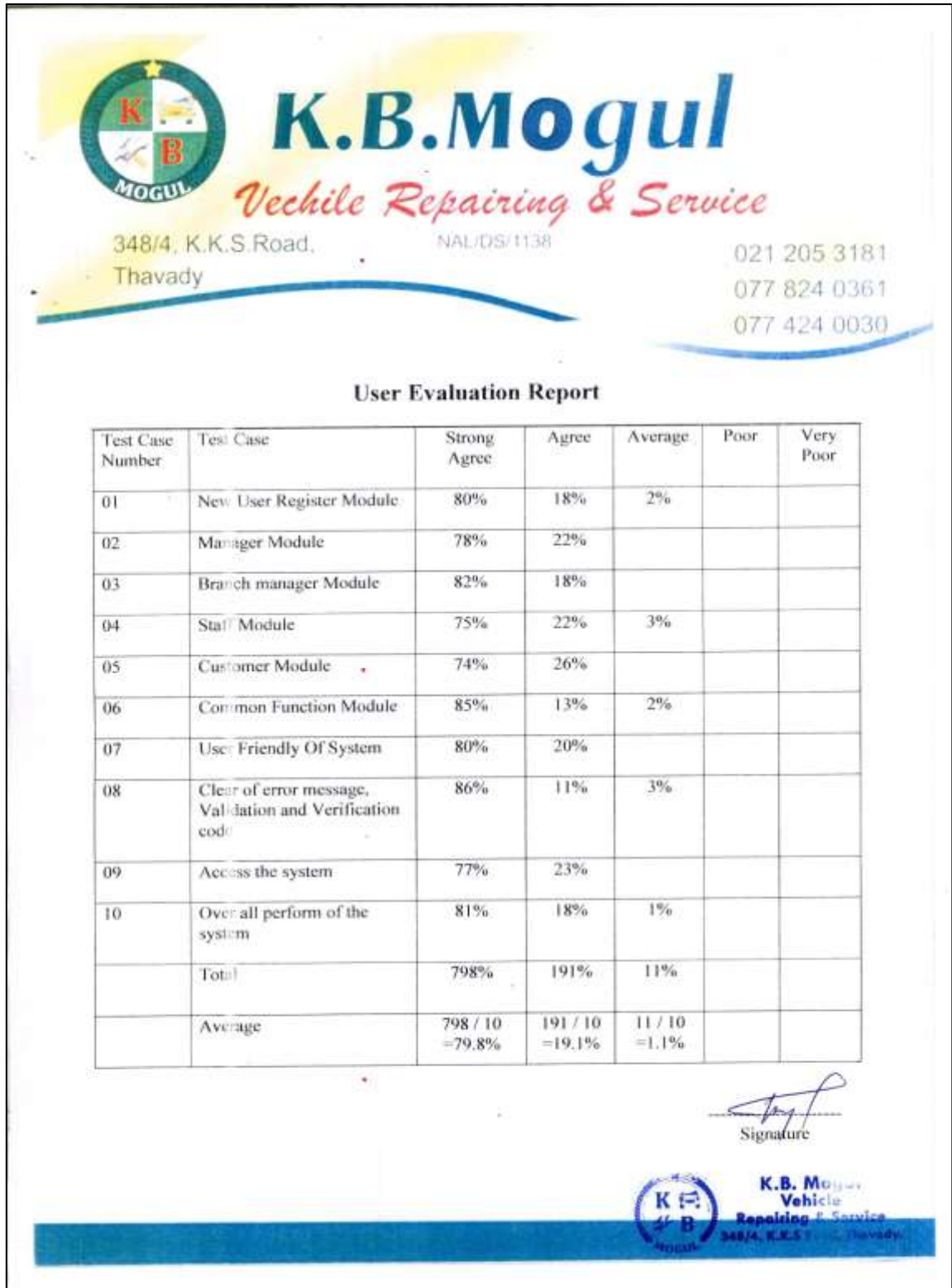


Figure 5.3: Users Acceptance Result

# CHAPTER 6: CONCLUSION

This project was successfully completed within the time span allotted. The project has been developed in php. All the modules are tested separately via testing procedures and put together to form the main SFEM system. Finally the system is tested with real data and everything worked successfully. Thus the system has fulfilled the entire objects identified. The system had been developed in an attractive dialogs fashion.

## 6.1 CONCLUSION

So user with minimum knowledge about computers can also operate the system easily. It will make easy interactions between users and system. The speed and accuracy are maintained in proper way. The system allows the users to access the system according their user type. This system was constructed using CSS, PHP, JavaScript, and MySQL.

In my Online Vehicle Service Station Management System adopted for K.B Mogul the following features are available. Further in my online management system online booking is available. This company can be able to accept service reservation request through online. SMS systems are available in this system. The system allows the staff of the company to “Confirm booking”, “Manage customer, vehicle, employee, items”, “Manage service and repairs”, “manage reserve details” and “generate bill”. In this online management system the following features are being adopted for the customers. They can submit reservation for their vehicle through online. The customer can check the available time for their vehicle service. In the analysis phase Functional and Non-functional requirements were reviewed. Client has been satisfied by the analysis phase.

## 6.2 LESSION LEARNT

This developed system does not merely fulfil the requirement of the final year of the BIT Degree program however it assists me to apply the knowledge learnt practically throughout the past three years. When assigning the project proposal, I did not have much of an idea on how to carry out the project. While progressing through step by step according to the guideline provided by the university, I gained a valuable knowledge on how to do a successful professional system development project. By doing the development process according to a schedule, I learnt how to do my day-today activities by managing time efficiently. The implementation phase was the toughest and most interesting phase of the project, as it allowed me to try out

practically the academic knowledge that I have gained on programming languages such as PHP, Java Scripts, CSS and many more development tools and techniques. Further. Writing the dissertation was another interesting task of the project. It provided me with lessons on how to write a report in a professional manner. It helped me to develop my skills on writing and designing technical reports.

### 6.3 FUTURE WORKS

There are some limitations for the current system to which solutions can be provided as a future development. According to the customer acceptance testing in the evaluation phase customer is fully satisfied with the system. Some suggestions for improvements in the future are as follows:

- Implement the online payment facility to the public via master card
- Improve the security by using encryption methods
- Add more reports

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# APPENDIX

## APPENDIX A - SYSTEM DOCUMENTATION

System documentation can provide an introduction and overview of systems. New Administrators, contractors and other staff may need to familiarize themselves with a system; the first thing that will be requested is any system documentation. To avoid staff to waste time discovering the purpose of a system, how it is configured etc. system documentation should provide an Introduction.

### 1st Step

System requirements can be verified according to Table A.1 and Table A.2

#### HARDWARE REQUIRMENTS

<b>HARDWARE</b>	<b>RECOMENDEDED MINIMUM REQRUMENTS</b>
Processor	Pentium 4 or Above
Memory	1GB or more
Display	1024*768 resolution or above
Printer	Basic Laser Printer or Dot matrix
Internet	512Kbps or above speed

Table A.1: Hardware

#### SOFTWARE REQUIRMENTS

<b>SOFTWARE</b>	<b>RECOMENDEDED MINIMUM REQRUMENTS</b>
Operating System	Microsoft Windows XP/Vista/Windows 7/Windows 8/windows 10
Code Editor	Adobe Dreamweaver Version 13.0/Notepad ++ 6.6.6 or higher version
Bundle Package	WAMP with Apache 2.4.4,PHP 5.4.12,MySQL 5.6.12 or higher version
Image Editor	Adobe Photoshop CS4
Web Browser	Firefox/Google Chrome/IE/Opera

Table A.2: Software



## **2nd Step**

### Installing WAMP

- Download and install WAMP Server for Windows (refer Table A.2 for the Minimum Version) from <http://www.wampserver.com/en/> Give installation path to E:\wamp of the computer.
- Installing Web Browsers
- Install Browsers (refer Table A.2 for the Version and Recommended Browsers).

## **3rd Step**

### Files Extraction

- Open the CD and copy the kbmogul folder and paste it to the directory path “E:\wamp\www\”

## **4th Step**

### Database Installation

- Open the web browser and type the URL <http://localhost/phpmyadmin/> and enter Username and Password (if you set username and password).
- Create empty database by providing name as “kbmogul\_db” and navigate to the “Import” tab and click “choose file” button. Then browse the CD and select the “kbmogul\_db.sql” file by opening Database folder.
- Then Press “GO” button located in the bottom of the page.

## **Final Step (Launching System)**

- Verify the WAMP is running, go to the “E:\wamp” and open the control panel and verify whether Apache, PHP, MySQL, Mercury is running.
- Open the installed web browser and type the URL <http://localhost/kbmogul> and press “Enter” button to access the system.
- Please refer Appendix-C User Documentation to get the idea about how to operate the system.

## APPENDIX B – DESIGN DOCUMENTATION

This document contains the high-level and low-level design specifications for the Software Requirements Specifications (SRS). Additionally, the software architecture, and user interfaces for each of the deliverables are described as well.

### Activity Diagrams and Descriptions

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. The following section with their description will give a clear understanding of the designing part of the system. These design diagrams were created using Microsoft Visio.

