



Republic of Iraq
Ministry of Higher Education
and Scientific Research
University of Mustansiriyah
College of Science

A web-based Car Reservation system

A project report submitted in partial fulfillment of the requirements for the award of degree of bachelor of Computer Science- Computer Science Information Technology branch

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Academic year

(2020-2021)

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

((يَرْفَعُ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ

وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ))

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DECLARATION

I hereby declare that this project report is based on my original work except for citations and quotations which have been duly acknowledged.

Signature : _____

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APPROVAL FOR SUBMISSION

I certify that this project report entitle " A Web-Based Car Reservation System" was prepared by Ghofran Ahmed and Souad Raheem has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Computer Information technology branch at Mustansiriyah University.

Approved by

Signature: _____

Supervisor: _____

Date: _____

Supervisor Certification

I certify that this project was prepared under my supervision in the department of computer science / Collage of science / Mustansiriyah University during the duration of the project, by the students: Ghofran Ahmed and Souad Raheem As a partial fulfillment for the requirement of the B.Sc. degree in computer science -Information technology branch.

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Date:

الاهداء



الى خالقي الذي استمد منه القوة فله الحمد والشكر

الى خاتم الانبياء والرسول محمد بن عبدالله (صلى الله عليه واله وصحبه المنتجبين

(الأخيار)

الى ال بيت النبي ائمة الهدى (عليهم السلام)

الى امام زماني المنتظر (عجل الله له الفرج) العالم المحب للعلم

الى السند والقذوة والدي و والدي حفظهم الله

الى كل الكادر التدريسي الذي اشرف على تعليمي في كافة المراحل الدراسية

لهم كل الحب والتقدير والاحترام



ACKNOWLEDGEMENTS

I would like to thank everyone who had contributed to the successful completion of this project. I would like to express my gratitude to my research supervisor, " L.Yasmin Makki Mohialden" for her invaluable advice, guidance and her enormous patience throughout the development of the research.

In addition, I would also like to express my gratitude to my loving parent and friends who had helped and given me encouragement....

Abstract

With the rapid growth of the urban population, the demand for renting private cars is growing at a reasonable rate, because people prefer private transportation over public transportation. The Coronavirus pandemic and social distancing and curfews in most countries in the world and in Iraq, have increased the demand for the use of electronic systems.

The interface of this website is intended to be very user-friendly and simple for people of all ages and backgrounds to use electronic applications and enter the data required for online reservations.

Customers can fill out details according to their needs with the help of this automated system.

This automated, computerized system assists customers by filling in the necessary information. It's used to figure out what kind of car you want, and how long you want to wait for it.

Admins will handle their rentals, bookings, customer issues, and car issues, among other things, using this method.

The software has been built using PHP, HTML, CSS, and JavaScript.

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List of Abbreviations

SQL - Structured Query Language

Chapter One

CAPTER ONE

General Introduction

1.1 Introduction

The car reservation system is an electronic system that assists in the management of everyday operations and the reduction of issues that may arise when utilizing paper-based systems.

The Project (A web-based car reservation system) is one of the important projects for the world to witness widespread demand at the present time. Instead of going out and moving between car dealerships, people can use the system to find what fits better for them.

This concept consists of leasing various vehicles to customers and businesses. The project will enable the transition from a paper-based to an electronic system while also reducing people's workload. It offers assistance to both vehicle operators and consumers while protecting individual privacy.

The website is built on PHP, HTML, CSS, and JavaScript, with a SQL database containing a number of cars with all of their details and information to allow customers to preview the car they want to reserve for rent.

1.2 Problem Background

Before you can hire a car, you will have to wait for the owner of the rental agency to come, deal with many issues, and complete documentation so that you may rent the car.

The manual system has several drawbacks, including:

- The manual registry is time-consuming.
- Spending money on paper and stationery is a waste of time and resources.
- It is a waste of space to keep records.

As a result, this website includes just a few components that allow the user to register, reserve, and schedule the time of reception and delivery in a straightforward and easy way.

1.3 The Aim of the project

The aim of the web-based vehicle reservation system is to automate the manual process. It enables the efficient, straightforward, and rapid retrieval and update of user data.

1.4 Research Objectives

1. a web-based solution to help manage the reservation office system.
2. Reduce the amount of paper you use and switch to an electronic method.
3. Giving users as much information as possible
4. increasing work reliability while ensuring information is correct, accurate, and up-to-date.
5. It may be utilized by anybody, reducing the load on reservation offices and saving time and effort.
6. It is less expensive than the cost of owning and maintaining a car.

1.5 Literature Review

[Fathi Ali ElShahawi,2009] This research identifies a novel way to handle car reservations in the development stage, using a GPS tracking function. In addition to studying different aspects, the research will examine how to transmit motor vehicle location coordinates via SMS to administrators as an alternative to making long phone calls. This proposal introduces GPS and mobile device integration into the overall system architecture. While the system is not designed to completely replace existing vehicle management and GPS technology, it will be used in conjunction with such technologies in order to enhance both. Vehicle rental businesses will be able to use a complete and rigorous web-based reservation/management system that includes GPS monitoring capabilities when they all work together [1].

[Khaled, M. S. M., Arefin, S., Kumar, D. S. R., & Tuhin, A. H.,2015] This project was given to us with the goal of investigating and relating to the many functional, operational, and technological requirements of a specialized web application for an online vehicle rental system. This system makes it easier for a web-based rental car company to operate. Each kind of vehicle should have a separate daily rental price. The cost of renting a car is determined by the number of days, the brand, and the vehicle's speed[2].

[Archana M, 2019] The proposed system is a fully integrated online system. It automates manual processes efficiently and efficiently. This automated method helps consumers to complete information according to their requirements. The number of times you want to rent a vehicle includes the kind of automobile you want to rent. A successfully planned, tested and documented on-line vehicle rental solution was delivered on time. The main objective of the system has now been achieved. The easy-to-use interface is provided to help you learn information. All the requirements of the SRS have been successfully met and tested. This automated system has been developed to enable customers to rent cars. In today's busy world, the online approach is easier. It enables customers to explore cars available, register, verify profiles and book a car [3].

To help individuals fulfill their requirements, we will develop software on the Internet that gives them access to services. This car reservation software assists both car rental companies and renters since it facilitates correct data storage and retrieval.

Chapter Two

CHAPTER TWO

Methodology

2-1 Web Design

Website building is made easy with the use of a markup language called HTML. Web designers use HTML tags to establish the information and metadata for each page. Cascading style sheets (CSS) may be used to determine the layout and look of the various components inside a website. So, because most websites include a mix of HTML and CSS that specifies how each page will look in a browser, that means HTML and CSS are critical to the success of any website.

