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MOBILE USED CAR PRICES AND INFORMATION

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
in  
Computer Science

---

by  
Ting-Shiuan Chang  
June 2003

MOBILE USED CAR PRICES AND INFORMATION

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## ABSTRACT

The demand for wireless access is a major force behind the growth of the global communication industry, providing the consumer with the benefits of portability as well as other advantages. This phenomenon is best seen in the telecommunications industry. However, wireless access technologies are not restricted to telephones. Personal digital assistants (PDAs) such as Palm OS devices have been improved and also support for wireless networks.

MOBILE USED CAR PRICES AND INFORMATION is a software system which allows users to read the used car values and car equipment from Palm OS devices. This Wireless Web application is to develop a mobile vehicle Web application for clients who are interested in used cars. Palm OS devices provide the wireless access to the internet and communicate with a desktop computer. Therefore, the basic design of this project is simply to communicate between Palm OS devices and a remote server.

This project was implemented in Web clipping which is created to deliver the World Wide Web on Palm OS devices. A Web clipping application (WCA) looks like a web application because both of them are written by HTML. However, due to the limitations of Palm OS devices, a WCA does not provide full HTML and the web pages over the internet can not be

shown properly on the screen of Palm OS devices. This means this project was designed only for Palm OS users.

## ACKNOWLEDGMENTS

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## CHAPTER ONE

### SOFTWARE REQUIREMENTS SPECIFICATION

#### 1.1 Introduction

The use of wireless devices such as cellular phones, two-way pagers and Personal Digital Assistants (PDAs) has undergone tremendous growth over the past few years. A Personal Digital Assistant (PDA) is a handheld device that combines computing, Internet, and networking features. Originally PDAs were used mainly for their contact management, calendar and to-do list functionality. As the technology has progressed, PDA capabilities have increased and today you can check email, browse the web or edit Microsoft Office documents from your Personal Digital Assistant.

There are two major categories of PDAs: those that use the Palm OS as their operating system, and those that use the Microsoft Pocket PC OS as their operating system. In October 1999, Palm, Inc. entered the wireless Internet market with the introduction of the Palm VII organizer. The Palm VII would be useful beyond its wireless capabilities. Then, Palm, Inc. created a Web content delivery technology called Web clipping that is based on Hypertext Markup Language (HTML); Web clipping content is optimized for Palm OS

devices. However, the screen size of Palm OS devices is significantly smaller than the size of a desktop computer screen and because of its limited size of the device; the result does not come close to displaying properly on the Palm OS device. The speed and expense of wireless networks also does not come close to matching today's wired network.

Due to these limitations, Palm, Inc. has created Web clipping to deliver as much of the Web experience as possible, redefine and package some components to perform better on Palm OS devices, and discard the rest. The biggest difference between Web clipping applications (WCAs) and standard World Web applications is that Web clipping application are started by launching an application file installed by the user onto the device instead of typing a URL into a Web browser.

The Palm OS Emulator (POSE) simulates the operation of an actual Palm OS device on the desktop computer. This project uses POSE to develop a Web clipping application called Mobile Used Car Prices and Information.

## 1.2 Purpose of the Project

Wireless is getting more important and popular than because its convenience and portability make things easier. The goal of this project is to develop a mobile vehicle

application called MOBILE USED CAR PRICES AND INFORMATION and this application provides the prices and information for clients. The clients can use their Palm handheld devices to read the prices and information whenever they want to check.

### 1.3 Context of the Problem

Most people go to the used car center and try to find a used car which satisfies their own standards. This means a person is not sure about what kind of car and which year she/he exactly need and sometimes one may encounter some interesting used cars that have never appeared in one's mind. In this situation, one does not want to drive back home and try to do some more research again because it wastes time. Therefore, the wireless technology will give one a way to solve the problem and a PDA will provide a fast and convenient solution.

### 1.4 Significance of the Project

The significance of the project was because the wireless technology has been widely used over the past few years and Personal Digital Assistants (PDAs) have been improved to include the wireless technology. We can feel that the wireless devices are part of our life and in the future it will be heavily used by us. Therefore, a wireless



application can be the practical proof of the successful wireless technology.

### 1.5 Assumptions

The following assumptions were made regarding the project:

1. This project requires a basic knowledge of wireless communication.
2. The clients need to know how to use and install an application on the Palm handheld device.
3. Not all Palm OS devices support Web clipping technology and Web clipping support can be found on Palm VII, Palm m500, Palm m505 etc.
4. Palm OS Emulator (POSE) simulates the operation of an actual Palm OS device on the desktop computer and POSE is used by developing this master's project.
5. The operating system for the desktop computer is Microsoft Windows 2000 professional and the operating system for Palm OS devices or POSE is Palm OS 3.5 or up.

### 1.6 Limitations

First, the screen size of Palm OS devices is obviously smaller than the size of a desktop computer screen and when

you write the program the result on the screen of Palm OS devices may be improper.

Second, the speed of wireless networks is much slower than today's wired network and a complicated program makes the situation worst.

Third, the expense of wireless networks is higher than today's wired network.

Fourth, Palm OS devices have performance and memory issues for supporting every Web technology. This means Palm OS devices can not provide full HTML support and web pages over the internet can not be shown correctly on the screen of Palm OS devices.

Fifth, there are thousands of different used cars and different years have different prices and information. This project only implemented several used cars and several different years.

### 1.7 Definition of Terms

The following terms are defined as they apply to the project.

Table 1. Definition of Terms

Palm OS device	A personal handheld organizer. Since the release of the Pilot 1000 in 1996,
----------------	---

	<p>devices running Palm OS have dominated the handheld computing market. Devices running the Palm OS are not intended to be portable versions of desktop computer. Instead, the handheld is a satellite device, designed as an extension to a desktop system.</p>
PDA	<p>Personal Digital Assistant. A PDA is a handheld device that combines computing, Internet, and networking features.</p>
GUI	<p>Graphical User Interface. The graphical representation of physical or pseudo-physical objects (such as buttons, trees, and lists) that allow the user to direct the flow of the program through the use of a mouse or other pointing device.</p>
HTML	<p>Hypertext Markup Language. A language that describes the formatting of text inside a browser.</p>
Windows 2000 pro	<p>Microsoft Windows 2000 professional is an operating system for personal computer.</p>
The Apache HTTP server	<p>The Apache HTTP Server Project is an effort to develop and maintain an open-</p>

	<p>source HTTP server for modern operating systems including UNIX and Windows NT.</p> <p>The goal of this project is to provide a secure, efficient and extensible server that provides HTTP services in sync with the current HTTP standards.</p>
PHP	<p>PHP stands for the Hypertext Preprocessor.</p> <p>PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.</p>
PHPMysqlAdmin	<p>phpMyAdmin is a tool written in PHP intended to handle the administration of MySQL over the WWW. Currently it can create and drop databases, create/drop/alter tables, delete/edit/add fields, execute any SQL statement, manage keys on fields.</p>
MySQL	<p>MySQL is the world's most popular open source database, recognized for its speed and reliability. MySQL AB, the company founded by the creators of the MySQL database, provides MySQL software</p>

	development and related support and services.
WCA	Web Clipping Application. WCAs appear as icons in the Application Launcher alongside the Address Book, MemoPad, and other Palm OS application.
POSE	Palm OS Emulator. A POSE simulates the operation of an actual Palm OS device on the desktop computer.
WCA Builder	Web Clipping Application Builder. To build a Web clipping application (WCA), Palm, Inc. has provided a utility called the Web Clipping Application Builder.
PQA	Palm Query Application. A PQA is a special type application for Palm OS devices that allows a user to interact wirelessly with Web content.

## 1.8 Organization of the Thesis

The thesis portion of the project was divided into six chapters. Chapter One provides software requirements specification, an introduction to the context of the problem, purpose of the project, significance of the project, limitations, and definitions of terms. Chapter Two consists of the software design. Chapter Three documents the steps used in testing the project. Chapter Four presents the maintenance required from the project. Chapter Five presents the users manual from the project. Chapter Six presents conclusions drawn from the development of the project. The Appendices containing the project follows Chapter Six. Finally, the references for the project are presented.

## CHAPTER TWO

### SOFTWARE DESIGN

#### 2.1 Introduction

The intent of this project is to design a system that can show the prices and information of the used car on the Palm handheld devices. Web clipping is the name Palm, Inc. created for their Web content delivery system designed for their line of Palm OS devices. This technology allows Palm OS devices to deliver the Web Wide Web and gives the programmer a way to design a software application on the Palm handheld devices. Because of the expense of Palm handheld devices this project uses Palm OS Emulator (POSE) to develop a mobile vehicle application which uses Web clipping as its programming language. Web clipping application is the web application for Palm OS devices.

#### 2.2 Preliminary Design

The basic idea of this project is to communicate between Palm OS devices and a remote server side. The design for this server is to develop the web application by using HTML and PHP as its programming languages. The web application for this server provides a way to manage the customer information and the used car information. This means the administrator can create, change, view or delete

the used car information and the user can register their information into this database. This server side is on the desktop of a personal computer and this server needs to be started whenever Palm OS devices are trying to send the request. On the Palm OS device, the client has to install the Web clipping application which contains Graphical user interfaces (GUIs) and then the client can proceed from the main page to the finally specified car page. Then the specified car page sends a request from the Palm OS device to Web clipping proxy server and waits for result from Web clipping proxy server. The proxy server sends the request forward to the remote sever side.

This server side contains a database which stores the prices and relative information. When the server receives a request from the Web clipping proxy server it will use those variables to do some operations like checking the password, calculating the price and finding the data. After the server has done all operations, it responds the required price and information to the Web clipping proxy server. The Web clipping proxy server converts the proper languages and discards the improper languages. Then the proxy server sends the result back to the Palm OS device and the user can see the price and information on the screen. The communication



between the Palm OS device and the MOBILE USED CAR PRICES AND INFORMATION server can be shown as Figure 1.

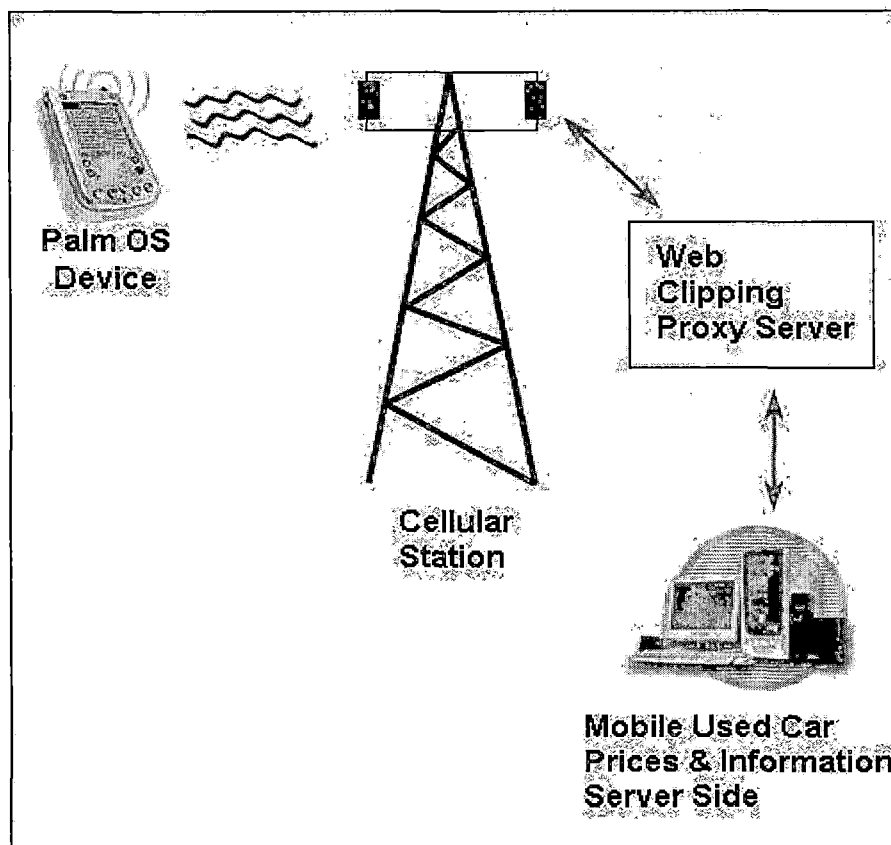


Figure 1. Wireless Communication

### 2.3 Architecture Design

This system is divided into two parts. One is the application for Palm OS devices and the other one is the server side.

### 2.3.1 Development Environment

The client side is on the Palm OS devices and the server side is on the desktop of a personal computer (PC). The development environment is described by the following two subsections. The hardware of this system is listed as a table in the first subsection and the software of this system is listed as a table in the second subsection.

2.3.1.1 Platform and Environment Requirements. The following table shows the required platform and environments of MOBILE USED CAR PRICES AND INFORMATION.

Table 2. Platform Requirements

	Palm OS devices	Personal Computer
Operating System	Palm OS 3.5 or up	Microsoft Windows 2000 pro
Memory	16MB or higher	128MB recommend or higher
Free disk space		200MB recommended
Devise version	Palm VII, Palm VIIx, Palm m500, Palm m500c, Palm m505, Palm m515 etc.	

### 2.3.1.2 Middleware and Applications Software

Requirements. The following table shows the required middleware and applications software of MOBILE USED CAR PRICES AND INFORMATION.

Table 3. Middleware Requirements

	The Client Side	The Server side
Technologies	Web Clipping Application (WCA)	PHP 4.0, Hypertext Markup Language (HTML) and MySQL
Software tools for development	Notepad, WCA Builder, Palm OS Emulator (POSE) and Adobe Photoshop 6.0	Notepad, Microsoft FrontPage, PHPMyAdmin, Apache HTTP server, Internet explorer (IE), MySQL Database and Adobe Photoshop 6.0

### 2.3.2 Architecture Overview

(1)When the client sends a request such as links or forms from a palm OS device, the local Palm.net station receives the compressed packet and relays the compressed packet to the palm web clipping proxy server. (2)The web clipping proxy server that receives the compressed packet converts it into a standard packet and sends this standard packet to the web application server through the internet. (3)The web application server will interact with database and send the result back to web clipping proxy server through the internet. (4)When the web clipping proxy server receives the result, the proxy server will convert the proper language and discard the improper language into a compressed packet. (5) The web clipping proxy server sends the compressed packet to the local Palm.net station. (6)The local Palm.net station relays the compressed packet to the palm OS device. (7)The result will show in the screen of the Palm OS device. The following diagram shows the architecture overview of this system.

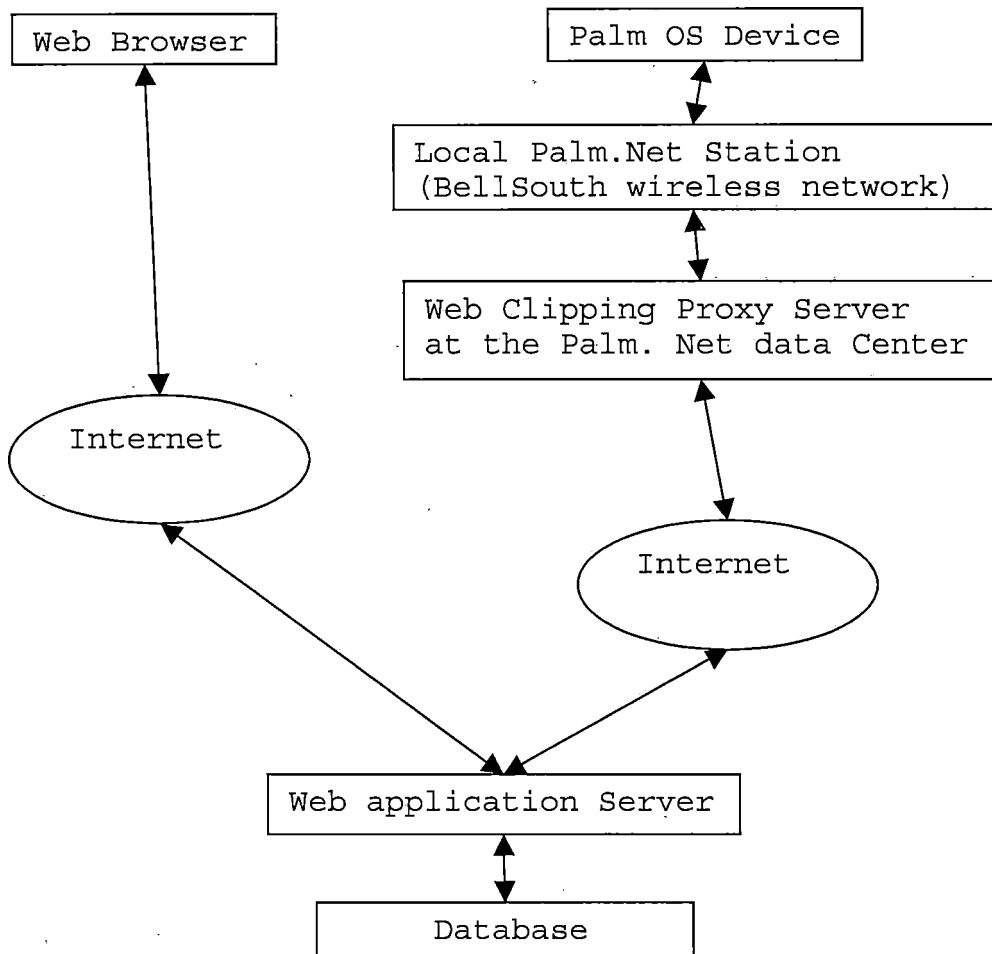


Figure 2. Architecture Overview one

This following picture is another view of this architecture overview. In this system, you can access the web clipping application GUI on palm OS devices and communicate with web application server.

You also can access the web GUI on regular workstation and communicate with the web application server.

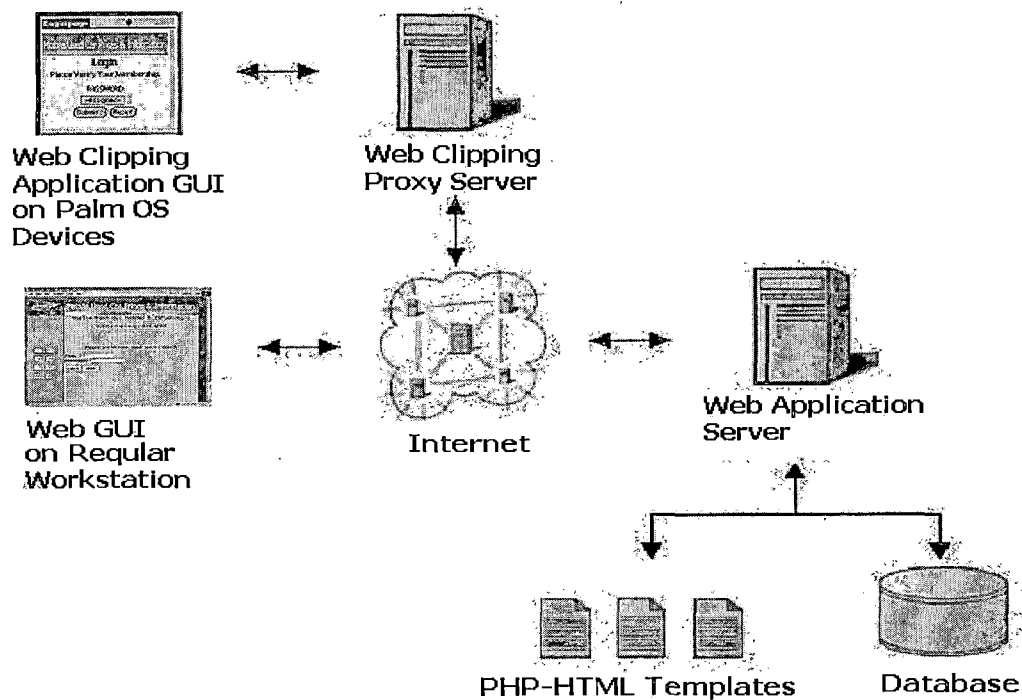


Figure 3. Architecture Overview Two

### 2.3.3 Functional Requirements

The operational structures of MOBILE USED CAR PRICES AND INFORMATION are described in this section.

2.3.3.1 Use Case Diagram. This system has three different users which are new member, member and administrator. All of them will be described as the following subsections.

2.3.3.1.1 New Member. The functional design of New Member is to apply the application and join the membership of MOBILE USED CAR PRICES AND INFORMATION. The use case diagram for New Member is as following:

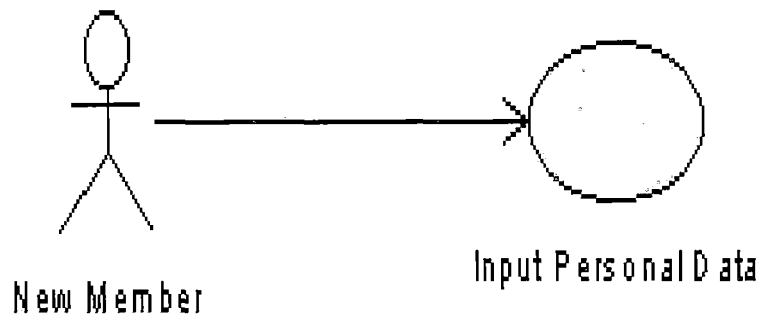


Figure 4. New Member Diagram

2.3.3.1.2 Member. The main design for Member is to obtain the software and install the software on Palm OS devices. Once the user becomes the member then he/she will be able to use this software on Palm OS devices. The following two diagrams describe the functions for member. The first diagram describes the member's functions for the Palm OS device and the second diagram describes the member's functions for the server side.

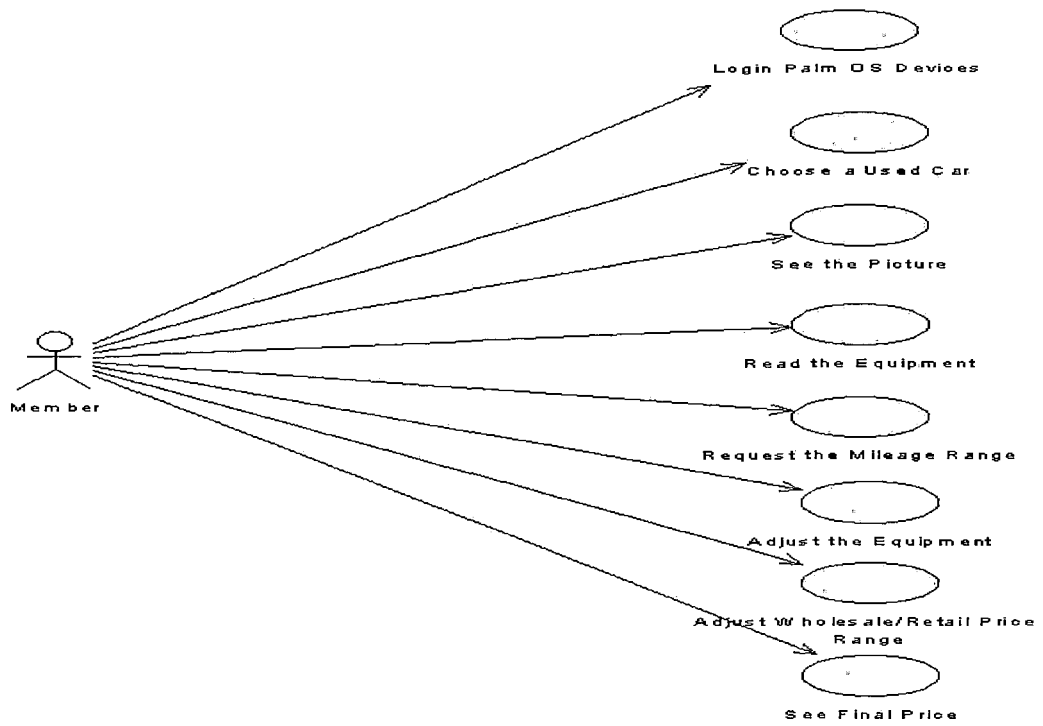


Figure 5. Member for Palm Diagram

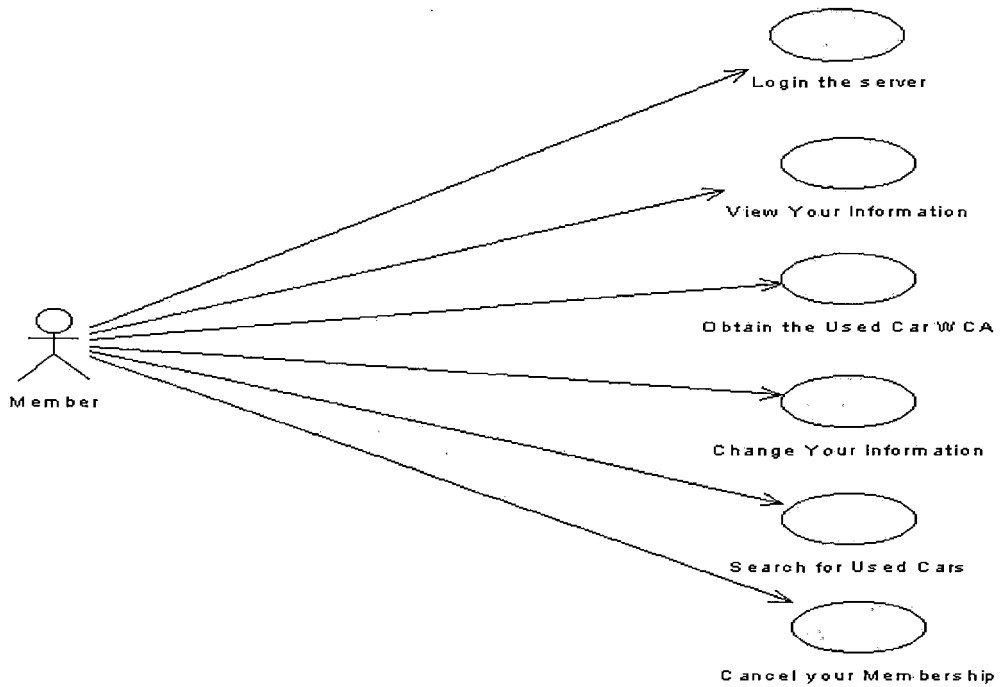


Figure 6. Member for Server Diagram



2.3.3.1.3 Administrator. The administrator has numerous functions because its role is definite a manager. A manager has to do all kinds of jobs to keep this system available. The administrator manages Members, Used Car Information, Mileage, Equipment and Equipment price. These jobs are to input, register, update, view, delete and so on. The sixth function is the Search function. This user case diagram for Administrator shows the main six functions. The detailed sub functions won't be explained here and I will describe all of them in Chapter Five.

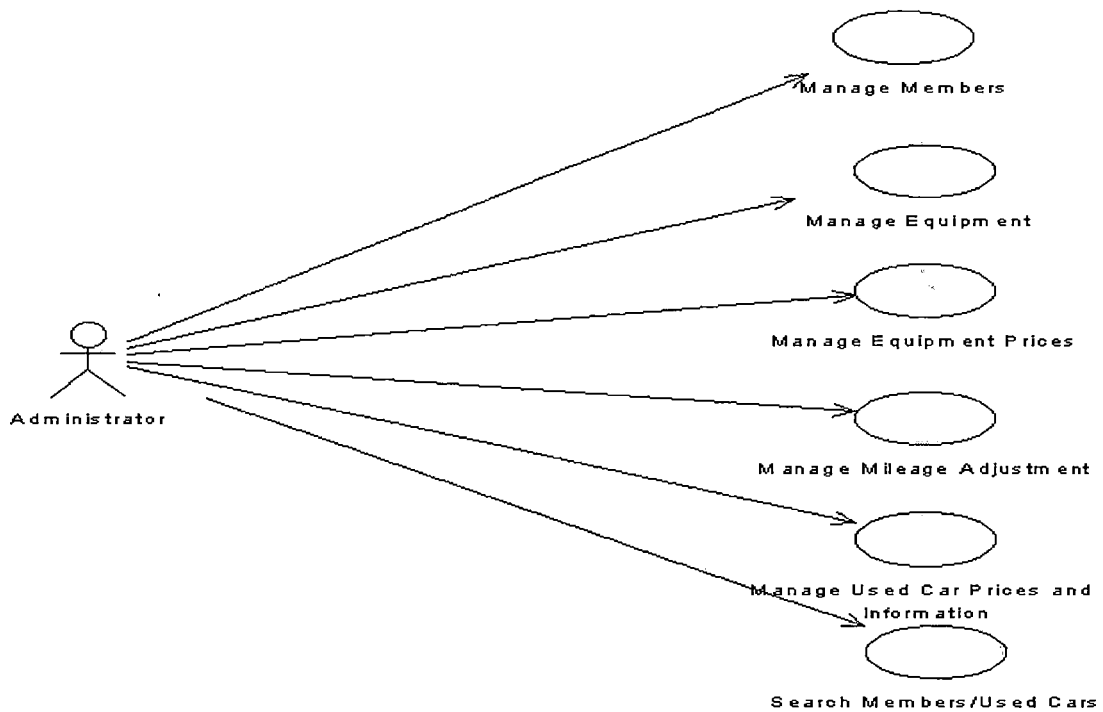


Figure 7. Administrator Diagram

## 2.4 Database Design

This section shows the database design of MOBILE USED CAR PRICES AND INFORMATION. There are seven tables in the database and the following items show the design of tables in the database.

1. Customer\_information has personal information such as account id, last name, first name, email, phone, address, city, country and password. This table stores all information from members.

2. Administrator\_info has only name and password because it is designed to be programmers.

3. This system needs to do some calculations and these calculations need the data from the database. First, the equation for calculating the final price is depending on several factors. The simple equations can be shown as following:

ADJUSED WHOLESALE PRICE = STANDARD WHOLESALE PRICE +(-)

MILEAGE ADJUSTMENT +(-) EQUIPMENT ADJUSTMENT

ADJUSTED RETAIL PRICE = STANDARD RETAIL PRICE +(-) MILEAGE  
ADJUSTMENT +(-) EQUIPMENT ADJUSTMENT

The factor affects all of them is the year of that car and this means different year has different wholesale price, retail price, averaged mileage and equipment price.

Therefore, the following tables will be created to do these calculations.

4. Used\_car\_information contains information number, category, make, model, year, type, transmission, engine, drive, equipment, wholesale, retail, and mileage. The equipment is assumed to be the standard equipment which basically comes with the vehicle. The mileage in this table means the averaged mileage for a particular year. The wholesale price and retail price are decided by this averaged mileage.

5. Equipment, Factory\_equipment\_cars, and Schedule is created for equipment adjustment. This equipment adjustment affects the final price which will be shown on the screen. Equipment contains the name and number. This number will be used by Schedule to create another number called final number. This final number and year will decide the price and this price will be added or deducted from wholesale price or retail price.

6. Mileage\_adjustment has table, mileage, year and price.

Present the structure of this database; three different diagrams which are conceptual model diagram, entity-relationship diagram (ER diagram) and relational database

schema. These database diagrams will be described one by one in the following subsections.

#### 2.4.1 Conceptual Model Diagram

The following two figures present the conceptual model diagrams of this database. Each diagram describes the various components.

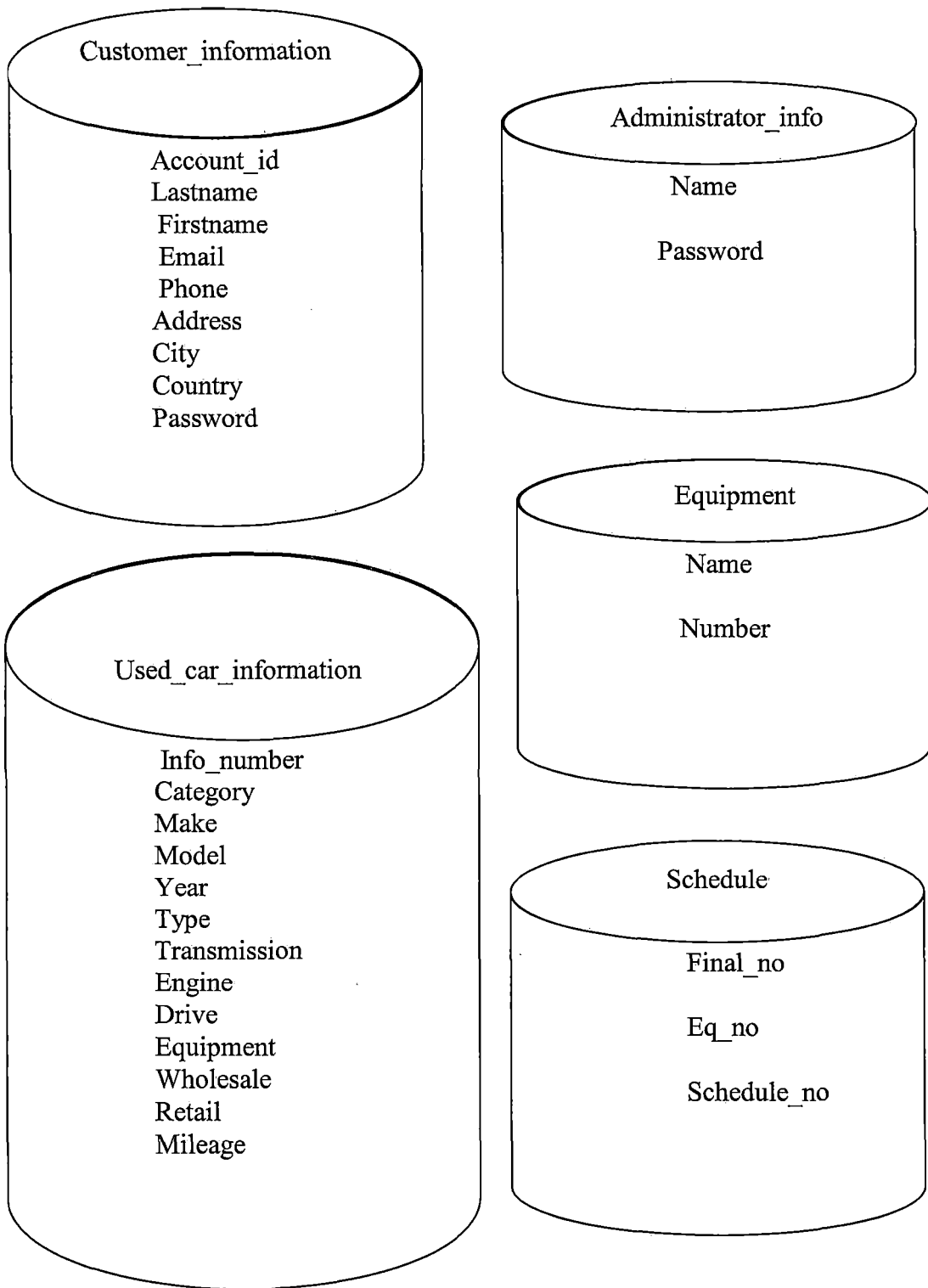


Figure 8. Conceptual Model Diagram Part One

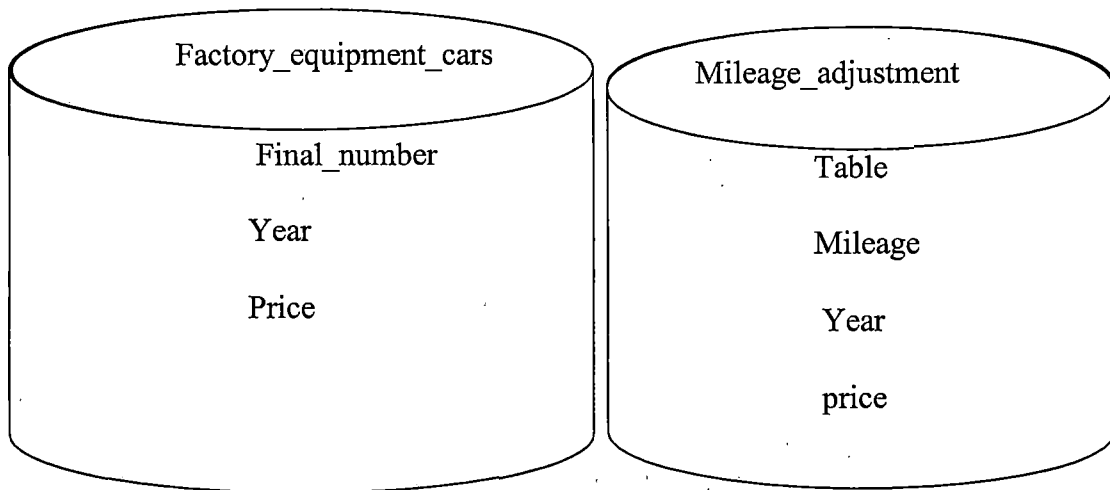


Figure 9. Conceptual Model Diagram Part Two

#### 2.4.2 Entity-Relationship Diagram

Because there are seven tables this diagram is separated into two figures and Administrator\_info is the connection between part one and part two.