Activity diagram for Payment is shown in following Figure B.1:

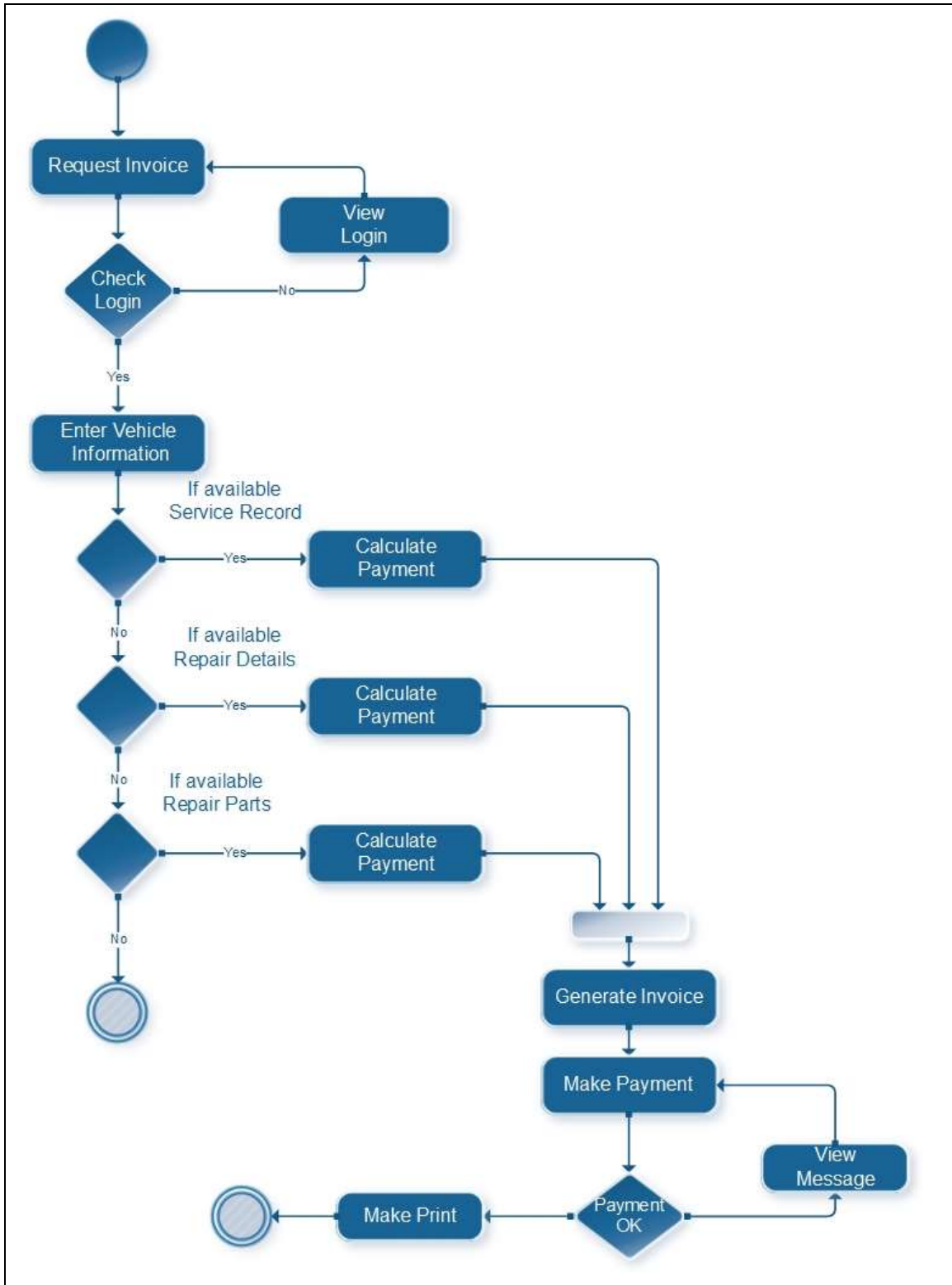


Figure B.1: Activity Diagram for Payment

Activity diagram for Vehicle service reservation is shown in following Figure B.2:

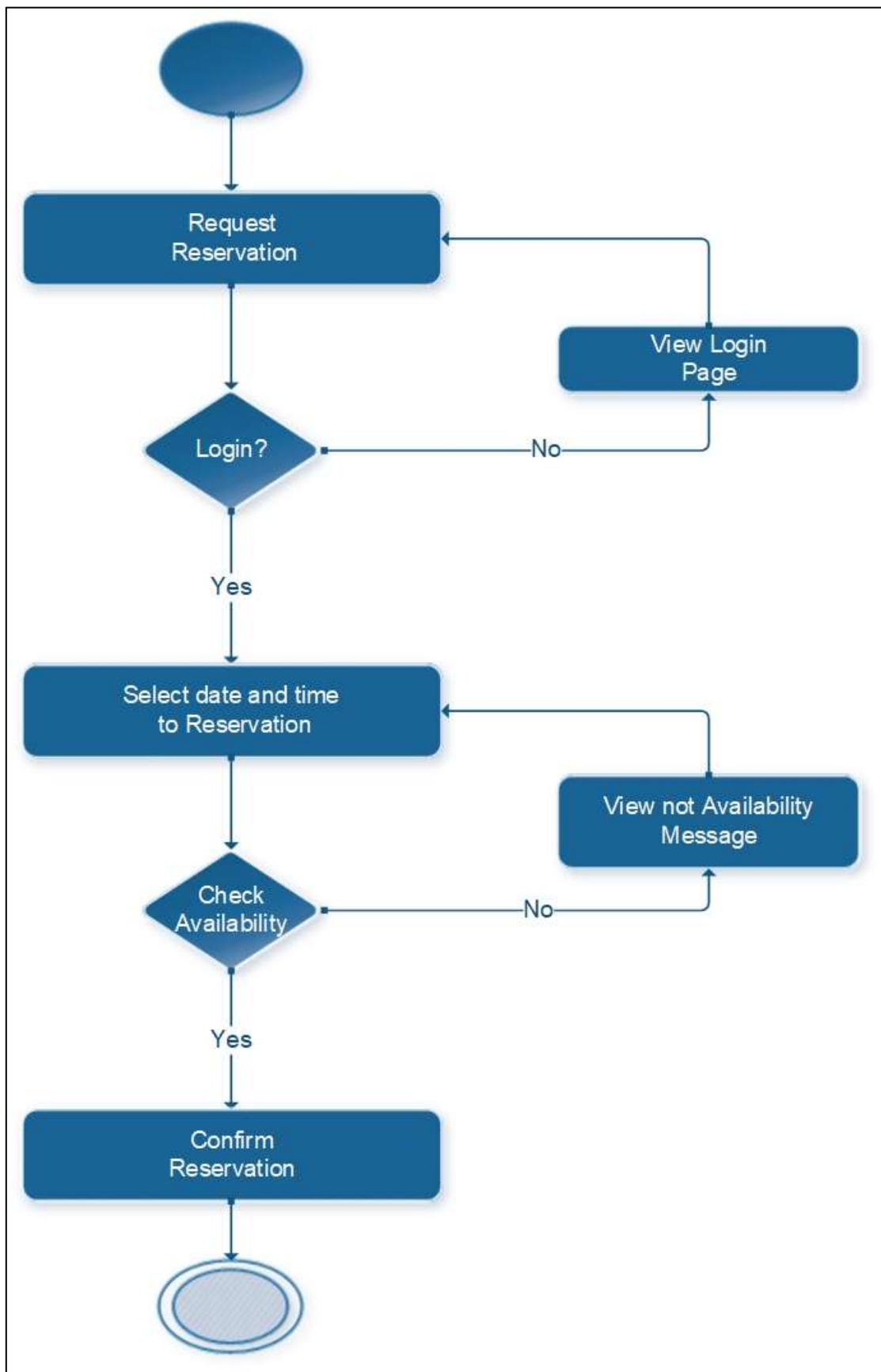


Figure B.2: Activity Diagram for Reservation

## Sequence diagram

This diagram represents how objects interact in given situation or activity. Sequence diagram for login is shown on Figure B.3:

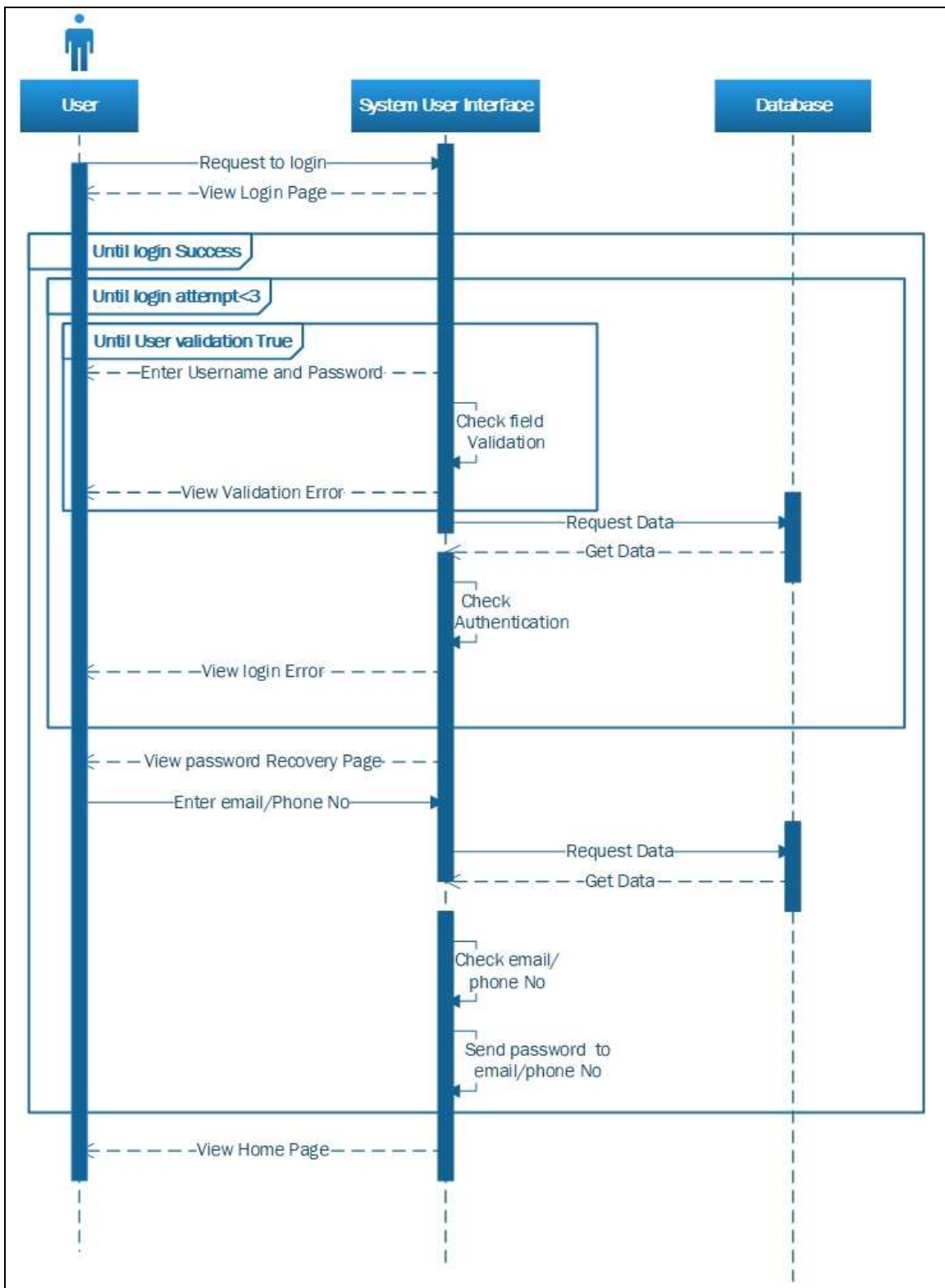


Figure B.3: Sequence Diagram for login

## APPENDIX C - USER DOCUMENTATION

Users who have privileges to access the system about how to navigate within the system and how to use its functions are helped by this document. Eligibility to access the system is available to manager, branch manager, staff and customers. Different user levels are available to each and every member and different profile pages are provided for their management.