2-2 Language Programmer Used:

2-2-1 Hypertext Markup Language (Html):

HTML, or Hypertext Markup Language, is a programming language that is used to create web pages (static pages).

The term "Hyper Text" refers to the method through which online pages are connected. Mark-up language refers to the process of "marking up" a text document with tags that instruct a web browser on how to organize and display it.

Browsers understand HTML, which may be authored in any editor and saved with the.html or.htm extension.

HTML is now extensively used to format web pages using the HTML language's many tags [5].

2-2-2 Hypertext Preprocessor (PHP):

The widespread usage of PHP and its relative simplicity and power make it well-suited for web development. The Web-scripting languages are integrated into HTML, which means they are compatible with operating systems such as Linux, FreeBSD, Ubuntu, Debian, and Solaris, as well as Windows and macOS. This supports all popular web servers (including Apache, Nginx, and OpenBSD). A

variety of common functions, including database abstraction, error handling, and so on, are made available to PHP by means of the PHP Extension and Application Repository (PEAR). The name of this program is PEAR, and it is a reusable PHP component framework and distribution method [6].

PHP It has many features as shown in the table. (2.1):

TABLE 2.1 *PHP's main Features*

<i>PHP's main Features</i>
PHP is free and easy
Interpreted.
It is faster than other scripting language e.g. asp and JSP as Server-Side Scripting Languages.
Open source means you no need to pay for use PHP, you can free download and use.
Platform Independent and runs on various platforms
CASE Sensitive.
Error Reporting.
Flexibility.
compatible with almost all servers used today

2-2-3 Cascading Style Sheets (CSS)

This CSS is critical to a Web-based application, and its role is to divide content from appearance. CSS includes fonts, colors, layout, and other presentation elements of a page, such as displays for various devices and screen sizes. Essentially, HTML is the base, while CSS is the visual detail. [7]

2-2-4 JavaScript language

The primary scripting language for Web browsers is JavaScript, which is a "safe" programming language. They can be written directly in a web page's HTML and executed when the page is loaded.

Scripts are supplied in plain text format and executed as such. They don't need any additional setup or compilation to operate.

JavaScript may run not just in the browser, but also on the server, or on any device with a JavaScript engine.

There are at least three great things about JavaScript :

- 1- Full integration with HTML/CSS.
- 2- Simple things are done simply.
- 3- Support by all major browsers and enabled by default [8].

2-2-5 Database Used:

-MySQL

MySQL is a relational database management open source system based on SQL (Structured Query Language). is developed and provided by MYSQL AB. MYSOL AB is a commercial company that bases its operations on MySQL database services. It is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications.

Chapter Three

CHAPTER THREE

Design and Implementation

3-1 INTRODUCTION

In this chapter, we explain the process of implementing the program in all its parts and explain how to use the site step by step.

3-2 The Flowchart of the proposed system:

Figure (3.1) presents the flow-chart of the web-based Car Reservation system. The figure depicts the system's work from the beginning of entering the website and logging in for both the user and the admin, as well as the work of each of them. We created this flow-chart to help a software development team share the design of a proposed system easily and quickly, even if the team is spread out across the country. This is an important step in the software life cycle.

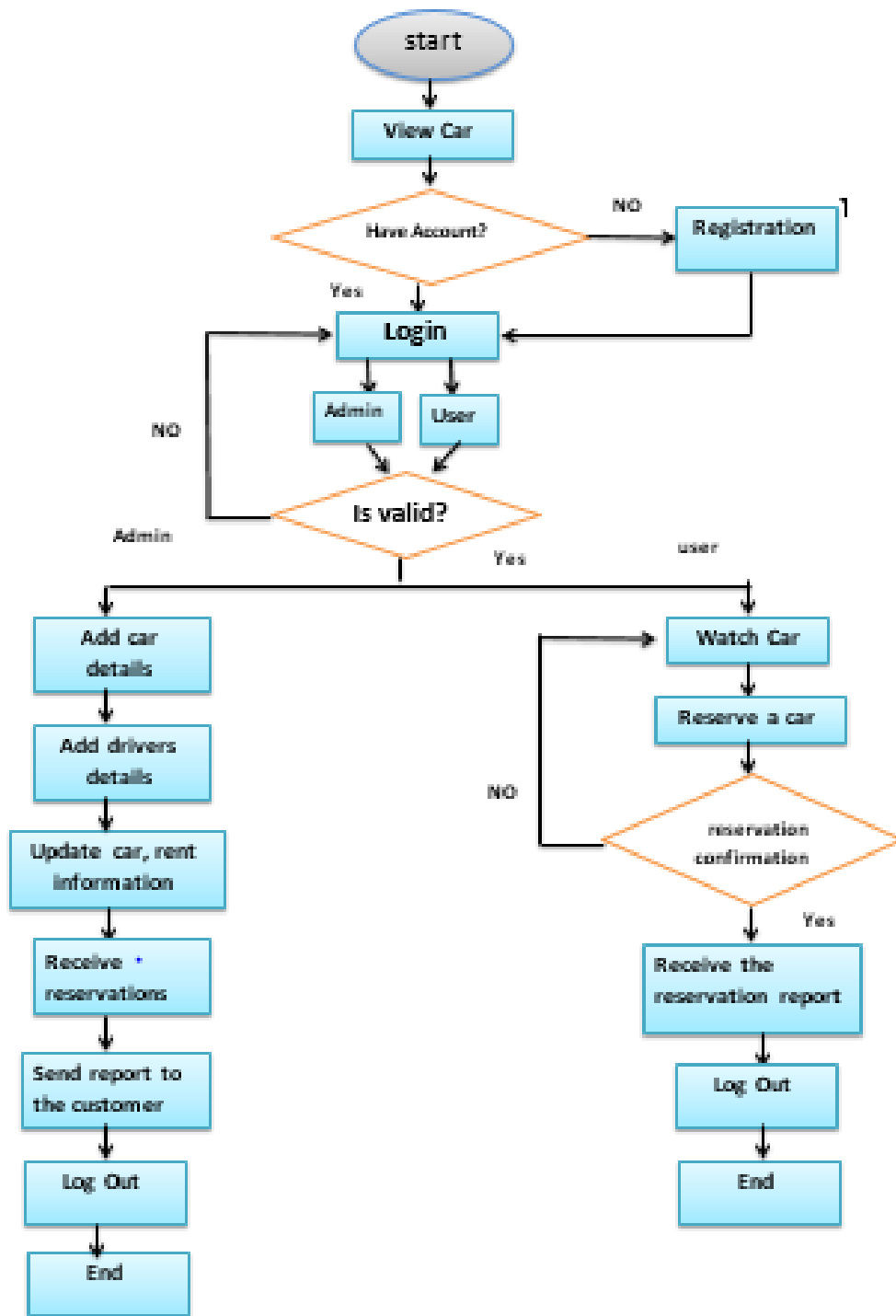


Fig (3.1) The Flowchart of the proposed system

3-3 Guide to system:

3-3-1 Main Interface

When the project is executed, the following window appears which contains the main interface of the site and pictures of the cars shown as in the figure (3.2), figure (3.3) and figure (3.4).