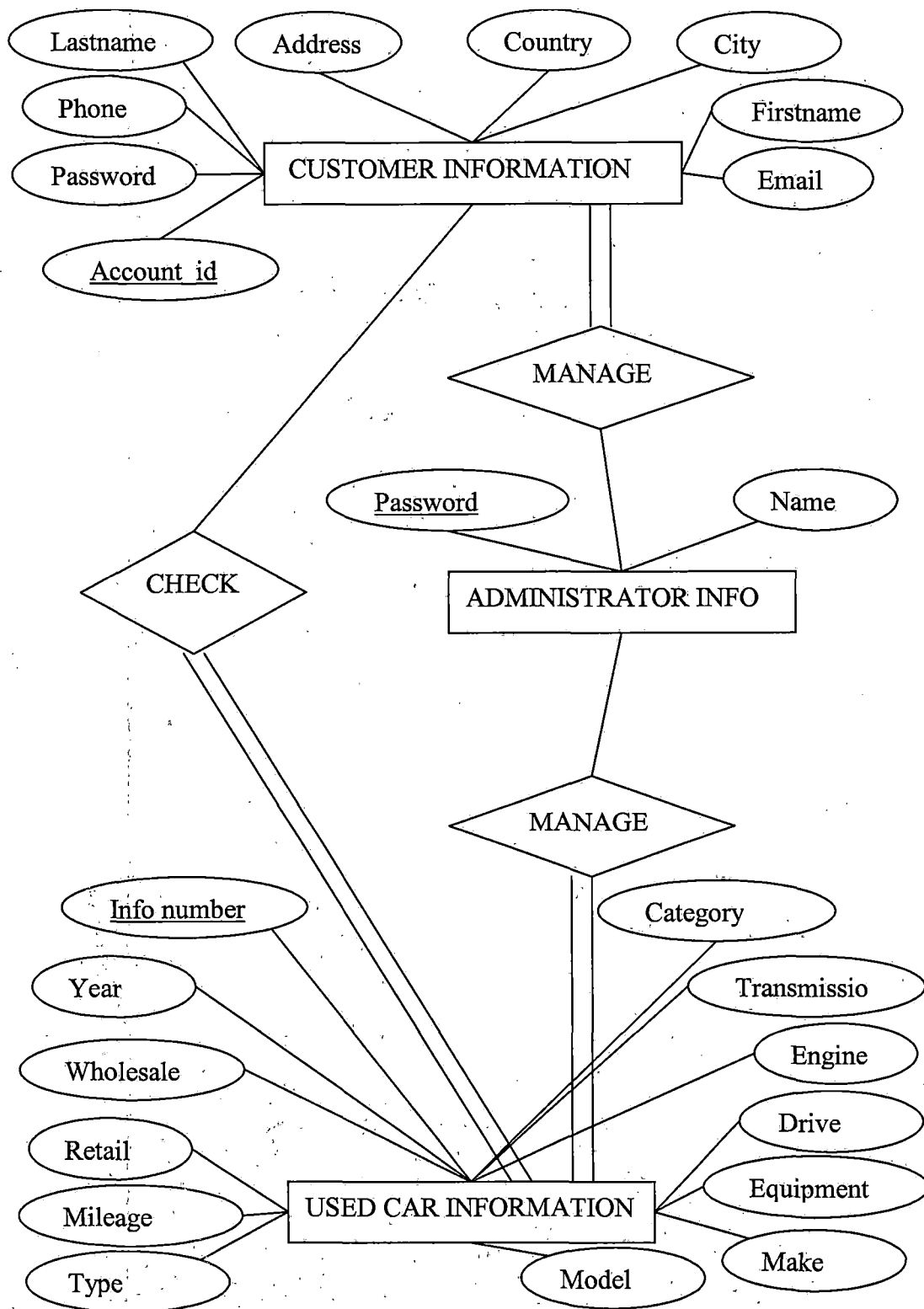


Figure 10. Entity-Relationship Diagram Part One

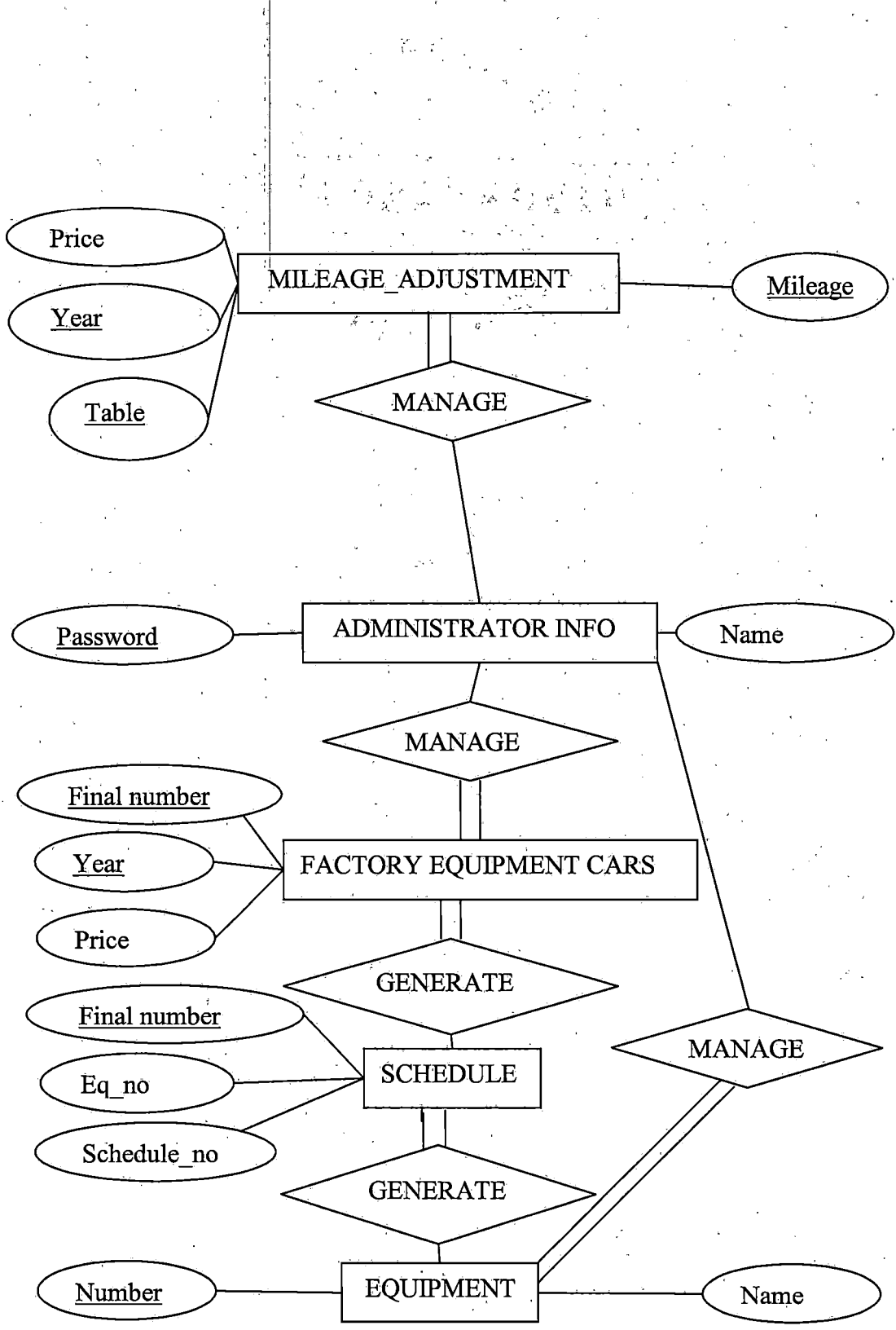


Figure 11. Entity-Relationship Diagram Part Two



### 2.4.3 Relational Database Schema

#### CUSTOMER\_INFORMATION

<u>Account id</u>	Password	Lastname	Firstname	Email	Phone	Adress	City	Country
-------------------	----------	----------	-----------	-------	-------	--------	------	---------

#### ADMINISTRATOR\_INFO

<u>Password</u>	Name
-----------------	------

#### USED\_CAR\_INFORMATION

<u>Info number</u>	Category	Make	Model	Year	Type	Transmission	Engine	Drive	Equipment	Wholesale	Retail	Mileage
--------------------	----------	------	-------	------	------	--------------	--------	-------	-----------	-----------	--------	---------

#### EQUIPMENT

<u>Number</u>	Name
---------------	------

#### SCHEDULE

<u>Final number</u>	Eq_no	Schedule_no
---------------------	-------	-------------

#### FACTORY\_EQUIPMENT\_CARS

<u>Final number</u>	<u>Year</u>	Price
---------------------	-------------	-------

#### MILEAGE\_ADJUSTMENT

<u>Table</u>	<u>Mileage</u>	<u>Year</u>	Price
--------------	----------------	-------------	-------

Figure 12. Relational Database Schema

## 2.5 Summary

The software design of MOBILE USED CAR PRICES AND INFORMATION helps to develop a more completely functional and achievable system. During the whole implementation phase a good software design reduces the unexpected results and guides the programmer to more flexible solutions. Actually, the design phase is far important than the coding phase. The preliminary design guided the basic idea of this project and gave a right direction during the first phase. The architecture design describes the requirements for both software and hardware. After the software environment and hardware environment were decided, the programming phase luckily was successful. Those functional diagrams helped to determine the functionality of each different user. The database design was successfully implemented in the MySQL language and the database diagrams helped to determine the relationship between each table. After combining all the efforts from each software design this project was completed.

## CHAPTER THREE

### SOFTWARE QUALITY ASSURANCE

#### 3.1 Introduction

Software Quality Assurance involves the entire software development PROCESS - monitoring and improving the process, making sure that any agreed-upon standards and procedures are followed, and ensuring that problems are found and dealt with. In this system, the software quality assurance has been done by the following subsections.

#### 3.2 Unit Test Plan

The unit test is the initial step in the software testing process and it focuses on the smallest functional unit of design. This section will provide overview, test plan, and results of the unit testing of the MOBILE USED CAR PRICES AND INFORMATION system. In MOBILE USED CAR PRICES AND INFORMATION the unit test includes several things to check for each functional unit and make sure that all the command buttons and links work as expected.

For both of POSE and server each single interface will be tested by following criteria:

1. Check all Graphics

To check if all graphics are shown as the programmers intended and if there is any unforeseen problem in viewing

these graphics. Also check if it's a linked image it must link to the right page.

2. Check all text

To check all text is the right information for that particular page and also check the font, grammar and spelling errors that wouldn't be caught by the computer.

3. Check all buttons

To check all buttons are shown in the screen and also check all buttons link to the right place.

4. Check all hyperlinks

All links must link to the right page.

5. Check all forms

To check if all forms are shown as the right page and all the field names and input type are correct.

The following tables show the unit test plan for MOBILE USED CAR PRICES AND INFORMATION. It is better to separate into two tables. One is for Palm OS devices and the other one is for server.

The following table is the unit test plan for Palm OS devices.

Table 4. Unit Test Plan Part One

Unit tested	Test Performed	Results
-------------	----------------	---------

Home	<p>Check the graphics.</p> <p>Check the enter button links to Login page.</p> <p>Check all text.</p>	Pass
Login	<p>Check all linked graphics.</p> <p>Check the input field is shown in the screen.</p> <p>Check submit button and reset button work correctly.</p>	Pass
Password	<p>Check the result.</p> <p>Check all buttons.</p>	Pass
Category	<p>Check the graphic is shown in the screen.</p> <p>Check the linked graphic.</p> <p>Check all buttons link to the right page.</p>	Pass
Make	<p>Check the graphic is shown in the screen.</p> <p>Check the linked graphic.</p> <p>Check all buttons link to the right page.</p>	Pass
Model	<p>Check the correct graphics is shown in the screen.</p>	Pass

	<p>Check all linked graphics.</p> <p>Check all buttons link to the right page.</p>	
Year	<p>Check the correct graphics is shown in the screen.</p> <p>Check all linked graphics.</p> <p>Check all buttons link to the right page.</p>	Pass
Type	<p>Check the correct graphics is shown in the screen.</p> <p>Check all linked graphics.</p> <p>Check all buttons link to the right page.</p>	Pass
Transmission	<p>Check the correct graphics is shown in the screen.</p> <p>Check all linked graphics.</p> <p>Check all buttons link to the right page.</p>	Pass
Option	<p>Check the correct graphics is shown in the screen.</p> <p>Check all linked graphics.</p> <p>Check all buttons link to the right page.</p>	Pass

Picture	Check the correct graphics is shown in the screen. Check all linked graphics.	Pass
Mileage Adjustment	Check the input field is shown in the screen.	Pass
Equipment Adjustment	Check all CHECKBOX type tags are shown in the screen and work correctly	Pass
Price Adjustment	Check these two CHECKBOX type tags are shown in the screen and work correctly.	Pass

The unit test plan for server is listed by the following table and it has been tested by using the criteria I described before.

Table 5. Unit Test Plan Part Two

Unit tested	Tested performed	Results
Home	Check all text. Check all linked or non-linked graphics. Check all hyperlinks.	Pass

Introduction	<p>Check all text.</p> <p>Check all linked or non-linked graphics.</p> <p>Check all hyperlinks.</p>	Pass
New Member Form	<p>Check all linked or non-linked graphics.</p> <p>Check all input fields.</p> <p>Check all buttons.</p> <p>Check the result.</p> <p>Check all hyperlinks.</p>	Pass
Member Login	<p>Check the password field.</p> <p>Check all linked or non-linked graphics.</p> <p>Check the result.</p> <p>Check all hyperlinks.</p>	Pass
Obtain the software	<p>Check all linked or non-linked graphics.</p> <p>Check all hyperlinks.</p>	Pass
Change the information	<p>Check all input fields.</p> <p>Check all linked or non-linked graphics.</p> <p>Check all buttons.</p> <p>Check the result.</p>	Pass



Cancel membership	Check all linked or non-linked graphics. Check the result.	Pass
Administrator Login	Check all linked or non-linked graphics. Check all fields. Check the result. Check all hyperlinks. Check all buttons.	Pass
Manage Members	Check all linked or non-linked graphics. Check all hyperlinks.	Pass
View All Members	Check all linked or non-linked graphics. Check the result.	Pass
Manage Used Car Information	Check all linked or non-linked graphics. Check all hyperlinks.	Pass
Create Used Car Information	Check all linked or non-linked graphics. Check all fields. Check the result. Check all buttons.	Pass

Update Used Car Information	Check all linked or non-linked graphics. Check all fields. Check the result. Check all buttons.	Pass
View All Used Cars	Check all linked or non-linked graphics. Check the result.	Pass
Delete Used Car	Check all linked or non-linked graphics. Check all fields. Check all buttons. Check the result.	Pass
Manage Equipment	Check all linked or non-linked graphics. Check all hyperlinks.	Pass
Register Equipment	Check all linked or non-linked graphics. Check all fields. Check the result. Check all buttons.	Pass
Change Equipment	Check all linked or non-linked graphics.	Pass

	<p>Check all fields.</p> <p>Check the result.</p> <p>Check all buttons.</p>	
View all Equipment	<p>Check all linked or non-linked graphics.</p> <p>Check the result.</p>	Pass
Delete Equipment	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check all buttons.</p> <p>Check the result.</p>	Pass
Manage Equipment Price	<p>Check all linked or non-linked graphics.</p> <p>Check all hyperlinks.</p>	Pass
Input Equipment Price	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check the result.</p> <p>Check all buttons.</p>	Pass
Update Equipment Price	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check the result.</p>	Pass

	Check all buttons.	
View All Relative Equipment Numbers	Check all linked or non-linked graphics. Check the result.	Pass
View All Equipment prices	Check all linked or non-linked graphics. Check the result.	Pass
Delete Equipment Price	Check all linked or non-linked graphics. Check all fields. Check the result. Check all buttons.	Pass
Manage Mileage Adjustment	Check all linked or non-linked graphics. Check all hyperlinks.	Pass
Input Mileage Adjustment Data	Check all linked or non-linked graphics. Check all fields. Check the result. Check all buttons.	Pass
Update Mileage Adjustment Data	Check all linked or non-linked graphics. Check all fields.	Pass

	<p>Check the result.</p> <p>Check all buttons.</p>	
<p>View Mileage Adjustment Tables</p>	<p>Check all linked or non-linked graphics.</p> <p>Check the result.</p>	Pass
<p>Delete Mileage Adjustment Data</p>	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check the result.</p> <p>Check all buttons.</p>	Pass
<p>Search</p>	<p>Check all linked or non-linked graphics.</p> <p>Check all hyperlinks</p>	Pass
<p>Search for Members</p>	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check the result.</p> <p>Check all buttons.</p>	Pass
<p>Search for Used Cars</p>	<p>Check all linked or non-linked graphics.</p> <p>Check all fields.</p> <p>Check the result.</p> <p>Check all buttons.</p>	Pass

### 3.3 Integration Test Plan

The integration test concentrates at the verification effort of the links between Palm OS devices and server. The result can be shown as the following table:

Table 6. Integration Test Plan

Requests	User Input	Desired Output	Results
Login	Type in the number for password.	Display the valid Password or invalid Password.	Pass
Equipment	Click on button to send a request.	Display the text which contains Equipment.	Pass
Price	Input the number for mileage. Select equipment for equipment adjustment. Select price for price adjustment.	Display the final price.	Pass

### 3.4 System Test Plan

After MOBILE USED CAR PRICES AND INFORMATION is completed tested, and meets all functional and performance requirements, the system test focuses on acceptance and usability. The result can be shown as the following table:

Table 7. System Test Plan

Unit Tested	Test Performed	Results
Palm OS Emulator	Check the wireless settings. Check the memory size. Check ROM images. Check the IP settings of the Palm proxy server.	Pass
MySQL Database	Check the DB user name and password. Check if the DB system is still alive. Check the connection between the Apache HTTP server, PHP, PHPMyAdmin and MySQL.	Pass

### 3.5 Summary

All these three test plans help to monitor and improve MOBILE USED CAR PRICES AND INFORMATION. During the software development process these test plans make sure that all problems have been fixed. These test plans also verify the performance of functions and keep the quality well. The software quality assurance in this system can not be done without these three test plans.



## CHAPTER FOUR

### MAINTENANCE

#### 4.1 Introduction

The maintenance for MOBILE USED CAR PRICES AND INFORMATION is based on the current environment. The maintenance needs to monitor both the Palm OS devices and the server on the desktop.

#### 4.2 Palm Handheld Devices

Because wireless technology is still new for Palm OS the technology could be improved very fast. So this project will be updateable in the future. In the current level of maintenance the programmer must keep the source code clear and always put some comments to explain the condition. Because used car industry is updated very frequently and the information for this system needs to be updated very often. So the software on the Palm OS device will be updateable in a short time and the programmer must update the information for users. This means when the used car market is updated this system will need to be updated too. The maintenance for this system needs to keep tracking on the used car market and provide the reliable information for customers.

### 4.3 Server

The maintenance for server is to provide a correct source for Palm OS users and this means not only the software on Palm OS devices but also the server on the desktop need to be updated very frequently. If one of these two can not work correctly the other won't be able to work correctly too. The programmer will have to update the new prices and information in the database.

### 4.4 Summary

The maintenance for this system will be continued because there will be always some new cars every single year. The most important thing to maintain this system is to keep looking at the used car market and update this system.

## CHAPTER FIVE

### USERS MANUAL

#### 5.1 Introduction

This manual provides information about MOBILE USED CAR PRICES AND INFORMATION system and it is written for any users who are interested in Palm OS. If you do not own one of the wireless Palm OS devices or simply want to evaluate this technology, an application called Palm OS Emulator (POSE) simulates the function of a real Palm OS device.

#### 5.2 Obtain the Software

The POSE is available for Microsoft Windows 95/98/Me/NT/2000, apple Macintosh, and various flavors of UNIX. The emulator is available at [www.palm.com/dev/tech/tools/emulator](http://www.palm.com/dev/tech/tools/emulator) and requires a ROM image. After downloading and unpacking the POSE archive, you will notice that POSE does not contain ROM image files. The ROM image files are copies of the Palm OS that permanently reside on a device. ROM image files can be obtained by transferring the ROM image from an actual device or by joining the Palm alliance Program and downloading ROM images from the Palm OS web site. You need to download the Web Clipping ROM image because this project was implemented by Web clipping technology. Then you need to configure the

settings before you start a Web Clipping application. Figure 10 shows the main screen of POSE.



Figure 13. Palm OS Emulator

You also need to download the Web Clipping Application Builder (WCA Builder) and it's necessary for a Web clipping developer. To build a Web clipping application (WCA), Palm, Inc. provided a utility called WCA Builder. The WCA builder parses and compresses static HTML and graphics into a format readable by Clipper, Palm Inc.'s limited web browser. This format is called Palm Query Application (PQA). If you already have written the source code, you need to use WCA

Builder and select the right setting options in the Build PQA Dialog Box. When you build the WCA, the original HTML file has been saving to a new PQA file. In this project, this PQA file is Used Car.pqa and it's ready for installing on the POSE.

### 5.3 Installing Web Clipping Applications

Web clipping application can be added to an actual Palm OS device by using the Install tool application on a desktop computer and performing a HotSync operation with the device. After the HotSync operation is complete, you can find an icon on the screen of Palm OS device. In this project, you will see an icon called Used Car in the Application Launcher of Palm OS device.

There are two different methods to install a Web clipping application on POSE. The Palm OS Emulator supports drag-and-drop operations. Simply drag and drop the file onto the Palm OS Emulator window. This is the easier way to install a WCA on POSE. The second method is to right-click the emulator application and you will see a pop-up menu which contains the operations. From the pop-up menu, select the Install Application/Database menu option select Other, and select the Used Car.pqa file from the browser. Then no matter which method you choose you will see a new icon on

the screen Of POSE called Used Car. Now you have successfully installed Used Car WCA onto the Palm OS Emulator and this figure is shown as following:

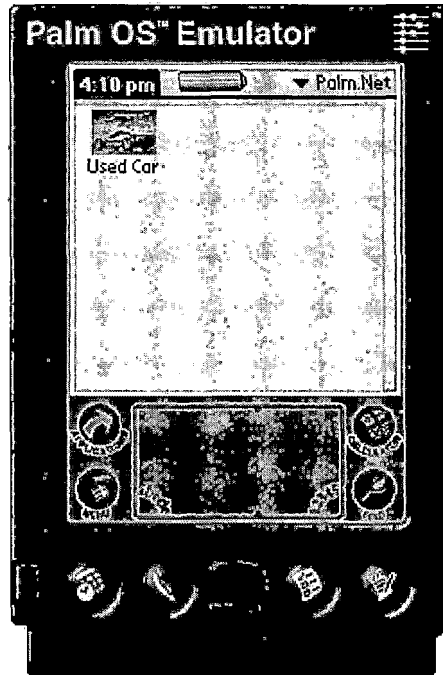


Figure 14. Used Car Icon

#### 5.4 Graphical User Interface

The GUIs for this system are separated to two parts. For clients you will see the GUIs on the POSE and I will describe them in the section one. For server you will see the GUIs on the desktop of a PC and I will show them in the section two.

### 5.4.1 Clients Side

This section only shows one used car for users because it's the same logic and it's not necessary to repeat the same thing. The used car that I will show below is year 2002, Honda, Civic, EX, two doors and automatic. I will describe these GUIs and show them with figures.

5.4.1.1 Main. After you launch the icon Used Car and you will see the first page of MOBILE USED CAR PRICES AND INFORMATION. From here you can decide to enter this system. The figure is shown as following:

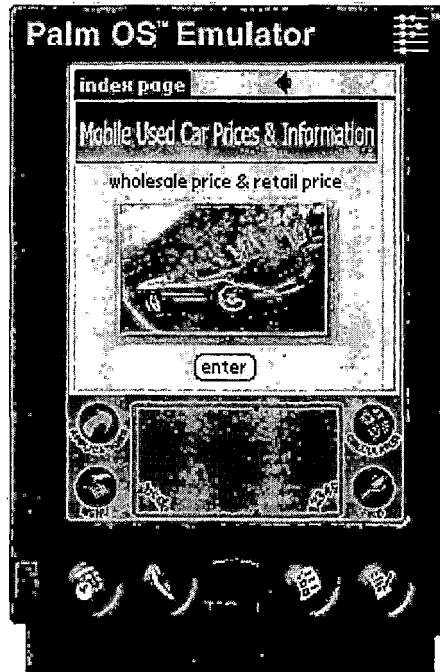


Figure 15. Main

5.4.1.2 Login. In this page, you need to verify your identification.

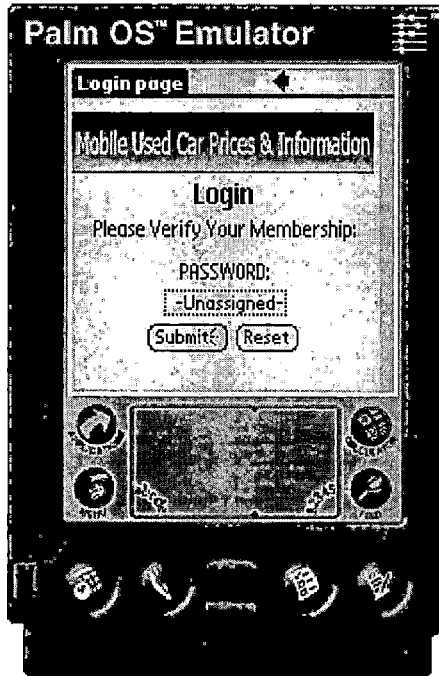


Figure 16. Login



5.4.1.2.1 Input Password. To verify your membership you will have to input a password. You will see a field called unassigned and you click on it. Then a window will pop out and you can input your password now. This figure is shown as following:

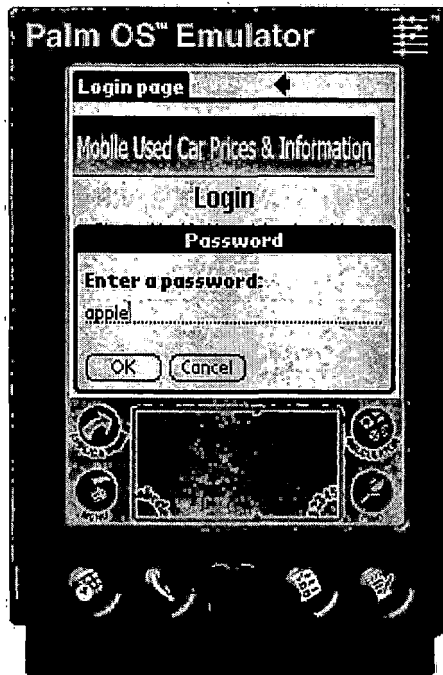


Figure 17. Input Password

5.4.1.2.2 Assigned Password. After you click on ok button, you will see "assigned". Then you just need to click on the Submit button and this figure is shown as following:

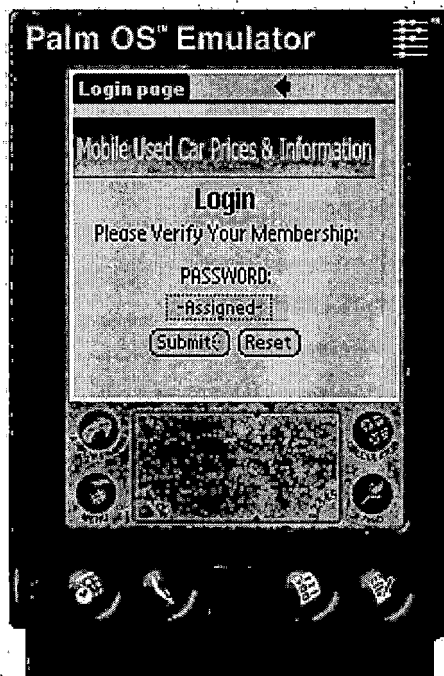


Figure 18. Assigned Password

5.4.1.3 Verification. There are two different results after you submit your password.

5.4.1.3.1 Valid Password. This page shows the valid password and you can see the Continue button. When you click on it, you will go to the category page. This figure is shown as following:

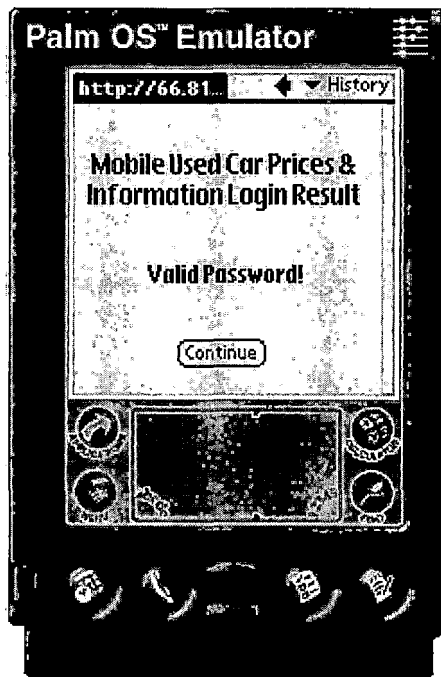


Figure 19. Valid Password

5.4.1.3.2 Invalid Password. When your password is invalid, you can go back to Login page by clicking on the Back button. This figure is shown as following:

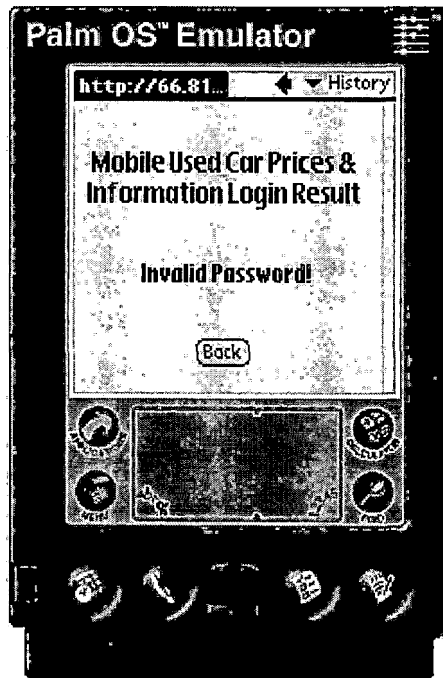


Figure 20. Invalid Password

5.4.1.4 Category. In this page, you need to choose one of these four categories which are cars, luxury, vans and trucks and we are going to choose the car category. On the upside of this page is an image which contains the title of this project and when you click on it, it will link back to the first page, Used Car. Later you will see more images on the top and all of them can link to its own page. The figure is shown as following:

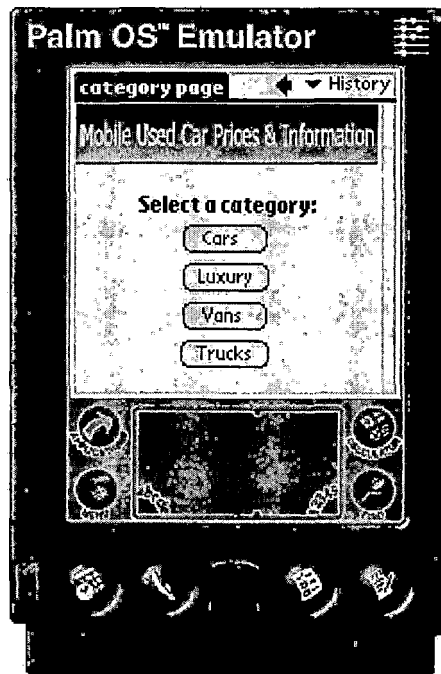


Figure 21. Category

5.4.1.5 Make. In this category, you will see only four makes because there are too many cars in the market and this project only implemented some cars. Now you pick the make, Honda. The figure is shown as following:



Figure 22. Make

5.4.1.6 Model. In this page, you can see another image contains the word "Honda" and this shows which make we have chosen. Now you choose civic and the figure is shown as following:

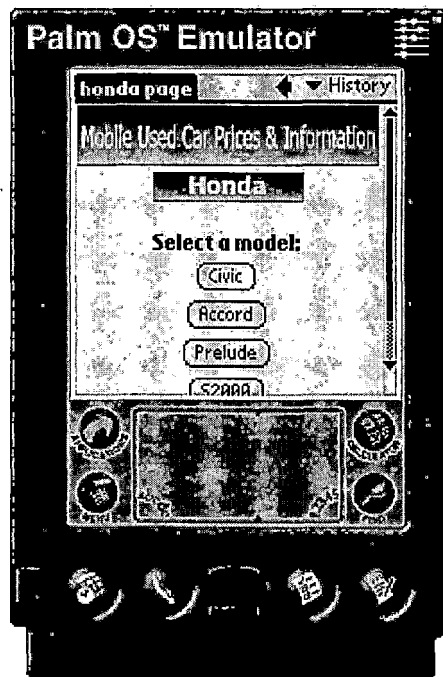


Figure 23. Model

5.4.1.7 Year. You will see another image which contains a word "Civic" and it shows which make you have chosen. Now you can pick 2002 and it is shown as following:

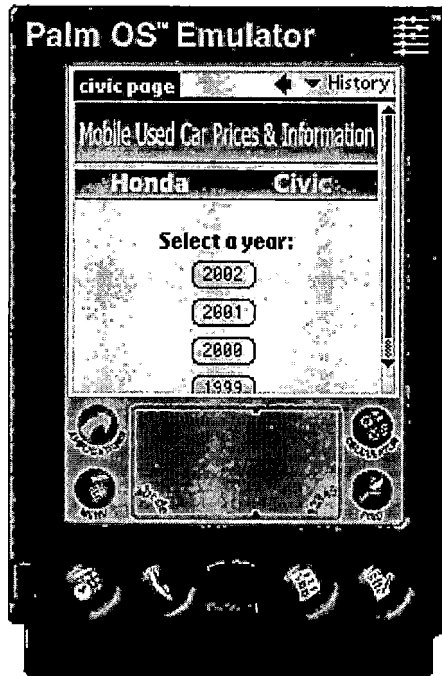


Figure 24. Year



5.4.1.8 Type. You will see another image which contains a word "2002" and it shows which year you have chosen. Now you click on Ex 2D and the figure is shown as following:

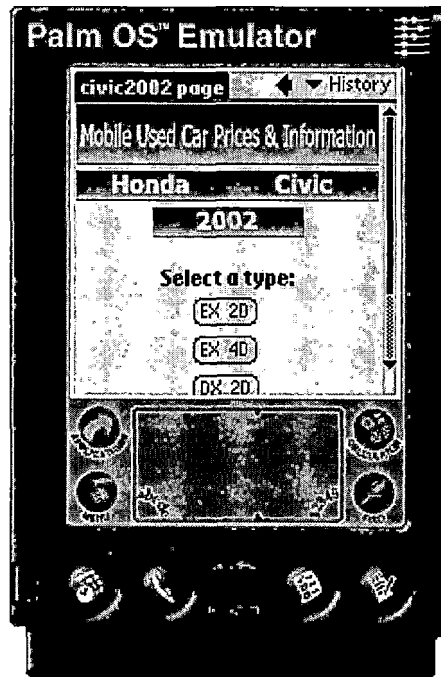


Figure 25. Type

5.4.1.9 Transmission. You will see another image which contains a word "EX 2D" and it shows which type you have chosen. Now you click on Automatic and the figure is shown as following:

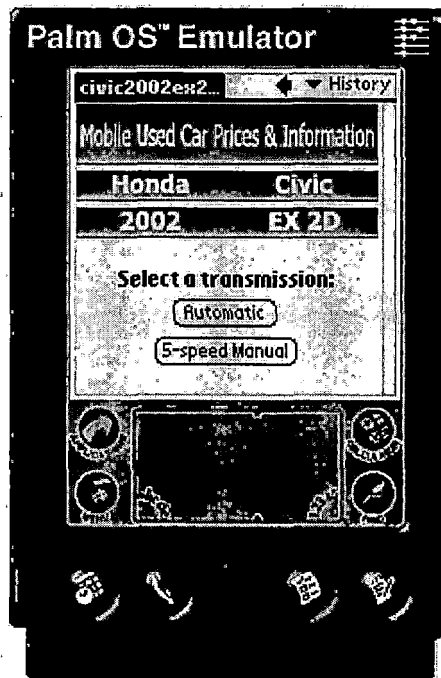


Figure 26. Transmission

5.4.1.10 Option. You will see another image which contains a word "Automatic" and it shows which transmission you have chosen. Now you can click on one of these options and first we can take a look at the picture of this car. Now you click on picture and the figure is shown as following:

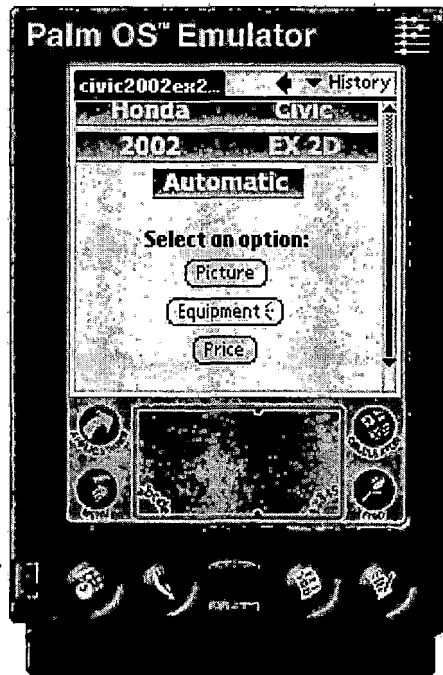


Figure 27. Option

5.4.1.11 Picture. This page contains the picture of this used car that you have been chosen and you go back to the Option page by clicking on the arrow on the top of this screen. The figure is shown as following:

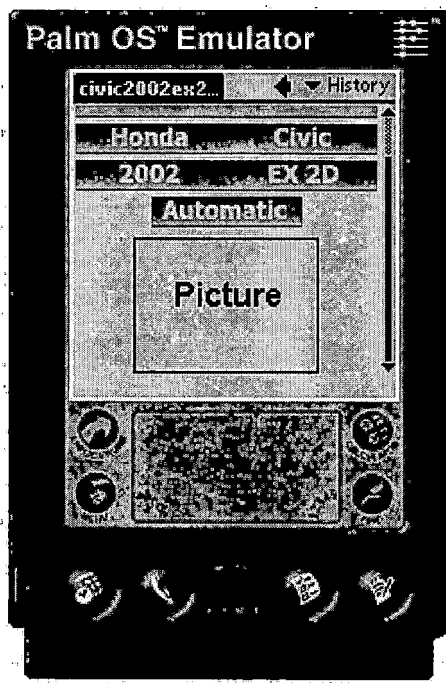


Figure 28. Picture

5.4.1.12 Equipment. When you click on Equipment from Option page you will send a request to the remote sever side and the server side will send a page which will contain the equipment of this used car. Then you can go back to Option page by clicking on the arrow on the top of this screen. The figure is shown as following:



Figure 29. Equipment

5.4.1.13 Adjustment. There are there parts in this page and they are mileage adjustment, equipment adjustment and trade-in or retail price.