### Login page

Open the web browser that configured in the installation. Type the URL <http://localhost/kbmogul> and navigate. After navigation, user can find the Login page that is under figure. After login, by entering username (user id) and password it directs user to the page which is under figure.

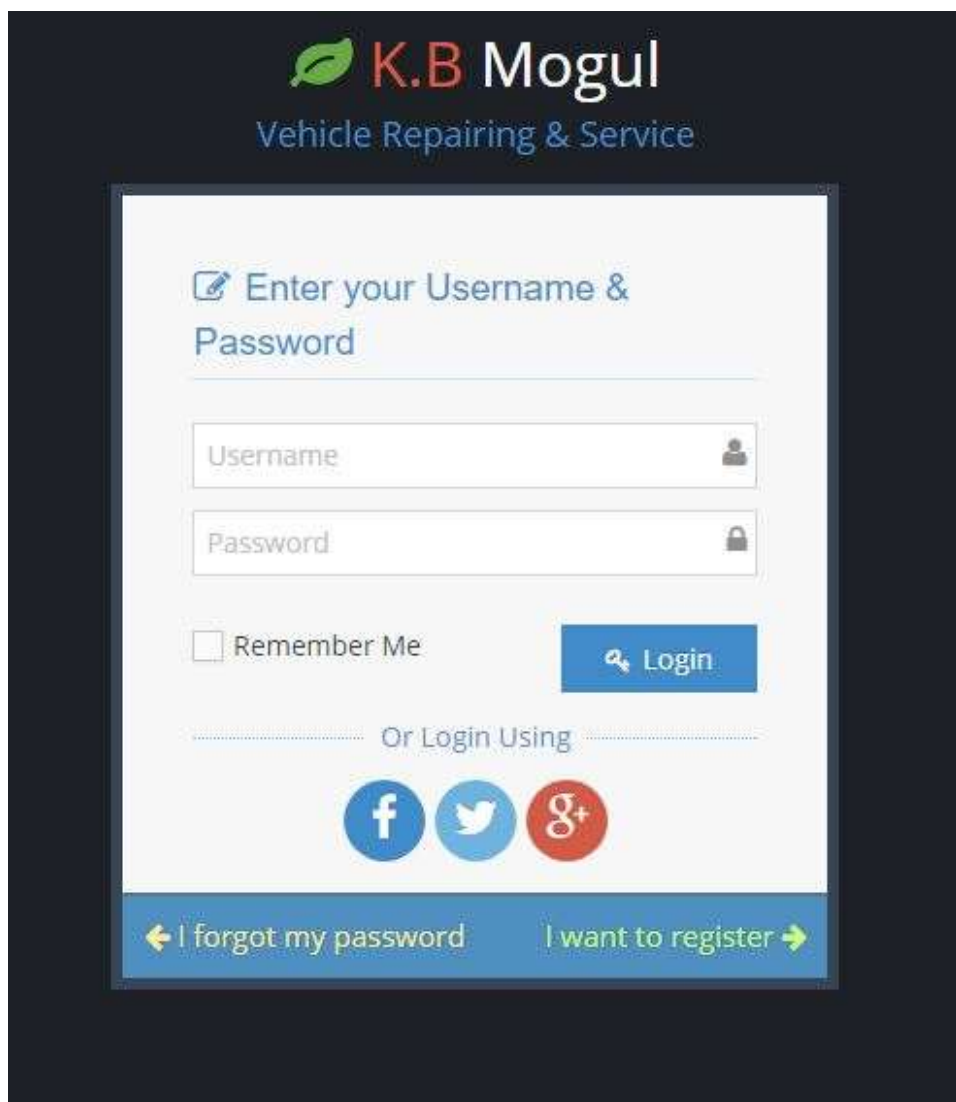


Figure C.1: Login page

## Home Page / Index Page

An index page is generally the main page. It's used to facilitate navigation to other pages. Type the URL <http://localhost/kbmogul/> and navigate. After navigation, user can find the following Figure C.2 Index page gives overall structure of the system.

The screenshot shows the home page of the K.B Mogul Vehicle Repairing & Service website. The header features the company logo on the left and the name 'K.B Mogul Vehicle Repairing & Service' in a large, stylized font. Below the header is a navigation menu with links for Home, About Us, Services, Gallery, Book Service, Contact Us, and Login. The main content area starts with a banner image of a red Tata Bolt car driving on a road, with the text 'Drive into K.B Mogul For all your automobile needs'. Below this is a section titled 'OUR SERVICES' with four columns: 'Auto wash & Detail', 'Wheel Alignment', 'Repair', and 'Routine Service'. Each column includes an image and a brief description of the service. The bottom section is titled 'CONTACT US' and contains a map of Kerala, India, with a red pin marking the location of K.B Mogul vehicle repairing & service. To the right of the map are contact details: Land (+94 21 205 3181), Mobile (+94 77 824 0361), E-Mail (kbmogul11@gmail.com), and Address (K.B Mogul, No. 348/4, K.K.S Road, Thevady, Jaffa). The footer of the page reads 'K.B Mogul Vehicle Repairing & Service © 2017'.

Figure C.2: Home/index page



## Manager's Home Page

After login as manager, the system shows the home page and manager menu. The home page is same as index page that already illustrated about this page under index page. The manager interface is shown in the following Figure C.7: manager's home page:



Figure C.3: manager's home page

## Change Password Facility

User can able to change their password through this page

The image shows a 'Change Password' form. The title 'Change Password' is centered at the top in a green header. Below the title, there are three input fields: 'Current password' with the placeholder text 'Enter Your current password', 'New password' with the placeholder text 'Enter Your New password', and 'Confirm password' with the placeholder text 'Enter New password Again'. At the bottom of the form, there are three buttons: a green button with a checkmark and the text 'Change', a purple button with a refresh icon and the text 'Reset', and a red button with an 'X' icon and the text 'Cancel'.

Figure C.4: change password



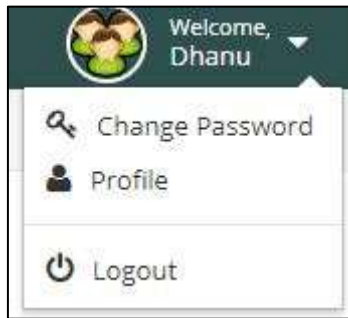


Figure C.5: user menu

By clicking, change password link which is located in the top right hand corner of the figure C.5 the current password can be changed by the user. After clicking that link the form appears which is shown under figure C.4

Current user's password can be changed by entering new password accurately into the fields.

## **New Customer Registration**

### **Sign-up Interface**

This sign-up interface is in Login page under "I want to register" link. If we click sign-up link, the system provide a form to register to our system as customer of our system. When you fill the form the system check if user insert hand phone number format or not and all the field is required. The system sends a user name and password to that particular user telephone number after user registration.