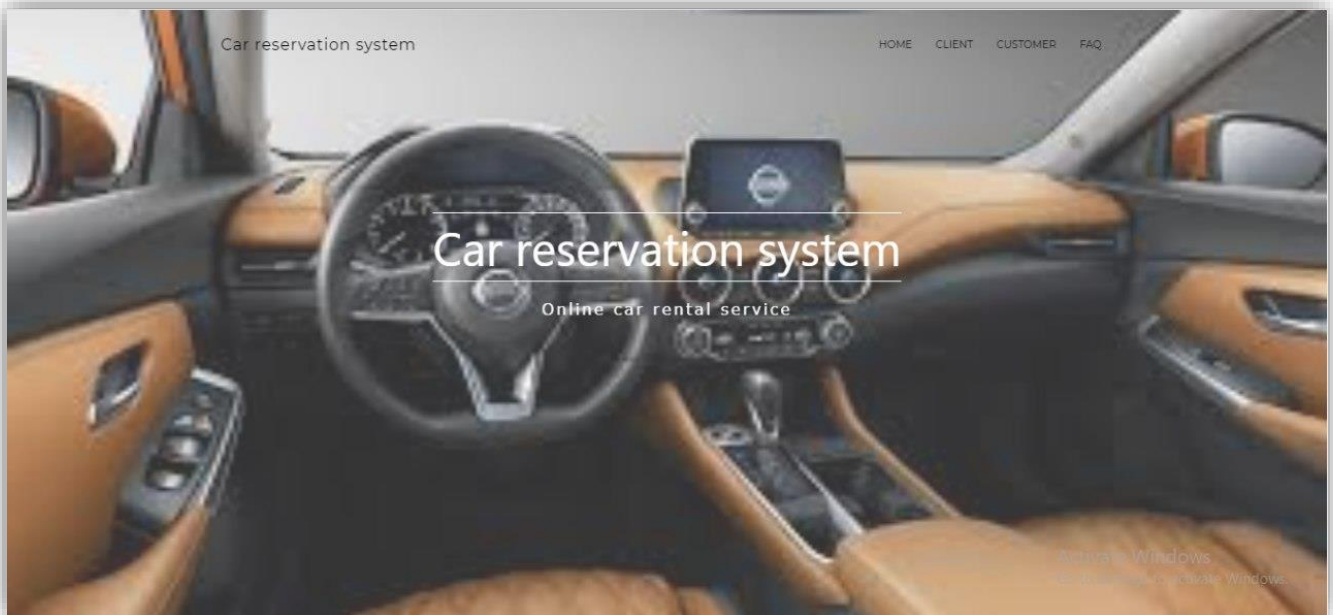


Fig (3.2) The main interface

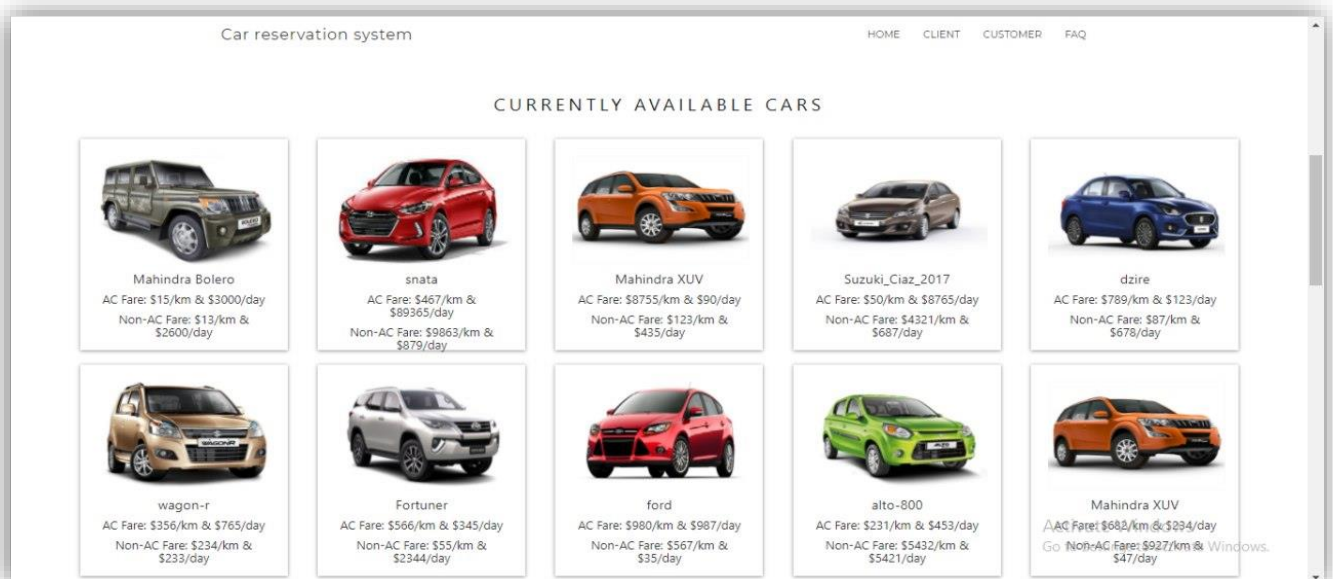


Fig (3.3) The down of the main interface

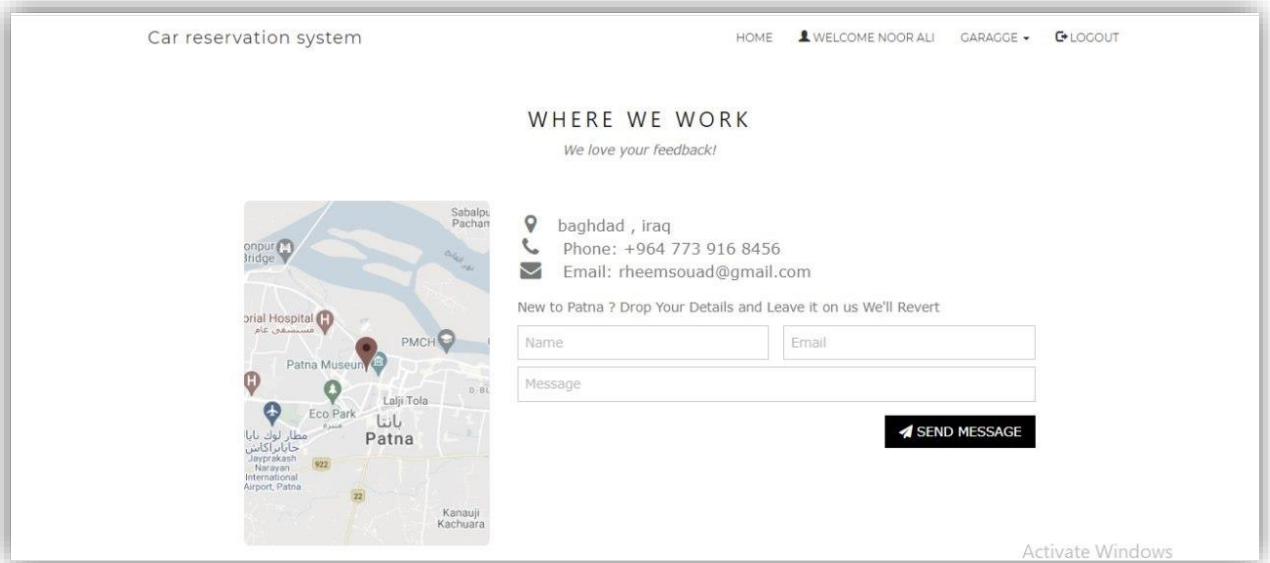


Fig (3.4) The down of the main interface

3-3-2 Login Window:

The next form of the system is the login window, as shown in Figure (3.5), which includes the login by the admin. To login to the system the admin should have the user name and the password of the system. The admin when logged on to the system has all the permissions to administer the system. as for the user to be able to log in to the site, he must have a username and password in order to be able to view and reserve the car.