5.4.1.13.1 Mileage Adjustment. You need to input an integer number to determine how many miles you expect for this used car. At beginning, it will set to a default mileage number which is an accepted mileage as demonstrated by market research. When you input a different number in this field it may give you a different price. I will leave 15000 as the default and move to the next section, equipment adjustment. This figure is shown as following:

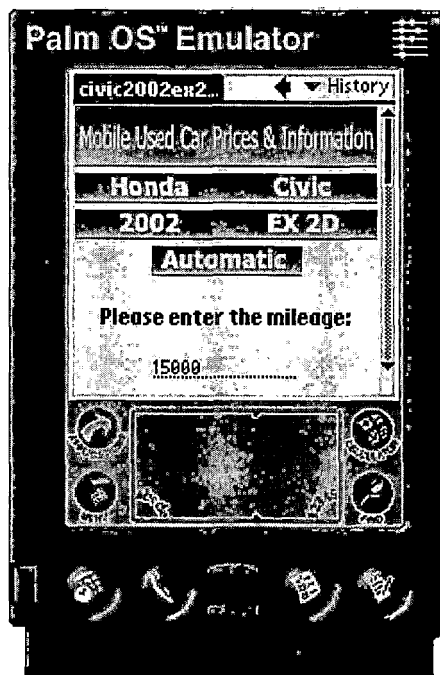


Figure 30. Mileage Adjustment

5.4.1.13.2 Equipment Adjustment. In this section, you will see exactly 23 checkbox-type tags and each presents one kind of equipment. As default, you can see some checkbox-type tags have been checked because these are the standard equipment which originally comes with the model. However, some cars have been modified and these modifications may result in different prices. Each modification has its own price and this price will be added or deducted from the base value, depending on equipment adjustment. In this page, I leave these checkbox-type tags as default and this figure is show as following:

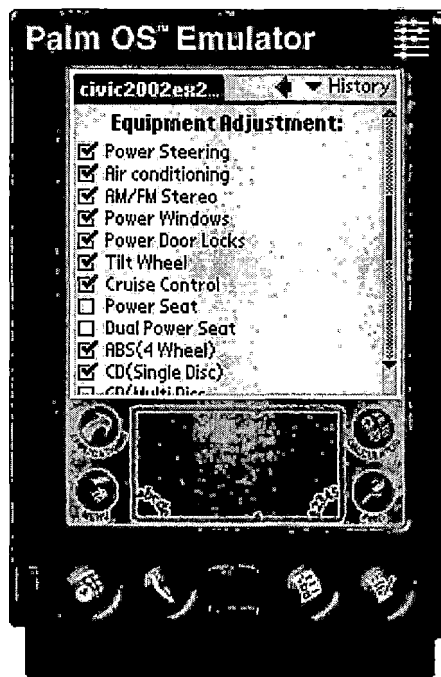


Figure 31. Equipment Adjustment

5.4.1.13.3 Trade-in Price or Retail Price. There are two checkbox-type tags which are Wholesale Price and Retail Price .Wholesale Price, the price a seller should expect to receive from a dealer in a sale or trade. Retail Price, the maximum price a buy should expect to pay a dealer. You can pick one of them to see the price. In this figure, I select the Retail Price. Then you need to click on Submit button and Reset button will set everything as default. When you submit this form it will immediately send to the remote server side. This figure is shown as following:



Figure 32. Trade-in Price or Retail Price



5.4.1.14 Price. When the remote server side receives some variables, it will use them to calculate the price and send the result back to POSE. This page will contain one price and you can select both of Wholesale Price and Retail Price to see two prices at once. This figure is shown as following:

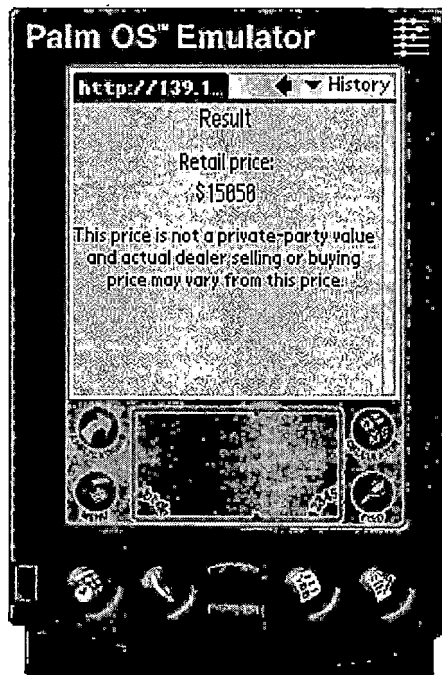


Figure 33. Price

#### 5.4.2 Server Side

This server contains web pages and a database. It is designed for members who want to use this system on their Palm handheld devices. It is also designed for the administrator to manage both the members and the used car information. The administrator's job is very important in this system.

To be able to use this system, the user has to fill in the form from this server side and this information will be stored in database. Then this user will have the membership of MOBILE USED CAR PRICES AND INFORMATION and have his or her own password. This member can use his or her password to login this system after this user has registered into this database. Members can change their personal information or cancel their membership.

The administrator performs an important role in this system and also needs to verify his or her identification. So the administrator must login the name and password into the database. When the match is found in the database, then the administrator can enter the system to do his or her job. In this section, there are four subsections which are Main, New Member, Member and Administrator. I will explain them one by one.

5.4.2.1 Main. There are two pages in this section and both of them describe the idea of this system.

5.4.2.1.1 Home. This is the first page of MOBILE USED CAR PRICES AND INFORMATION and generally explains the purpose of this system. This page is shown as following:

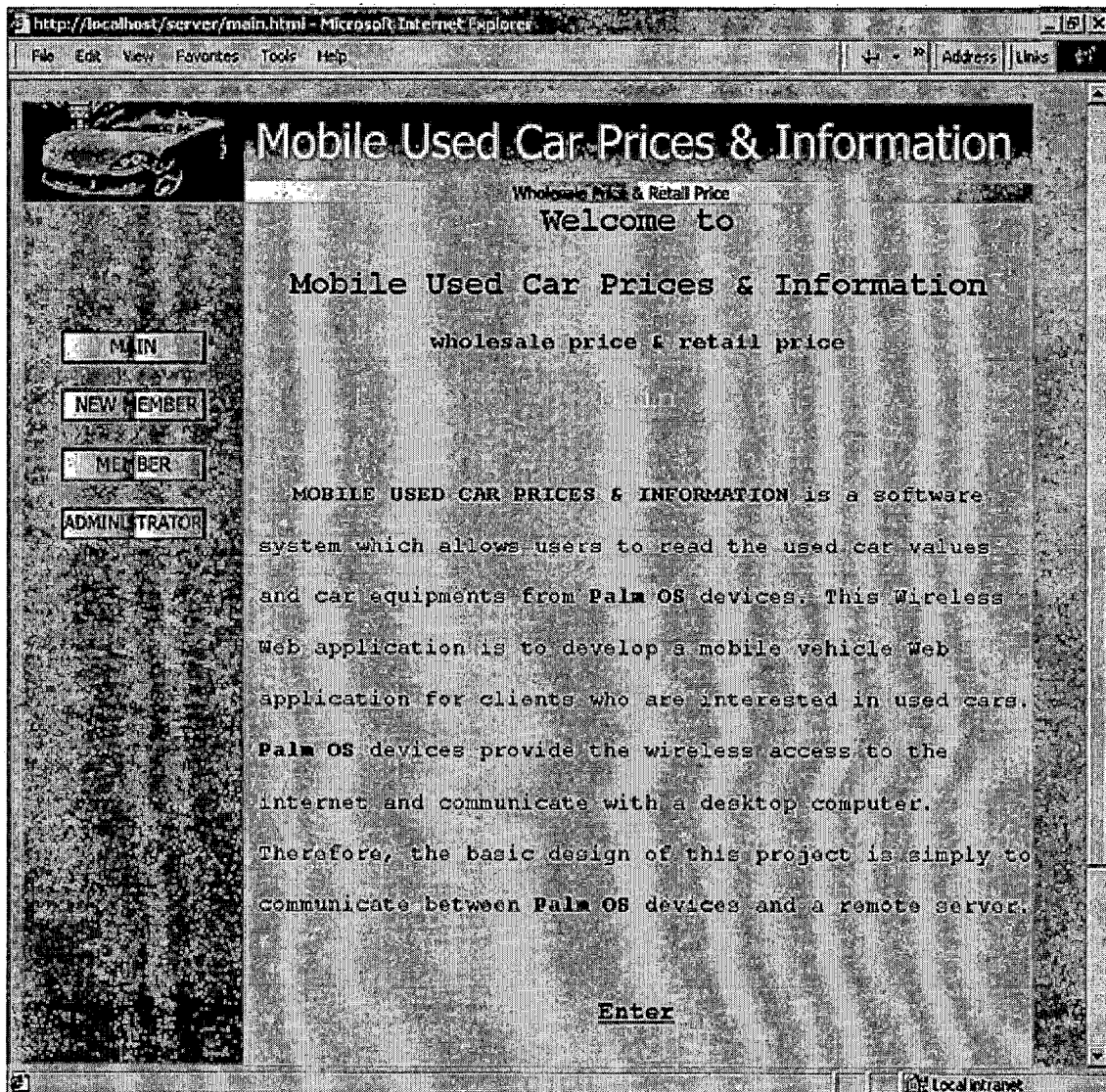


Figure 34. Home

5.4.2.1.2 Introduction. There are more words about this system in this page. If you are a new user, then click on New Member. If you are already one member of this project, then click on Member. The third one is Administrator and it is not for all members. This page is shown as following:

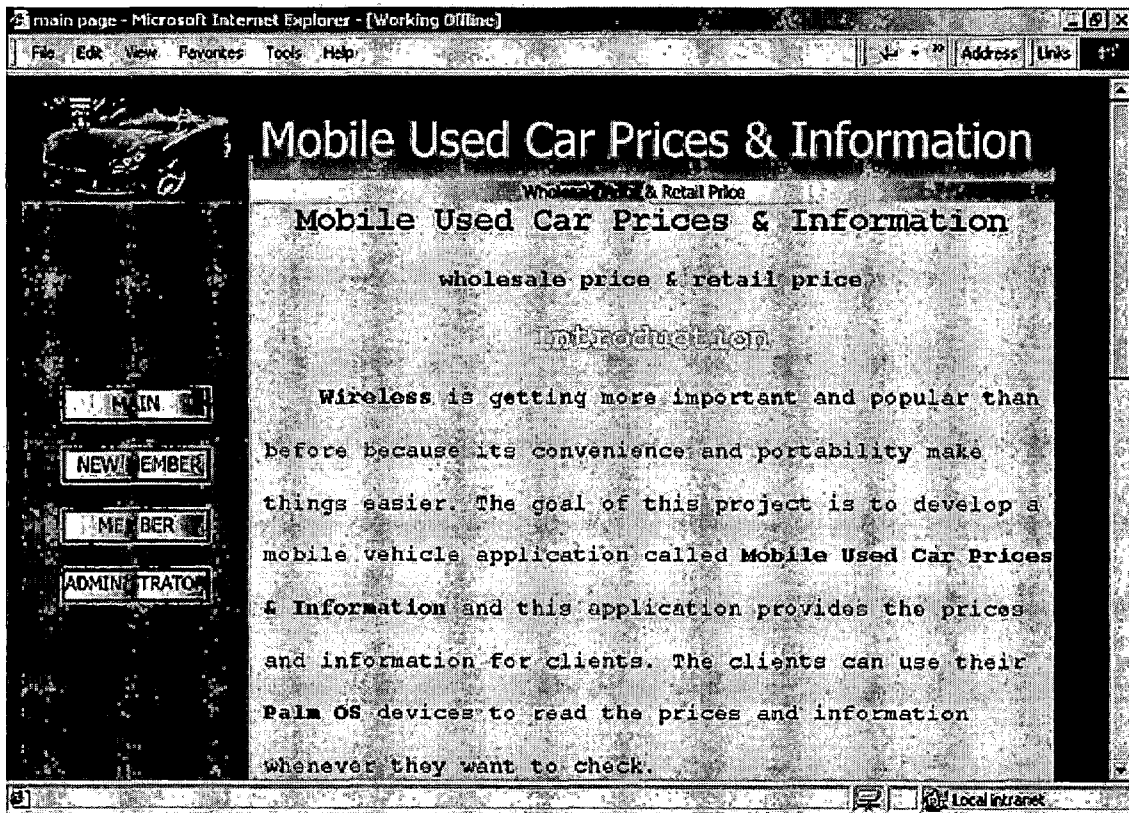


Figure 35. Introduction


5.4.2.2 New Member. To be able to use this system the new user must fill in the application and starts the membership.

5.4.2.2.1 Customer Information and Result. In this page you will see a form and this form contains eight fields. A new user must fill in all the fields and pick up a number for your own Password. This password will be the identification whenever you plan to use this software on the Palm OS devices. After you fill in the form you can see the result which can tell you the errors or if you don't have any error then you will be registered into the database. The important thing for password is to be unique and no two members have the same password.

form page - Microsoft Internet Explorer - [Working Offline]

File Edit View Favorites Tools Help

Address Links



## Mobile Used Car Prices & Information

Wholesale Price & Retail Price

### Mobile Used Car Prices & Information

wholesale price & retail price

Last Name:

First Name:

Email:

Phone:

Address:

City:

Country:


Password:  You must enter an integer number.

Local intranet

customer page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address Links



## Mobile Used Car Prices & Information

Wholesale Price & Retail Price

### Mobile Used Car Prices & Information

wholesale price & retail price

Password : 909  
 Lastname : Cheng  
 Firstname : Ting-Shiuan  
 Email : me@hotmail.com  
 Phone : 19098854876  
 Address : 5142 Sundance dr.  
 City : San Bernardino  
 Country : USA

This member has been registered to our database!

Now go to [MEMBER](#)

Done

Local intranet

Figure 36. New Member Form and Result

5.4.2.3 Member. When you become a member you can enter this page and the design for member is to download the software form this server.

5.4.2.3.1 Member Login and Result. Member Login contains a password field and you just have to type your own password. This result page will always be seen in this server because it will try to find a match in the database system. If you input the wrong password it sure replies the error message. Once you have input the correct password then you have five things to do here and there are five more subsections to explain them.

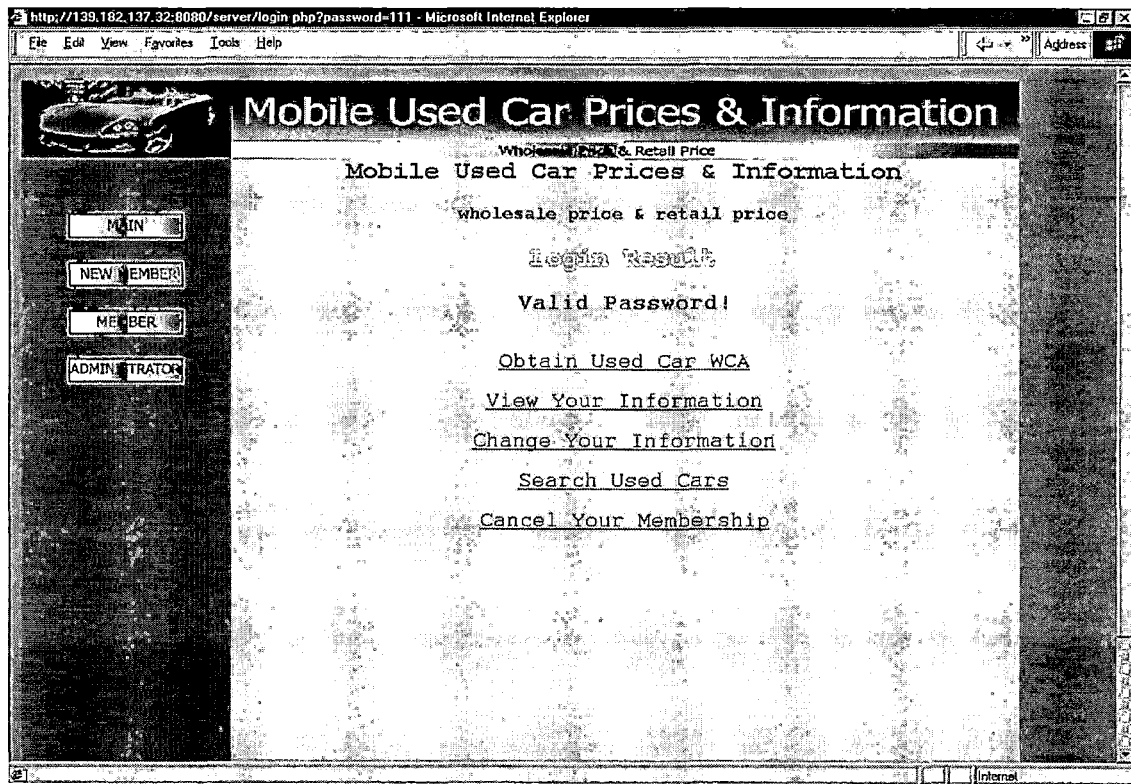
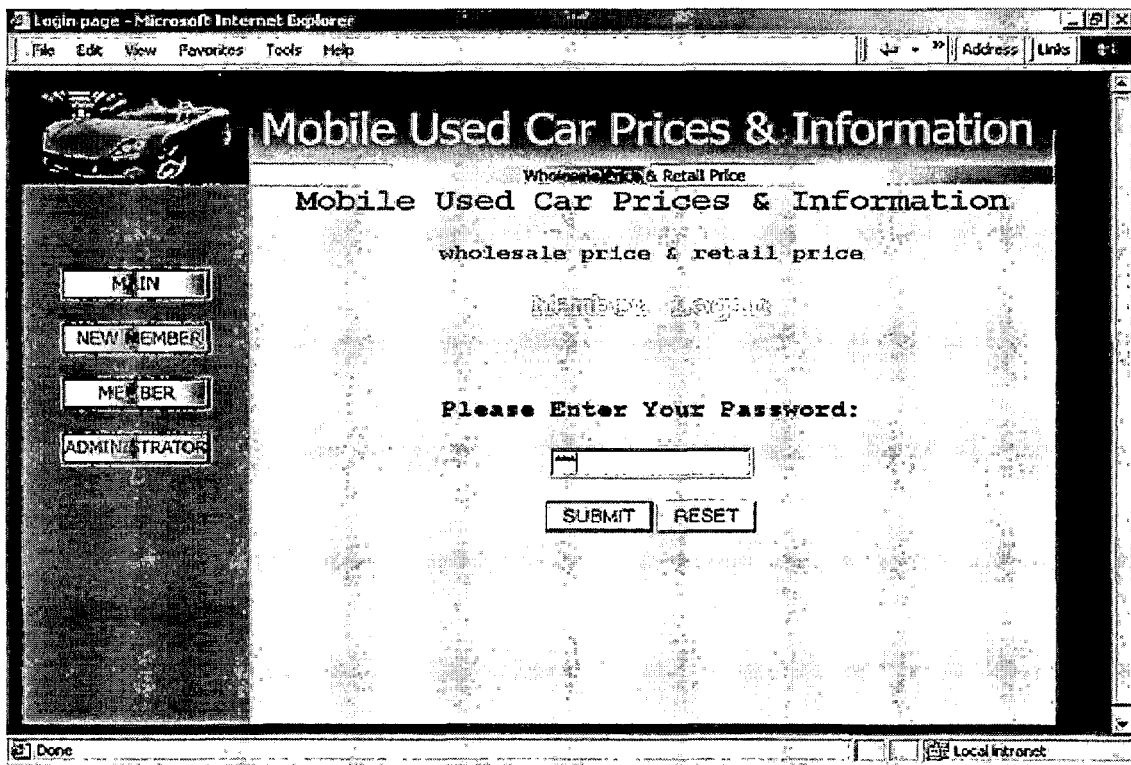


Figure 37. Member Login and Result



5.4.2.3.2 Obtain the Software. This page is designed for downloading the software for Palm OS devices or POSE. The member always can come back to obtain the newest version whenever the software has been updated to a new version.

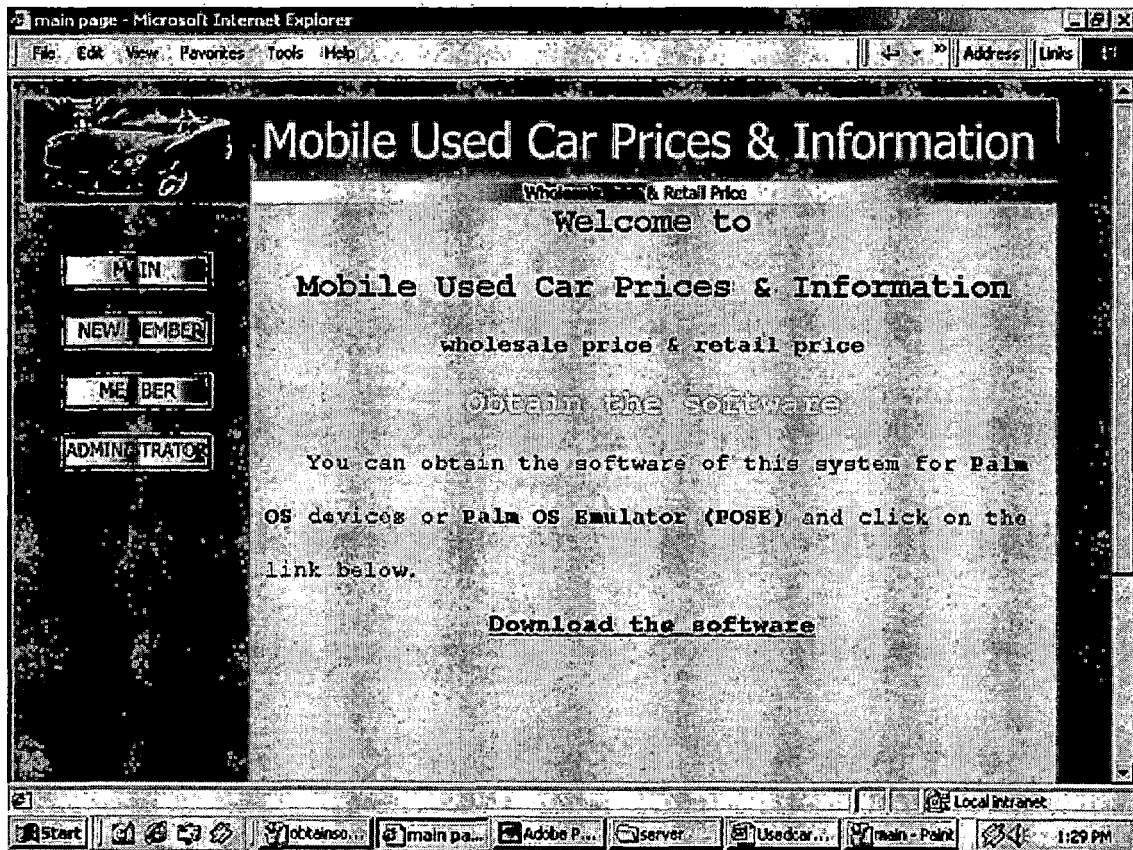


Figure 38. Obtain the Software

5.4.2.3.3 View Your Information. Here you can view your personal information.

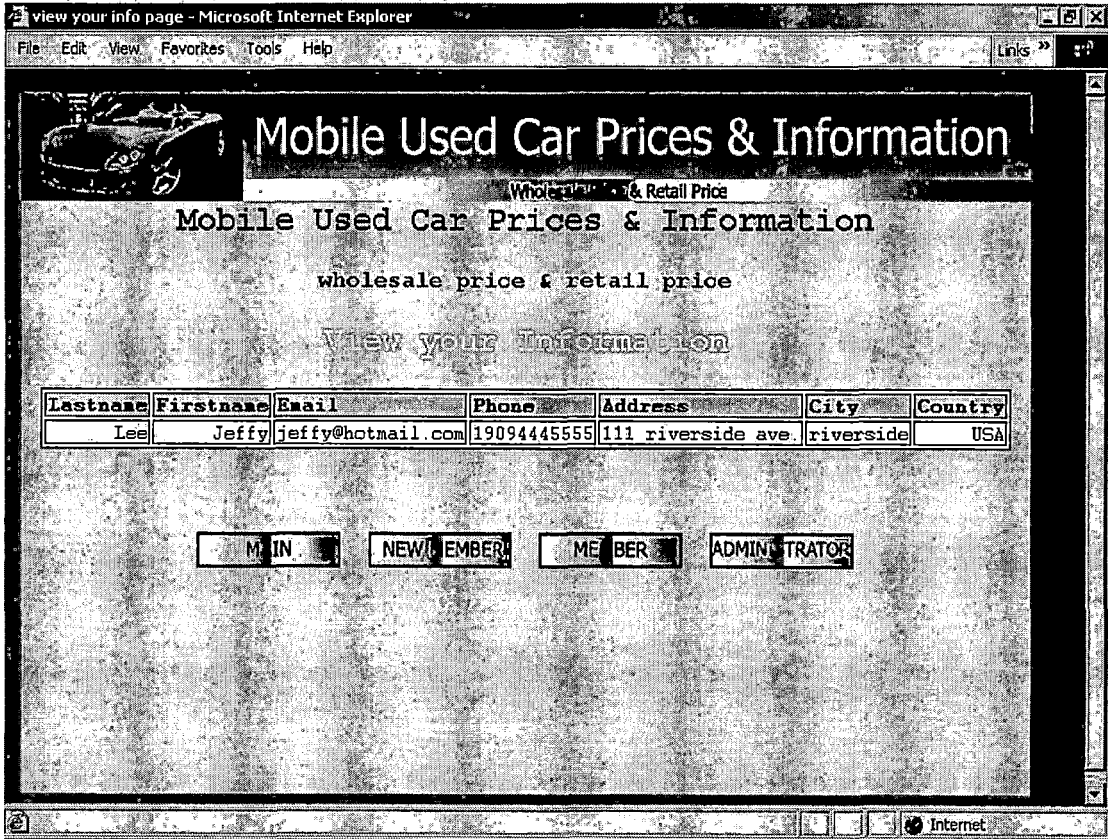


Figure 39. View Your Information

5.4.2.3.3 Change Your Information and Result. The second function for members and you can change everything including the password. The result shows the answer which can be valid or invalid. As I mentioned before no two members have exactly the same password. When the user tries to change the password if the password is already in the database the user needs to pick up another number for a new password. The result will tell you when you input a new number for the new password.

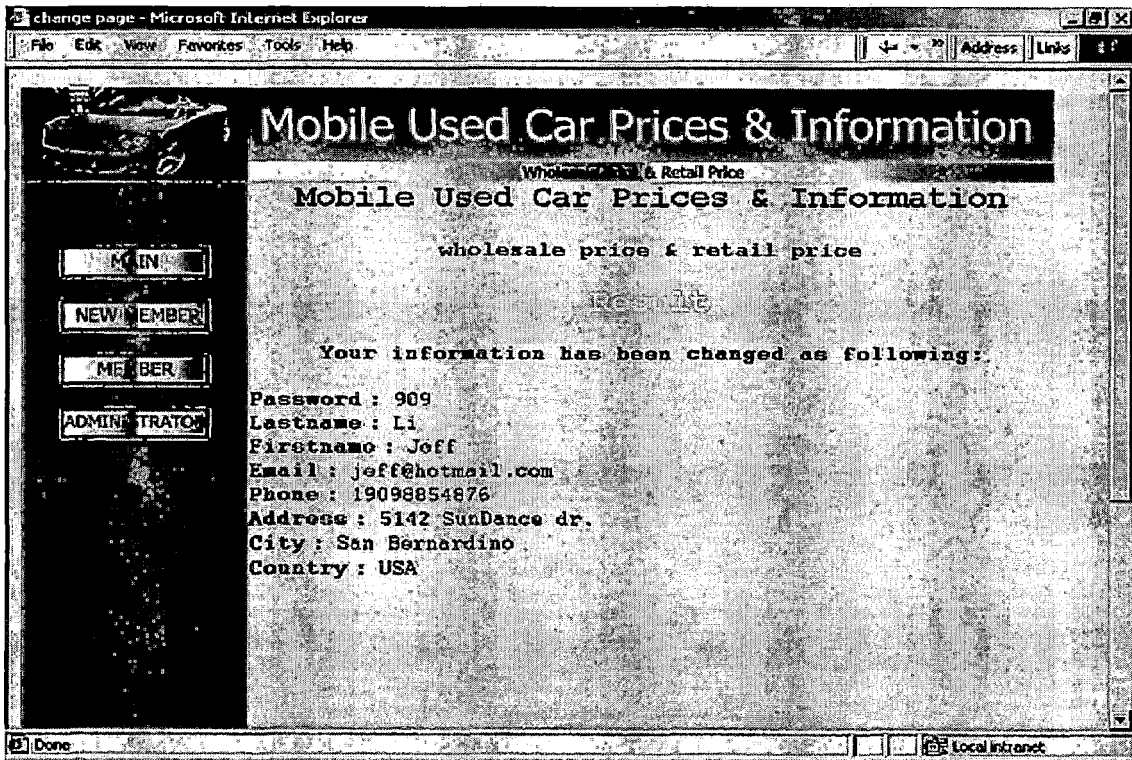
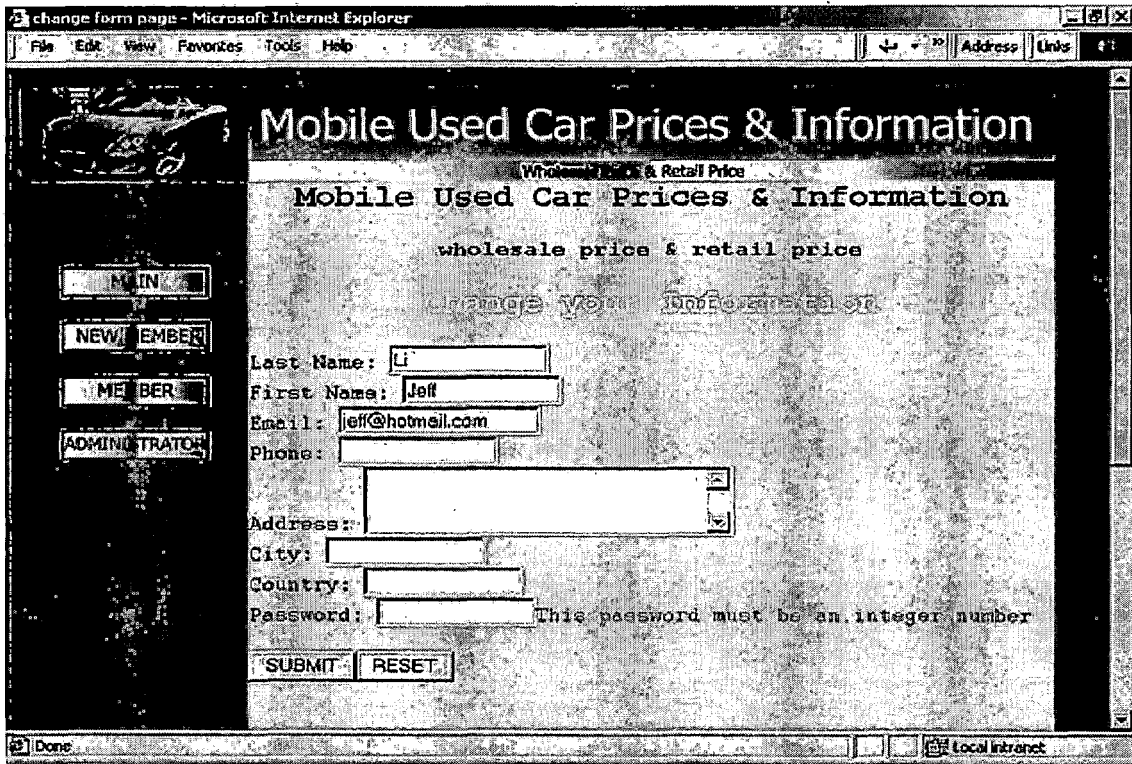


Figure 40. Change Your Information and Result

5.4.2.3.4 Search Used Cars and Result. This is the search function for members and they can search the used cars in the database.