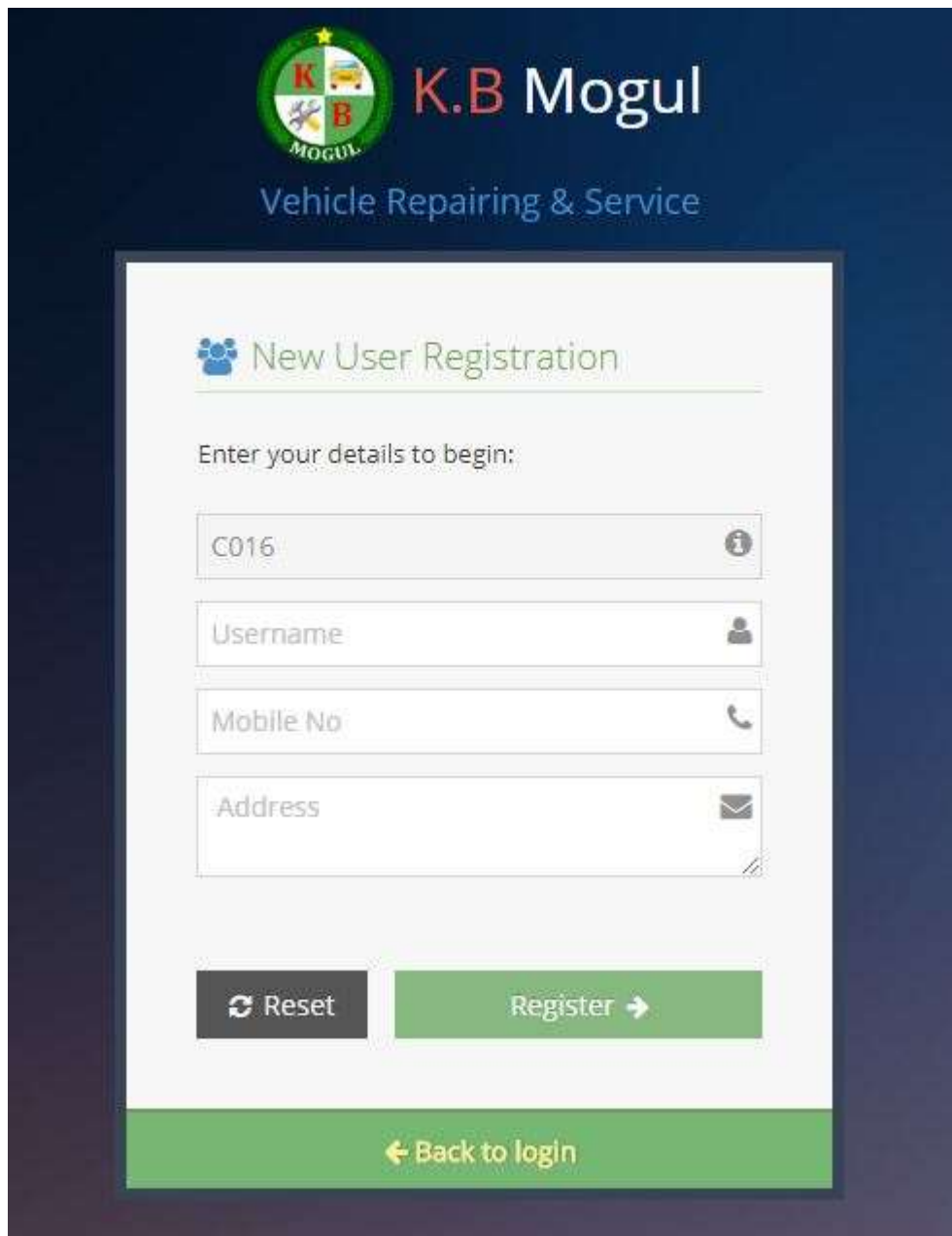


Figure C.6: Customer Registration

### **Add Vehicle Information**

After customer registration user have to add vehicle details for online booking. Vehicle id and customer id should not be Change.

When staff access 'add vehicle' page staff can select customer   through this select button.

Figure C.7: Add Vehicle Details

### Reservation Page

After customer added vehicle information, He/she can check available time for their vehicle service. Until available status field indicate 'Available' message, customer cannot be click the confirm button

Figure C.8: Online service booking

When available status field indicate 'available' message, He/she can make reservation for their vehicle service

Figure C.9: online booking-available

## Reservation Confirm Page

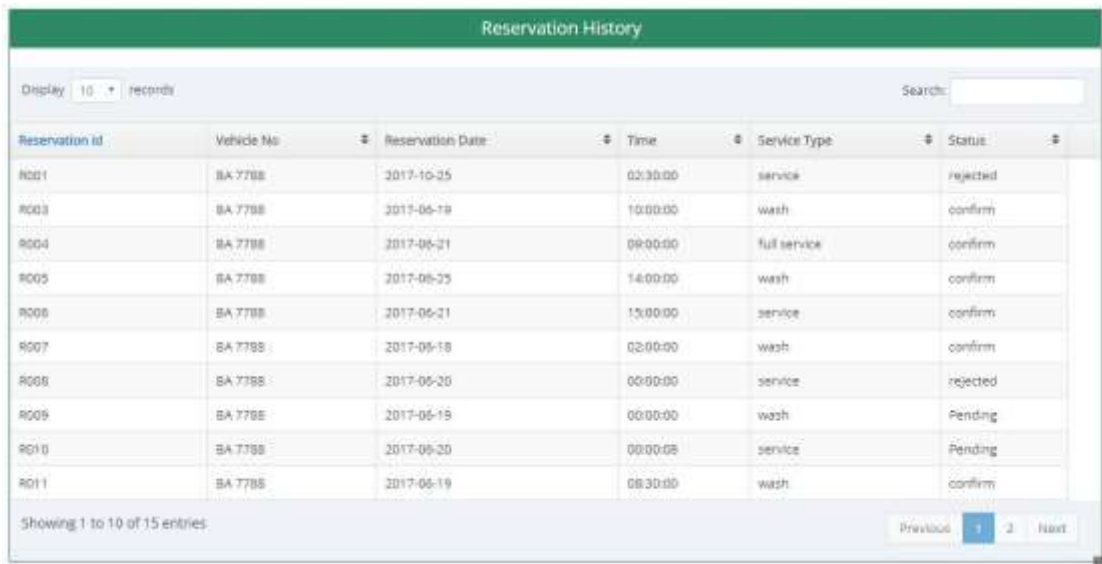
Staff can view overall history of Reservation request that send by customer. Staff can confirm or reject it. When staff click confirm button, customer will get a confirmation message with date and time through SMS.

Reservation Id	Vehicle Id	Date	Reservation Date	Reservation Time	Service Type	Action
R001	V001	2017-10-25	2017-10-25	02:30:00	service	Confirm Reject
R002	V002	2017-06-12	2017-06-22	11:00:00	wash	Confirm Reject
R003	V001	2017-06-12	2017-06-19	10:00:00	wash	Confirm Reject
R004	V001	2017-06-12	2017-06-21	09:00:00	full service	Confirm Reject
R005	V001	2017-06-12	2017-06-25	14:00:00	wash	Confirm Reject
R006	V001	2017-06-18	2017-06-21	15:00:00	service	Confirm Reject
R007	V001	2017-06-18	2017-06-18	02:00:00	wash	Confirm Reject
R008	V001	2017-06-18	2017-06-20	00:00:00	service	Confirm Reject
R009	V001	2017-06-18	2017-06-19	00:00:00	wash	Confirm Reject
R010	V001	2017-06-18	2017-06-20	00:00:08	service	Confirm Reject

Figure C.10: Reservation Request

## Reservation History page

Customer can view overall history of him/her reservation that is already send company and view accept or pending or reject details.



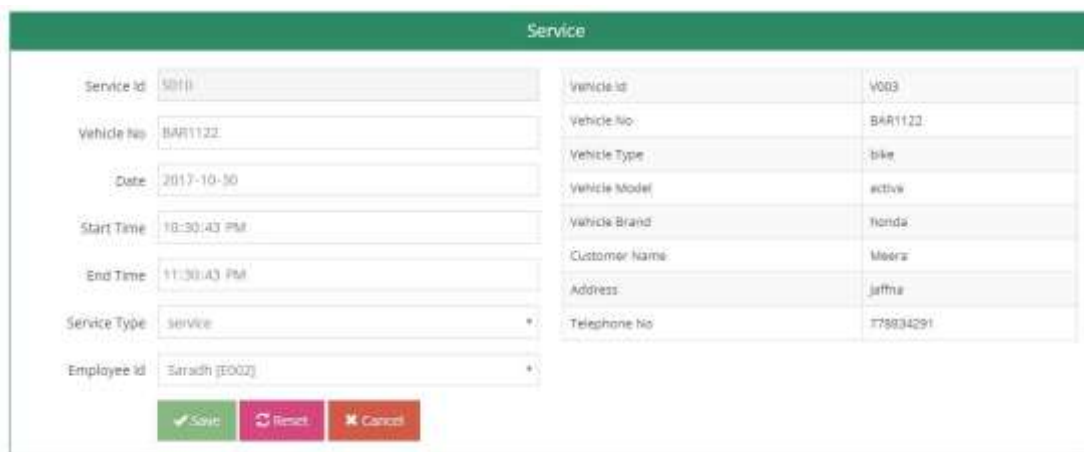
The screenshot shows a web interface titled "Reservation History". At the top, there is a search bar and a "Display 10 records" dropdown. Below is a table with columns: Reservation Id, Vehicle No, Reservation Date, Time, Service Type, and Status. The table contains 11 rows of data. At the bottom, there are pagination controls showing "Showing 1 to 10 of 15 entries" and buttons for "Previous", "1", "2", and "Next".

Reservation Id	Vehicle No	Reservation Date	Time	Service Type	Status
R001	BA 7788	2017-10-25	02:30:00	service	rejected
R003	BA 7788	2017-05-19	10:00:00	wash	confirm
R004	BA 7788	2017-05-21	09:00:00	full service	confirm
R005	BA 7788	2017-05-25	14:00:00	wash	confirm
R006	BA 7788	2017-05-21	15:00:00	service	confirm
R007	BA 7788	2017-05-18	02:00:00	wash	confirm
R008	BA 7788	2017-05-20	00:00:00	service	rejected
R009	BA 7788	2017-05-19	00:00:00	wash	Pending
R010	BA 7788	2017-05-20	00:00:00	service	Pending
R011	BA 7788	2017-05-19	08:30:00	wash	confirm

Figure C.11: Reservation History

## Add Service details Page

Staff can able to add vehicle's service details in this page. When staff enter the vehicle number, that vehicle details will be shown near the form.



The screenshot shows a web interface titled "Service". It contains a form with two columns of input fields. The left column includes: Service Id (5011), Vehicle No (BAR1122), Date (2017-10-30), Start Time (10:30:43 PM), End Time (11:30:43 PM), Service Type (service), and Employee Id (Sivraj (E002)). The right column includes: Vehicle Id (V003), Vehicle No (BAR1122), Vehicle Type (bike), Vehicle Model (active), Vehicle Brand (Honda), Customer Name (Meera), Address (Jaffna), and Telephone No (778834291). At the bottom, there are three buttons: "Save", "Reset", and "Cancel".

Figure C.12: Add Service

## Add Repair details Page

Staff can able to add vehicle's repair details in this page. When staff enter the vehicle number, that vehicle details will be shown near the form.

### Repair

Repair id:

Vehicle No:

Date:

Repair Charge:

Employee id:

Vehicle Id:

Vehicle No:

Vehicle Type:

Vehicle Model:

Vehicle Brand:

Customer Name:

Address:

Telephone No:

Item:  No of Item:  + Add Item

NO	Repair Item	No of Item	Unit price	Total
1	Tire (001)	2	4000	8000
2	break cable (002)	1	1000	1000
			Total	10000

✓ Save

Figure C.13: Add Repair

### Bill Page

Staff can be generate the invoice details. Its include service charge, repair charge and repair item charge.