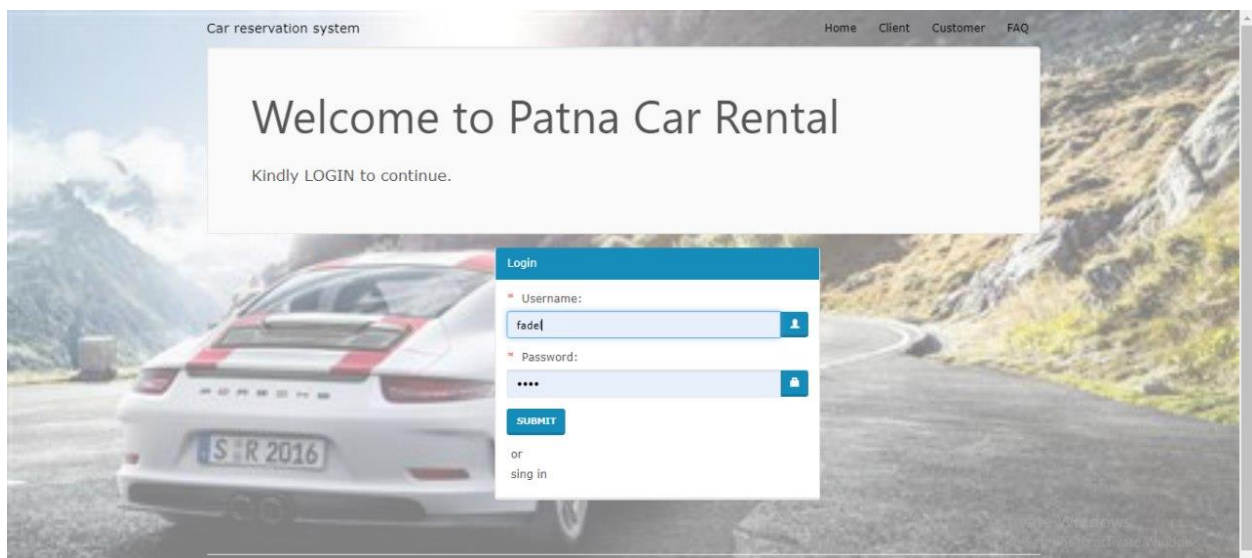


Fig (3.5) Login Window

3-3-3 Sign in Window

For the user, if he is using the site for the first time, he can create a new account by entering some of his required information to obtain an account and enter the site as shown in Figure (3.6).

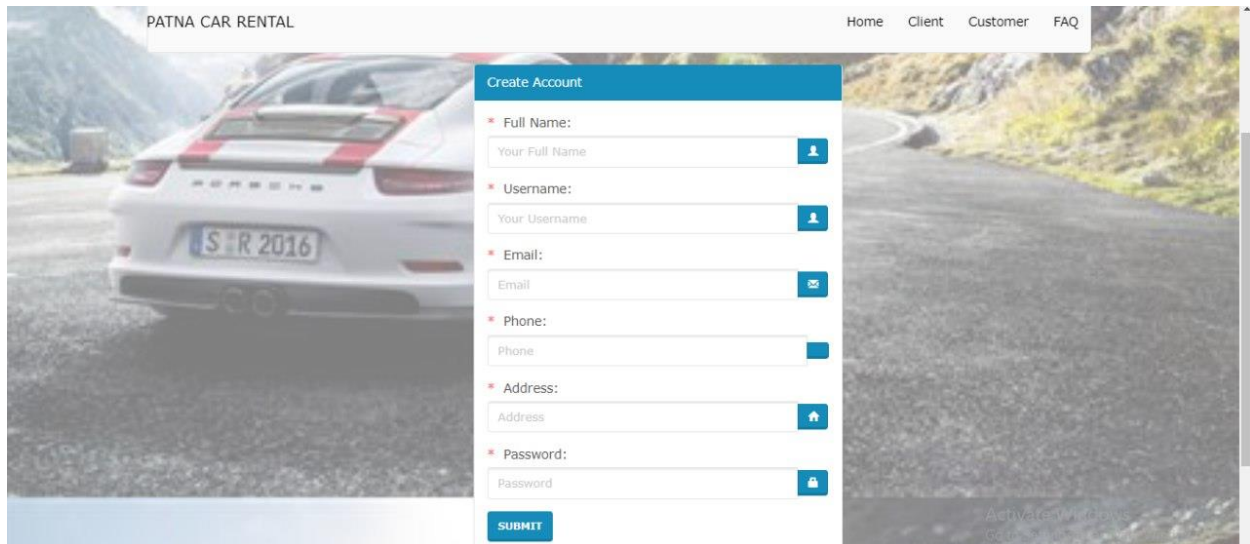


Fig (3.6) Sign in Window

3-3-4 Windows available to the admin after login

After logging in, the admin can use his permissions within the system, which include adding or deleting cars from the interfaces of the site, adding drivers or modifying the information on the site as shown in the figure (3.7)