Search for Used Cars

Category Data:

Make Data:

Model Data:

Year Data:

Type Data:

Transmission Data:

Engine Data:

Drive Data:

Equipment Data:

Wholesale Price Data:

Navigation: [MAIN](#), [NEW MEMBER](#), [MEMBER](#), [ADMIN TRATOR](#)

Result

Category	Make	Model	Year	Type	Transmission	Engine	Drive	Equipment	Wholesale	Retail	Mi
Cars	Honda	Civic	2002	Ex 2d	Automatic	4-Cyl. 1.7L VTEC	Front wheel drive	Air Conditioning, Power Steering, Power Windows, Power Door Locks, Tilt Wheel, Cruise Control, AM/FM Stereo, Compact Disc, Dual Front Air Bags, Moon Roof	12400	14700	
Cars	Honda	Civic	2002	Ex 2d	5-speed manual	4-Cyl. 1.7L VTEC	Front wheel drive	Power Steering, Air Conditioning, AM/FM Stereo, Power Windows, Power Door Locks, Tilt Wheel, Cruise Control, ABS (4 Wheel), CD (Single Disc), Moon Roof (Sliding)	11950	14150	

Figure 41. Search Used Cars and Result

5.4.2.3.5 Cancel Your Membership and Result. If you don't want to be the member of this system any more, then you just have to use this function.

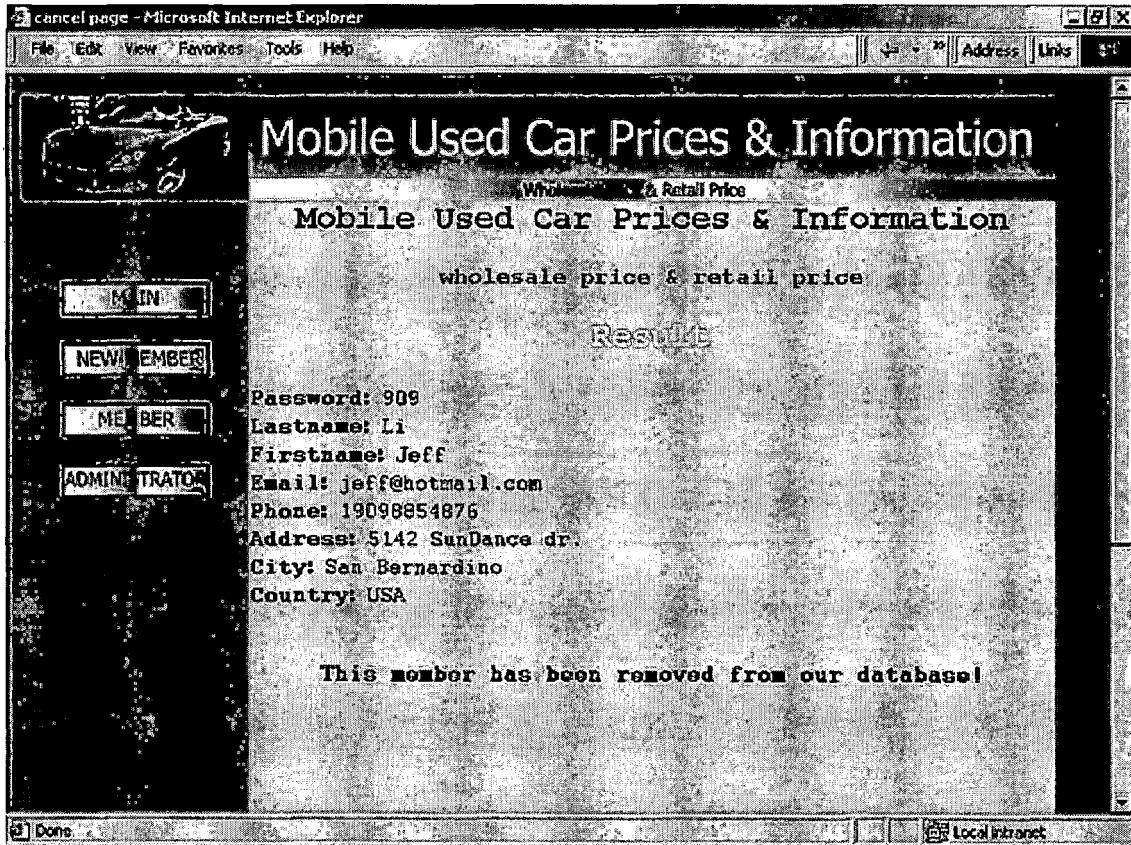


Figure 42. Cancel Your Membership and Result

5.4.2.4 Administrator. The most important part of this server is the job of administrator. The main thing for administrator is to manage the members and database. There are six functions and I will describe in the following subsections one by one.

5.4.2.4.1 Administrator Login and Result. For security reason the administrator must be identified carefully than a normal user. There are two fields which are user name and password to identify the administrator. Once the administrator has been proved there will be six options in this page.

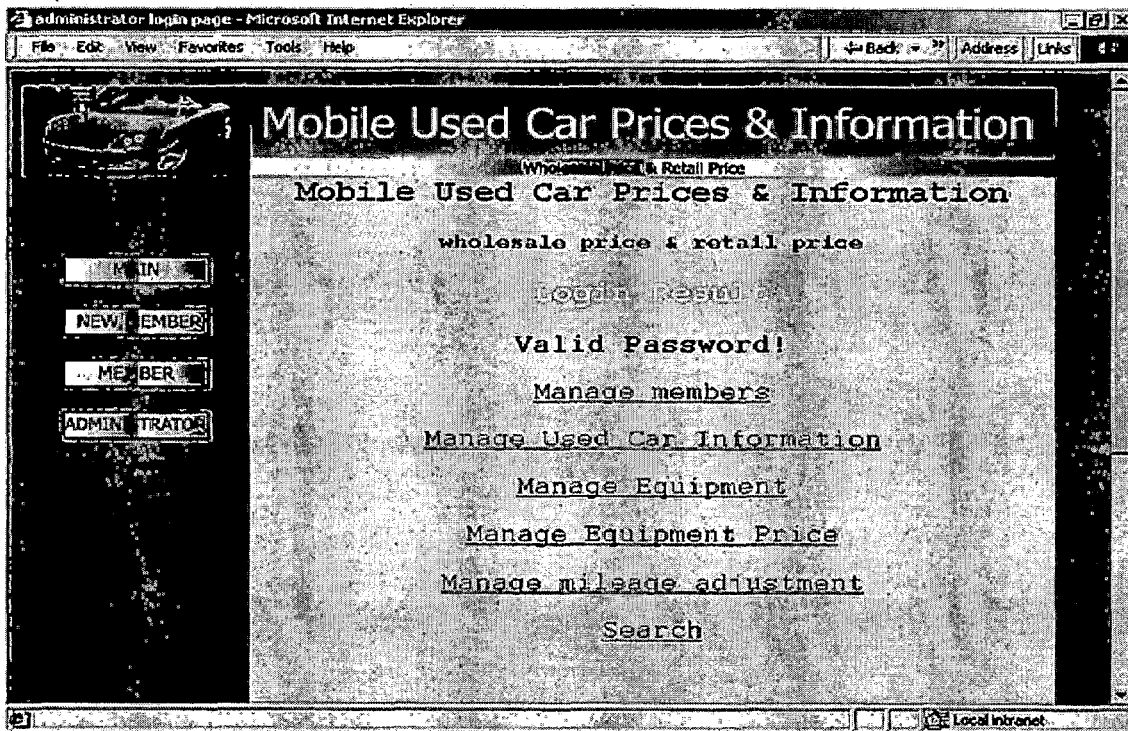


Figure 43. Administrator Login and Result

5.4.2.4.2 Manage Members. The administrator has the right to monitor all members. There are two options in this page.

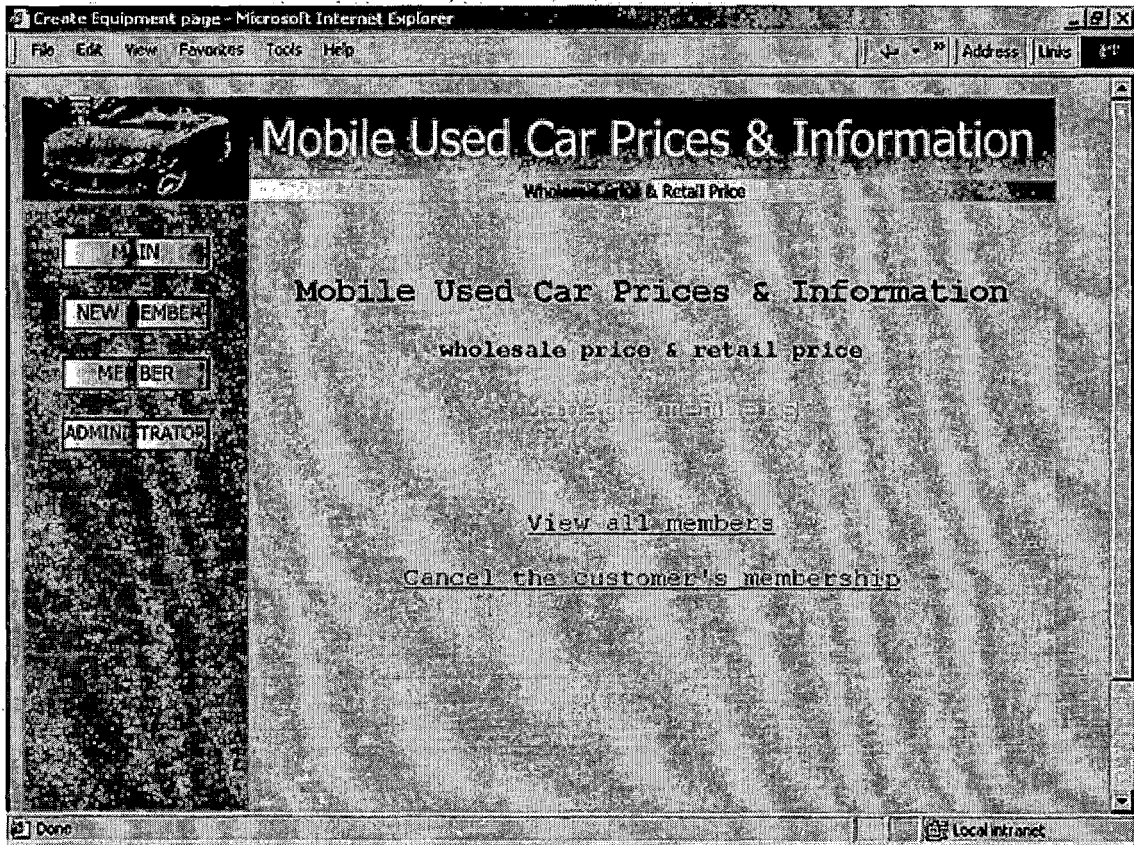


Figure 44. Manage Members



5.4.2.4.2.1 View All Members. In this page you can view all the members in the database.

The screenshot shows a web browser window with the title 'view customer page - Microsoft Internet Explorer'. The page content is as follows:

**Mobile Used Car Prices & Information**  
Wholesale Price & Retail Price  
**Mobile Used Car Prices & Information**  
wholesale price & retail price  
**All customers**

Password	Lastname	Firstname	Email	Phone	Address	City	Country
111	Li	John	john@hotmail.com	19093332345	1755 E Highland Ave.	San Bernardino	USA
222	Wang	Peter	peter@hotmail.com	19095456677	2001 Diners	San Bernardino	USA
333	Cheng	jeff	jeff@hotmail.com	19098887676	2002 E Highland Ave.	San Bernardino	USA
777	Du	james	james@hotmail.com	19098886666	1752 E Lugonia Ave.	Redlands	USA

Navigation buttons: [MAIN](#) [NEW MEMBER](#) [MEMBER](#) [ADMINISTRATOR](#)

Figure 45. View All Members

5.4.2.4.2.2 Cancel the Customer's Membership and Result. Once the administrator wants to cancel the membership of someone this is the page to do it.

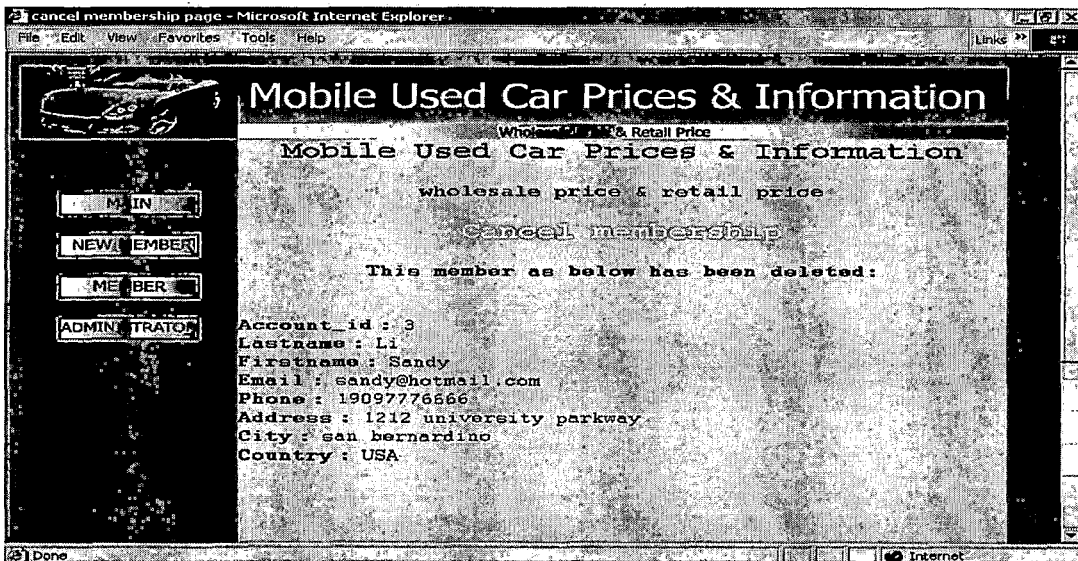
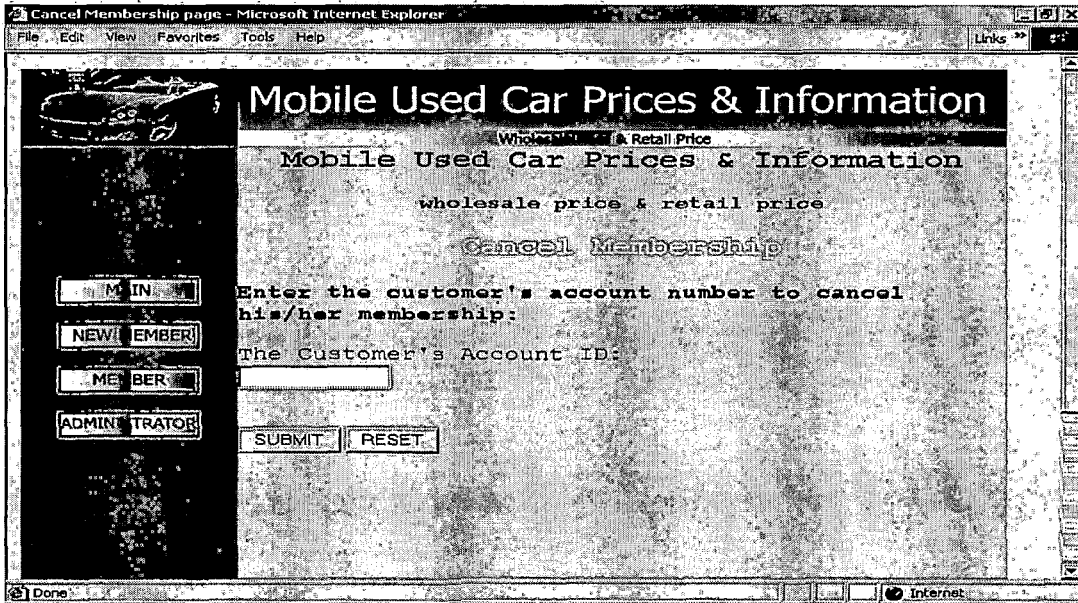


Figure 46. Cancel Membership and Result

5.4.2.4.3 Manage Used Car Information. You can see here are four options and it is all about the used car information. You can create a new data, update the data, view all data and of course delete the data.

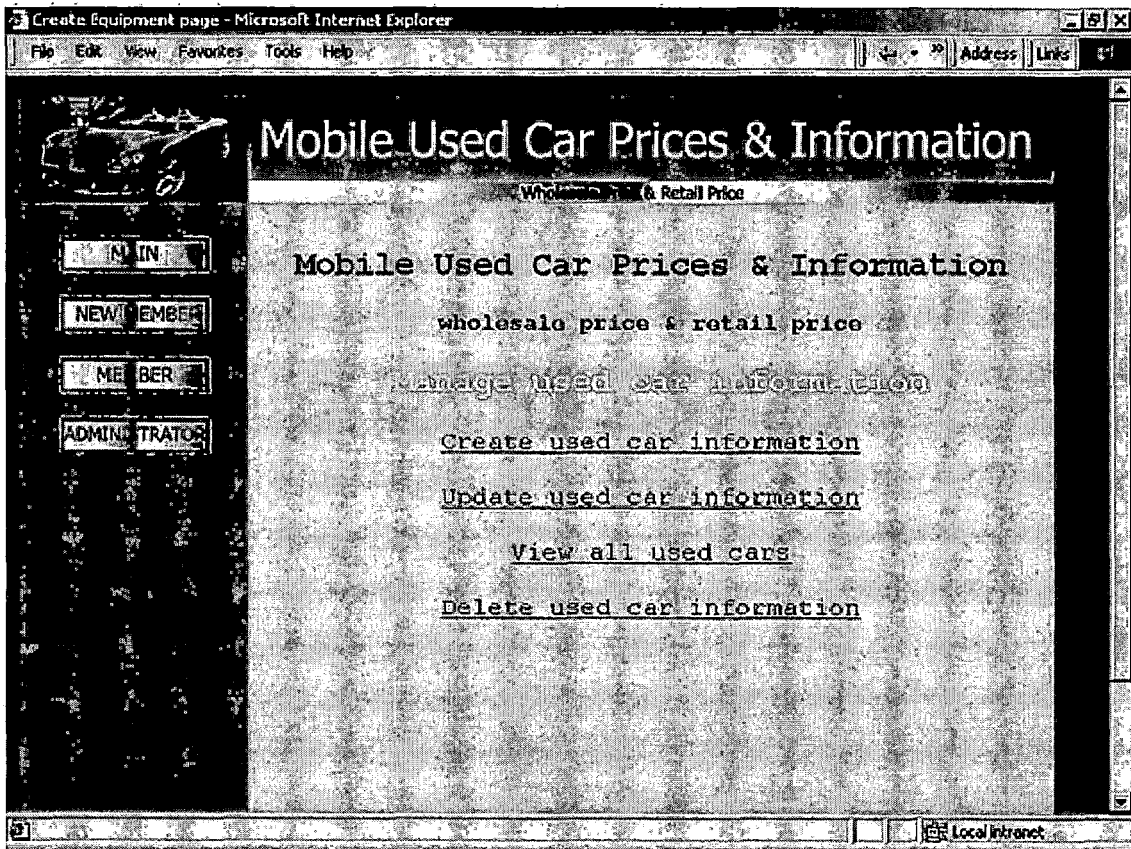


Figure 47. Manage Used Car Information

#### 5.4.2.4.3.1 Create Used Car Information and Result.

There are twelve fields in this form and when you have done with typing it will send this form to database. There is also no exactly the same data in the database. When you succeed to create a new data in the database for each used car there is one unique number to identify this car. This unique number is called the final equipment number for this system.

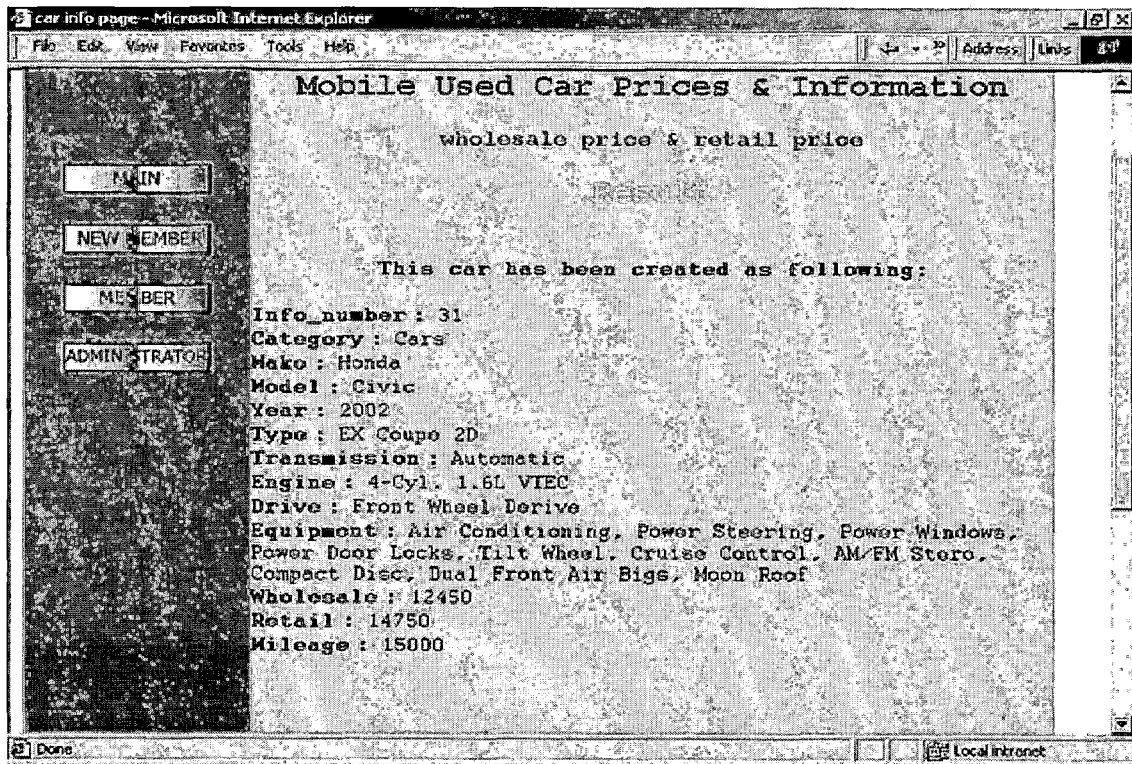
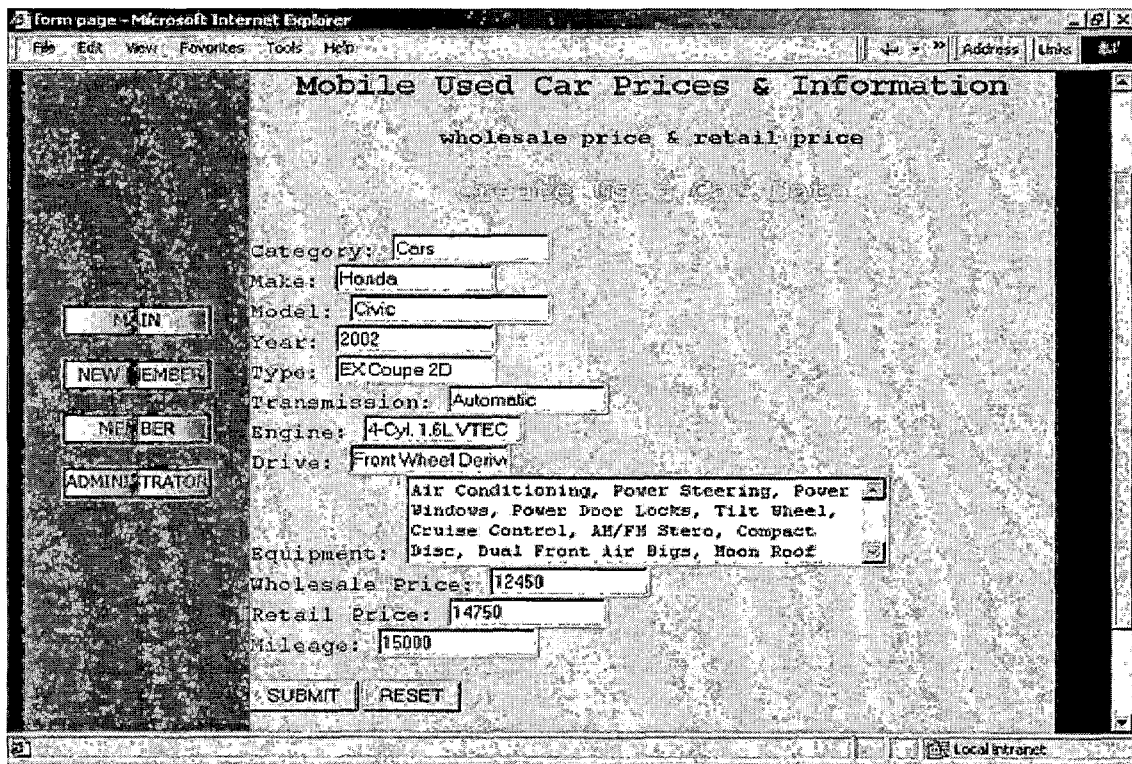


Figure 48. Create Used Car Information and Result

#### 5.4.2.4.3.2 Update Used Car Information and Result. As

I mentioned above, you need to enter the information number to specify which car you want to update. There still will be twelve fields for used car information and the administrator can change any of them in the database. In this case I only change the transmission from Automatic to 5-Speed Manual.

Then the result is showing as the following figure.

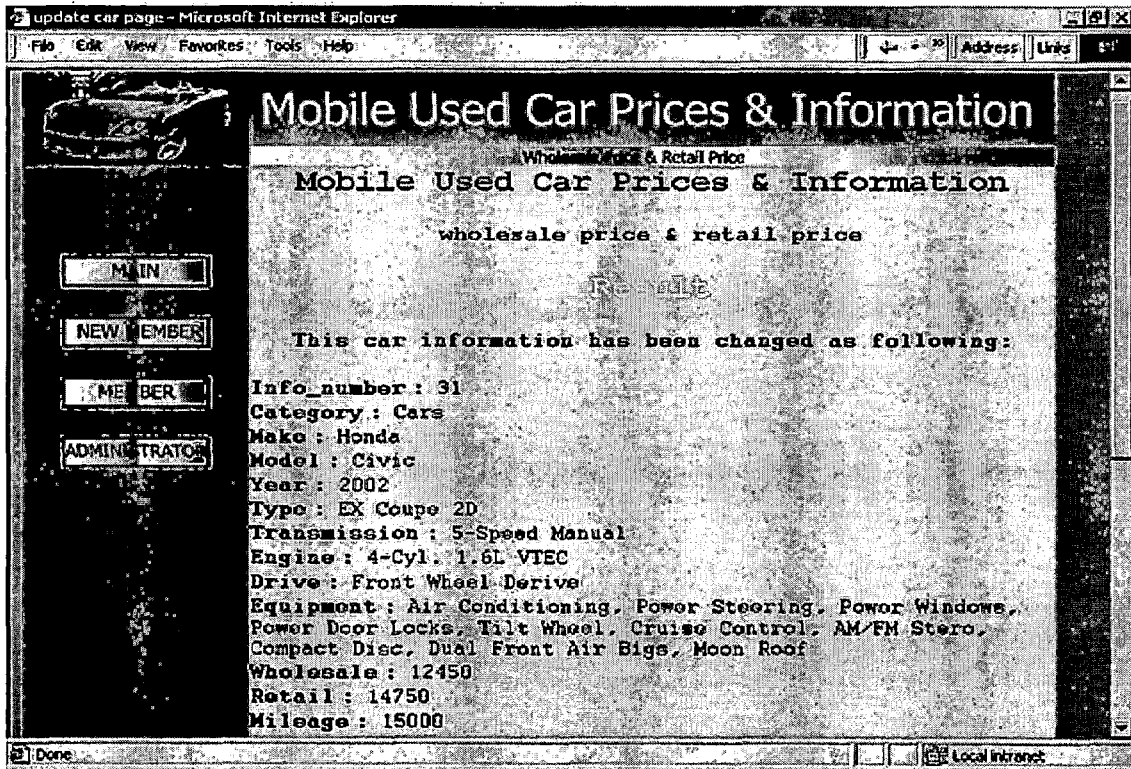
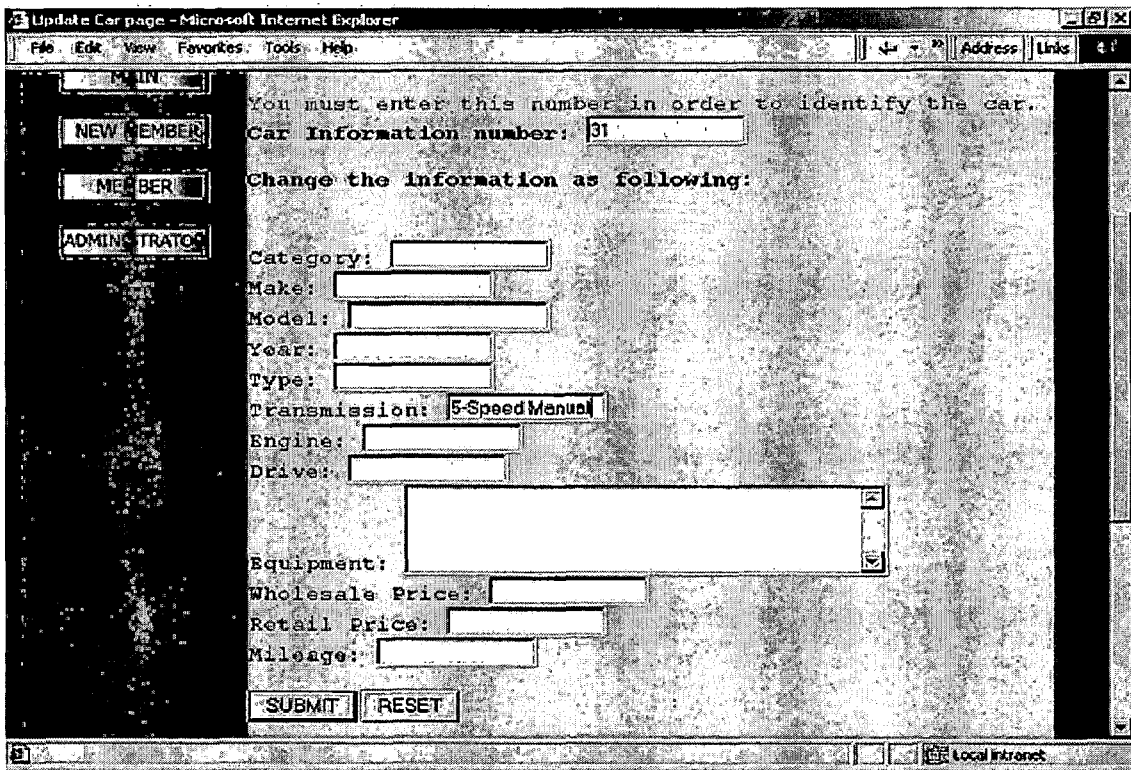


Figure 49. Update Used Car Information and Result

5.4.2.4.3.3 View All Used Cars. This function is provided for checking all the used car information in the database.

view car page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address Link

## Mobile Used Car Prices & Information

Wholesale Price & Retail Price

### Mobile Used Car Prices & Information

wholesale price & retail price

ALL USED CARS

Category	Make	Model	Year	Type	Transmission	Engine	Drive	Equipment	Wholesale	Retail	Hi
Cars	Honda	Civic	2002	EX Coupe 2D	Automatic	4-Cyl. 1.8L VTEC	Front Wheel Drive	Air Conditioning, Power Steering, Power Windows, Power Door Locks, Tilt Wheel, Cruise Control, AM/FM Stereo, Compact Disc, Dual Front Air Bags, Moon Roof	12450	14750	

MAIN NEW MEMBER MEMBER ADMINISTRATOR

Local intranet

Figure 50. View All Used Cars



#### 5.4.2.4.3.4 Delete Used Car Information and Result.

When some used cars are no longer needed for this system this function can remove the data from the database. To do this the administrator needs to know what the information number is for that particular used car. Then the administrator simply input this number into the field and click on the submit button. Then the result will show the information for that particular used car which has been removed form the database. In this case I input the number 31 and the result is shown as the following figure.