## INVOICE

Vehicle No

Bill id	BL014	
Vehicle No	BAR1122	
Customer Name	Meera	
Telephone No	778834291	
Staff id	5003	
Date	2017-11-04	

NO	Description	Total
1	wash	100
2	Repair Charge	500
3	Tire(2x4000)	8000
4	Meter cable(1x500)	500
<b>Grand Total</b>		<b>9100</b>

✓ Paid
Print

Figure C.14: Bill

When the user clicks the 'Print' button system allows the user to see a print preview and take the print out.

**K.B Mogul**  
Vehicle Repairing & Service  
NAL/DS/1136

348/4, K.K.S Road,  
Tharayady

021 205 3181  
077 824 0861

Print Report

Bill Id	BL014
Vehicle No	BAB1122
Customer Name	Meera
Telephone No	778834291
Staff Id	5003
Date	2017-11-04

NO	Description	Total
1	wash	100
2	Repair Charge	500
3	Tire(2x4000)	8000
4	Meter cable(1x500)	500
	Grand Total	9100

Figure C.15: Bill-print

## Message

Manager, branch manager, staff can able to send message from this form. User can select the receiver by selecting category such as all or particular person.

Message

Message Id: M002

Message From: Dhanu

Message To: Select Receiver

Message: message

Send

Figure C.16: Message

## Employee Attendance Page

Attendance is the act or fact of attending (being present at) work. Attendance is also used to define the number of persons present on a particular day at work. Staff can be able to enter employee's attendance time

Employee id	Employee name	Designation	Arrive Time	Departure Time
E001	Kavin	Mechanic	--:--	--:--
E002	Saradh	Mechanic	--:--	--:--
E003	karan	Mechanic	--:--	--:--
E004	Mohan	Mechanic	--:--	--:--

Figure C.17: Employee Attendance

## Purchase Page

Manager, branch manager and staff can be able to add, view purchase details.

NO	Item	No of Item	Unit price	Total
1	Tire [001]	15	1000	15000
2	break cable [002]	25	1000	25000
3	Meter cable [003]	20	500	10000
4	break shoe [004]	20	750	15000
	Total			65000

Figure C.18: Purchase



Purchase Details				
<a href="#">New Purchase</a>				
Display 10 records			Search: <input type="text"/>	
Purchase Id	Date	Supplier	Branch Id	Action
P001	2017-10-02	sujan	B001	<a href="#">view product</a>
P002	2017-10-03	kaji	B002	<a href="#">view product</a>
P003	2017-10-03	sujan	B002	<a href="#">view product</a>
P004	2017-10-03	kajan	B002	<a href="#">view product</a>
P005	2017-10-03	suman	B002	<a href="#">view product</a>
P006	2017-10-03	kaji	B002	<a href="#">view product</a>
P007	2017-10-03	kajan	B002	<a href="#">view product</a>
P008	2017-10-09	kkk	B001	<a href="#">view product</a>
P009	2017-10-09	grown motors	B002	<a href="#">view product</a>
P010	2017-11-03	Grown Motors	B002	<a href="#">view product</a>

Showing 1 to 10 of 10 entries

Previous 1 Next

Figure C.19: View Purchase

When we click ‘view product’ button, user can able to view purchase item for particular purchase.

Purchase Items				
<a href="#">Print</a>				
Display 10 records			Search: <input type="text"/>	
Purchase Id	Item Id	No of Item	Unit Price	Total
P010	I001	15	1000	15000
P010	I002	25	1000	25000
P010	I003	20	500	10000
P010	I004	20	750	15000

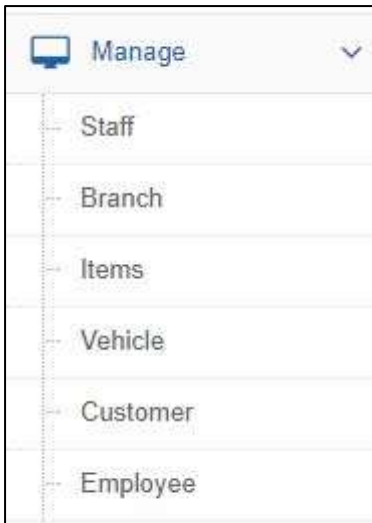
Showing 1 to 4 of 4 entries

Previous 1 Next

Figure C.20: View Purchase Item

## Manage Menu

Manager can manage staff, branch, employee, customer, vehicle and items.



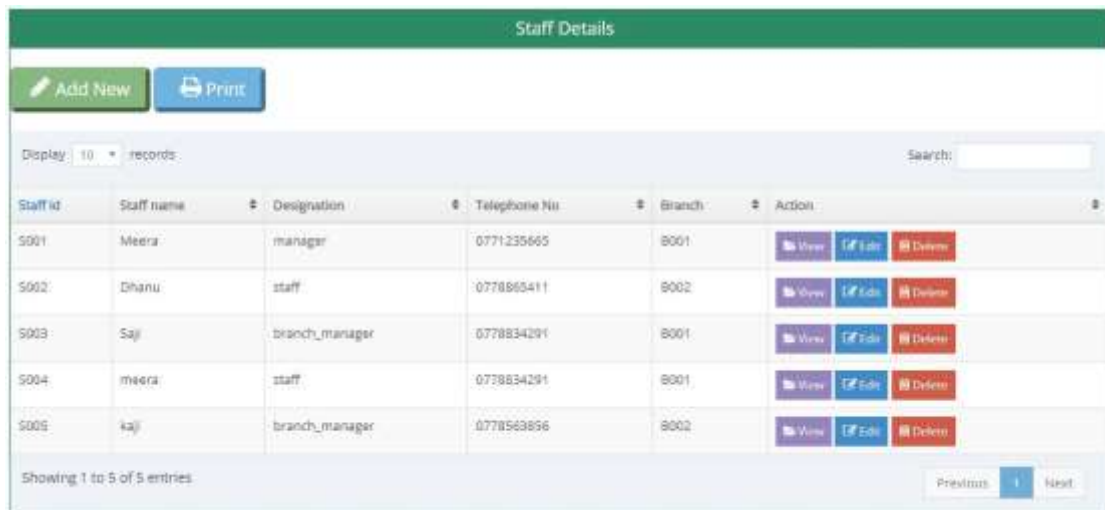
Manager can able to add, delete, edit, view and print these menu details.

Figure C.21: Manager's Menu

## Manage → Staff

Manager can added staff and delete them if the staff is no longer available. When manager click the manage staff in the menu you will be directed to the view of all staff.

This page (Figure: C.22) allows admin to View and Delete the staff. Admin can change their details. Simply click on the Delete button to delete the staff.



Staff Id	Staff name	Designation	Telephone No	Branch	Action
S001	Meera	manager	0771235665	8001	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
S002	Dhanu	staff	0778865411	8002	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
S003	Saji	branch_manager	0778834291	8001	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
S004	meera	staff	0778834291	8001	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
S005	saji	branch_manager	07788563856	8002	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>

Showing 1 to 5 of 5 entries

Previous [1](#) Next

Figure C.22: Manage Staff

Add new staff button used to add new staff details by the manager and branch manager only. It show in Figure C.23:

Figure C.23: Add Staff

Print staff button used to print staff details by the manager and branch manager only.

It show in Figure C.24:

**K.B Mogul**  
Vehicle Repairing & Service  
NAL/DS/1136  
345/4, K.K.S Road, Thanady  
021 205 3181  
077 824 0361

Print Report

Staff Details				
Staff id	Staff name	Designation	Telephone No	Branch
5001	Meera	manager	0771235665	B001
5002	Dhanu	staff	0778865411	B002
5003	Saji	branch_manager	0778834291	B001
5004	meera	staff	0778834291	B001
5005	kaji	branch_manager	0778563856	B002

Figure C.24: Print Staff

Customer, vehicle, Branch, Items and employee are also has add and print button.

### Manage → Customer

Manager can manage customer details also. When manager click the manage customer in the menu he/she will be directed to the view of all customer details edit and delete the details. That show in Figure C.25:

Customer Id	Customer Name	Address	Telephone No	Action
C001	Thanu	kokuvi,jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C002	Dhanu	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C003	Weera	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C004	madhu	kokuvi	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C005	kaja	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C006	linga	kokuvi	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C007	tharu	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C008	dhenu	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C009	tharu	jaffna	778834291	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
C010	bala	jaffna	776303666	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>

Figure C.25: Manage Customer

### Manage → Branches

Manager only can manage branch details. Simply click on the Delete button to delete the branches. Click on the Edit button will direct you to the edit branch page.

Branch Id	Branch Name	Branch Address	Telephone no	Action
B001	Thavady	Thavady, jaffna srilanka	0212214477	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
B000	jaffna	Talipalai, jaffna	0212214477	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>

Figure C.26: Manage Branch

Manager only can able to delete and edit branch details.



Figure C.27: Edit Staff

When you click delete button, you will see a confirmation message box. By clicking ok you can delete that records

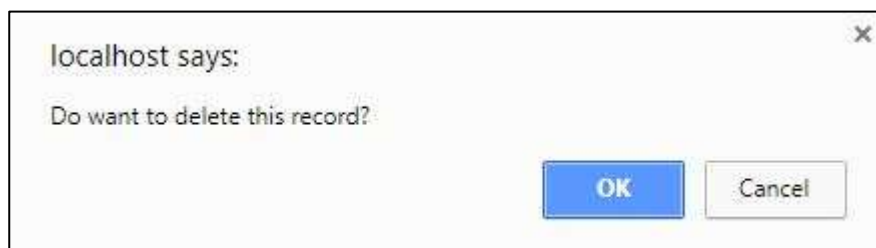


Figure C.28: Delete Confirmation

### **Manage → Employee**

Manager can added employee and delete them if the Employee is no longer available. When manager click the manage Employee in the menu, manager will be directed to the view of all Employees.

This page allows manager to view, edit and Delete the employees in Figure C.29:

Employee Id	Employee name	Telephone Number	Work Type	Employee Type	Branch	Action
E001	Kavin	0778845653	monthly	Mechanic	B002	View Edit Delete
E002	Saradh	0772256483	daily	Mechanic	B002	View Edit Delete
E003	karan	0775502256	hourly	Mechanic	B002	View Edit Delete
E004	Mohan	0775524865	daily	Mechanic	B002	View Edit Delete
E005	suresh	0775632565	daily	Technician	B001	View Edit Delete

Figure C.29: Manage Employee

By clicking the view button, user can able to view individual employee’s full details.