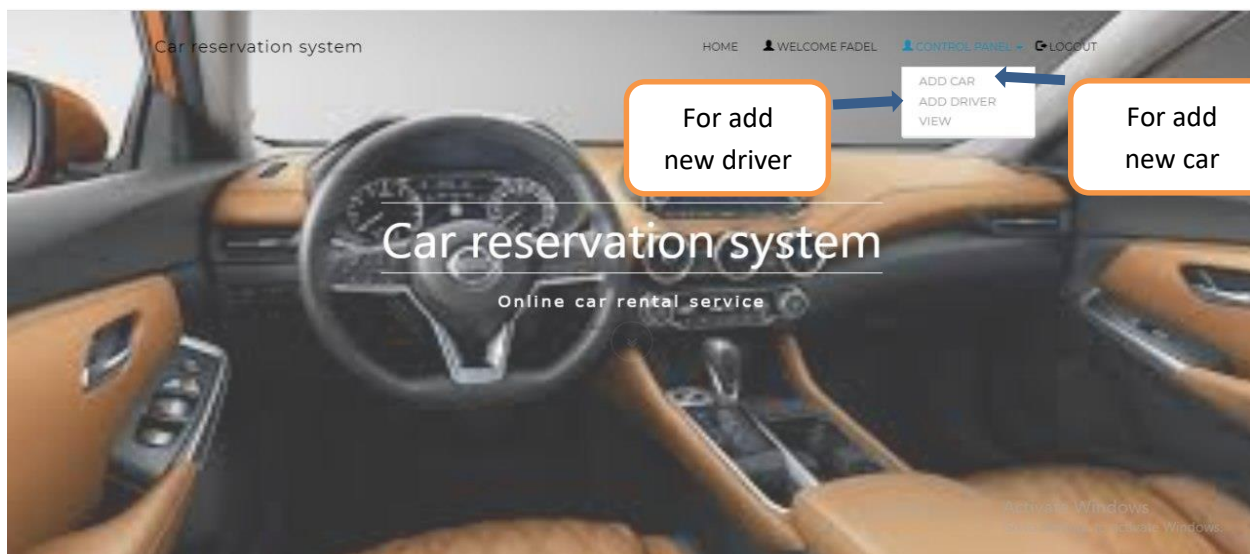


Fig (3.7) Add data through admin

When the admin adds a new car to the site, he must enter all of the car's details along with an image, as shown in the figure (3.8).

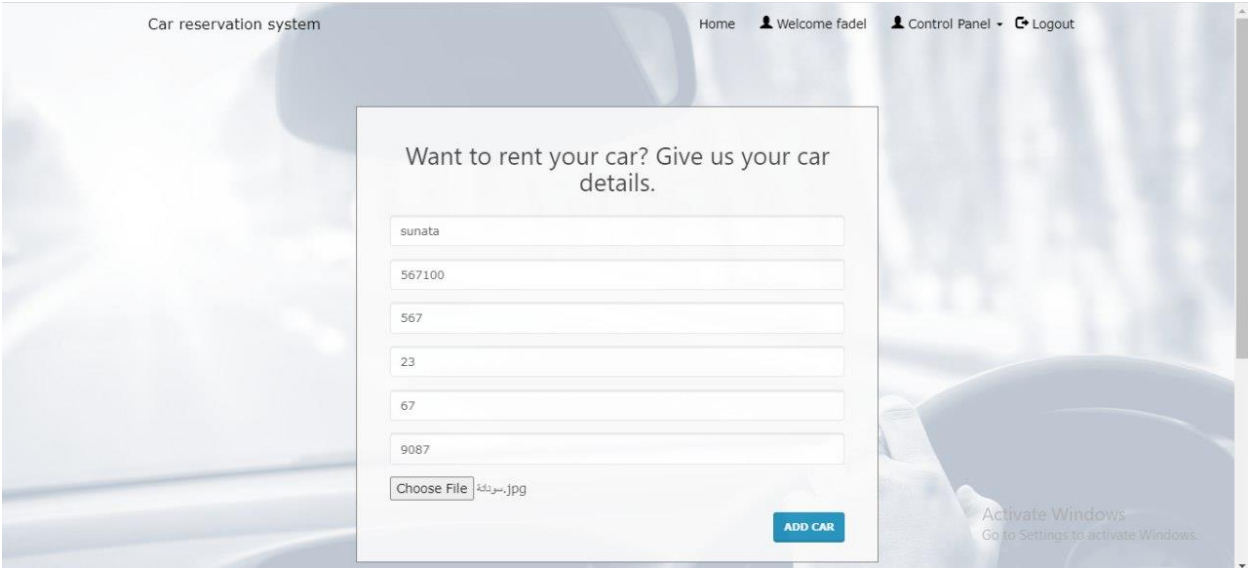


Fig (3.8) Add new car to the system

As well as for adding a driver, it is done in the same context as shown in the figure (3.9).