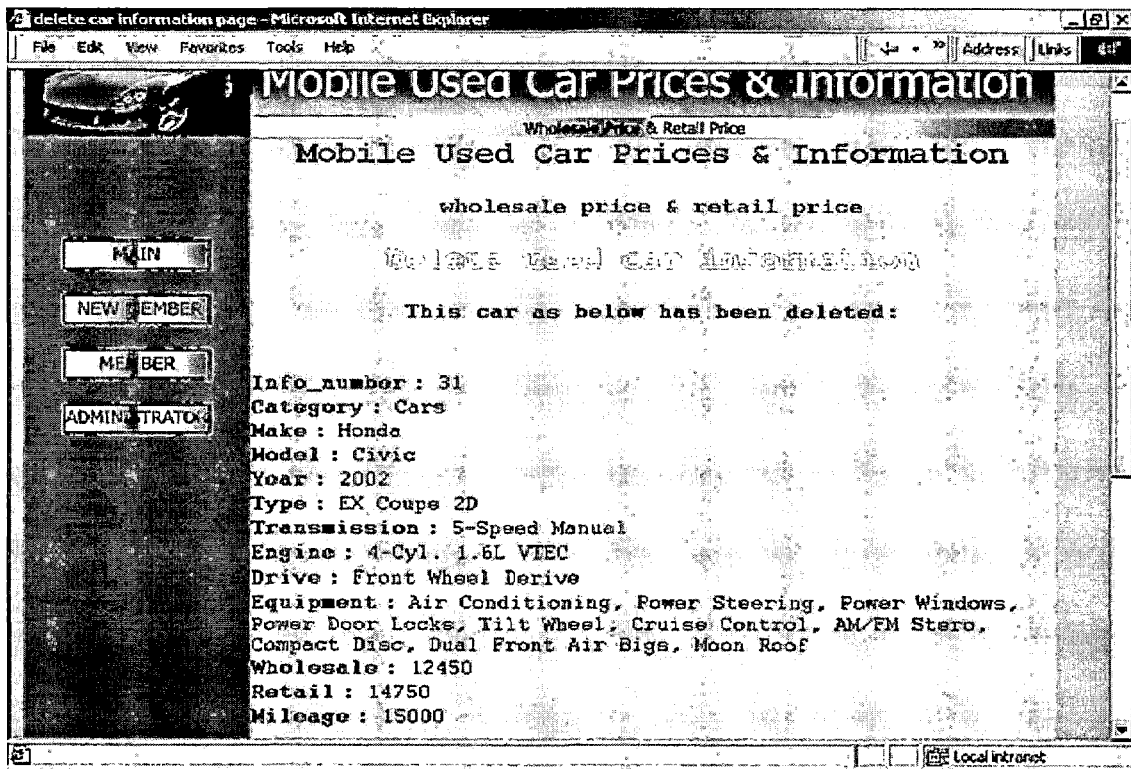
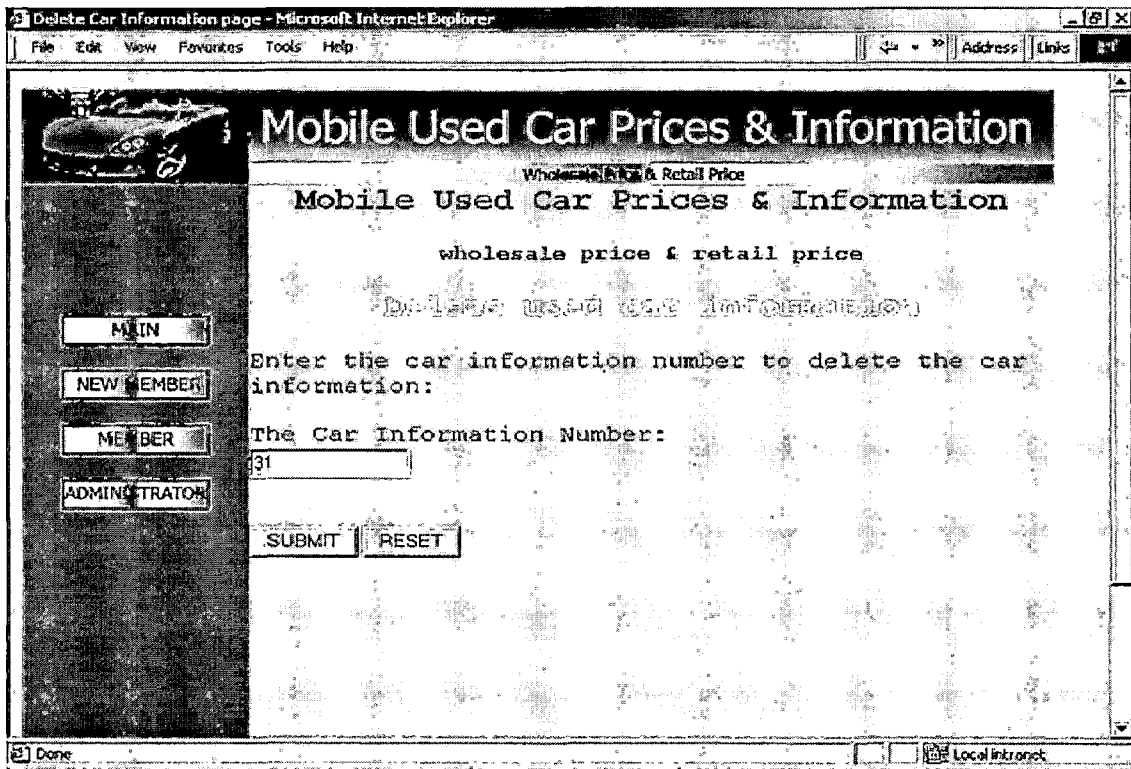


Figure 51. Delete Used Car Information and Result

5.4.2.4.4 Manage Equipment. The equipment affects the value of a used car and each of them has its own market price. Therefore the administrator needs to have Register, Change, View and Delete functions.

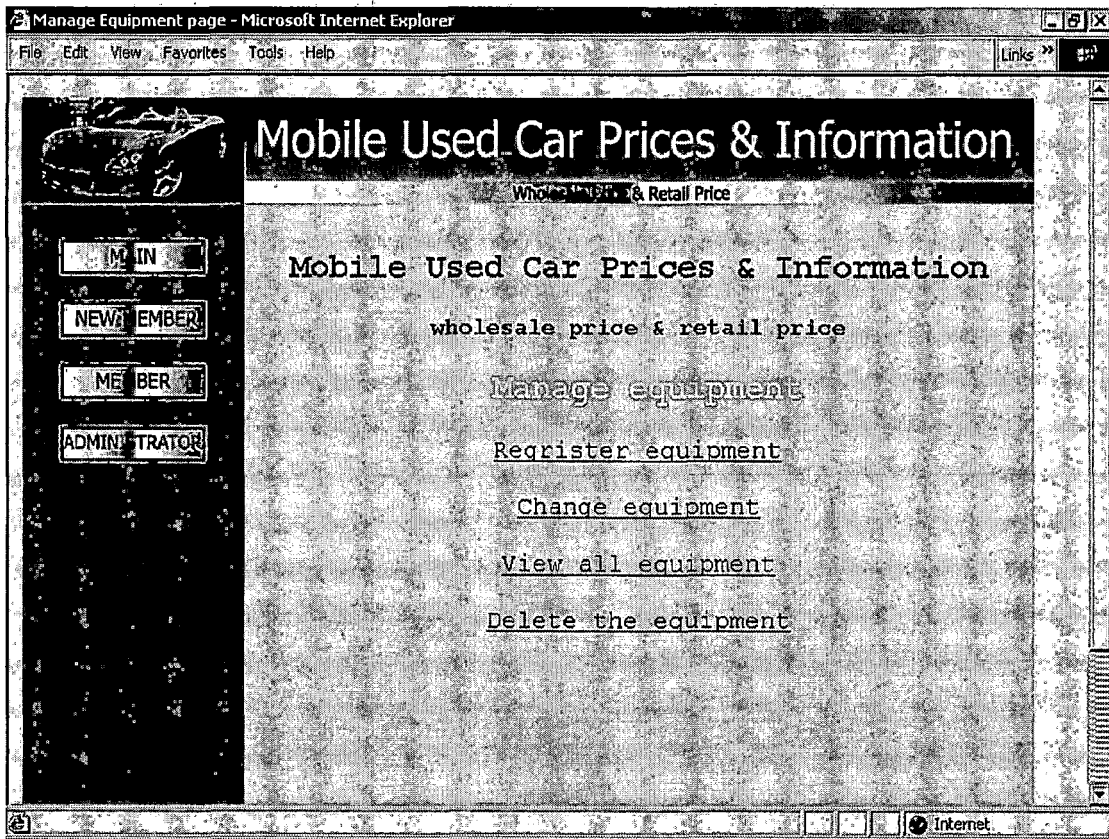


Figure 52. Manage Equipment

5.4.2.4.4.1 Register Equipment and Result. Simply input the name of that equipment to register it and it also will have a unique number for each of them. In this case I type in Integrated Phone into the field and this equipment will be created in the database. Then you click on submit button to send this information to the database. The result is shown as the following figure.

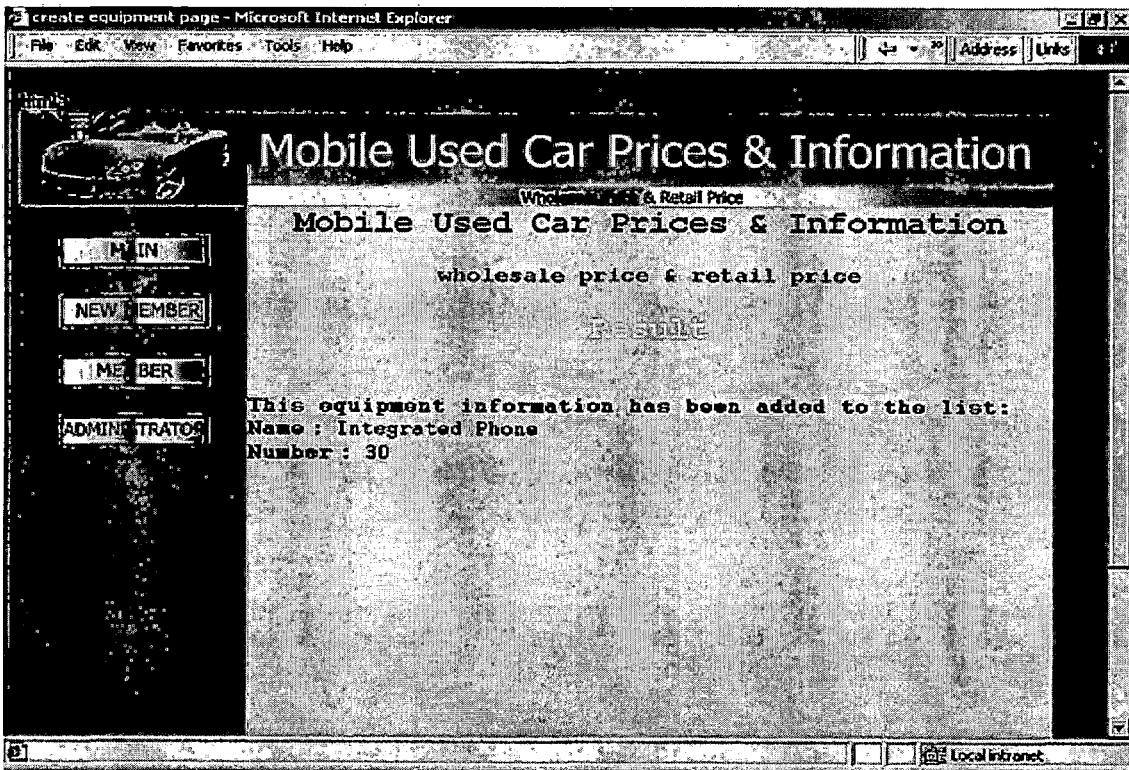
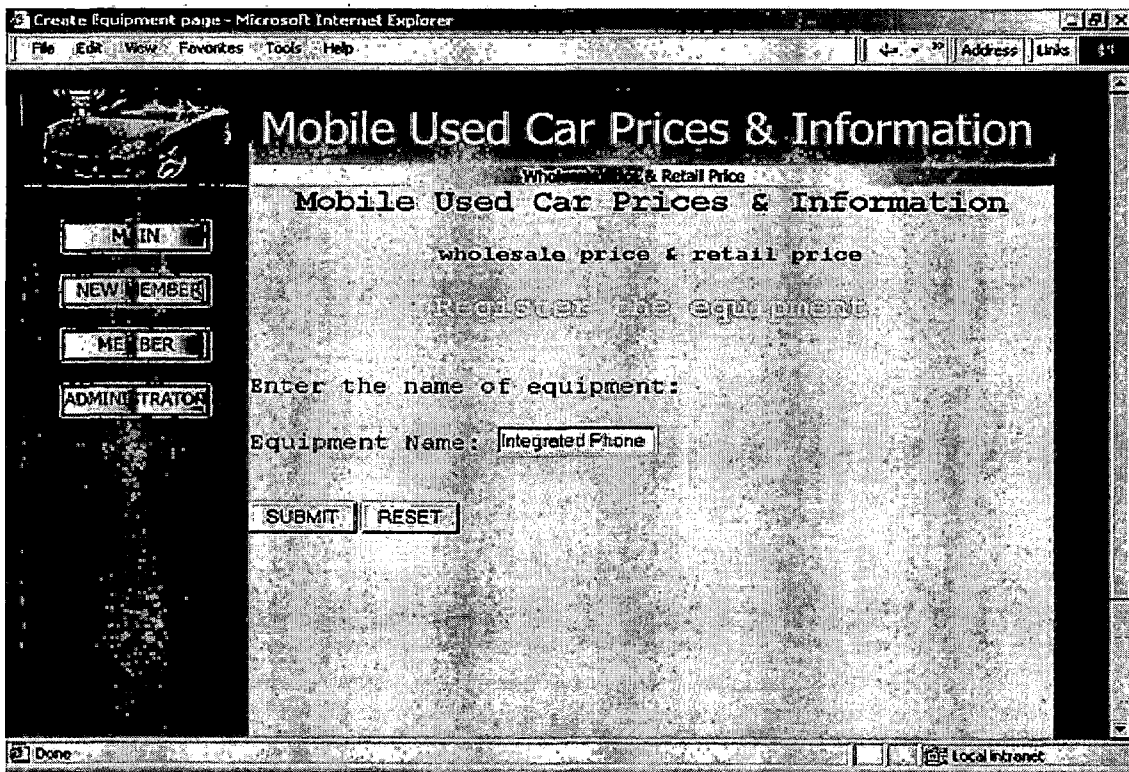


Figure 53. Register Equipment and Result

5.4.2.4.4.2 Change Equipment and Result. As I mentioned before it always needs to input the identification number to find the data and then you can change the data. In this case I want to change the equipment number 30 which is Integrated Phone. Then I type in the number 30 to the first field and the new equipment name is T-Bar Roof. Then you click on the Submit button to send the information into the database. The result is shown as the following figure.

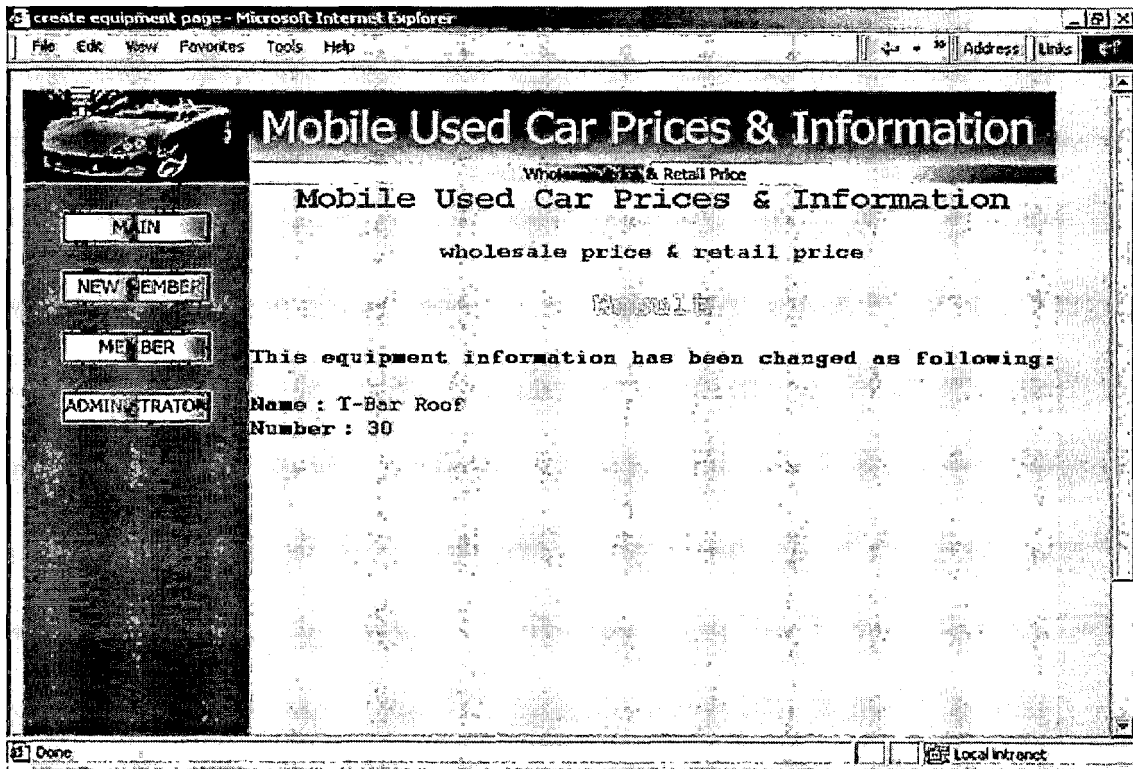
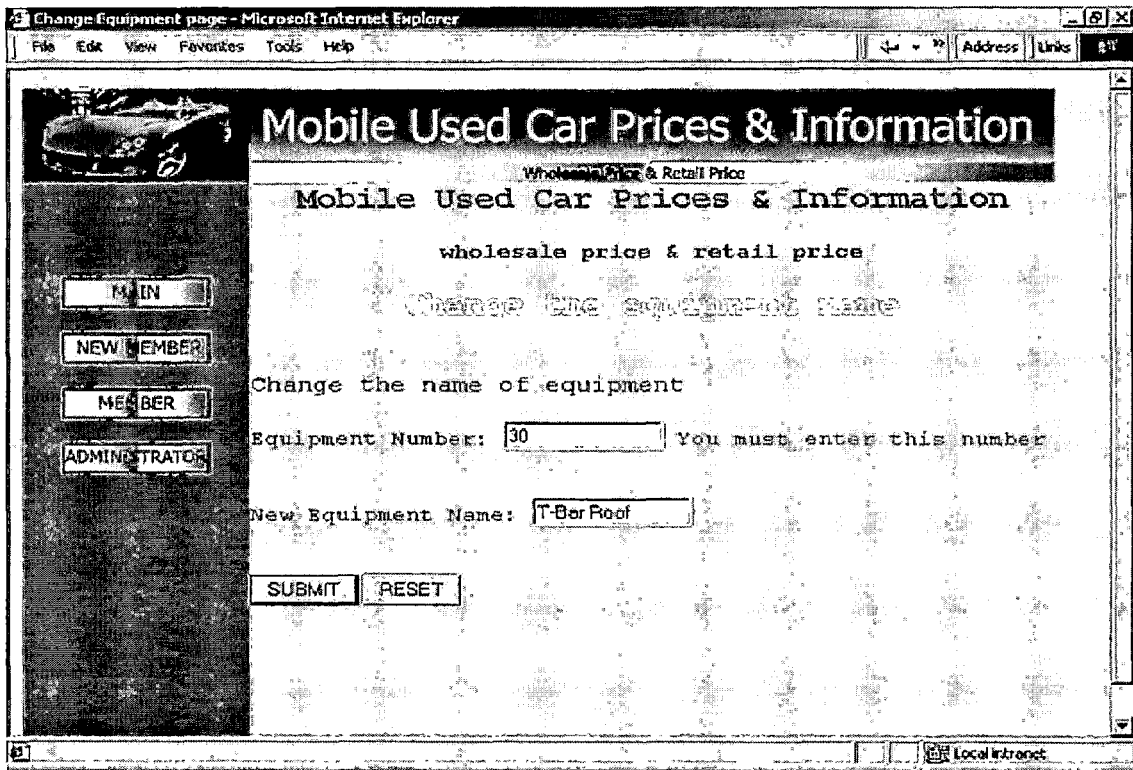


Figure 54. Change Equipment and Result

5.4.2.4.4.3 View All Equipment. The whole equipment will be shown here.

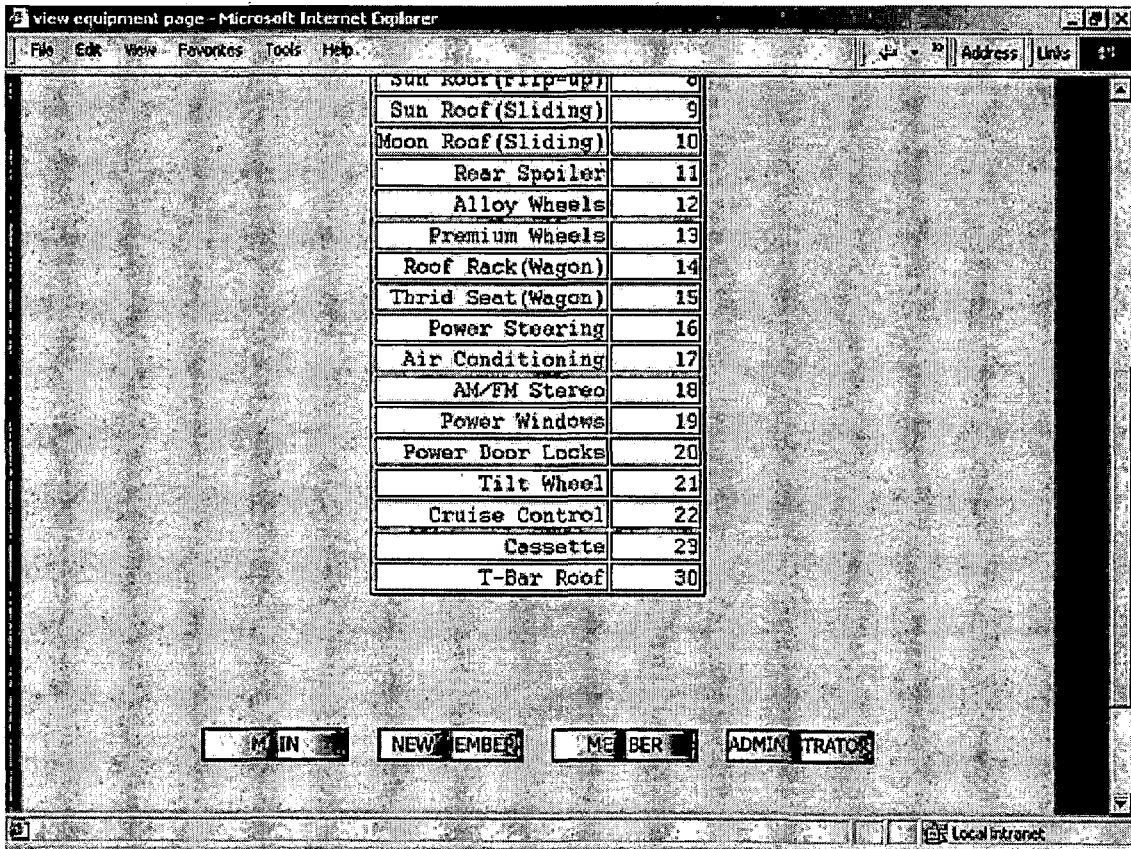


Figure 55. View All Equipment

5.4.2.4.4.4 Delete Equipment and Result. Remove the equipment from the database.



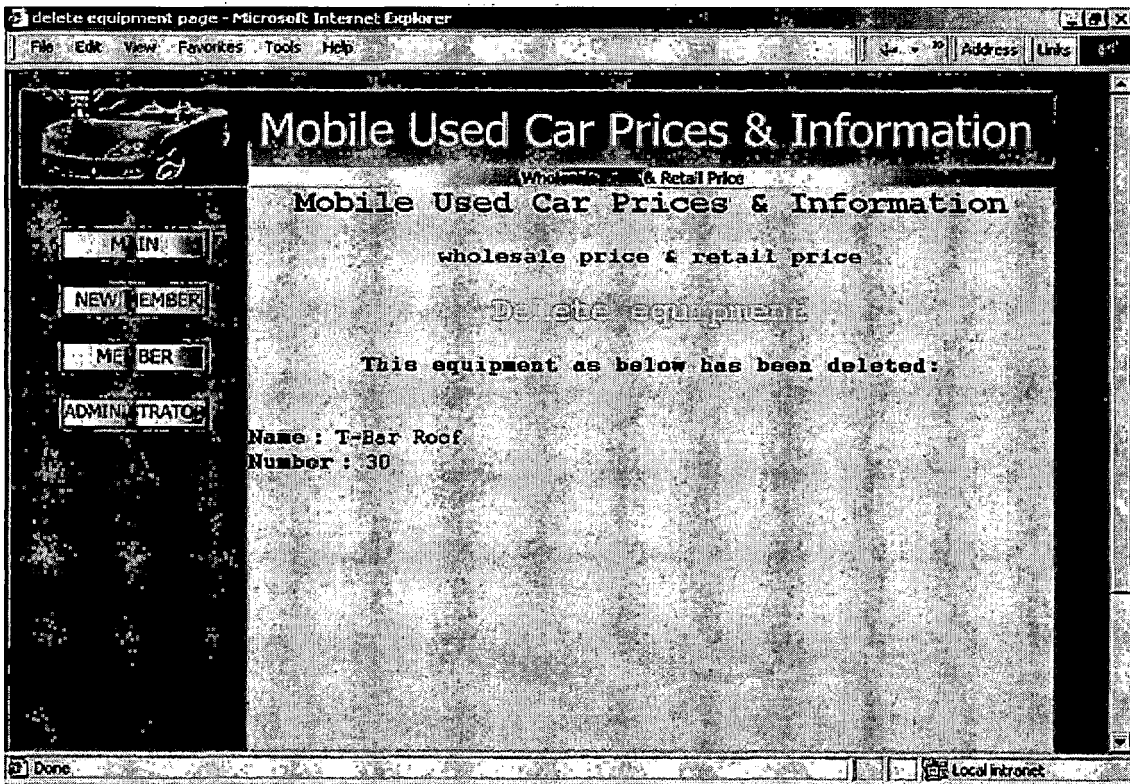
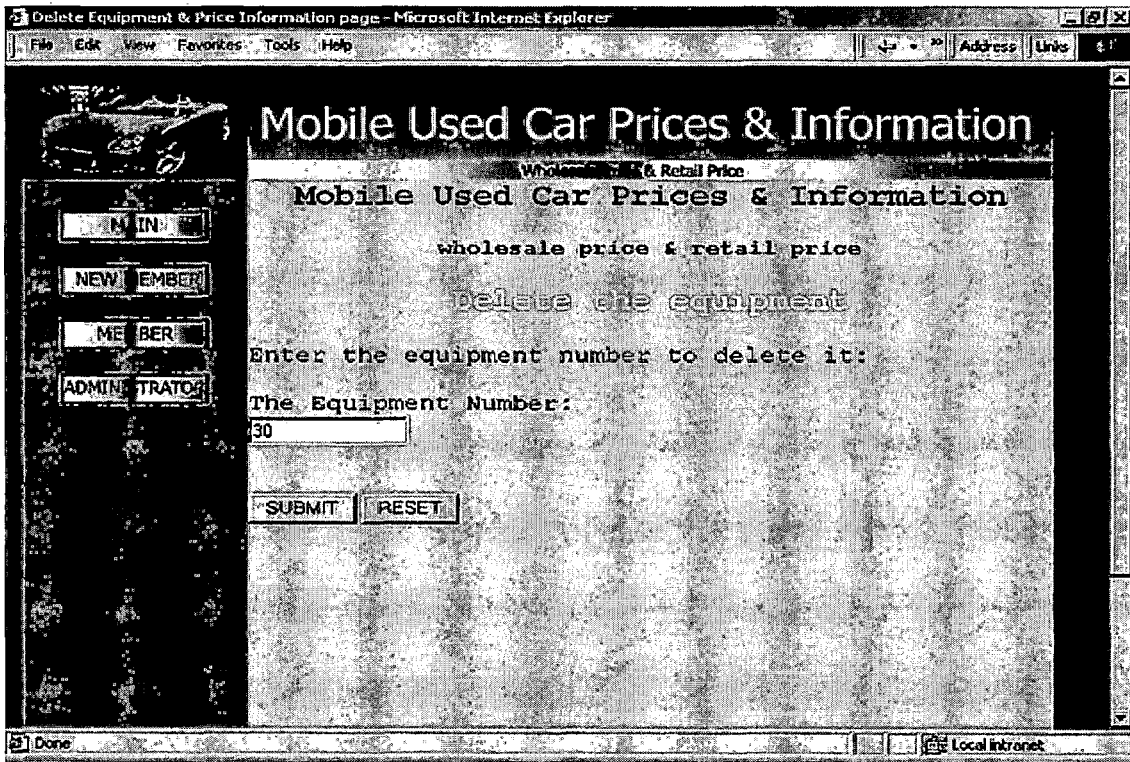


Figure 56. Delete Equipment and Result

5.4.2.4.5 Manage Equipment Price. To manage the equipment prices is more complicated because there are three tables about the equipment price in the database. There are five options in this page.

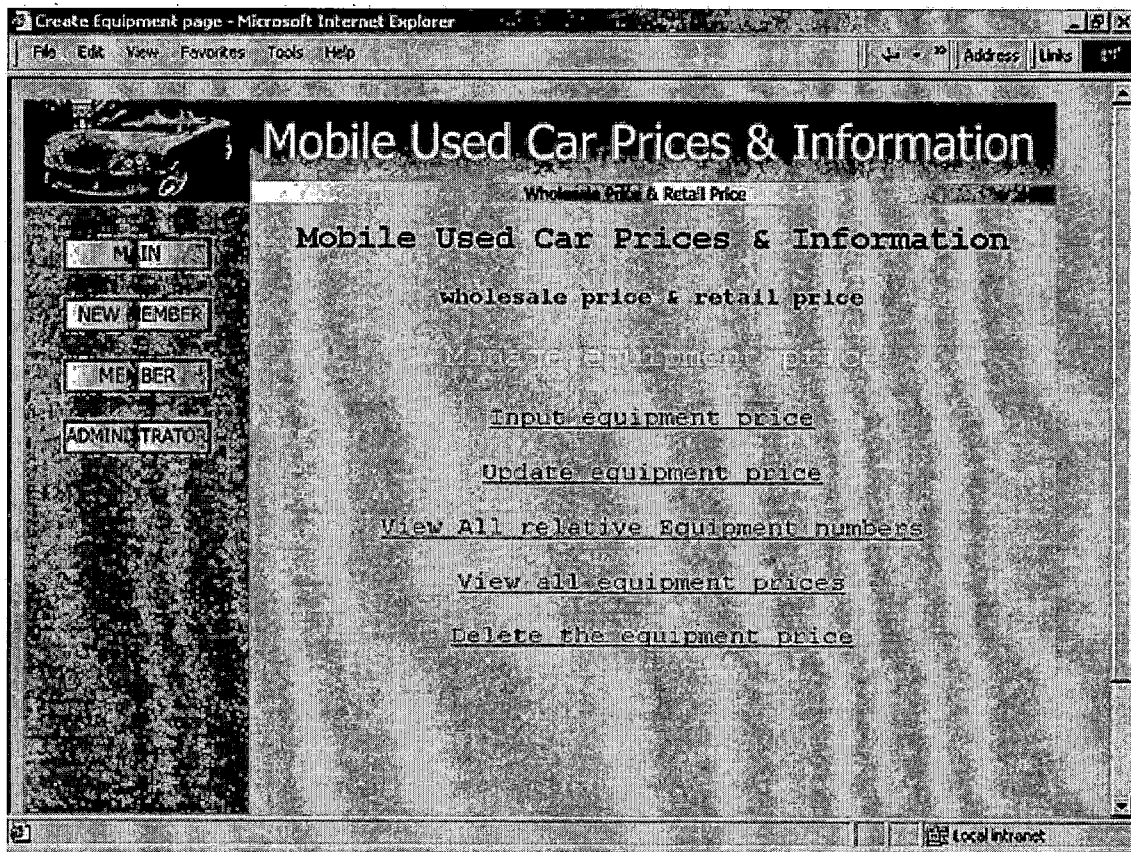


Figure 57. Manage Equipment Price

5.4.2.4.5.1 Input Equipment Price and Result. According to the information I got from Kelly blue book the equipment value is determined by two factors which are year and schedule. So the administrator needs to input four fields to add a new value for specified equipment. But in the database when you input those information it will generate a special number called final equipment number to identify the specified equipment and schedule number. Final equipment is also a unique number.

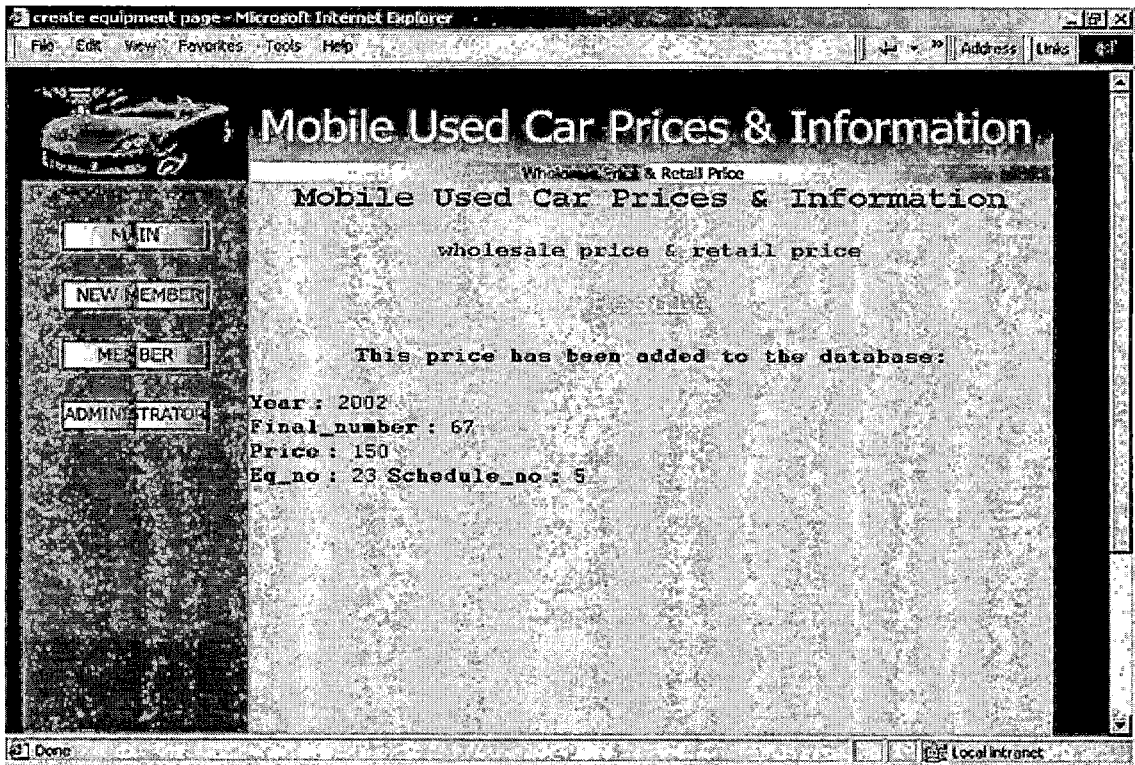
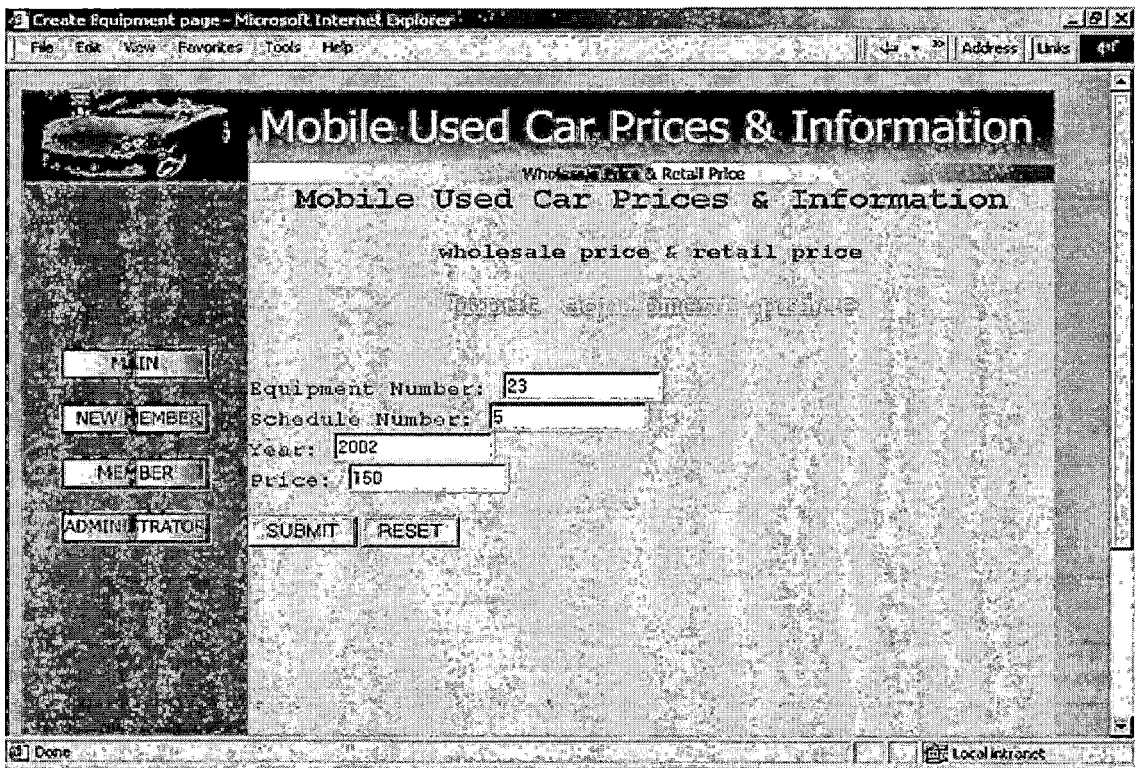


Figure 58. Input Equipment Price and Result

#### 5.4.2.4.5.2 Update Equipment Price and Result. To

identify specified equipment price the administrator needs to know what's the year and final equipment number. Then input the price you want to update. In this case I have to input the year and final equipment number to find a match in the database. Then I need to input the new price and click on the Submit button to send the new information to the database. The result is shown as the following figure.