That show in Figure C.30:

Employee Id	E001
Employee Name	Kavin
Nic	915844568V
Address	Kokuvil
Telephone No	0778845653
Work type	monthly
Rate	10000
Employee Type	Mechanic
Branch Id	B002
<a href="#">Edit</a> <a href="#">Go Back</a> <a href="#">Print</a>	

Figure C.30: Employee-individual

### Manage → Item

Manager also edit and change the item. After changing the item name and price click on the ‘save’ button to save the changes made.

When you click the manage item in the menu manager will be directed to the view of all available items added into the system already in Figure C.31:

Item Id	Item Name	Item Price	Action
I001	Tire	4000	View Edit Delete
I002	break cable	1000	View Edit Delete
I003	Meter cable	500	View Edit Delete
I004	break shoe	1000	View Edit Delete
I005	bike glass	1000	View Edit Delete
I006	signal	1000	View Edit Delete

Figure C.31: Manage item

### Manage → Vehicle

Manager also edit and change the customer’s vehicle details

When you click the manage vehicle in the menu manager will be directed to the view of all vehicle details added into the system already in Figure C.32:

Vehicle Id	Vehicle No	Vehicle Type	Customer Name	Action
V001	BA 7788	Car	Thanu	View Edit Delete
V002	BAR6677	bike	Dhanu	View Edit Delete
V003	BAR1122	bike	Meera	View Edit Delete
V004	CA4455	bike	madhu	View Edit Delete
V005	BAR5566	bike	kugan	View Edit Delete

Figure C.32: Manage vehicle

### GENERAL GUIDE LINE IN USING MANAGE



View – Click button directs you to view form to display more details of the selected data.



Edit – Click button will direct you to update form with the values of the selected record.



Delete – Click button will delete the entire record of the selected row.

## REPORTS

Manager can generate reports by clicking on the Reports on the menu bar and select the type of report you need to generate. Report menus is organized in the format of a multi listed as follows.

- Purchase Report
- Service Report
- Repair Report
- Salary Report
- Stock Details
- Income Report

Manager can generate any report by clicking the link on the report sub menu. If you want to generate any other date you can select the desired date from the date calendar.

### Report → Service Report

Manager can generate service details by selected date range following format with branch wise all the relevant service id, service date, vehicle number and Service type.

Service Id	Vehicle Number	Service Date	Service Type
5001	BA 7799	2017-10-24	service
5004	BAR6677	2017-09-20	service
5006	BAR6677	2017-07-09	service
5008	BAR6677	2017-10-04	wash

Figure C.33: Service Report



## Report →Item stock Report

Manager only can generate item stock report for all branch



Branch	Item Id	Item Name	Item Price
All	1001	19	8002
	1002	10	8001
	1002	54	8002
	1003	35	8002
	1004	5	8001
	1004	20	8002

Figure C.34: item stock-print

## Contact us Menu

It show the contact details about company and its show the location of the company in Figure C.35:



**CONTACT US**

K.B Mogul vehicle repairing & service  
No. 348/4, K.K.S Road,  
Thanady,  
Jaffna.  
E-mail: kbmogul11@gmail.com

**Telephone Number**  
+94 21 205 3181  
+94 77 824 0361

**facebook**  
K.B MOGUL Vehicle Repairing & Service  
VEHICLE Repairing & Service  
Jaffna

K.B Mogul Vehicle Repairing & Service © 2017

Figure C.35: Contact Us

## About us Menu

It show the introduction about K.B Mogul Refer Figure C.36: About Us



Figure C.36: About US

## Quotation

Customer can book quotation; quotation booking form is shown in the following Figure C.37:

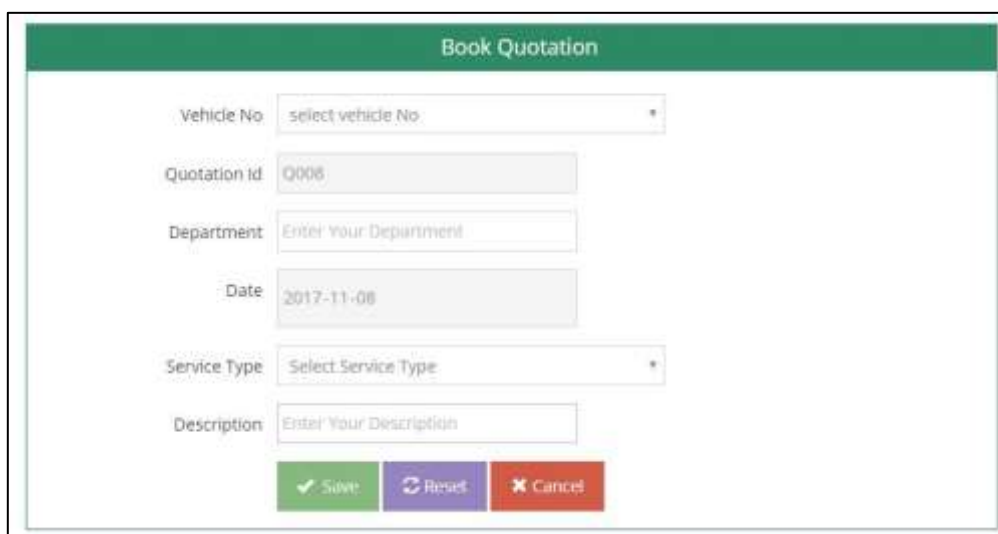
The image shows a screenshot of a web form titled 'Book Quotation'. The form has a green header bar with the title. Below the header, there are several input fields: 'Vehicle No' with a dropdown menu showing 'select vehicle No'; 'Quotation Id' with a text input field containing 'Q006'; 'Department' with a text input field containing 'Enter Your Department'; 'Date' with a text input field containing '2017-11-08'; 'Service Type' with a dropdown menu showing 'Select Service Type'; and 'Description' with a text input field containing 'Enter Your Description'. At the bottom of the form, there are three buttons: a green 'Save' button with a checkmark icon, a purple 'Reset' button with a circular arrow icon, and a red 'Cancel' button with an 'X' icon.

Figure C.37: Book for Quotation

## Gallery

It contains number of galleries of K.B Mogul. Refer the figure C.38: Gallery



Figure C.38: Gallery

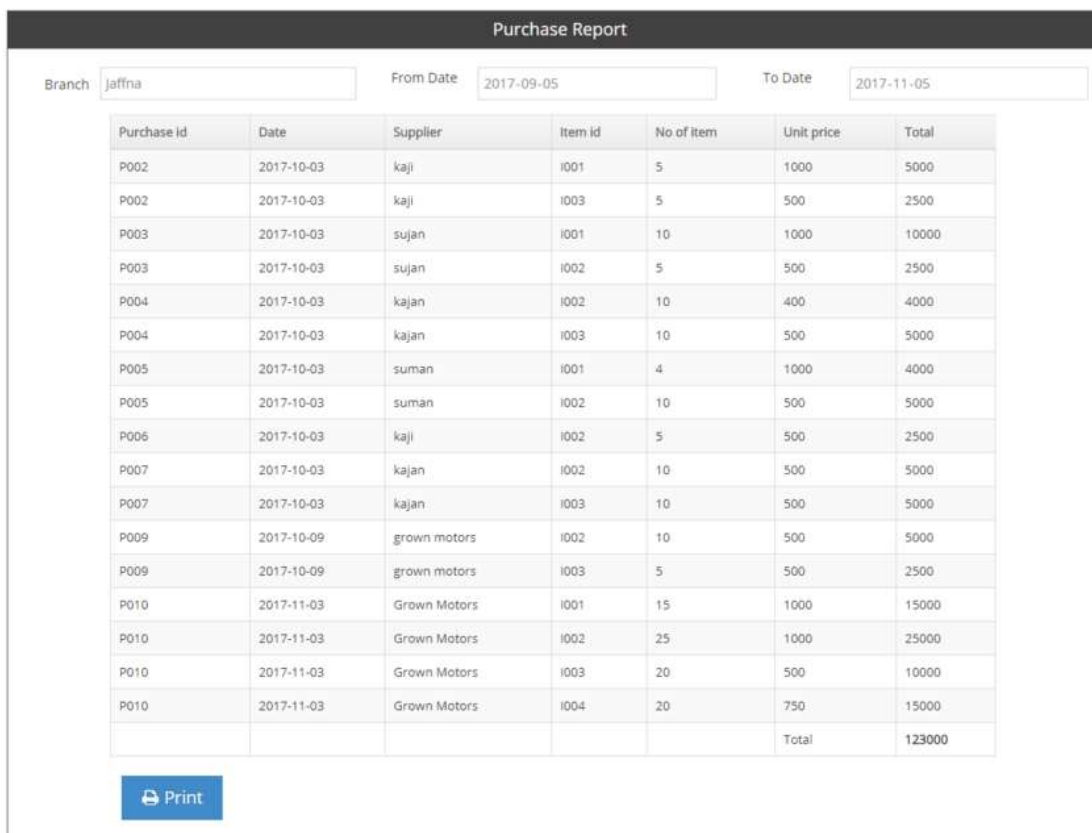
## APPENDIX D - MANAGEMENT REPORT

This system allows the Manager to generate the following reports registered staff report, registered customer Details, Employee Details, stock details, service report, repair report and income report, purchase report and salary report. The reports allow to select date range to generate each report.

Reports helps the users and management to get summary of events. These reports are given in well-structured format to print.

### Purchase Report

User can generate purchase details by selected date range following format with all the relevant purchase id, date, supplier, item id no of item and Amount with total will be displayed.