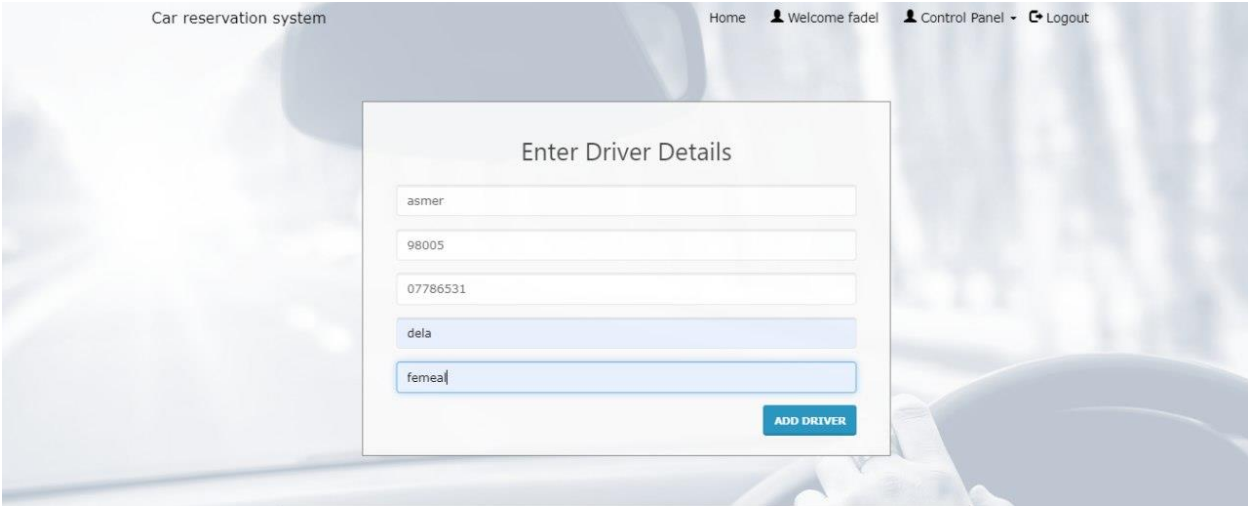


Fig (3.9) Add new driver to the system

3-3-5 Windows available to the user after login

The first interface that appears to the user after logging in is shown in the figure (3.10) which includes a welcome statement for the user as well as the Garage command, which allows the user to cancel or review past reservations is shown in the figure (3.11).

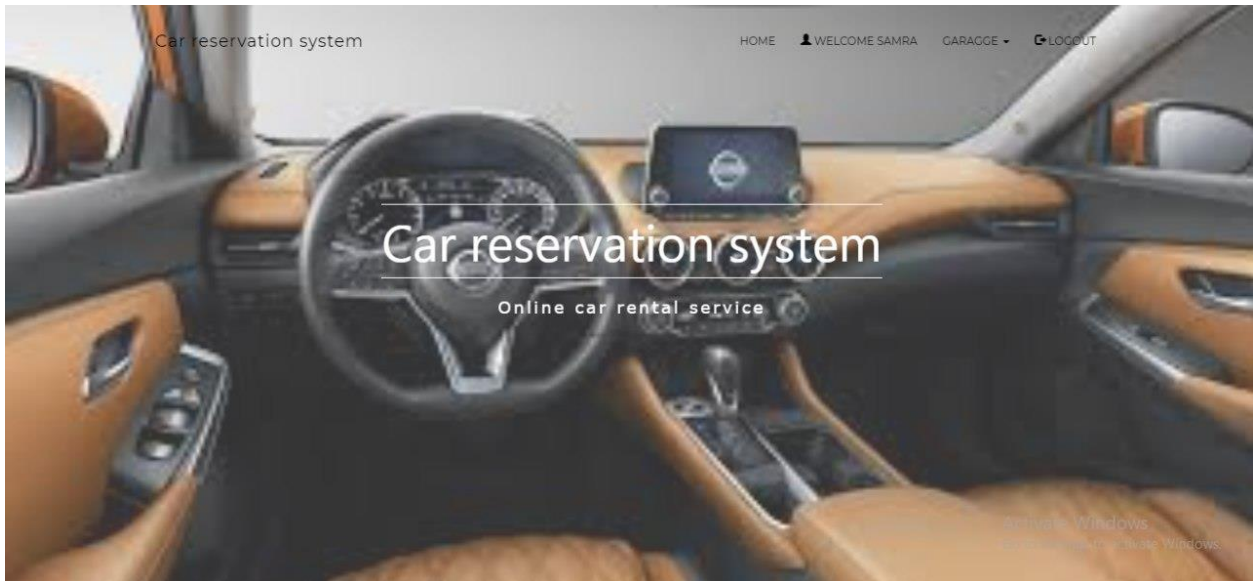


Fig (3.10) First interface for user

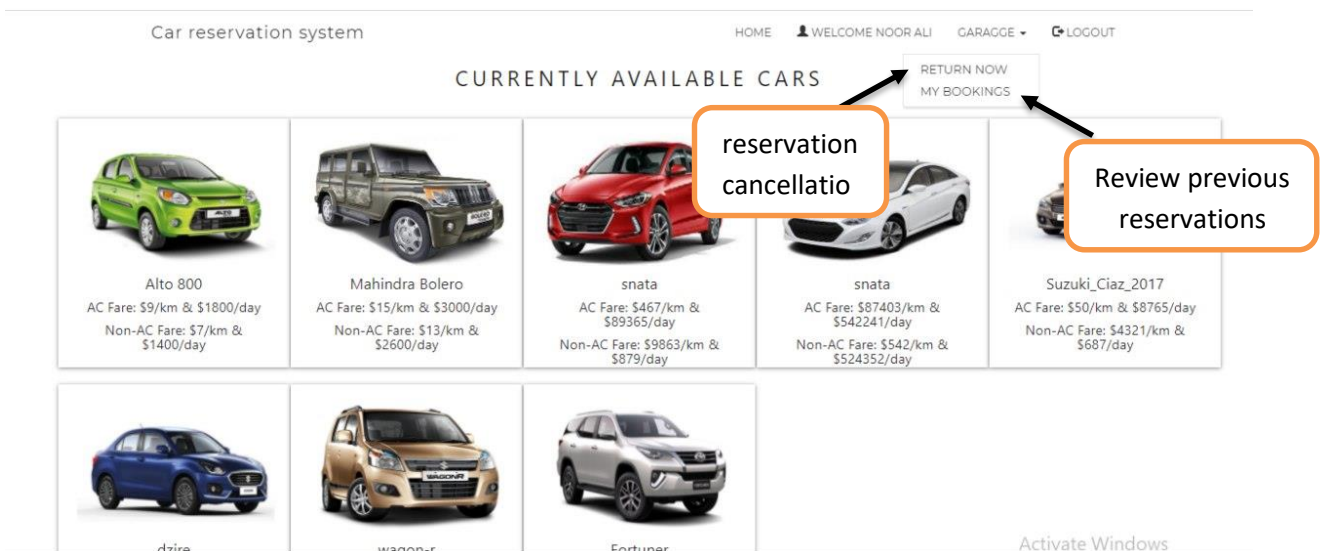


Fig (3.11) Garage command

The car that was booked is returned by pressing the command "Return," as shown in figure (3.12).