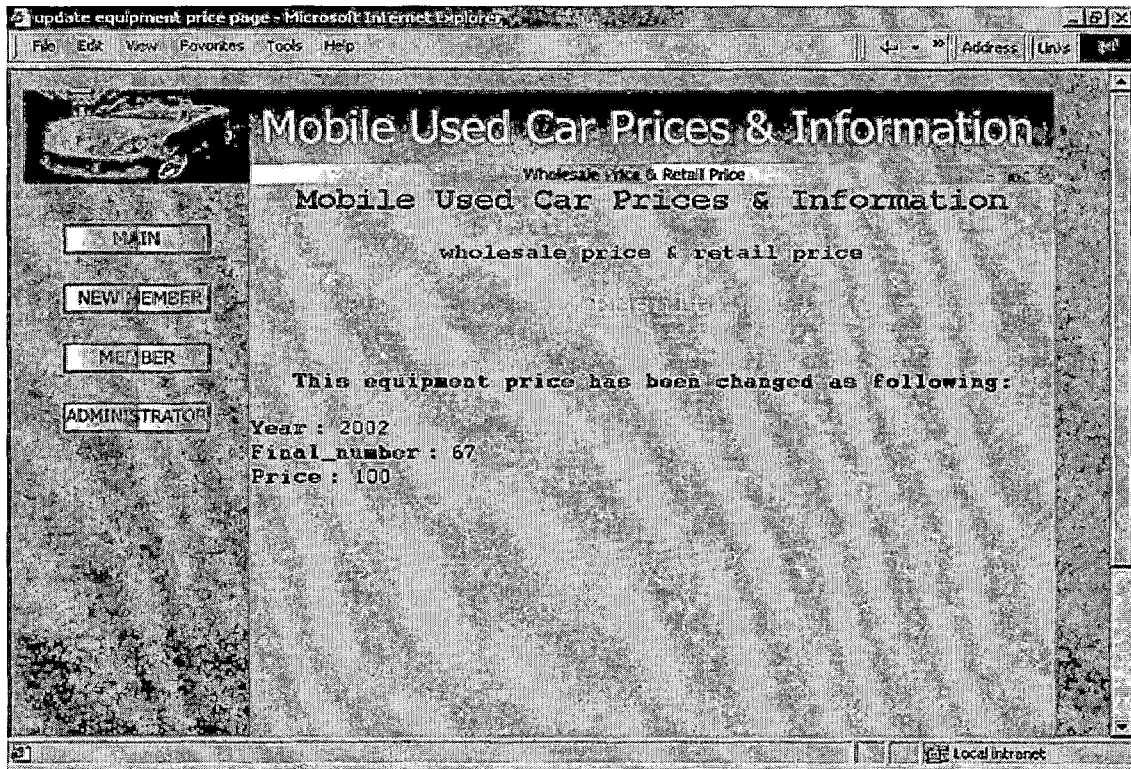
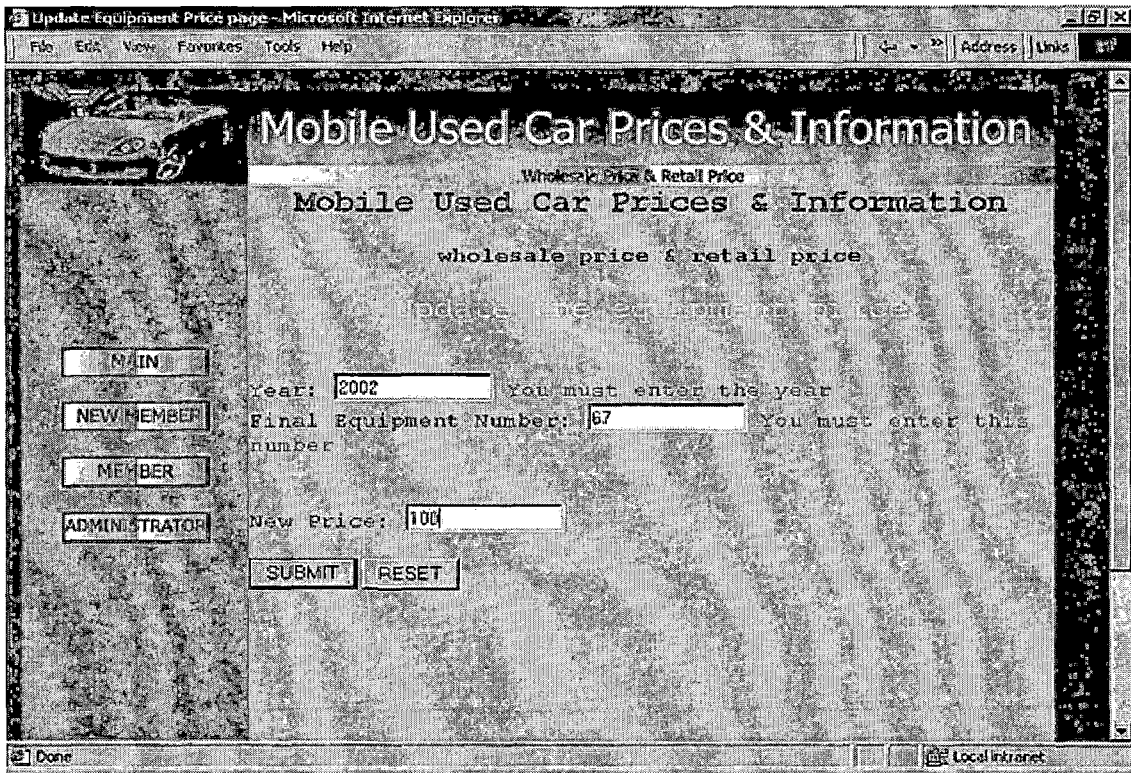
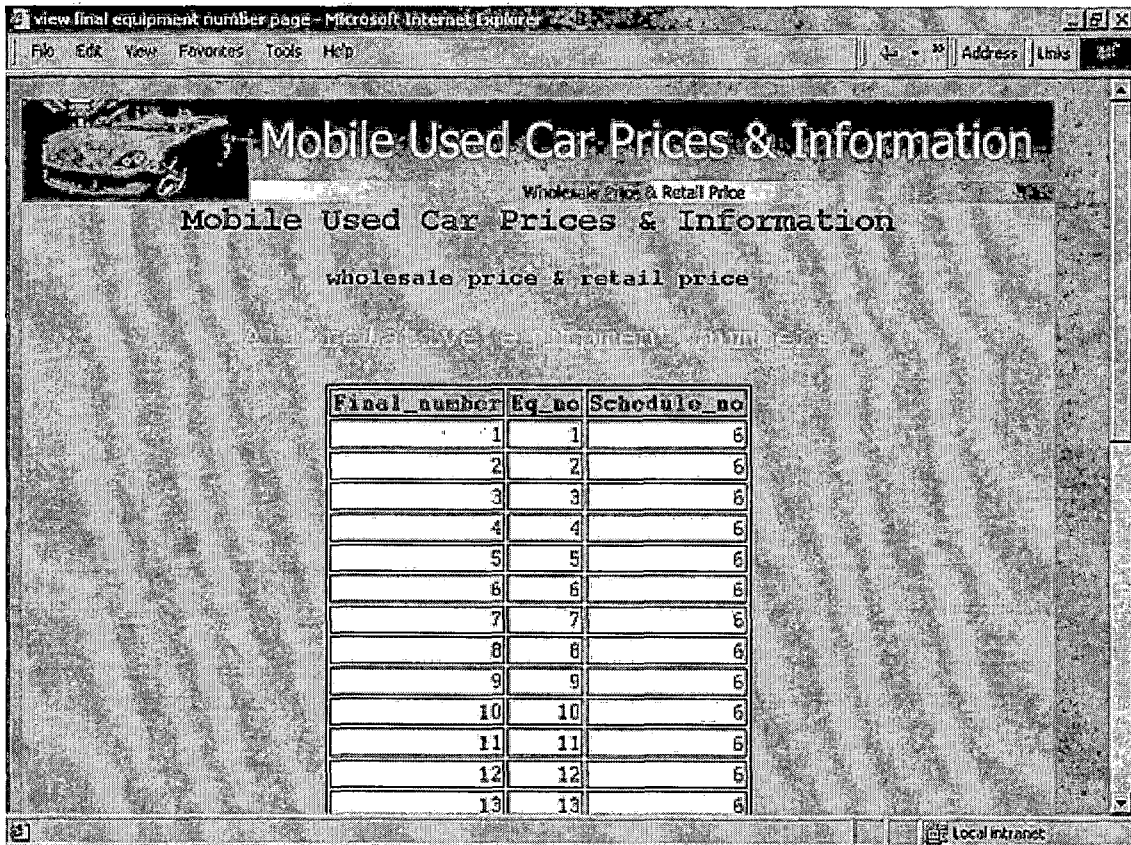


Figure 59. Update Equipment Price and Result

5.4.2.4.5.3 View All Relative Equipment Numbers. All relative equipment numbers means equipment number, schedule number and final equipment number.

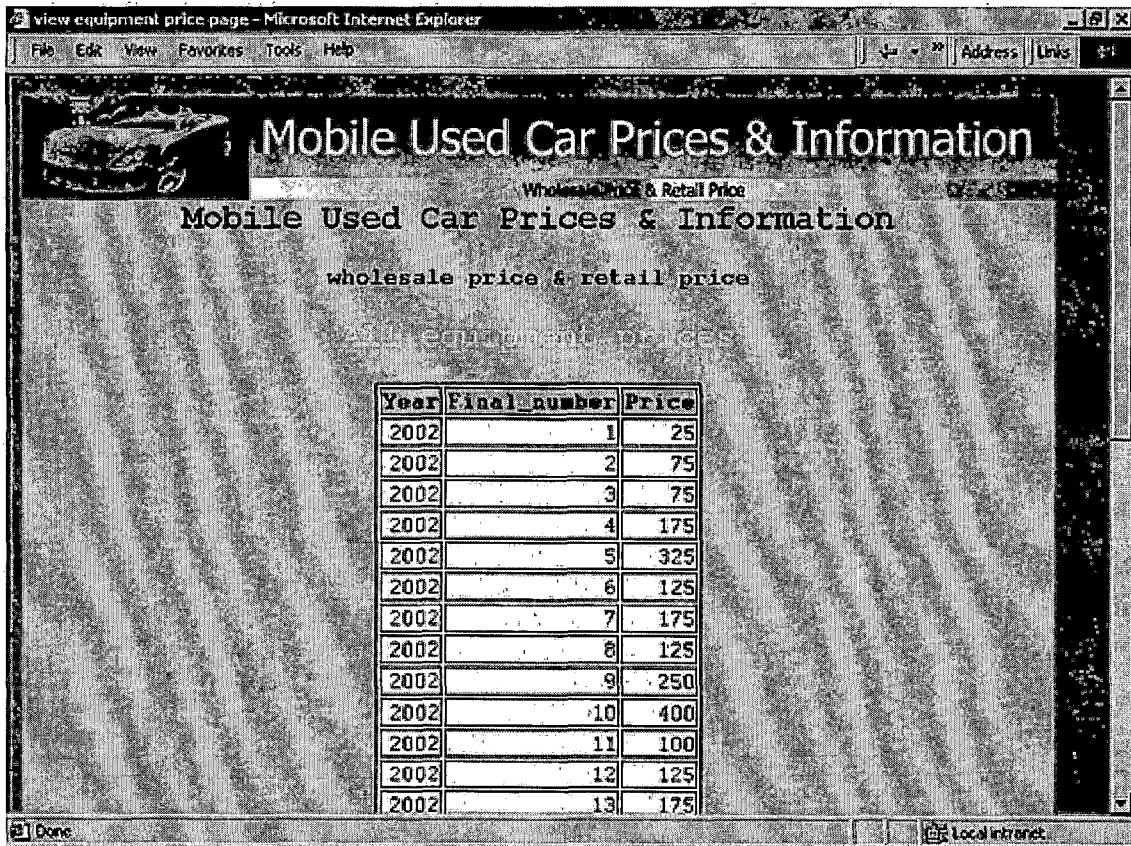


The screenshot shows a web browser window with the title "view final equipment number page - Microsoft Internet Explorer". The browser's address bar is empty. The main content area displays a page titled "Mobile Used Car Prices & Information" with a sub-header "Wholesale Price & Retail Price". Below this, the text "Mobile Used Car Prices & Information" and "wholesale price & retail price" is repeated. A table with three columns is visible, containing numerical data. The table is as follows:

Final_number	Eq_no	Schedule_no
1	1	6
2	2	6
3	3	6
4	4	6
5	5	6
6	6	6
7	7	6
8	8	6
9	9	6
10	10	6
11	11	6
12	12	6
13	13	6

Figure 60. View All Relative Equipment Numbers

5.4.2.4.5.4 View All Equipment Prices. The table in this page shows all equipment prices.



view equipment price page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address Links

# Mobile Used Car Prices & Information

Wholesale Price & Retail Price

## Mobile Used Car Prices & Information

wholesale price & retail price

ALL EQUIPMENT PRICES

Year	Final number	Price
2002	1	25
2002	2	75
2002	3	75
2002	4	175
2002	5	325
2002	6	125
2002	7	175
2002	8	125
2002	9	250
2002	10	400
2002	11	100
2002	12	125
2002	13	175

Done Local intranet

Figure 61. View All Equipment Prices

5.4.2.4.5.5 Delete the Equipment Price and Result. When the administrator needs to delete the equipment price these two fields have to fill in with information which identifies that specified equipment price.



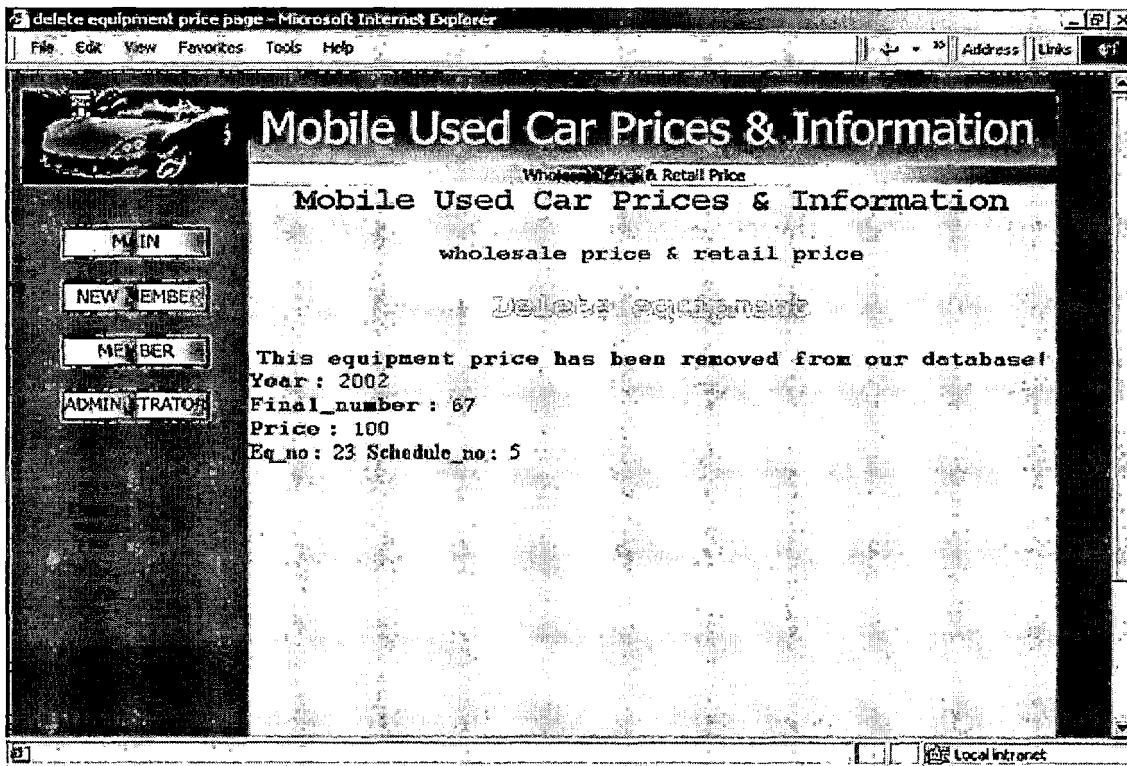
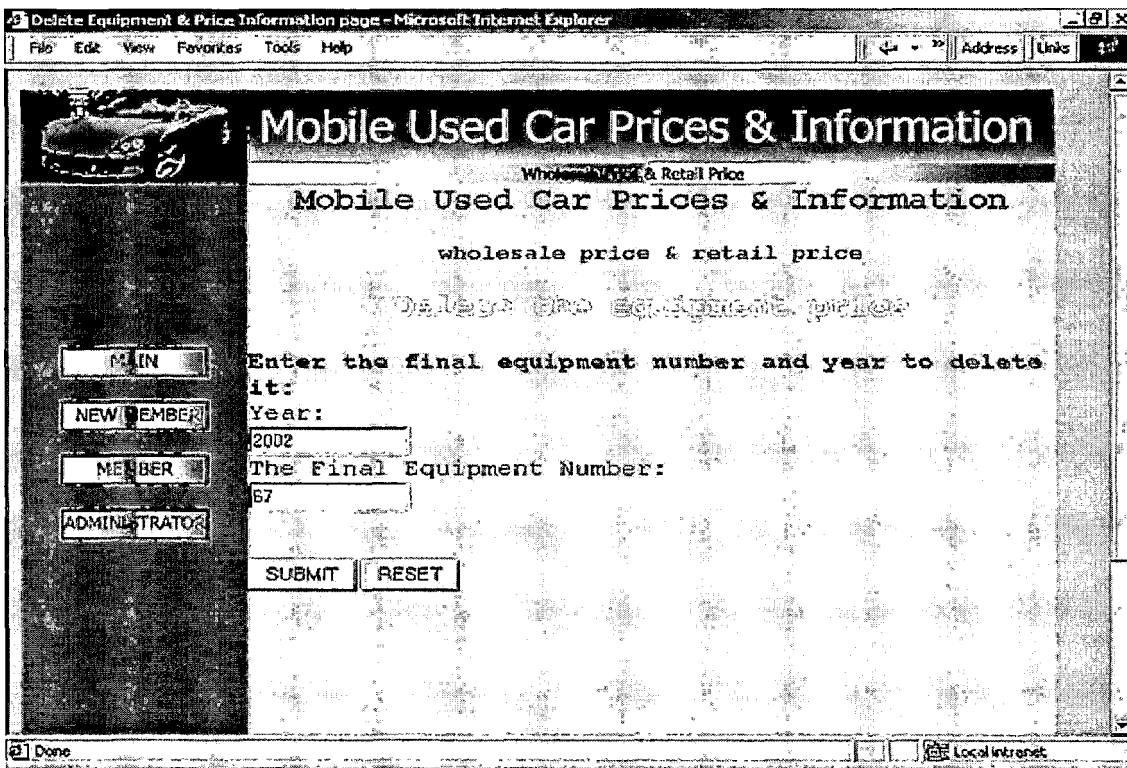


Figure 62. Delete Equipment Price and Result

5.4.2.4.6 Manage Mileage Adjustment. The number of mileage also has the effect to the value of a used car. According to the VMR standard auto guides there are three tables for different levels of vehicles. There are six options in this page.

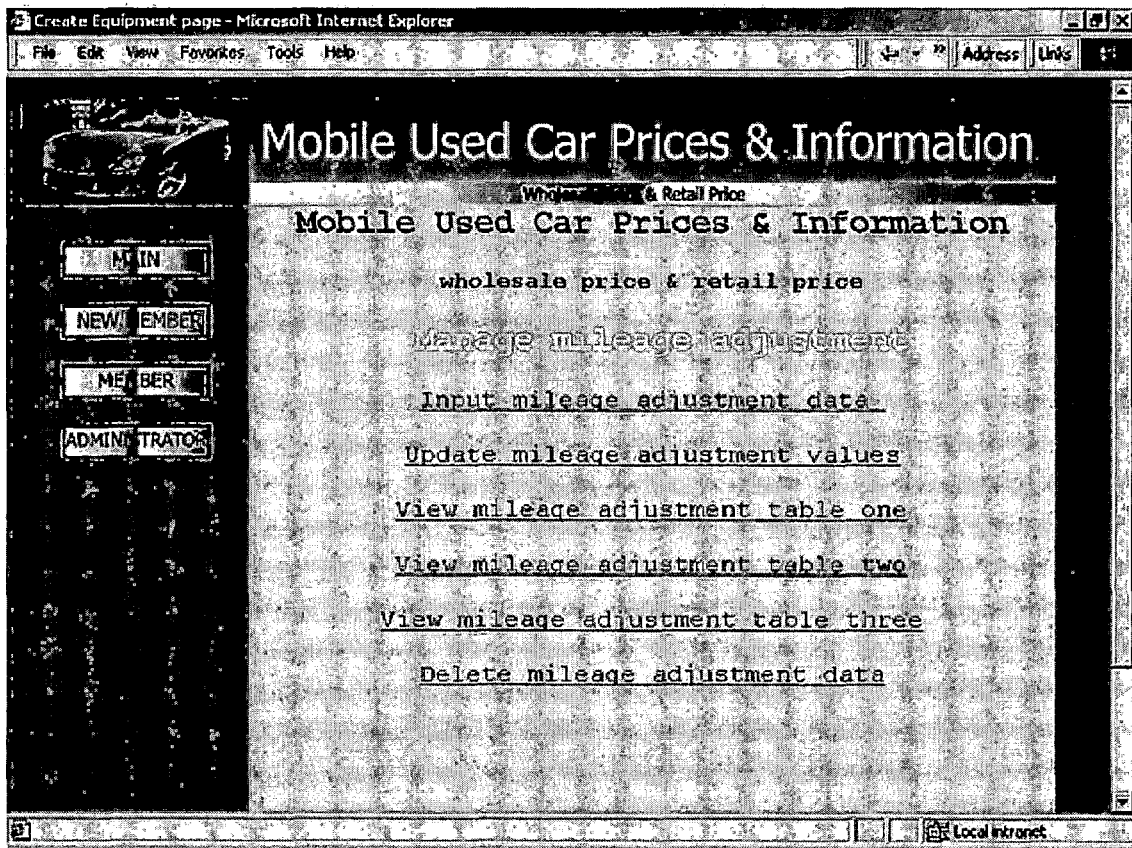


Figure 63. Manage Mileage Adjustment

#### 5.4.2.4.6.1 Input Mileage Adjustment Data and Result.

In this page the administrator needs to pick up which table to type in the information and it can be more than just one table. In this case I choose table one and table three to input the data. Then I need to type in the mileage, year and value for both table one and table two. Then click on the Submit button to send these data to the database. The result is shown as the following figure.

Form page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address Links

NEW MEMBER  
MEMBER  
ADMINISTRATOR

Choose which mileage adjustment table:

Table one (Wholesale value under \$12,500)

Mileage: 15000  
Year: 2001  
Value: 500

Table two (Wholesale value between \$12,500 and \$25,500)

Mileage:   
Year:   
Value:

Table three (Wholesale value over \$25,500)

Mileage: 15000  
Year: 2001  
Value: 1100


SUBMIT RESET

Local intranet

input mileage page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address Links

 **Mobile Used Car Prices & Information**

Wholesale Price & Retail Price

**Mobile Used Car Prices & Information**

wholesale price & retail price

RESULT

The data you input is as following:

Table one:

Mileage : 15000  
Year : 2001  
Price : 500

The data you input is as following:

Table three:

Mileage : 15000  
Year : 2001  
Price : 1100

MAIN  
NEW MEMBER  
MEMBER  
ADMINISTRATOR

Done

Local intranet

Figure 64. Input Adjustment Data and Result

#### 5.4.2.4.6.2 Update Mileage Adjustment Values and

Result. To update the value the administrator needs to input mileage and year. In this case I choose table one and table two to change the information. First I need to input the mileage and year to find a match in the database. Then I input the new value. The result is shown as the following figure.

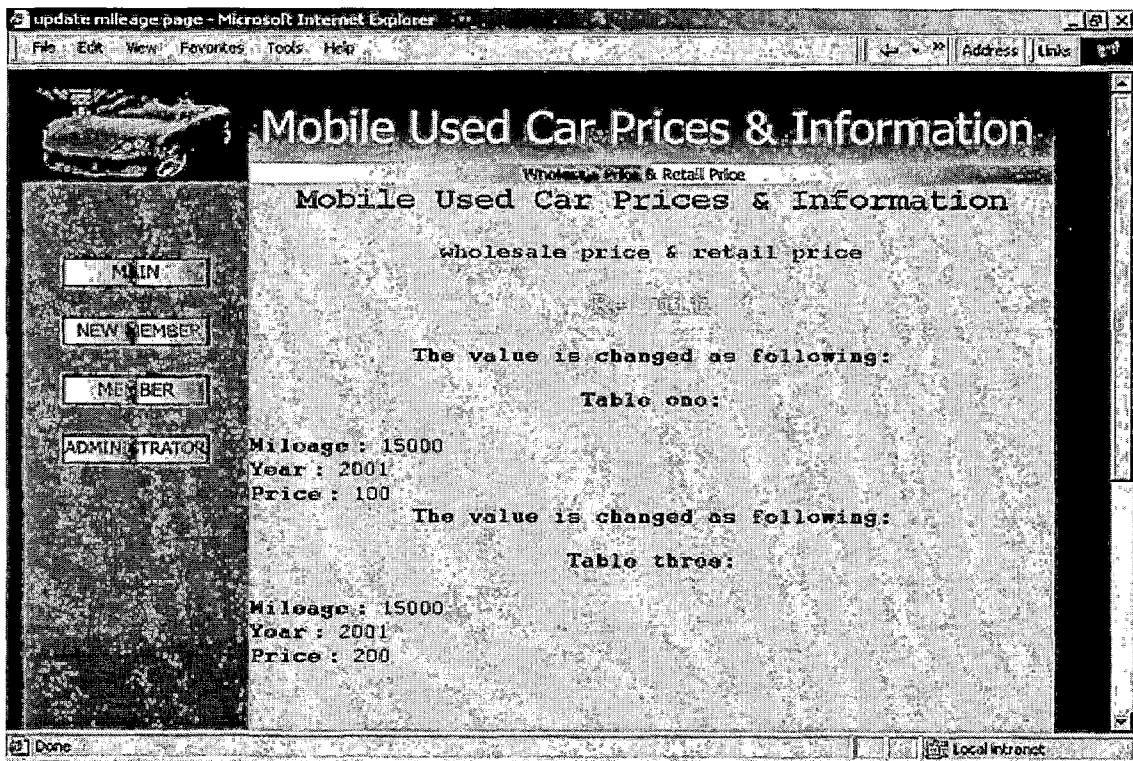
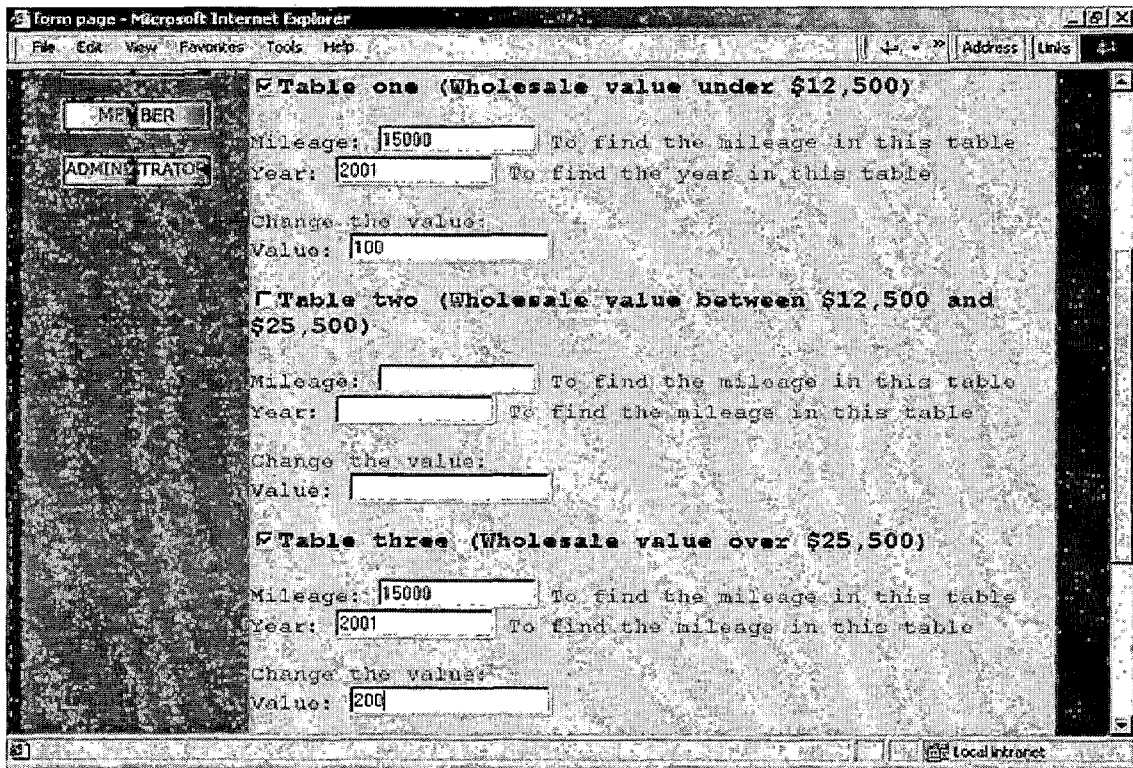
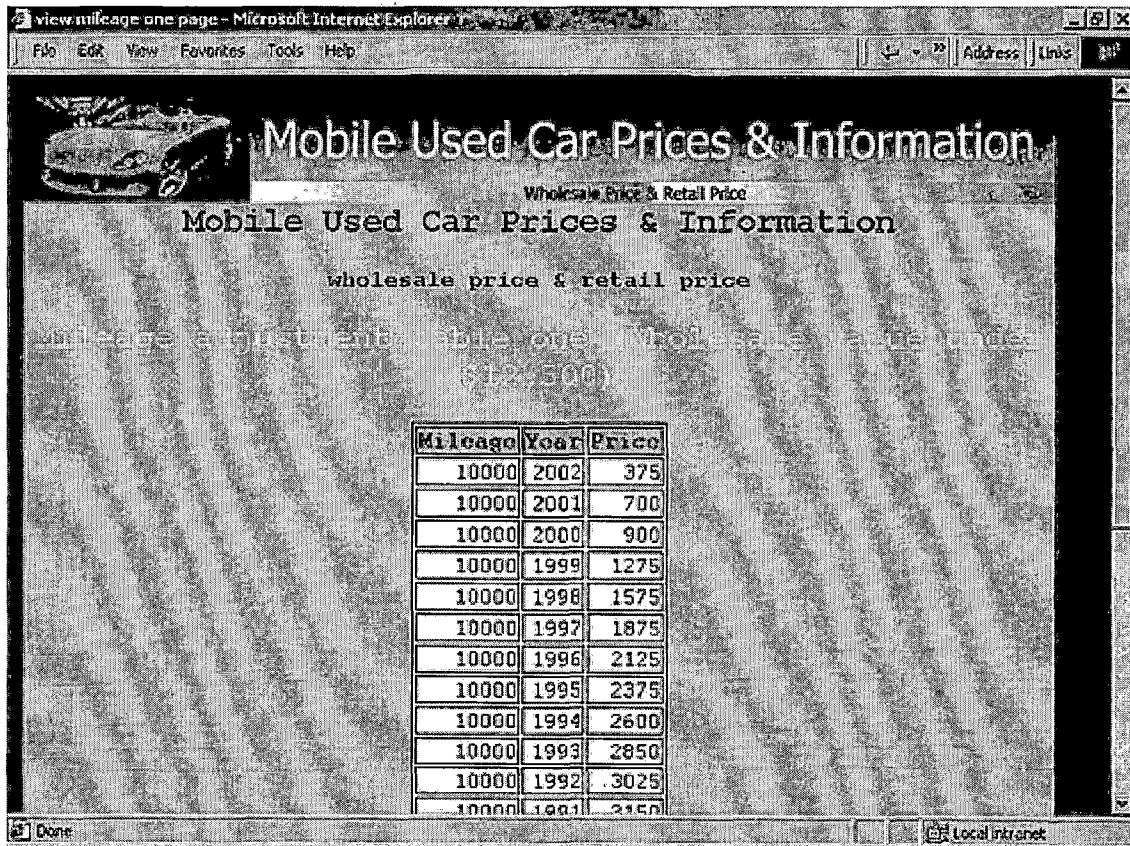


Figure 65. Update Adjustment Values and Result

5.4.2.4.6.3 View Mileage Adjustment Tables. Choose and View these tables.



The screenshot shows a web browser window titled "view mileage one page - Microsoft Internet Explorer". The page content includes a header "Mobile Used Car Prices & Information" and a sub-header "Wholesale Price & Retail Price". Below this, there is a table with three columns: "Mileage", "Year", and "Price". The table contains 12 rows of data, all with a mileage of 10000 and prices ranging from 375 to 3150. The browser's status bar at the bottom shows "Done" and "Local intranet".

Mileage	Year	Price
10000	2002	375
10000	2001	700
10000	2000	900
10000	1999	1275
10000	1998	1575
10000	1997	1875
10000	1996	2125
10000	1995	2375
10000	1994	2600
10000	1993	2850
10000	1992	3025
10000	1991	3150

Figure 66. View Mileage Adjustment Tables

5.4.2.4.6.4 Delete Mileage Adjustment Data and Result.

The administrator still has to follow the correct way to delete the data and in this case mileage and year are required.