Purchase id	Date	Supplier	Item id	No of item	Unit price	Total
P002	2017-10-03	kaji	i001	5	1000	5000
P002	2017-10-03	kaji	i003	5	500	2500
P003	2017-10-03	sujan	i001	10	1000	10000
P003	2017-10-03	sujan	i002	5	500	2500
P004	2017-10-03	kajan	i002	10	400	4000
P004	2017-10-03	kajan	i003	10	500	5000
P005	2017-10-03	suman	i001	4	1000	4000
P005	2017-10-03	suman	i002	10	500	5000
P006	2017-10-03	kaji	i002	5	500	2500
P007	2017-10-03	kajan	i002	10	500	5000
P007	2017-10-03	kajan	i003	10	500	5000
P009	2017-10-09	grown motors	i002	10	500	5000
P009	2017-10-09	grown motors	i003	5	500	2500
P010	2017-11-03	Grown Motors	i001	15	1000	15000
P010	2017-11-03	Grown Motors	i002	25	1000	25000
P010	2017-11-03	Grown Motors	i003	20	500	10000
P010	2017-11-03	Grown Motors	i004	20	750	15000
					Total	123000

Figure D.1: Purchase Report

### Income Report

Manager only can generate income Report by selected date range following format with all the relevant bill id, date, vehicle number, and Amount with total will be displayed.

Income Report			
From Date	<input type="text" value="2017-08-10"/>	To Date	<input type="text" value="2017-11-05"/>
Service id	Vehicle Number	Service Date	Amount
BL004	BAR1122	2017-08-20	2000
BL005	BAR1122	2017-08-27	4000
BL006	BAR6677	2017-08-27	400
BL007	BAR6677	2017-08-27	400
BL008	BAR1122	2017-08-27	400
BL009	BAR6677	2017-10-02	5400
BL010	BAR1122	2017-10-02	600
BL011	BAR6677	2017-10-04	100
BL012	BAR1122	2017-10-24	400
BL013	BAR1122	2017-10-24	400
Total			14300




Figure D.2: Income Report

### Item stock Report

Manager only can generate stock Report for all branch, branch manager can view only his own branch stock details


Item stock Details		
Branch	<input type="text" value="All"/>	
Display	<input type="text" value="10"/> records	Search: <input type="text"/>
Item id	Item Name	Item Price
I001	19	B002
I002	10	B001
I002	54	B002
I003	35	B002
I004	5	B001
I004	20	B002
Showing 1 to 6 of 6 entries		<input type="button" value="Previous"/> <input type="button" value="1"/> <input type="button" value="Next"/>

Figure D.3: Stock Report

## Employee Salary Report

Manager and branch manager only can generate employee's salary report. Employee's salary will be calculated by employee attendance.

- Employee's hourly based salary

Employee Hourly Based Salary					
		Date	2017-11-05		
					
Employee id	Employee name	Arrive Time	Departure Time	Duration	Amount
E003	karan	08:00:00	17:00:00	9	900

Figure D.4: Employee's hourly based salary

- Employee's daily based salary

Employee Daily Based Salary								
		Date	2017-11-05					
								
Employee id	Employee name	Arrive Time	Departure Time	Duration	Over Time	Basic Salary	Over Time Salary	Total Amount
E002	Saradh	09:00:00	18:00:00	9	1	1000	150	1150
E004	Mohan	09:00:00	18:00:00	9	1	1000	150	1150

Figure D.5: Employee's daily based salary

- Employee's monthly based salary

Employee Monthly Based Salary					
		Date	November 2017		
					
Employee id	Employee name	Basic Salary	Overtime	Overtime Salary	Total Amount
E001	Kavin	10000	2	300	10300

Figure D.6: Employee's monthly based salary



## Monthly Staff Salary Report

Manager only can generate staff's salary report.



Staff id	Staff name	Basic Salary
S001	Meera	25000
S003	Saji	40000
S004	meera	10000

Figure D.7: staff salary

## APPENDIX E - TEST RESULTS

Since the “Online vehicle service station Management system for K. Mogul” is mainly developed for public usage along with management. Appropriate error messages and success messages and information were displayed to notify the user about the activities. Detected errors were carried out to provide the enhanced working system to the client. The following test cases and resulting screenshots given below to enlighten the user about the testing phases carried out.

### Test Results for User Authentication

The test cases with results belong to User Authentication is displayed by figure


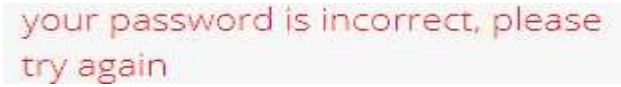


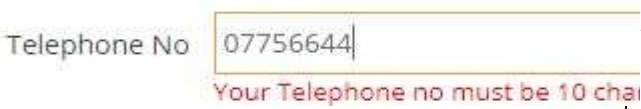

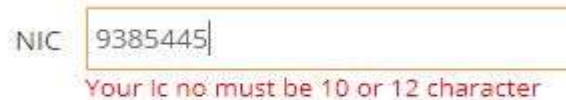
Test No	Steps to Test	Actual output	status
01	Enter correct username Enter correct password	Successfully Login into the system 	pass
02	Enter correct username Enter incorrect password	Display error message 	pass
03	Enter incorrect username Enter correct password	Display error message 	pass
04	Enter both username and password incorrectly	Display error message 	pass

Table E.1: User Test

### Test Cases for General Forms




Test No	Steps to Test	Actual output	status
01	Enter phone number in wrong format and no of digits	Telephone No <input type="text" value="07756644"/> 	pass
02	Submit without entering value in mandatory field		pass
03	Enter Nic no in wrong format	NIC <input type="text" value="9385445"/> 	pass



04	Vehicle id automatically shown on textbox and prevent changing		pass
05	Add all the required fields correctly		Pass
06	Delete confirmation message		Pass

Table E.2: Form Test Case

## Common Test Cases

Test No	Steps to Test	Actual output	status
01	Select reservation date, time, branch, service type	The system display 'available' or 'not available' message' in status field 	pass
02	Until available status field show 'available' message, user cannot click confirm button		pass
03	If available status field show 'available' message, user can be click the confirm button		pass
04	Enter wrong UR (http://localhost/kbmogul/Register.php)	<b>Not Found</b> The requested URL /kbmogul/Register.php was not found on this server.	pass
05	Enter wrong Database name on config.php	database couldn't select:Unknown database	pass

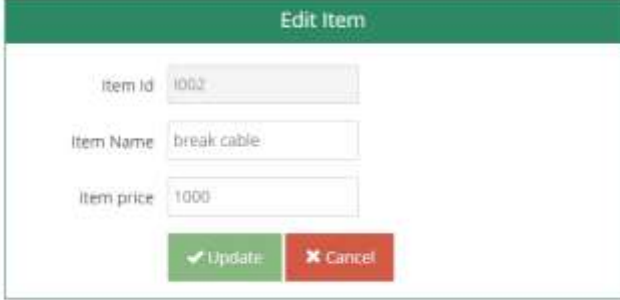
06	Edit button direct to save form with value fields		pass
----	---	--	------

Table E.3: Common Test Case

## APPENDIX F - CODE LISTINGS

This section provides more detailed view of the coding to the users. Since the code section is very lengthy, only important section of the coding are provided below with appropriate comments to make the user more comfortable with the coding.

### LOG OUT

When the user logging out the system all session variables will be destroyed and the user will be directed to index page.

```
<?php
include('config.php');
if(!isset($_SESSION))
    {
        session_start();
    }
session_destroy();
header('location:index.php');
?>
```

### ADD NEW RECORDS

Adding new staff, adding new customer, adding new vehicle, adding new item, adding new staff and adding new employee are the modules used this type of code below. As all modules using same coding with some changes like table names, attributes here is one example given below

```
<?php
include('config.php');
if(!isset($_SESSION))
{
    session_start();
}
//start insert part in customer
if(isset($_POST['btnsave']))
{
    $sqlinsertcustomer="INSERT INTO `customer`(`cus_id`, `user_id`, `cus_name`, `address`, `tp_no`)
```

```

VALUES('".mysql_real_escape_string($_POST['cus_id'])."',
      '".mysql_real_escape_string($_POST['user_id'])."',
      '".mysql_real_escape_string($_POST['cus_name'])."',
      '".mysql_real_escape_string($_POST['address'])."',
      '".mysql_real_escape_string($_POST['tp_no'])."');

$resultinsertcustomer=mysql_query($sqlinsertcustomer)or die("error in insert
customer part:".mysql_error());

//Save activity on userlog

$action="Add New Customer";

include('userlog.php');

//start insert login part

$sqlinsertlogin="INSERT INTO `login`(`user_id`, `password`, `role_id`,
`attempt`, `status`) VALUES (
      '".mysql_real_escape_string($_POST['user_id'])."',
      '".mysql_real_escape_string($_POST['tp_no'])."',
      '".mysql_real_escape_string("R04")."',
      '".mysql_real_escape_string(0)."',
      '".mysql_real_escape_string("active")."");

$resultinsertlogin=mysql_query($sqlinsertlogin)or die("error in insert login
part:".mysql_error());

if($resultinsertstaff & $resultinsertlogin)
{
    echo'<script> alert("your data added successfully");</script>';
}

```

## FORM

The field that contain auto generated value should be set as read only to prevent user from changing it.

```

<form class="form-horizontal" role="form" action="" "
method="post">

```

```

<div class="form-group">
  <label class="col-sm-3 control-label no-padding-right"
for="form-field-1"> Customer Id </label>
  <div class="col-xs-10 col-sm-5">
    <?php
      //Generate Customer id automatically-start
      $sql1="select cus_id from customer order by cus_id
DESC";
      $result1=mysql_query($sql1)or die("error in insert
Customer Id:".mysql_error());
      $row=mysql_fetch_assoc($result1);
      $cus_id=$row['cus_id'];
      if(mysql_num_rows($result1)>0)
      {
        $cus_id=++$cus_id;
      }
      else{
        $cus_id="C001";
      }
    ?>
    <input type="text" name="cus_id" id="cus_id" value="<?php
echo $cus_id;?>" class="form-control" required readonly />
  </div>
</div>
<div class="form-group">
  <label class="col-sm-3 control-label no-
padding-right" for="form-field-1-1"> User Id </label>
  <div class="col-xs-10 col-sm-5">
    <input type="text" name="user_id"
id="user_id" value="<?php echo $cus_id;?>" class="form-
control" readonly />