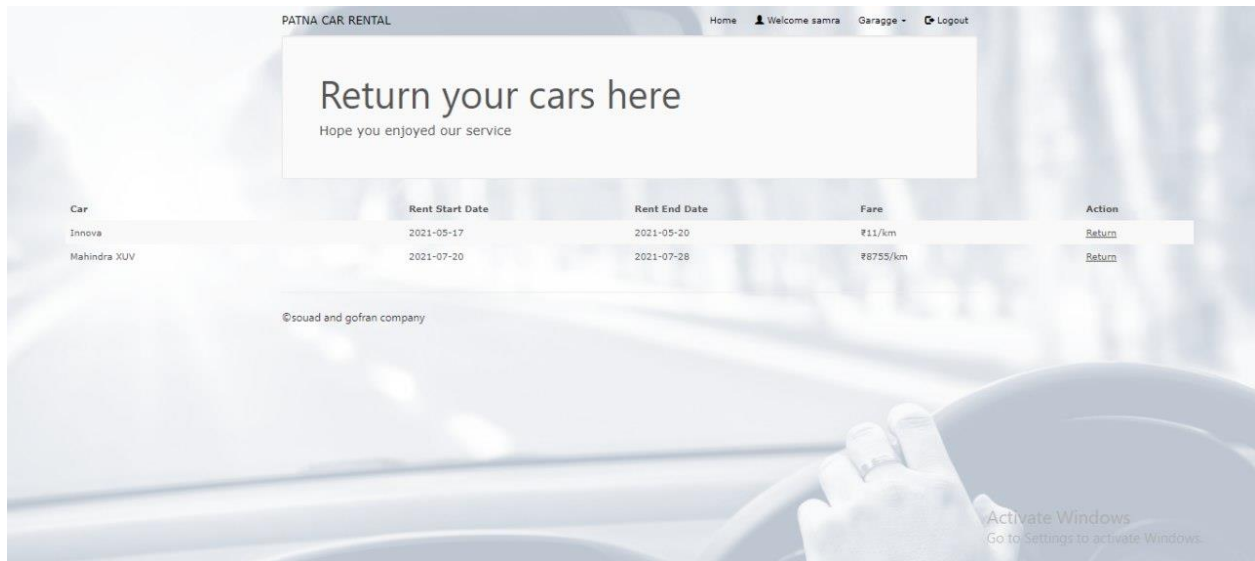


Fig (3.12) Return command

When one of the cars in the figure (3.11) is selected, a window appears where you can enter the reservation information, which includes the date of the reservation, whether it is with or without a driver, and other details of the car as shown in the figure (3.13) .

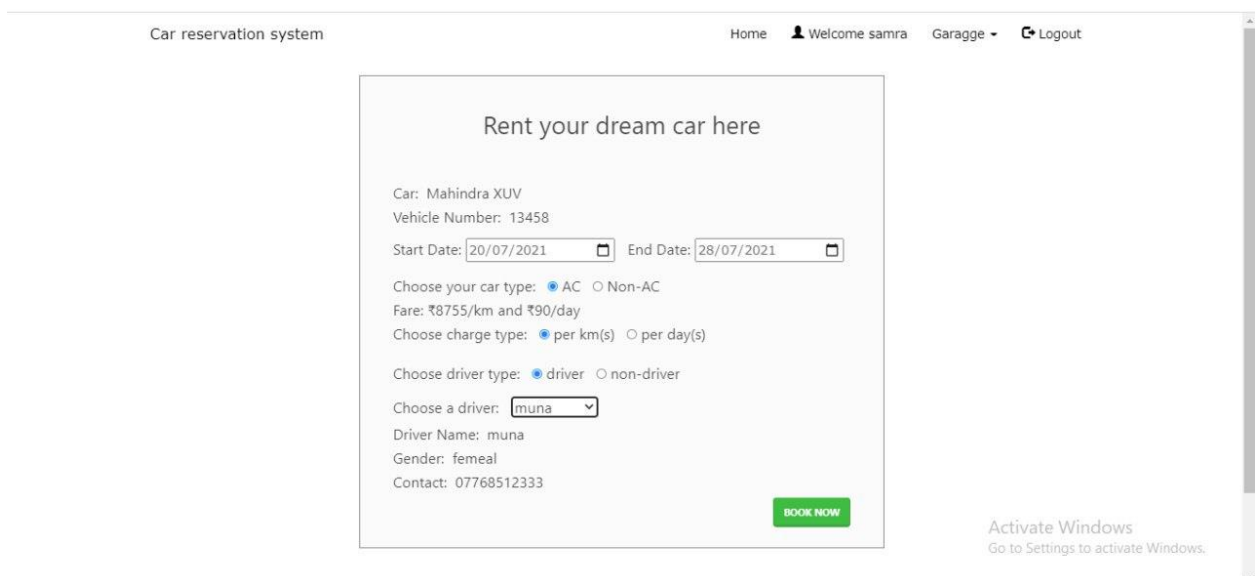


Fig (3.13) Enter car reservation details

Following the completion of the booking process, a window with the rental receipt displays, containing all of the information entered as shown in the figure (3.14).