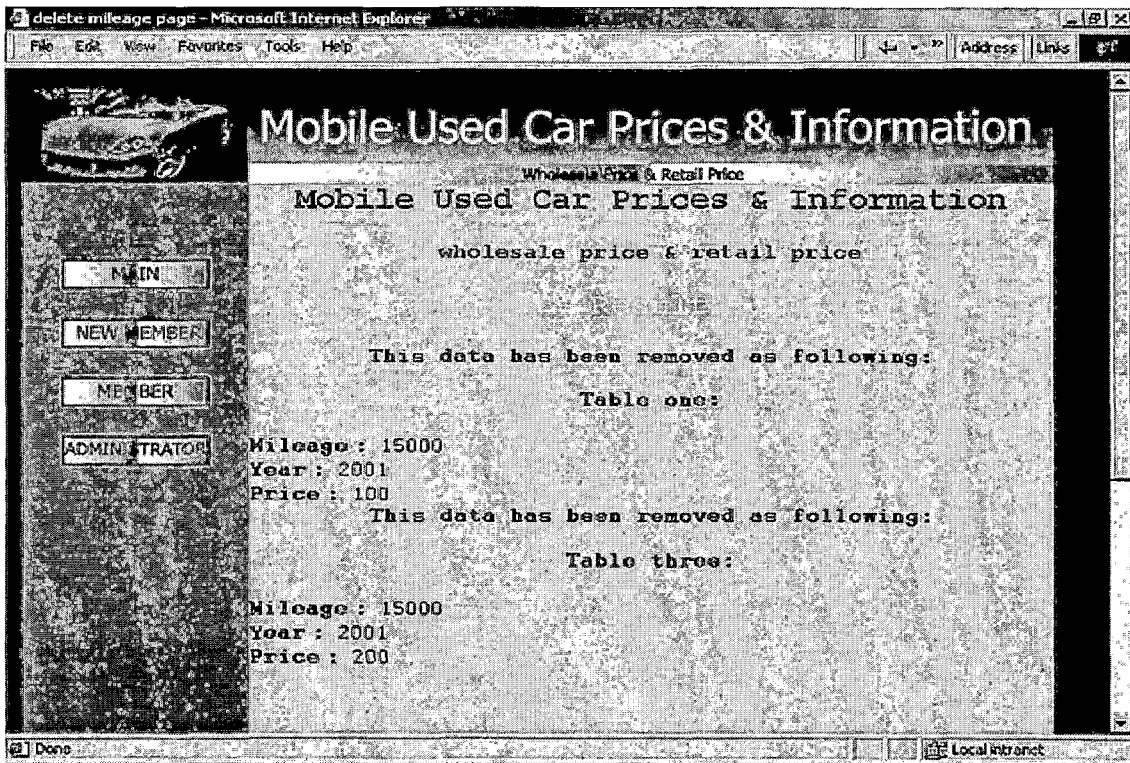
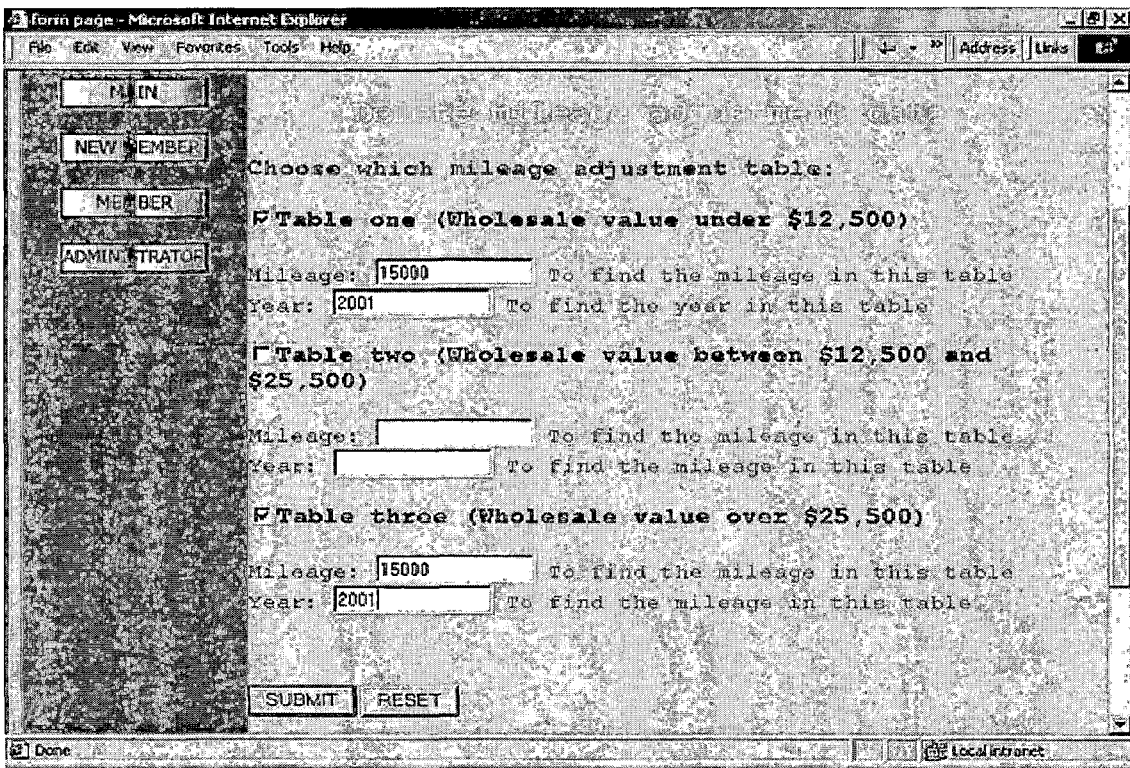


Figure 67. Delete Adjustment Data and Result



5.4.2.4.7 Search. This sixth function is to search the database and tries to find one or more matches in the database. The administrator can search for members and used cars.

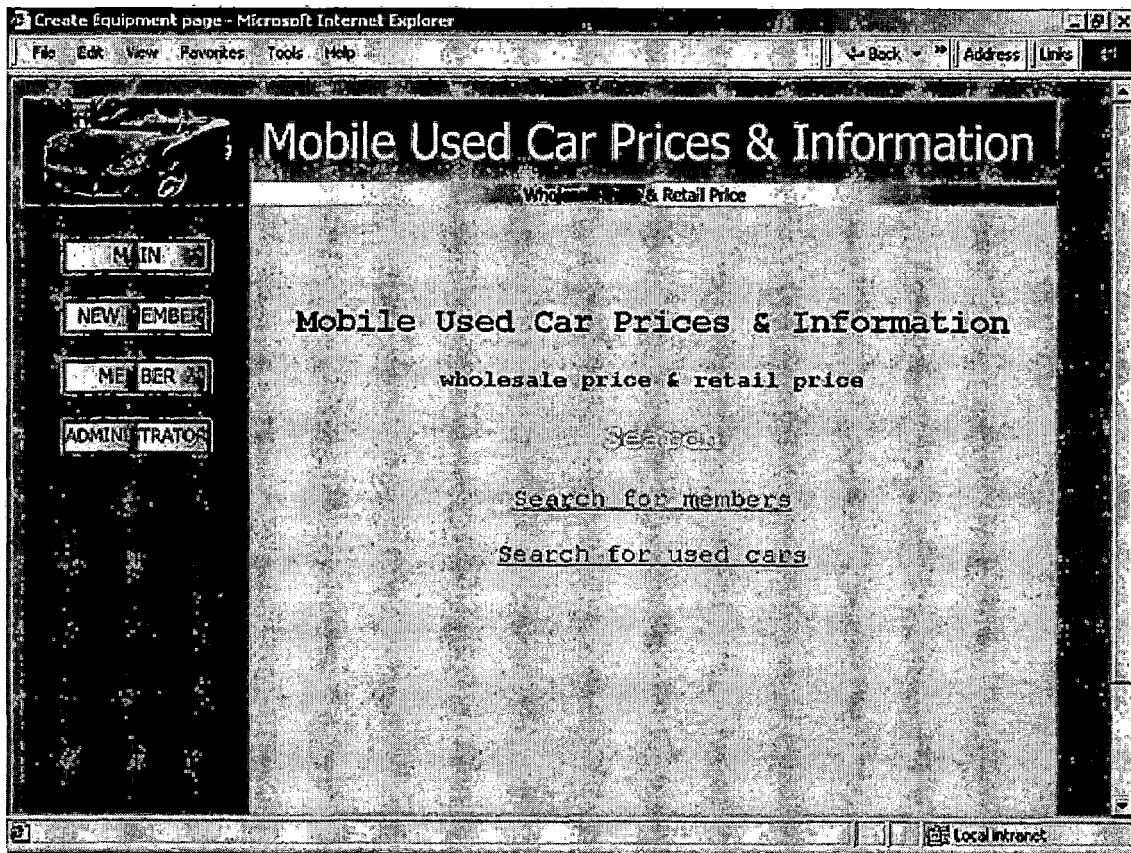


Figure 68. Search

5.4.2.4.7.1 Search for Members and Result. In this page there are two fields. The first field is a select box and you can pick up one of them. The second field is for inputting data.

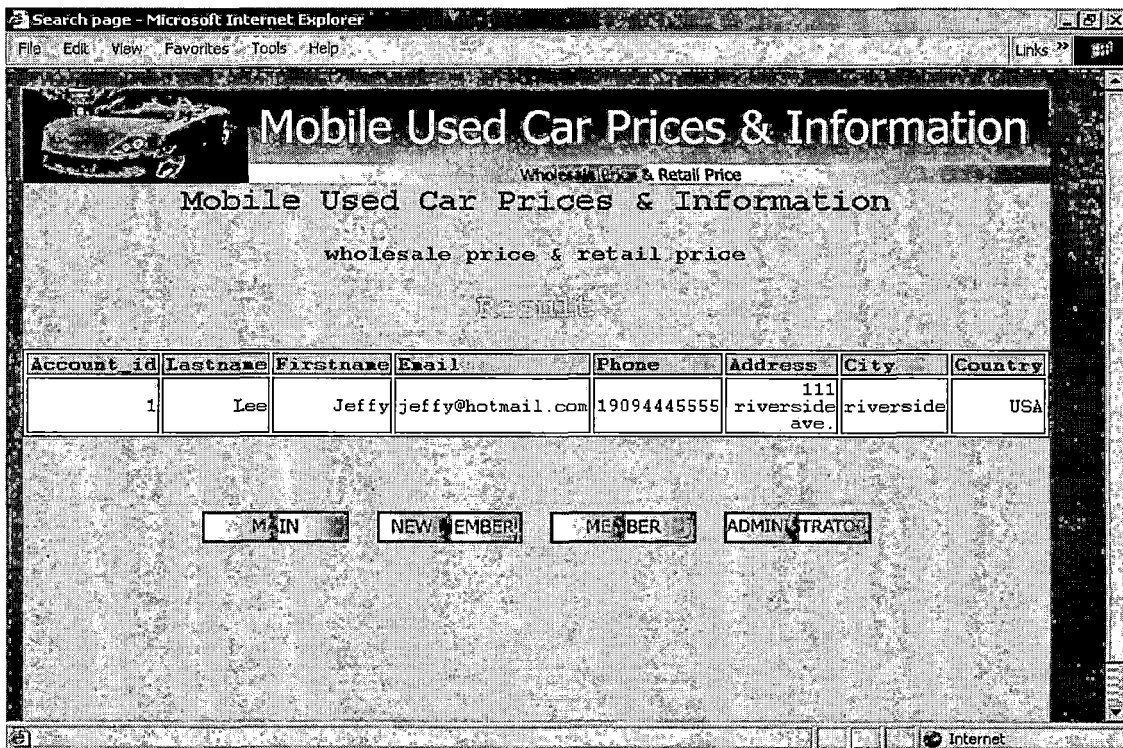
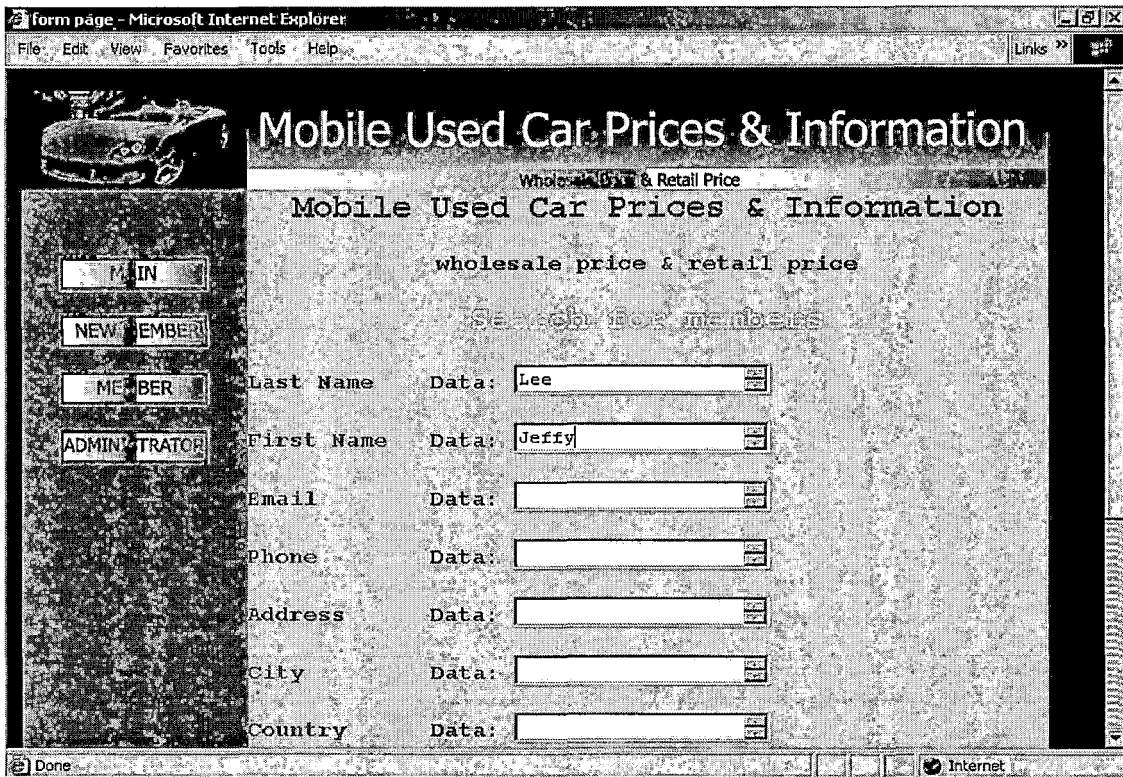


Figure 69. Search for Members and Result

5.4.2.4.7.2 Search for Used Cars and Result. In this page there are two fields. The first field is a select box and you can pick up one of them. The second field is for inputting data. In this case I choose Make as the first field and input the Honda as the second field. Then I click on the Submit button to send the information. The result is shown as the following figure.

form page - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links

### Search for Used Cars

Information number Data:

Category Data:

Make Data:

Model Data:

Year Data:

Type Data:

Transmission Data:

Engine Data:

Drive Data:

Equipment Data:

Wholesale Price Data:

Done Internet

Search page - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links

### Results

Info number	Category	Make	Model	Year	Type	Transmission	Engine	Drive	Equipment	Wholesa
1	Cars	Honda	Civic	2002	Ex 2d	Automatic	4-Cyl. 1.7L VTEC	Front wheel drive	Air Conditioning, Power Steering, Power Windows, Power Door Locks, Tilt Wheel, Cruise Control, AM/FM Stereo, Compact Disc, Dual Front Air Bags, Moon Roof	124
2	Cars	Honda	Civic	2002	Ex 2d	5-speed manual	4-Cyl. 1.7L VTEC	Front wheel drive	Power Steering, Air Cinditioning, AM/FM Stereo, Power Windows, Power Door Locks, Tilt Wheel, Cruise Control, ABS (4 Wheel), CD (Single Disc), Moon Roof (Sliding)	119
									Power Steering, Air	

Done Internet

Figure 70. Search for Used Cars and Result

## 5.5 Summary

This manual provides a quick way to use this system and helps people to understand immediately after they read. This manual also has specified the requirements of this software and how to install the WCA onto Palm Os devices or POSE. For both clients and server side these figures are shown and a detailed explanation is provided for each single figure.

## CHAPTER SIX

### CONCLUSIONS

#### 6.1 Introduction

MOBILE USED CAR PRICES AND INFORMATION applies the newest wireless technology to create a communication between Palm OS devices and a personal computer. For Palm OS devices this system gives these users a chance to check used car prices and information. For a personal computer this system provides the functional, manageable and comprehensive web server. Because of this newest wireless technology it makes the wireless communication possible. This technology gives Palm OS developer a better way to solve the limitations of Palm OS devices.

#### 6.2 Conclusions

The conclusions extracted from the project follows.

1. Web Clipping, Palm OS wireless technology, has been successfully applied in this project and it is proved to be a better solution for web application on Palm OS devices. The limitations which are the small screen size and limited memory cause the difference between Web Clipping application and Web Application. Because of the

limitations of Palm OS devices Web browsers on these devices work differently from browsers on the desktop. So Web Clipping needs to discard some HTML skills to look properly on Palm OS devices. I regard the limitations and try to design a proper implementation on the Palm OS devices. As the result of this implementation it shows that Web Clipping Application is the fast, effective and achievable way for wireless communication on Palm OS devices.

2. For sever on the desktop, the combination of Apache HTTP server, PHP, PHPMyAdmin and MySQL database becomes the very powerful and useful technologies for this system. Another reason for using this combination is the PHP support form Web Clipping browser. There is no problem to send any data from Palm OS devices or receive the data from the web server. PHP is a remarkable script language and MySQL is also a remarkable database. This database stores the required data for MOBILE USED CAR PRICES AND INFORMATION and PHPMyAdmin is a very convenient tool for building the database tables. All these useful tools help to develop this system more effectively. Then the

communication between Palm OS devices and this server is fast and effective than I expected. This result is proved to be the good design for my server.

### 6.3 Summary

MOBILE USED CAR PRICES AND INFORMATION provides an effective way to access the information in anytime and anywhere. MOBILE USED CAR PRICES AND INFORMATION allows different users to interact with database in real-time.

MOBILE USED CAR PRICES AND INFORMATION provides the Palm OS users a way to know about the used car prices and information from their Palm OS devices. Wireless communication has been proved positively in the result of this implementation. Because of the limitations of Palm OS devices and the support of technologies there still have a lot of troubles to encounter when dealing with a complicated project. This project will depend on the improvement of these limitations and hope Palm, Inc. will have a better solution for wireless communication. All these improvement will be used to improve the current implementation of this system and will help to develop a better Web Application. For the future developments, this project will be able to integrate the system with different devices such as cellular



phones, pocket PC devices and so on. This project can add more features to the client side like the clients can apply the membership from the Palm OS device and this means a new user can apply for his membership from both the Palm OS device and web browser.

APPENDIX A

SOURCE CODE

Web clipping application (WCA):

```
/*
```

```
File name: main.html
```

```
*/
```

```
<html>
<head>
<title>index page</title>

<meta name="palmcomputingplatform" content="true">
<meta name="LocalIcon" content="titleImage.jpg">
<meta name="LocalIcon" content="2002_corvette.jpg">
</head>

<body bgcolor="#FFFFFF">
<p align=center></p>
<p align=center><font size=3 color=#0000ff face="Times New
Roman">wholesale price & retail price</font><font
face="Times New Roman"><br></font></p>
<p align=center>
<br></p>

<p align=center><font face="Times New Roman">
<a href="login.html" button>enter</a></font></p>
<p align="center">
<br>
</p>
</body>
</html>
```

```
/******
```

```
File name: login.html
```

```
*****/
```

```
<html>
<head>
  <title>Login page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="2002_corvette.jpg">
</head>
<body bgcolor="#FFFFFF">
<p><a href="main.html"></a></p>
<h1 align=center><font color=#0000ff>Login</font></h1>
<br>
<p align=center><font size=4 color=#0000ff>Please Verify
Your Membership:</font></p>
<br><br>
<center>
<font size="4">PASSWORD:</font>
<form method="GET"
action="http://139.182.137.32:8080/phpMyAdmin/code/login.php
">
<input type="password" name="mypw" size="6" maxlength="12">
<br>
<br>
<input type="submit" value="Submit">
<input type="reset" value="Reset">
</form>

</body>
</html>
```

```
/******
```

```
File name: login.php
```

```
*****/
```

```
<html>
<body bgcolor=#FFFFFF>
<?
  $password = $_GET["mypw"];
  mysql_connect("localhost","root","007164");
  mysql_select_db("used_car");
  $sql = "SELECT Password FROM customer_information";
  $pw = mysql_query($sql);

  $check = "0";

  if(!$pw) echo("<font size=3><b>No Password!</b></font>");
  else {
    while($id = mysql_fetch_row($pw)) {
      if($id[0]=== $password) {
        $check = "1";
        break;
      }
    }
  }
  echo("<br><br><center><h1><b>
  Mobile Used Car Prices & Information Login Result
  </b></h1><center><br><br>");
  if($check === "1") {
    echo("<center><h2><b>Valid
  Password!</b></h2></center><br>");
    echo '<a href="file:Used Car.pqa/category.html"
  button>Continue</a>';
  }
  if($check === "0") {
    echo("<center><h2><b>Invalid
  Password!</b></h2><center><br><br>");
    echo '<a href="file:Used Car.pqa/login.html"
  button>Back</a>';
  }
?>
</body></html>
```



```
/******
```

```
File name: cars.html
```

```
*****/
```

```
<html>
<head>
  <title>cars page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
</head>
<body bgcolor="#FFFFFF">
<br>
<p align=center><a href="main.html"></a></p>
<br><br>
<h3 align=center color=#0000ff>Select a make:</h3>
<br>
<p align=center><a href="honda-cars.html "
button>&nbsp;Honda&nbsp;</a></p>
<br>
<p align=center><a href="toyota-cars.html "
button>&nbsp;Toyota&nbsp;</a></p>
<br>
<p align=center><a href="ford-cars.html "
button>&nbsp;Ford&nbsp;</a></p>
<br>
<p align=center><a href="bmw-cars.html "
button>&nbsp;BMW&nbsp;</a></p>
<br>
</body>
</html>
```



```
/******
```

```
File name: civic-cars.html
```

```
*****/
```

```
<html>
<head>
  <title>civic page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="hondaImage.jpg">
  <meta name="LocalIcon" content="civicImage.jpg">
</head>
<body bgcolor="#FFFFFF">
<br>
<p align=center><a href="main.html"></a></p>
<br>
<p align=center><a href="honda-cars.html"></a>
<a href="civic-cars.html"></a></p>
<br>
<h3 align=center color=#0000ff>Select a year:</h3>
<br>
<p align=center><a href="civic2002-cars.html"
button>&nbsp;2002&nbsp;</a></p>
<p align=center><a href="civic2001-cars.html"
button>&nbsp;2001&nbsp;</a></p>
<p align=center><a href="civic2000-cars.html"
button>&nbsp;2000&nbsp;</a></p>
<p align=center><a href="civic1999-cars.html"
button>&nbsp;1999&nbsp;</a></p>

</body>
</html>
```





```
/******
```

```
File name: civic2002ex2d-cars.html
```

```
*****/
```

```
<html>
<head>
  <title>civic2002ex2d page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="hondaImage.jpg">
  <meta name="LocalIcon" content="civicImage.jpg">
  <meta name="LocalIcon" content="2002Image.jpg">
  <meta name="LocalIcon" content="ex2dImage.jpg">
</head>
<body bgcolor="#FFFFFF">
<br>
<p align=center><a href="main.html"></a></p>
<br>
<p align=center><a href="honda-cars.html"></a>
<a href="civic-cars.html"></a></p>
<br>
<p align=center><a href="civic2002-cars.html"></a>
<a href="civic2002ex2d-cars.html"></a></p>
<br>
<h3 align=center color=#0000ff>Select a transmission:</h3>
<br>
<p align=center><a href="civic2002ex2dA-cars.html"
button>&nbsp;Automatic&nbsp;</a></p>
<br>
<p align=center><a href="civic2002ex2d5M-cars.html"
button>5-speed Manual</a></p>
<br>
</body>
</html>
```

```
/******
```

```
File name: civic2002ex2dA-cars.html
```

```
*****/
```

```
<html>
<head>
  <title>civic2002ex2d automatic page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="hondaImage.jpg">
  <meta name="LocalIcon" content="civicImage.jpg">
  <meta name="LocalIcon" content="2002Image.jpg">
  <meta name="LocalIcon" content="ex2dImage.jpg">
  <meta name="LocalIcon" content="automaticImage.jpg">
</head>
<body bgcolor="#FFFFFF">
<br>
<p align=center><a href="main.html"></a></p>
<br>
<p align=center><a href="honda-cars.html"></a>
<a href="civic-cars.html"></a></p><br>
<p align=center><a href="civic2002-cars.html"></a>
<a href="civic2002ex2d-cars.html"></a></p><br>
<p align=center><a href="civic2002ex2dA-cars.html"></a></p><br>
<h3 align=center color=#0000ff>Select an option:</h3><br>
<p align=center><a href="civic2002ex2dA-p-cars.html"
button>&nbsp;Picture&nbsp;</a></p><br>
<p align=center><a
href="http://139.182.137.32:8080/phpMyAdmin/code/civic2002ex
2dA.php" button>&nbsp;Equipment&nbsp;</a></p>
<br>
<p align=center><a href="civic2002ex2dM-cars.html"
button>&nbsp;Price&nbsp;</a></p>
</body>
</html>
```

```
/******
```

```
File name: civic2002ex2dA-p.html
```

```
*****/
```

```
<html>
<head>
  <title>civic2002ex2dA picture page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="hondaImage.jpg">
  <meta name="LocalIcon" content="civicImage.jpg">
  <meta name="LocalIcon" content="2002Image.jpg">
  <meta name="LocalIcon" content="ex2dImage.jpg">
  <meta name="LocalIcon" content="automaticImage.jpg">
</head>
<body bgcolor="#FFFFFF">
<br>
<p align=center><a href="main.html"></a></p>
<br>
<p align=center><a href="honda-cars.html"></a>
<a href="civic-cars.html"></a></p>
<br>
<p align=center><a href="civic2002-cars.html"></a>
<a href="civic2002ex2d-cars.html"></a></p>
<br>
<p align=center><a href="civic2002ex2dA-cars.html"></a></p>
<br>
<p align=center></p>

</body>
</html>
```

```
/******
```

```
File name: civic2002ex2dM.html
```

```
*****/
```

```
html>
<head>
  <title>civic2002ex2d mileage page</title>
  <meta name="palmcomputingplatform" content="true">
  <meta name="LocalIcon" content="titleImage.jpg">
  <meta name="LocalIcon" content="hondaImage.jpg">
  <meta name="LocalIcon" content="civicImage.jpg">
  <meta name="LocalIcon" content="2002Image.jpg">
  <meta name="LocalIcon" content="ex2dImage.jpg">
  <meta name="LocalIcon" content="automaticImage.jpg">
</head>
<body bgcolor="#FFFFFF"><br>
<p align=center><a href="main.html"></a></p><br>
<p align=center><a href="honda-cars.html"></a>
<a href="civic-cars.html"></a></p><br>
<p align=center><a href="civic2002-cars.html"></a>
<a href="civic2002ex2d-cars.html"></a></p><br>
<p align=center><a href="civic2002ex2dA-cars.html"></a></p><br>
<h3 align=center color=#0000ff>Please enter the
mileage:</h3><br><p align=center>
<form method="GET"
action="http://139.182.137.32:8080/phpMyAdmin/code/civic2002
ex2dA-M.php"><br>
<input type="text" name="mileage" value="15000"
maxlength="20"></p><br>
<h3 align=center color=#0000ff>Equipment
Adjustment:</h3><br><p align=left>
<input type="checkbox" name="powersteering" value="16"
checked>Power Steering<br>
<input type="checkbox" name="aircondiioning" value="17"
checked>Air conditioning<br>
<input type="checkbox" name="amfmstereo" value="18"
checked>AM/FM Stereo<br>
<input type="checkbox" name="powerwindows" value="19"
checked>Power Windows<br>
```

```



```

```

/*****
File name: civic2002ex2dA.php
*****/

<html><body bgcolor=#FFFFFF>

<?
mysql_connect("localhost","root","007164");

mysql_select_db("used_car");

$sql = "SELECT * FROM used_car_information
        WHERE Model = 'Civic' AND Year = 2002
        AND Type = 'EX 2D' AND Transmission =
'Automatic'";

$rows = mysql_query($sql);

if(!$rows) echo("<font size=3><b>No Data!</b></font>");
else {

    while($row = mysql_fetch_row($rows))
    {

        for($I= 1;$I<count($row);$I++) {
            if($I > 9) break;
            else {
                $temp = mysql_field_name($rows,$I);
                echo("<font size=3><b>$temp</b></font>". "<font
size=3><b>:</b></font>");
                echo "&nbsp;&nbsp;&nbsp;";
                echo("<font size=3>$row[$I]</font>");
                echo "<br>";
            }
        }
    }
}

?>
</body></html>

```

```
/******
```

```
File name: civic2002ex2dA-M.php
```

```
*****/
```

```
<html><body bgcolor=#FFFFFF>
```

```
<p align=center><font size=6>Result</font></p>
```

```
<br>
```

```
<?php
```

```
mysql_connect("localhost","root","007164");
```

```
mysql_select_db("used_car");
```

```
$sql = "Select * From used_car_information  
WHERE Model = 'Civic' AND Year = 2002  
AND Type = 'EX 2D' AND Transmission =  
'Automatic'";
```

```
$rows = mysql_query($sql);
```

```
$row = mysql_fetch_row($rows);
```

```
$year = $row[4];
```

```
$w = $row[10];
```

```
$r = $row[11];
```

```
$mileage = $row[12];
```

```
if($_GET["mileage"]) $value = 0 + $_GET["mileage"];
```

```
else {
```

```
    echo ("<center><b><font size=3>
```

```
        You must input a number!</font></b></center>");
```

```
    return;
```

```
}
```

```
$w_price = $_GET["wholesale"];
```

```
$r_price = $_GET["retail"];
```

```
if(0 <= $value && $value <= 10000) $value = 10000;
```

```
else if(10001 <= $value && $value <= 15000) $value =  
15000;
```



```

    else if(15001 <= $value && $value <= 22500) $value =
22500;
    else if(22501 <= $value && $value <= 30000) $value =
30000;
    else if(30001 <= $value && $value <= 37500) $value =
37500;
    else if(37501 <= $value && $value <= 45000) $value =
45000;
    else if(45001 <= $value && $value <= 52500) $value =
52500;
    else if(52501 <= $value && $value <= 60000) $value =
60000;
    else if(60001 <= $value && $value <= 67500) $value =
67500;
    else if(67501 <= $value && $value <= 75000) $value =
75000;
    else if(75001 <= $value && $value <= 82500) $value =
82500;
    else if(82501 <= $value && $value <= 90000) $value =
90000;
    else if(90001 <= $value && $value <= 105000) $value =
105000;
    else if(105001 <= $value && $value <= 120000) $value =
120000;
    else if(120001 <= $value && $value <= 135000) $value =
135000;
    else if(135001 <= $value && $value <= 999999) $value =
999999;
    else echo ("<center><font size = 5>Wrong
mileage</font></center>");

if(0 <= $w && $w <= 12500) {

    $sql = "Select * From mileage_adjustment
        WHERE Table = 1 AND Mileage = $value AND Year =
        $year";
}
else if(12501 <= $w && $w <= 25000) {

    $sql = "Select * From mileage_adjustment
        WHERE Table = 2 AND Mileage = $value AND Year =
        $year";
}
else if(25001 <= $w) {

    $sql = "Select * From mileage_adjustment

```

```

        WHERE Table = 3 AND Mileage = $value AND Year =
$year";
    }
    else echo ("<center><font size = 5>Wrong
Data</font></center>");

$rows = mysql_query($sql);

$row = mysql_fetch_row($rows);

$m_adjustment = $row[2];

if($value <= $mileage) {
    $r = $r + $m_adjustment;
    $w = $w + $m_adjustment;
}

if($value > $mileage) {
    $r = $r - $m_adjustment;
    $w = $w - $m_adjustment;
}

$powersteering = $_GET["powersteering"];
$aircondiioning = $_GET["aircondiioning"];
$amfmstereo = $_GET["amfmstereo"];
$powerwindows = $_GET["powerwindows"];
$powerrdoorlocks = $_GET["powerrdoorlocks"];
$tiltwheel = $_GET["tiltwheel"];
$cruisecontrol = $_GET["cruisecontrol"];
$powerseat = $_GET["powerseat"];
$dualpowerseat = $_GET["dualpowerseat"];
$abs4wheel = $_GET["abs4wheel"];
$cdsingledisc = $_GET["cdsingledisc"];
$cdmultidisc = $_GET["cdmultidisc"];

```

```

$premiumsound = $_GET["premiumsound"];
$leather = $_GET["leather"];
$sunroofflipup = $_GET["sunroofflipup"];
$sunroofsliding = $_GET["sunroofsliding"];
$moonroofsliding = $_GET["moonroofsliding"];
$rearspoiler = $_GET["rearspoiler"];
$alloywheels = $_GET["alloywheels"];
$premiumwheels = $_GET["premiumwheels"];
$roofrackwagon = $_GET["roofrackwagon"];
$thridseatwagon = $_GET["thridseatwagon"];
$cassette = $_GET["cassette"];

$sql = "Select * From factory_equipment_cars
        WHERE Year = $year";

$rows = mysql_query($sql);

$row = mysql_fetch_row($rows); // 1

if($powerseat === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //2

if($dualpowerseats === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //3

if($abs4wheel != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

```

```

}

$row = mysql_fetch_row($rows); //4

if($cdsingledisc != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //5

if($cdmultidisc === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //6

if($premiumsound === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //7

if($leather === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //8

if($sunroofflipup === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //9

if($sunroofsliding === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //10

if($moonroofsliding != $row[1]) {

```

```

    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //11

if($rearspoiler === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //12

if($alloywheels === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //13

if($premiumwheels === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //14

if($roofrackwagon === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //15

if($thridseatwagon === $row[1]) {
    $r = $r + $row[2];
    $w = $w + $row[2];
}

$row = mysql_fetch_row($rows); //16

if($powersteering != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

```

```

}

$row = mysql_fetch_row($rows); //17

if($airconditioning != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //18

if($amfmstereo != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //19

if($powerwindows != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //20

if($powerrdoorlocks != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //21

if($tiltwheel != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

$row = mysql_fetch_row($rows); //22

if($cruisecontrol != $row[1]) {
    $r = $r - $row[2];
    $w = $w - $row[2];
}

```

```

    $row = mysql_fetch_row($rows); //23

    if($cassette === $row[1]) {
        $r = $r + $row[2];
        $w = $w + $row[2];
    }

    if($w_price) {
        echo ("<br><center><font size = 4>Wholesale
price:</font></center>");
        echo ("<br>");
        echo ("<center><font size = 5>\$$w</font></center>");
    }

    if($r_price) {
        echo ("<br><center><font size = 4>Retail
price:</font></center>");
        echo ("<br>");
        echo ("<center><font size = 5>\$$r</font></center>");
    }

    if(!$w_price && !$r_price) {
        echo ("<center><font size = 4>Wholesale
price:</font></center>");
        echo ("<br>");
        echo ("<center><font size = 5>\$$w</font></center>");
        echo ("<center><font size = 4>Retail
price:</font></center>");
        echo ("<br>");
        echo ("<center><font size = 5>\$$r</font></center>");
    }

?>
<br><br>
<p align=center><font size=3>This price is not a private-
party value
and actual dealer selling or buying price may vary from
this price.</font></p>

</body></html>

```

Web application:

```
/******
```

```
File name: main.html
```

```
*****/
```

```
<html>
<head>
  <title>main page</title>
</head>
<body bgcolor="#00CCFF">
<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592"><tr>
  <td width="21%" height="73" rowspan="2">
    </td>
    <td width="79%" height="58">
      </td></tr><tr>
    <td width="79%" height="15">
      </td></tr><tr>
    <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
      <p align="center">
        <a href="main.html">
          </a><p align="center"><a href="serverform.html">
          </a><p align="center"><a
href="serverlogin.html">
          </a><p align="center"><a href="adminlogin.html">
          </a></td>
    <td width="79%" height="519" rowspan="2"
bgcolor="#C0C0C0">
      <h2 align=center><font color="#0000FF" face="Courier
New">Welcome to</font></h2>
      <h2 align=center><font color=#0000ff face="Courier New">
Mobile Used Car Prices & Information</font></h2>
      <h2 align=center><font size=3 color=#0000ff face="Courier
New">wholesale price & retail price</font></h2>
      <h2 align=center><font face="Courier New"
color="#FFFF00">Main </font></h2>
```



```

<h2 align=center><font face="Courier New"
color="#0000FF"><br>
    <b><font size="3">MOBILE USED CAR PRICES &
INFORMATION</font></b><font size="3">
<span style="font-weight: 400">is a
software</span></font></font></h2>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;system which
allows users to read the used car values</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;and car
equipments from <b>Palm OS</b> devices. This
Wireless</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;Web
application is to develop a mobile vehicle Web</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;application
for clients who are interested in used cars.</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;<b>Palm OS</b>
devices provide the wireless access to the</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;internet and
communicate with a desktop computer.</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;Therefore,
the basic design of this project is simply to</font></p>
<p class="MsoNormal"><font face="Courier New"
color="#0000FF">&nbsp;communicate
between <b>Palm OS</b> devices and a remote server.
</font></p>
<p align=center>&nbsp;</p>
<p align=center><b><font face="Courier New" size="4"><a
href="introduction.html">
Enter</a></font></b></p>
<p align=center>&nbsp;</p>
<p>&nbsp;<p>&nbsp;<p>&nbsp;<p>&nbsp;<p>&nbsp;<p>&nbsp;</td>
</tr><tr>
    <td width="21%" height="315"
bgcolor="#808080">&nbsp;</td></tr>
</table><br>
</body>
</html>

```

```
/******
```

```
File name: login.php
```

```
*****/
```

```
<?php
```

```
    session_start();  
    $mypassword = $_GET["password"];
```

```
    session_register("mypassword");
```

```
?>
```

```
<html><head></head><body bgcolor="#6699FF">
```

```
</head>
```

```
<body bgcolor="#C0C0C0">
```

```
<table border="0" cellpadding="0" cellspacing="0"  
style="border-collapse: collapse"
```

```
        bordercolor="#111111" width="92%"
```

```
id="AutoNumber1" height="592">
```

```
    <tr>
```

```
        <td width="21%" height="73" rowspan="2">
```

```
            </td>
```

```
        <td width="79%" height="58">
```

```
            </td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td width="79%" height="15">
```

```
            </td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td width="21%" height="204" bordercolor="#000000"  
bgcolor="#808080">
```

```
            <p align="center">
```

```
                <a href="main.html">
```

```
                    </a>
```

```
                <p align="center"><a href="serverform.html">
```

```
                    
```

```
                </a><p align="center"><a href="serverlogin.html">
```

```

        </a>
        <p align="center"><a href="adminlogin.html">
        </a></td>
        <td width="79%" height="519" rowspan="2"
bgcolor="#C0C0C0">

<h2 align=center><font color=#0000ff face="Courier New">
Mobile Used Car Prices & Information</font></h2>
<h2 align=center><font size=3 color=#0000ff face="Courier
New">
    wholesale price & retail price</font></h2>
<p align=center><b><font face="Courier New" size="5"
color="#FFFF00">
    Login Result</font></b></p>

<?