```

```

        </div>
    </div>
    <div class="form-group">
        <label class="col-sm-3 control-label no-
padding-right" for="form-field-1-1"> Customer Name
</label>
<div class="col-xs-10 col-sm-5">
        <input type="text" name="cus_name"
id="cus_name" placeholder="Customer Name" class="form-
control" required />
    </div>
</div>
<div class="form-group">
        <label class="col-sm-3 control-label no-
padding-right" for="form-field-1-1"> Address </label>
<div class="col-xs-10 col-sm-5">
        <textarea class="form-control"
name="address" id="address" placeholder="Address"
></textarea>
    </div>
</div>
<div class="form-group">
        <label class="col-sm-3 control-label no-
padding-right" for="form-field-1"> Telephone No </label>
<div class="col-xs-10 col-sm-5">
        <input type="text" name="tp_no" id="tp_no"
placeholder="Telephone No" class="form-control"
onBlur="validatetp()" required />
        <font color="red"><div
id="tperrormsg"></div></font>
    </div>
</div>

```

```

<div class="form-group">
    <label class="col-sm-3 control-label no-
padding-right" for="form-field-1"> </label>
<div class="col-sm-9">
    <button type="submit" name="btnsave"
id="btnsave" class="btn btn-success"><i class="ace-icon fa
fa-save"></i>Save</button>
    <button type="reset" name="btnreset"
id="btnreset" class="btn btn-pink"><i class="ace-icon
glyphicon glyphicon-refresh"></i>Reset</button>
    <a
href="index.php?pg=customer.php?option=view"><button
type="button" class="btn btn-danger"><i class="ace-icon
glyphicon glyphicon-remove"></i>Cancel</button> </a>
</div>
</div></form>

```

## EDIT/UPDATE RECORDS

Edit details coding is used on many pages when adding made. Such as Edit Staff details, Edit item, Edit customer details, Edit employee, Edit vehicle and Edit Branch details.

```
if(isset($_POST['btnupdate']))
```

```
{
```

```
    $staff_id=$_POST['staff_id'];
```

```
    $sqlupdatestaff="UPDATE `staff` SET
```

```
staff_name='".mysql_real_escape_string($_POST['staff_name'])."',
```

```
    gender='".mysql_real_escape_string($_POST['gender'])."',
```

```
    dob='".mysql_real_escape_string($_POST['dob'])."',
```

```
    nic='".mysql_real_escape_string($_POST['nic'])."',
```

```
    address='".mysql_real_escape_string($_POST['address'])."',
```

```
    tp_no='".mysql_real_escape_string($_POST['tp_no'])."',
```

```

designation="'.mysql_real_escape_string($_POST['designation'])."',
basic_salary="'.mysql_real_escape_string($_POST['basic_salary'])."',
branch_id="'.mysql_real_escape_string($_POST['branch_id'])."' where
staff_id='$staff_id';

$resultupdatestaff=mysql_query($sqlupdatestaff)or die("error in
update staff part:".mysql_error());

if($resultupdatestaff)
{
    echo'<script> alert("your data added successfully");</script>';
    header('location:index.php?pg=staff.php&option=new');
}
}
}

```

The values get from the database set into appropriate fields to enable the user easily understand which fields have to be edited.

```

<input type="text" name="staff_name" id="staff_name"
value="<?php echo $row['staff_name'];?>" class="form-control"
required />

```

## DELETE RECORDS

Deleting record from the database such as Delete Item, Delete branch, Delete employee details, Delete customer details, Delete staff details and Delete vehicle details. But deleting records from database is only allowed to administrator to ensure security.

```

elseif($_GET['option']=="delete")
{
    $branch_id=$_GET['branch_id'];

    $sqldlt="DELETE FROM branch WHERE
branch_id='$branch_id';

    $resultdlt=mysql_query($sqldlt)or die("error in delete
part:".mysql_error());

```



```
}
```

## VIEW RECORDS

Added records can be viewed by the authorized users. MySQL is used to SELECT record from database and echoed in the appropriate place using PHP.

```
<?php
```

```
    $sqlview="SELECT * FROM `reservation` where status='pending' and  
branch_id='$branch';
```

```
    $result=mysql_query($sqlview) or die("@error in reserve confirm view  
part:".mysql_error());
```

```
    echo'<table id="dynamic-table" class="table table-striped table-bordered  
table-hover"><thead><tr><th>Reservation  
Id</th><th>Vehicle  
Id</th><th>Date</th><th>Reservation  
Date</th><th>Reservation  
Time</th><th>Service Type</th><th>Action</th></tr></thead><tbody>';
```

```
    while($row=mysql_fetch_assoc($result))
```

```
    {
```

```
        echo'<tr><td>'.$row['reservation_id'].'</td><td>'
```

```
        .$row['veh_id'].'</td><td>'
```

```
        .$row['date'].'</td><td>'
```

```
        .$row['reserve_date'].'</td><td>'
```

```
        .$row['reserve_time'].'</td><td>'
```

```
        .$row['service_type'].'</td>';
```

```
    echo'<td><a
```

```
href="index.php?pg=reserve_confirm.php&option=confirm&reservation_id='.$row  
['reservation_id'].'">
```

```
        <button type=button class="btn btn-xs btn-success"><i class="ace-  
icon glyphicon glyphicon-ok"></i>Confirm</button></a>;
```

```
        echo'<a  
href="index.php?pg=reserve_confirm.php&option=reject&reservation_id='.$row  
['reservation_id'].'">
```

```
        <button type=button class="btn btn-xs btn-danger"><i class="ace-  
icon glyphicon glyphicon-remove"></i>Reject</button></a></td></tr>';
```

```
    }
```

```
echo'</tbody></table>';
```

```
?>
```

The below coding used to echoed the selected records in a table view in the staff's branch with pending reservations.

```
$sqlview="SELECT * FROM `reservation` where status='pending' and branch_id='$branch'";
```

System allows the users to print the report using print function. Page want to be printed included into the frame work. When the user click the Print button some values including Print Preview window size, Toolbar status, Menu bar status, Directories, Locations and some user defined options also send to the print page.

```
if(!isset($_GET['pr']))
```

```
{
```

```
echo'<a href="print.php?pr=staff.php&option=view" target="_blank"><button class="btn-lg btn-info"><i class="ace-icon fa fa-print align-top bigger-125 icon-on-right"></i> Print</button> </a>';
```

```
}
```

After the user clicked the Print button the print preview page will be open according to the size, toolbar, menu bar statuses defined on the above such coding. On the print page a checking is done to ensure whether the option is get. If the option is get successfully. Page want to be print will be included.

```
<?php
```

```
if(!isset($_GET['pr']))
```

```
{
```

```
echo'<body>';
```

```
}
```

```
elseif($_GET['option']=="hourly")
```

```
{
```

```
echo'<body onload="selectdateforhourly()">';
```


```
}
```

### Select Vehicle Number using Ajax function

Using Ajax technology, Select Vehicle Number to the system is helped by this code segment. User's internet bandwidth is saved with its help as data is sent to the server without refreshing the entire page while necessary parts as responses are updated.

```
function veh_info(){  
    var veh_no=document.getElementById("veh_no").value;  
    var xmlhttp=new XMLHttpRequest();  
    xmlhttp.onreadystatechange = function()  
    {  
        if (xmlhttp.readyState==4 & xmlhttp.status==200)  
        {  
  
            document.getElementById("loadveh").innerHTML=xmlhttp.responseText;  
        }  
    }  
  
    xmlhttp.open("GET","ajaxpage.php?option=viewbill&veh_no="+veh_no,true)  
    ;  
    xmlhttp.send();  
}
```

## APPENDIX G - CLIENT CERTIFICATE



# K.B. Mogul

*Vehicle Repairing & Service*

348/4, K.K.S.Road,                      NAL/DS/1138  
Thavady

021 205 3181  
077 824 0361  
077 424 0030

BIT Coordinator,  
University of Colombo School of Computing,  
Colombo-07.


Dear Sir/Madam,


**LETTER OF CERTIFICATION**

This is to certify that Ms.Thanusiya Balachandran has successfully designed and developed an Online Vehicle Service Station Management System for K.B Mogul. The project was undertaken by her partial fulfilment of a requirement for the Bachelor of Information Technology Degree program.

The system was fully satisfied with our requirements and this system, web based management system would be solution for us and customer. From this system customer can easily make a reservation through online and also enabled the smooth operation of our company to manage service. It has enhanced our relationship with customer. I'm pleased to certify that the system developed by Ms.Thanusiya Balachandran fulfills the requirements of the company and could be used as our online management system and host to public use.

Thank you.

Yours faithfully,  
  
Mr.S.T.Kuganesan  
Owner,  
K.B Mogul



**K.B. Mogul**  
Vehicle  
Repairing & Service  
348/4, K.K.S Road, Thavady.

# GLOSSARY

**AJAX** – Stands for Asynchronous JavaScript and XML. Combine collection of technologies. Running on Client side and helps to develop interactive web applications

**Apache** – Secure web server developed by Apache Software foundation.

**CSS** – Stands for Cascading Style Sheets. Use to apply styles for Markup languages such as HTML, XML.

**Database** - is an organized collection of data for one or more purposes, usually in digital form.

**Domain** - is knowledge about the environment in which the target system operates.

**Graphical User Interface** - is a type of user interface that allows users to interact with electronic devices with images rather than text commands

**HTML** – Stands for Hyper Text Markup Language. Use to build Web pages.

**Internet** - is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide.

**Interface** – Interconnect web system with the user.

**JavaScript** – Use to dynamic web applications. Develop by Netscape.

**JQuery** – It is a JavaScript library. It was designed to simplify the client-side scripting of HTML.

**MySQL** – One of most popular Database management system can handle big amount of data related to different types.

**PHP** – Stand for PHP Hypertext Preprocessor. Object oriented supported server side scripting language.

**SQL** - Stands for Structured Query Language. Help to retrieve data base details.

**WAMP** – Open source Bundled software package. Include Apache, PHP, MYSQL, and Perl.

**Web Browser** - is a software which allows the user to access WWW.

**WWW (World Wide Web)** - is a system of interlinked hypertext documents accessed via the Internet.