```

```

mysql_connect("localhost","root","007164");

mysql_select_db("used_car");

$sql = "SELECT Password FROM customer_information";

$pw = mysql_query($sql);

$check = "0";

if(!$pw) echo ("<font face=Courier New size=4><b>No
Password!</b></font>");
else {
    while($id = mysql_fetch_row($pw)) {

        if($id[0]=== $mypassword) {
            $check = "1";
            break;
        }
    }
}

if($check === "1") {
    echo ("<center><font face=Courier New size=5><b>
Valid Password!</b></font></center><br><br>");
    echo '<center><font face=Courier New size=5>

```



```
/******
```

```
File name: customer.php
```

```
*****/
```

```
html><head>
<title>customer page</title>
</head>
<body bgcolor="#FF6600">
<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse"
bordercolor="#111111" width="92%"
id="AutoNumber1" height="592"><tr>
  |
```

```

        wholesale price & retail price</font></h2>
<p align=center><b><font face="Courier New" size="5"
color="#FFFF00">
    Result</font></b></p>
<?php

    $check = "1";

    if($_GET["lastname"])
        $lastname = $_GET["lastname"];
    else $check = "0";

    if($_GET["firstname"])
        $firstname = $_GET["firstname"];
    else $check = "0";

    if($_GET["email"])
        $email = $_GET["email"];
    else $check = "0";

    if($_GET["phone"]) {
        $phone = $_GET["phone"];
        if(is_numeric($phone)) ;
        else $check = "3";
    }
    else $check = "0";

    if($_GET["address"])
        $address = $_GET["address"];
    else $check = "0";

    if($_GET["city"])
        $city = $_GET["city"];
    else $check = "0";

    if($_GET["country"])
        $country = $_GET["country"];
    else $check = "0";

    if($_GET["password"]) {
        $password = $_GET["password"];
        if(is_numeric($password)) ;
        else $check = "2";
    }
    else $check = "0";

    if($check === "3")

```

```

    echo ("<center><b><font face=Courier New size=4>
        Wrong input!please input a phone
number!</font></b></center>");
    if($check === "2")
        echo ("<center><b><font face=Courier New size=4>
            The password must be an integer
number!</font></b></center>");
    if($check === "0")
        echo ("<center><b><font face=Courier New size=4>
            You must enter all fields</font></b></center>");
    if($check === "1") {

        $lastname = strtolower($lastname);
        $lastname = ucfirst($lastname);

        $firstname = strtolower($firstname);
        $firstname = ucfirst($firstname);

        $address = strtolower($address);
        $city = strtolower($city);
        $country = str toupper($country);
        mysql_connect("localhost","root","007164");
        mysql_select_db("used_car");
        $sql = "SELECT Password FROM customer_information";
        $pw = mysql_query($sql);
        $test = "1";
        if(!$pw) ;
        else {

            while($result = mysql_fetch_row($pw)) {
                if($password === $result[0]) $test = "0";
            }
        }
        if($test === "0")
            echo ("<center><b><font face=Courier New size=4>
                This password have been used, Please
choose another number!</font></b></center>");
        else {
            $sql = "Insert Into customer_information

(Lastname,Firstname,Email,Phone,Address,City,Country,Passwor
d)

        Values
('$lastname','$firstname','$email','$phone',
'$address','$city','$country', '$password')";

            mysql_query( $sql );

```

```

        $sql = "SELECT * FROM customer_information
                WHERE Password = '$password'";

        $rows = mysql_query($sql);
        if(!$rows) echo ("<font face=Courier New
size=4><b>No Data!</b></font>");
        else {
            while($row = mysql_fetch_row($rows)) {
                for($I= 2;$I<count($row);$I++) {
                    $temp = mysql_field_name($rows,$I);
                    echo ("<font face=Courier New
size=4><b>$temp</b></font>".
                        <font face=Courier New
size=4><b>:</b></font>");
                    echo "&nbsp;&nbsp;&nbsp;";
                    echo ("<font face=Courier New
size=4>$row[$I]</font>");
                    echo "<br>";
                }
            }
            echo ("<center><br><font face=Courier New
size=4><b>
                This member has been registered to our
database!</b></font><br>");
            echo ("<br><font face=Courier New size=4><b>
                Now go to&nbsp;&nbsp;&nbsp; </b></font>");
            echo '<font face=Courier New size=4
color=#0000ff><b><a
href="/server/serverlogin.html">MEMBER</a></b></font></cente
r>';
        }
    }
?>
<p align=center>&nbsp;&nbsp;&nbsp;</p>
<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;</td>
</tr><tr>
    <td width="21%" height="315"
bgcolor="#808080">&nbsp;&nbsp;&nbsp;</td></tr>
</table>
</body></html>

```



```

/*****
File name: change.php
*****/

<?php
    session_start();
?>

<html>
<head>
    <title>change page</title>

</head>
<body bgcolor="#FFCC00">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592">
    <tr>
        <td width="21%" height="73" rowspan="2">
            </td>
            <td width="79%" height="58">
                </td>
        </tr>
        <tr>
            <td width="79%" height="15">
                </td>
        </tr>
        <tr>
            <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
                <p align="center">
                    <a href="main.html">
                        </a><p align="center"><a href="serverform.html">
                            </a><p align="center"><a
href="serverlogin.html">
                                </a><p align="center"><a href="adminlogin.html">
                                    </a></td>

```

```

        <td width="79%" height="519" rowspan="2"
bgcolor="#C0C0C0">

<h2 align=center><font color=#0000ff face="Courier New">
  Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier
New">wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New"
color="#FFFF00">Result</font></b><font size="5"
color="#00FFFF" face="Courier New"><br>
  </font>
  </p>

```

```
<?php
```

```

mysql_connect("localhost","root","007164");

mysql_select_db("used_car");

$mypw = $_HTTP_SESSION_VARS[mypassword];

$check = "0";

$test = "1";

if($_GET["lastname"]) {
    $lastname = $_GET["lastname"];

    $lastname = strtolower($lastname);
    $lastname = ucfirst($lastname);

    $sql = "UPDATE customer_information SET
      Lastname = '$lastname' WHERE Password = '$mypw'";

    mysql_query( $sql );
    $check = "1";
}

if($_GET["firstname"]) {
    $firstname = $_GET["firstname"];

    $firstname = strtolower($firstname);

```

```

$firstname = ucfirst($firstname);

$sql = "UPDATE customer_information SET
    Firstname = '$firstname' WHERE Password = '$mypw'";

mysql_query( $sql );
$check = "1";
}

if($_GET["email"]) {
    $email = $_GET["email"];

    $sql = "UPDATE customer_information SET
        Email = '$email' WHERE Password = '$mypw'";

    mysql_query( $sql );
    $check = "1";
}

if($_GET["phone"]) {
    $phone = $_GET["phone"];

    if(is_numeric($phone)) {
        $sql = "UPDATE customer_information SET
            Phone = '$phone' WHERE Password = '$mypw'";

        mysql_query( $sql );
        $check = "1";
    }
    else $check = "4";
}

if($_GET["address"]) {
    $address = $_GET["address"];

    $address = strtolower($address);

    $sql = "UPDATE customer_information SET
        Address = '$address' WHERE Password = '$mypw'";

    mysql_query( $sql );
    $check = "1";
}

if($_GET["city"]) {

```

```

$city = $_GET["city"];

$city = strtolower($city);

$sql = "UPDATE customer_information SET
    City = '$city' WHERE Password = '$mypw'";

mysql_query( $sql );
$check = "1";
}

if($_GET["country"]) {
    $country = $_GET["country"];

    $country = strtoupper($country);

    $sql = "UPDATE customer_information SET
        Country = '$country' WHERE Password = '$mypw'";

    mysql_query( $sql );
    $check = "1";
}

if($_GET["password"]) {

    $password = $_GET["password"];

    if(is_numeric($password)) ;
    else $check = "3";

    if($check === "3") echo ("<center><b><font
face=Courier New size=4>
                                You must enter a number for
password!</font></b></center>");
    else {

        $sql = "SELECT Password FROM customer_information";

        $pw = mysql_query($sql);

        if(!$pw) ;
        else {

            while($result = mysql_fetch_row($pw)) {

```

```

        if($password === $result[0]) $test = "0";
    }
}
if($test === "0") {
    echo ("<b><font face=Courier New size=4>
        This password have been used, Please
choose
            another number!</font></b></center>");
    $check = "2";
}
if($test === "1") {
    $sql = "UPDATE customer_information SET
    Password = '$password' WHERE Password =
'$mypw'";

    mysql_query( $sql );
    $check = "1";
}
}
}
else $test = "0";

if($check === "0")
    echo ("<font face=Courier New size=4><b>
        You did not change any
data</b></font></center>");

if($check === "4")
    echo ("<font face=Courier New size=4><b>
        Wrong input!Please enter a phone number!
</b></font></center>");

if($check === "1") {
    if($test === "0")
        $sql = "SELECT * FROM customer_information
            WHERE Password = '$mypw'";
    if($test === "1")
        $sql = "SELECT * FROM customer_information
            WHERE Password = '$password'";

    $rows = mysql_query($sql);

    echo ("<font face=Courier New size=4><b>

```



```

/*****
File name: cancelmember.php
*****/

html>
<head>
  <title>cancel membership page</title>

</head>
<body bgcolor="#FF6600">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592">
  <tr>
    <td width="21%" height="73" rowspan="2">
      </td>
    <td width="79%" height="58">
      </td>
    </tr>
    <tr>
      <td width="79%" height="15">
        </td>
      </tr>
    <tr>
      <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
        <p align="center">
          <a href="main.html">
            </a><p align="center"><a href="serverform.html">
            </a><p align="center"><a
href="serverlogin.html">
            </a><p align="center"><a href="adminlogin.html">
            </a></td>
      <td width="79%" height="519" rowspan="2"
bgcolor="#C0C0C0">

<h2 align=center><font color=#0000ff face="Courier New">

```

```

Mobile Used Car Prices & Information</font></h2>
<h2 align=center><font size=3 color=#0000ff face="Courier
New">wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New" color="#FFFF00">Cancel
membership
</font></b><font size="5" color="#00FFFF" face="Courier
New"><br>
  </font>
  </p>

<?php

  $check = "1";

  if($_GET["Account"])
    $Account = $_GET["Account"];
  else $check = "0";

  if($check === "0")
    echo ("<center><b><font face=Courier New size=4>
      You must input the number!</font></b></center>");

  if($check === "1") {

    mysql_connect("localhost","root","007164");

    mysql_select_db("used_car");

    $sql = "SELECT Account_id FROM customer_information";

    $pw = mysql_query($sql);
    $test = "1";
    if(!$pw) $test = "0";
    else {
      while($result = mysql_fetch_row($pw)) {
        if($Account === $result[0]) {
          $test = "1";
          break;
        }
        else $test = "0";
      }
    }

    if($test === "0")

```



```

        echo ("<center><b><font face=Courier New size=4>
            This customer does not exist in the
database!!</font></b></center>");

        if($test == "1") {
            $sql = "SELECT * FROM customer_information WHERE
Account_id = '$Account'";
            $rows = mysql_query($sql);
            echo ("<center><b><font face=Courier New size=4>
                This member as below has been
deleted:</b></font></center><br><br>");
            if(!$rows)
                echo ("<center><font face=Courier New
size=4><b>No Data!</b></font></center>");
            else {
                while($row = mysql_fetch_row($rows)) {
                    for($I= 1;$I<count($row);$I++) {

                        $temp = mysql_field_name($rows,$I);
                        echo ("<font face=Courier New
size=4><b>$temp</b></font>
                            "<font face=Courier New
size=4><b>:</b></font>");
                        echo "&nbsp;&nbsp;&nbsp;";
                        echo ("<font face=Courier New
size=4>$row[$I]</font>");
                        echo "<br>";
                    }
                }
            }
            $sql = "DELETE FROM customer_information WHERE
Account_id = '$Account'";
            mysql_query( $sql );
        }
    }
?>
<p align=center>&nbsp;&nbsp;&nbsp;</p>
<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;</td>
</tr>
<tr>
    <td width="21%" height="315"
bgcolor="#808080">&nbsp;&nbsp;&nbsp;</td>
</tr>
</table></body></html>

```

```

/*****
File name: viewmyinfo.php
*****/

<?php
    session_start();
?>
<html>
<head>
    <title>view your info page</title>
</head>
<body bgcolor="#0099CC">
<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="168"><tr>
    <td width="24%" height="49" rowspan="2">
        </td>
        <td width="76%" height="41">
            </td>
    </tr><tr>
        <td width="76%" height="8">
            </td></tr><tr>
        <td width="100%" height="119" bgcolor="#C0C0C0"
colspan="2">
<center>
<h2 align=center><font color=#0000ff face="Courier New">
    Mobile Used Car Prices & Information</font></h2>
<h2 align=center><font size=3 color=#0000ff face="Courier
New">
    wholesale price & retail price</font></h2>
        <p align="center"><br>
<font size="5" face="Courier New" color="#FFFF00">View your
Information
    </font></b><font size="5" color="#00FFFF" face="Courier
New"><br></font></p>
<?
    $check = "1";
    mysql_connect("localhost","root","007164");
    mysql_select_db("used_car");
    $mypw = $_HTTP_SESSION_VARS[mypassword];
    $sql = "Select * From customer_information WHERE Password
= '$mypw'";

```



```
/******
```

```
File name: searchusedcars.php
```

```
*****/
```

```
<html><head>
<title>Search page</title>

</head>
<body bgcolor="#0099CC">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="168">
  <tr>
    <td width="24%" height="49" rowspan="2">
      </td>
    <td width="76%" height="41">
      </td>
    </tr>
    <tr>
      <td width="76%" height="8">
        </td>
      </tr>
      <tr>
        <td width="100%" height="119" bgcolor="#C0C0C0"
colspan="2">

<center>

<h2 align=center><font color=#0000ff face="Courier New">
Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier
New">
wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New" color="#FFFF00">Result
</font></b><font size="5" color="#00FFFF" face="Courier
New"><br>
  </font>
</p>
```

```
<?php
```

```
    $c1 = "0";$c2 = 0;$c3 = 0;$c4 = 0;$c5 = 0;$c6 = 0;$c7 =  
0;$c8 = 0;$c9 = 0;  
    $c10 = 0;$c11 = 0;$c12 = 0;$c13 = 0;
```

```
    if($_GET["d1"])  
        $d1 = $_GET["d1"];  
    else $c1 = "1";
```

```
    if($_GET["d2"])  
        $d2 = $_GET["d2"];  
    else $c2 = "1";
```

```
    if($_GET["d3"])  
        $d3 = $_GET["d3"];  
    else $c3 = "1";
```

```
    if($_GET["d4"])  
        $d4 = $_GET["d4"];  
    else $c4 = "1";
```

```
    if($_GET["d5"])  
        $d5 = $_GET["d5"];  
    else $c5 = "1";
```

```
    if($_GET["d6"])  
        $d6 = $_GET["d6"];  
    else $c6 = "1";
```

```
    if($_GET["d7"])  
        $d7 = $_GET["d7"];  
    else $c7 = "1";
```

```
    if($_GET["d8"])  
        $d8 = $_GET["d8"];  
    else $c8 = "1";
```

```
        if($_GET["d9"])  
            $d9 = $_GET["d9"];  
        else $c9 = "1";
```

```
    if($_GET["d10"])  
        $d10 = $_GET["d10"];  
    else $c10 = "1";
```

```

if($_GET["d11"])
    $d11 = $_GET["d11"];
else $c11 = "1";

if($_GET["d12"])
    $d12 = $_GET["d12"];
else $c12 = "1";

if($_GET["d13"])
    $d13 = $_GET["d13"];
else $c13 = "1";

if($c1 === "1" && $c2 === "1" && $c3 === "1" && $c4 ===
"1" && $c5 === "1" && $c6 === "1" &&
    $c7 === "1" && $c8 === "1" && $c9 === "1" && $c10 ===
"1" && $c11 === "1" && $c12 === "1"
    && $c13 === "1") echo ("<center><b><font face=Courier
New size=4>
                You must enter at least one
field!</font></b></center>");

else {

mysql_connect("localhost","root","007164");

mysql_select_db("used_car");

    $sql = "SELECT * FROM used_car_information WHERE
            Info_number like '$d1%' AND Category like
'$d2%' AND Make like '$d3%'AND Model like '$d4%'
            AND Year like '$d5%'AND Type like '$d6%' AND
Transmission like '$d7%'
            AND Engine like '$d8%' AND Drive like '$d9%'
AND Equipment like '$d10%'
            AND Wholesale like '$d11%' AND Retail like
'$d12%' AND Mileage like '$d13%'";

    $rows = mysql_query($sql);

    $num = mysql_num_rows($rows);
    $test = "0";
    if ($num === 0 ) $test = "0";
    else $test = "1";
    if($test === "0")

```



```

/*****
File name: adminlogin.php
*****/

<html>
<head>
  <title>administrator login page</title>

</head>
<body bgcolor="#669999">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592">
  <tr>
    <td width="21%" height="73" rowspan="2">
      </td>
    <td width="79%" height="58">
      </td>
    </tr>
    <tr>
      <td width="79%" height="15">
        </td>
      </tr>
    <tr>
      <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
        <p align="center">
          <a href="main.html">
            </a><p align="center"><a href="serverform.html">
            </a><p align="center"><a
href="serverlogin.html">
            </a><p align="center"><a href="adminlogin.html">
            </a></td>
      <td width="79%" height="519" rowspan="2">
        bgcolor="#C0C0C0">

<h2 align=center><font color=#0000ff face="Courier New">

```



Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier New">wholesale price & retail price</font></h2>

<p align="center">

<b>

<font size="5" face="Courier New" color="#FFFF00">Login

Result</font></b><font size="5" color="#00FFFF"

face="Courier New"><br>

</font>

</p>

<?

```
$mypassword = $_GET["password"];
```

```
$name = $_GET["name"];
```

```
mysql_connect("localhost","root","007164");
```

```
mysql_select_db("used_car");
```

```
$sql = "SELECT Name,Password FROM administrator_info";
```

```
$pw = mysql_query($sql);
```

```
$check = "0";
```

```
if(!$pw) echo ("<center><font face=Courier New size=5><b>  
No Data!</b></font></center>");
```

```
else {
```

```
while($id = mysql_fetch_row($pw)) {
```

```
if($id[0] === $name and $id[1]=== $mypassword) {
```

```
    $check = "1";
```

```
    break;
```

```
    }
```

```
    }
```

```
}
```

```
if($check === "1") {
```

```
    echo ("<center><font face=Courier New size=5><b>Valid  
Password!</b></font><br><br>");
```

```
    echo ("<font face=Courier New size=5 color=#0000ff>
```

```
        <a href=/server/managecustomer.html>Manage  
members</a></font>");
```

```
    echo "<br><br>";
```

```
    echo '<font face=Courier New size=5 color=#0000ff>
```

```

        <a href="/server/managecar.html">Manage Used Car
Information</a></font>';
        echo "<br><br>";
        echo '<font face=Courier New size=5 color=#0000ff>
        <a href="/server/manageequipment.html">Manage
Equipment</a></font>';
        echo "<br><br>";
        echo '<font face=Courier New size=5 color=#0000ff>
        <a href="/server/manageprice.html">Manage Equipment
Price</a></font>';
        echo "<br><br>";
        echo '<font face=Courier New size=5 color=#0000ff>
        <a href="/server/managemileage.html">Manage mileage
adjustment</a></font>';
        echo "<br><br>";
        echo '<font face=Courier New size=5 color=#0000ff>
        <a
href="/server/search.html">Search</a></font></center>';

    }
    if($check === "0") {
        echo ("<center><h2><font face=Courier New size=5><b>
        Invalid Password!</b></font></center>");
    }
?>

<p align=center>&nbsp;</p>

<p align=center>&nbsp;</p>

<p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p><p>&nbsp;</p>
sp;</td>
    </tr>
    <tr>
        <td width="21%" height="315"
bgcolor="#808080">&nbsp;</td>
    </tr>
</table>
<br>

</body></html>

```

```
/******
```

```
File name: searchmembers.php
```

```
*****/
```

```
<html><head>
<title>Search page</title>

</head>
<body bgcolor="#0099CC">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="168">
  <tr>
    <td width="24%" height="49" rowspan="2">
      </td>
    <td width="76%" height="41">
      </td>
  </tr>
  <tr>
    <td width="76%" height="8">
      </td>
  </tr>
  <tr>
    <td width="100%" height="119" bgcolor="#C0C0C0"
colspan="2">

<center>

<h2 align=center><font color=#0000ff face="Courier New">
Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier
New">
wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New" color="#FFFF00">Result
  </font></b><font size="5" color="#00FFFF" face="Courier
New"><br>
    </font>
  </p>
```

```

<?php
    $c1 = "0";$c2 = 0;$c3 = 0;$c4 = 0;$c5 = 0;$c6 = 0;$c7 =
0;$c8 = 0;
    if($_GET["d1"])
        $d1 = $_GET["d1"];
    else $c1 = "1";
    if($_GET["d2"])
        $d2 = $_GET["d2"];
    else $c2 = "1";
    if($_GET["d3"])
        $d3 = $_GET["d3"];
    else $c3 = "1";
    if($_GET["d4"])
        $d4 = $_GET["d4"];
    else $c4 = "1";
    if($_GET["d5"])
        $d5 = $_GET["d5"];
    else $c5 = "1";
    if($_GET["d6"])
        $d6 = $_GET["d6"];
    else $c6 = "1";
    if($_GET["d7"])
        $d7 = $_GET["d7"];
    else $c7 = "1";
    if($c1 === "1" && $c2 === "1" && $c3 === "1" && $c4 ===
"1" && $c5 === "1" && $c6 === "1" &&
        $c7 === "1") echo ("<center><b><font face=Courier New
size=4>You must enter at least one
field!</font></b></center>");
    else {
        mysql_connect("localhost","root","007164");
        mysql_select_db("used_car");

        $sql = "SELECT * FROM customer_information WHERE
Lastname like '$d1%' AND
        Firstname like '$d2%' AND Email like '$d3%'AND
Phone like '$d4%'
        AND Address like '$d5%'AND City like '$d6%'
AND Country like '$d7%'
        ";
        $rows = mysql_query($sql);
        $num = mysql_num_rows($rows);
        $test = "0";
        if ($num === 0 ) $test = "0";

```



```

/*****
File name: carinfoform.php
*****/

<html>
<head>
  <title>car info page</title>

</head>
<body bgcolor="#FFFFCC">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592">
  <tr>
    <td width="21%" height="73" rowspan="2">
      </td>
    <td width="79%" height="58">
      </td>
    </tr>
    <tr>
      <td width="79%" height="15">
        </td>
      </tr>
    <tr>
      <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
        <p align="center">
          <a href="main.html">
            </a>
            <p align="center"><a href="serverform.html">
              
                </a><p align="center"><a href="serverlogin.html">
                  
                    </a><p align="center"><a href="adminlogin.html">
                      </a></td>
      <td width="79%" height="519" rowspan="2">
        bgcolor="#C0C0C0">

```

```

<h2 align=center><font color=#0000ff face="Courier New">
  Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier
New">
  wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New" color="#FFFF00">Result
  </font></b><font size="5" color="#00FFFF" face="Courier
New"><br>
    </font>
    </p>

<?php

  $check = "1";

  $test = "1";

  if($_GET["category"])
    $category = $_GET["category"];
  else $check = "0";

  if($_GET["make"])
    $make = $_GET["make"];
  else $check = "0";

  if($_GET["model"])
    $model = $_GET["model"];
  else $check = "0";

  if($_GET["year"]) {
    $year = $_GET["year"];
    if(is_numeric($year)) ;
    else $check = "5";
  }
  else $check = "0";

  if($_GET["type"])
    $type = $_GET["type"];
  else $check = "0";

  if($_GET["transmission"])
    $transmission = $_GET["transmission"];
  else $check = "0";

```

```

if($_GET["engine"])
    $engine = $_GET["engine"];
else $check = "0";

if($_GET["drive"])
    $drive = $_GET["drive"];
else $check = "0";

if($_GET["equipment"])
    $equipment = $_GET["equipment"];
else $check = "0";

if($_GET["wholesale"]) {
    $wholesale = $_GET["wholesale"];
    if(is_numeric($wholesale)) ;
    else $check = "2";
}
else $check = "0";

if($_GET["retail"]) {
    $retail = $_GET["retail"];
    if(is_numeric($retail)) ;
    else $check = "3";
}
else $check = "0";

if($_GET["mileage"]) {
    $mileage = $_GET["mileage"];
    if(is_numeric($mileage)) ;
    else $check = "4";
}
else $check = "0";

if($check === "2")
    echo ("<center><b><font face=Courier New size=4>
        Wrong input! wholesale must be a
number!</font></b></center>");
if($check === "3")
    echo ("<center><b><font face=Courier New size=4>
        Wrong input! reatil must be a
number!</font></b></center>");

if($check === "4")
    echo ("<center><b><font face=Courier New size=4>
        Wrong input! mileage must be a
number!</font></b></center>");

```



```

if($check === "5")
    echo ("<center><b><font face=Courier New size=4>
        Wrong input! year must be a
number!</font></b></center>");

if($check === "0")
    echo ("<center><b><font face=Courier New size=4>
        You must enter all fields</font></b></center>");
if($check === "1") {

    $category = strtolower($category);
    $category = ucfirst($category);

    $make = strtolower($make);
    $make = ucfirst($make);

    $model = strtolower($model);
    $model = ucfirst($model);

    $type = strtolower($type);
    $type = ucfirst($type);

    $transmission = strtolower($transmission);
    $transmission = ucfirst($transmission);

    $drive = strtolower($drive);
    $drive = ucfirst($drive);

    mysql_connect("localhost","root","007164");

    mysql_select_db("used_car");

    $sql = "SELECT Type,Transmission FROM
used_car_information WHERE
        Model = '$model' AND Year = '$year'";

    $rows = mysql_query($sql);

    if(!$rows) ;
    else {
        while($result = mysql_fetch_row($rows)) {

            if($result[0] === $type && $result[1] ===
$transmission)
                $test = "0";
        }
    }
}

```

```

    }

    if($test === "0")
        echo ("<center><b><font face=Courier New size=4>
            This vehicle is already in the
database!</font></b></center>");
    if($test === "1") {
        $sql = "Insert into used_car_information

(Category,Make,Model,Year,Type,Transmission,Engine,Drive,Equ
ipment)
            Values ('$category','$make','$model','$year',
'$type','$transmission','$engine','$drive','$equipment')";

        mysql_query( $sql );

        $sql = "SELECT * FROM used_car_information WHERE
            Model = '$model' AND Year = '$year' AND Type =
'$type'
            AND Transmission ='$transmission'";

        $rows = mysql_query($sql);

        if(!$rows) ;
        else {
            while($result = mysql_fetch_row($rows)) {
                $sql = "UPDATE used_car_information SET
                Wholesale = '$wholesale',Retail =
'$retail',Mileage = '$mileage'
                    WHERE Info_number = $result[0]";

                mysql_query( $sql );
            }
        }

        $sql = "SELECT * FROM used_car_information WHERE
Model = '$model'
            AND Year = '$year' AND Type = '$type' AND
Transmission ='$transmission'";;

        $rows = mysql_query($sql);

        echo ("<br><center><font face=Courier New size=4><b>
            This car has been created as
following:</b></font></center><br>");
    }

```

```

        if(!$rows)
            echo ("<center><font face=Courier New
size=4><b>No Data!</b></font></center>");
        else {

            while($row = mysql_fetch_row($rows)) {

                for($I= 0;$I<count($row);$I++) {

                    $temp = mysql_field_name($rows,$I);
                    echo ("<font face=Courier New
size=4><b>$temp</b></font>
                    "."<font face=Courier New
size=4><b>:</b></font>");
                    echo "&nbsp;&nbsp;&nbsp;";
                    echo ("<font face=Courier New
size=4>$row[$I]</font>");
                    echo "<br>";
                }
            }
        }

    }

?>
<p align=center>&nbsp;&nbsp;&nbsp;</p>

<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;</td>
</tr>
<tr>
    <td width="21%" height="315"
bgcolor="#808080">&nbsp;&nbsp;&nbsp;</td>
</tr>

</table>
</body></html>

```

```

/*****
File name: createequipment.php
*****/

<html>
<head>
  <title>create equipment page</title>

</head>
<body bgcolor="#0099CC">

<table border="0" cellpadding="0" cellspacing="0"
style="border-collapse: collapse" bordercolor="#111111"
width="92%" id="AutoNumber1" height="592">
  <tr>
    <td width="21%" height="73" rowspan="2">
      </td>
    <td width="79%" height="58">
      </td>
    </tr>
    <tr>
      <td width="79%" height="15">
        </td>
      </tr>
    <tr>
      <td width="21%" height="204" bordercolor="#000000"
bgcolor="#808080">
        <p align="center">
          <a href="main.html">
            </a>
            <p align="center"><a href="serverform.html">
              
              </a><p align="center"><a href="serverlogin.html">
                
                </a><p align="center"><a href="adminlogin.html">
                  </a></td>
      <td width="79%" height="519" rowspan="2"
bgcolor="#C0C0C0">

```

```

<h2 align=center><font color=#0000ff face="Courier New">
  Mobile Used Car Prices & Information</font></h2>

<h2 align=center><font size=3 color=#0000ff face="Courier
New">
  wholesale price & retail price</font></h2>
  <p align="center">
<b>
<font size="5" face="Courier New" color="#FFFF00">Result
  </font></b><font size="5" color="#00FFFF" face="Courier
New"><br>
    </font>
    </p>

<?php

  $check = "1";

  if($_GET["name"])
    $name = $_GET["name"];
  else $check = "0";

  if($check === "0")
    echo ("<center><b><font face=Courier New size=4><b>
      No input Data!</font></b></center>");

  if($check == "1") {

    mysql_connect("localhost","root","007164");

    mysql_select_db("used_car");

    $sql = "SELECT Name FROM equipment";

    $rows = mysql_query($sql);
    $test = "1";
    if(!$rows) ;
    else {
      while($result = mysql_fetch_row($rows)) {

        if($result[0] === $name) $test = "0";

      }
    }

    if($test === "0")
      echo ("<center><b><font face=Courier New size=4>

```

database! This equipment has been registered in the

```
        </font></b></center>");
    if($test === "1") {
        $sql = "Insert into equipment (Name) Values
('$name')";
        mysql_query( $sql );
        $sql = "SELECT * FROM equipment WHERE Name =
'$name'";
        $rows = mysql_query($sql);
        echo ("<br><font face=Courier New size=4><b>
This equipment information has been added to the
list:</b></font>");
        if(!$rows) echo ("<center><font face=Courier New
size=4><b>No Data!</b></font></center>");
        else {
            while($row = mysql_fetch_row($rows)) {
                for($I= 0;$I<count($row);$I++) {
                    $temp = mysql_field_name($rows,$I);
                    echo ("<font face=Courier New
size=4><b>$temp</b></font>
                    "."<font face=Courier New
size=4><b>:</b></font>");
                    echo "&nbsp;&nbsp;&nbsp;";
                    echo ("<font face=Courier New
size=4>$row[$I]</font>");
                    echo "<br>";
                }
            }
        }
    }
}
?>
```

```
<p align=center>&nbsp;&nbsp;&nbsp;</p>
<p align=center>&nbsp;&nbsp;&nbsp;</p>
<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;<p>&nbsp;&nbsp;&nbsp;
sp;</td></tr><tr>
    <td width="21%" height="315"
bgcolor="#808080">&nbsp;&nbsp;&nbsp;</td>
</tr></table><br></body></html>
```

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