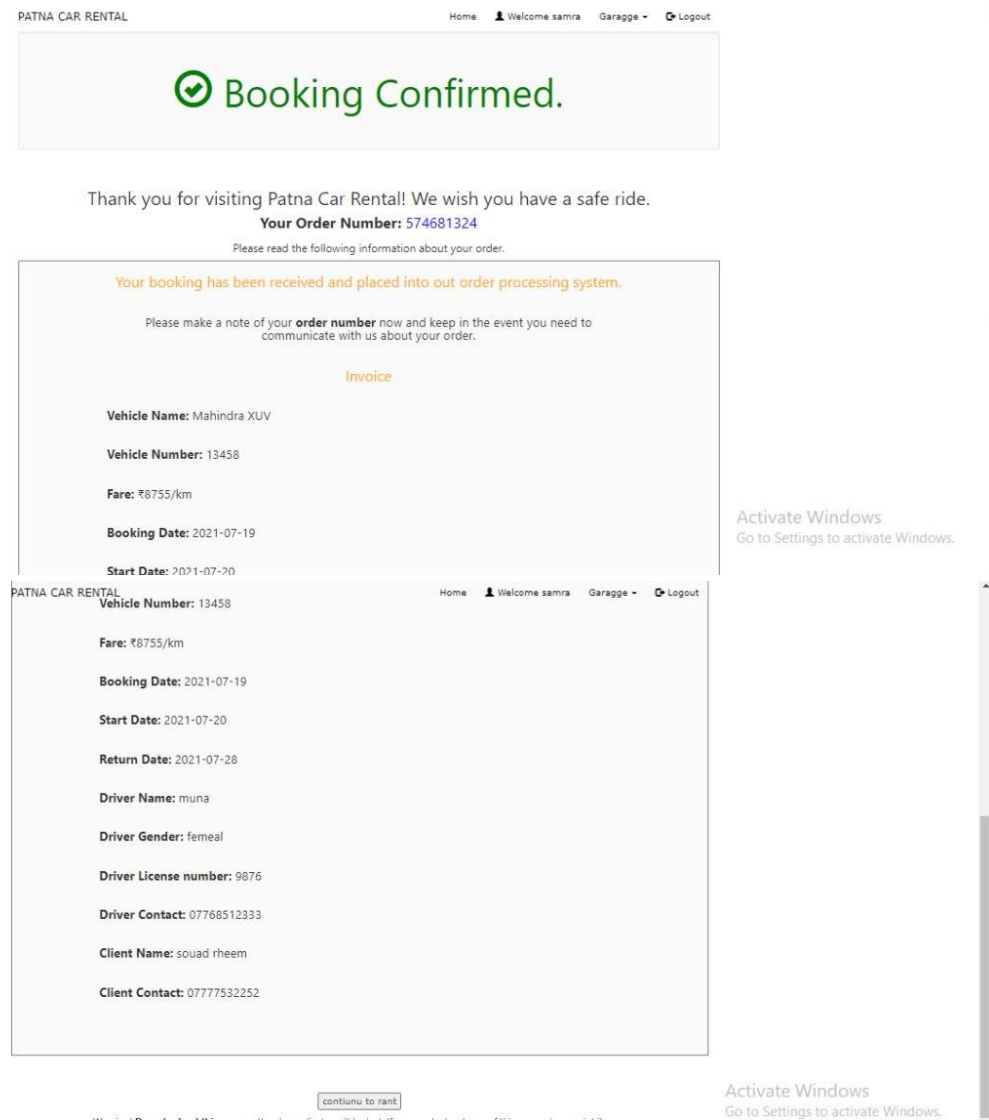


Fig (3.14) Receipt of booking confirmation

3-3-6 The payment process

After completing all the user's reservations, the payment process is done electronically, as shown in the figure (3.15)

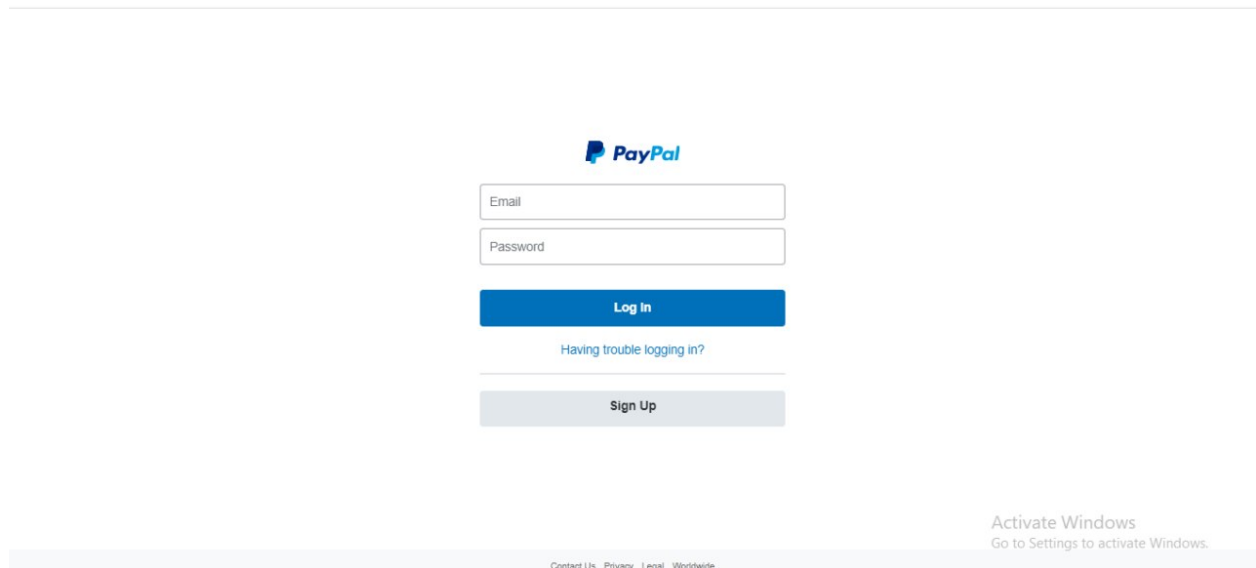
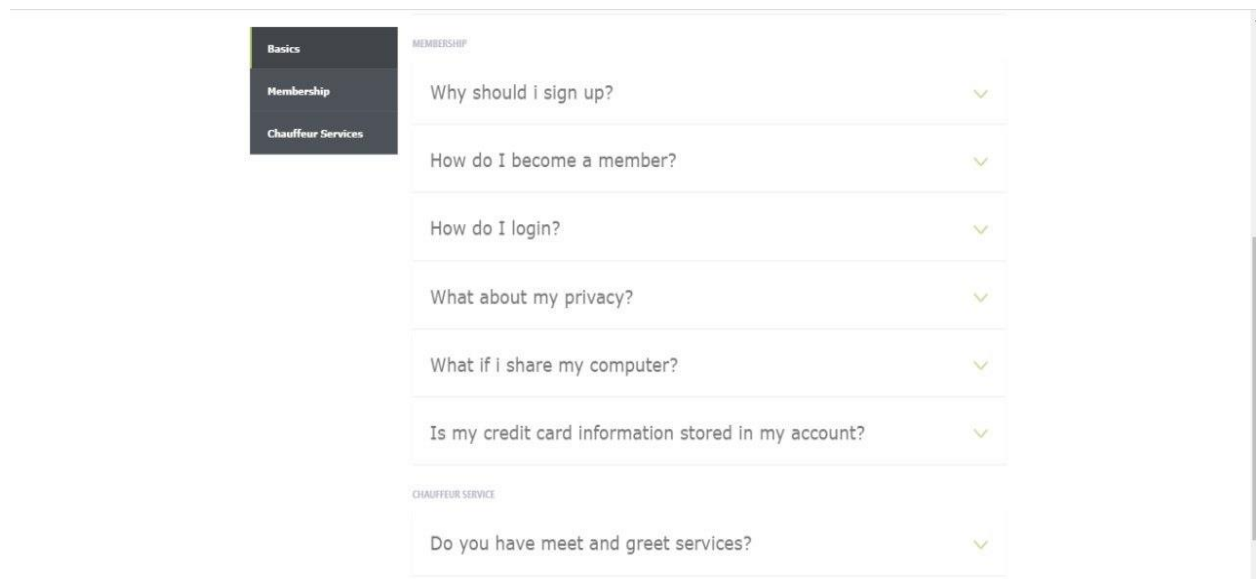


Fig (3.15) The payment process

3-3-7 FAQ window

This page is located in the main window of the site, which contains some common questions and their answers to help users if they encounter any problem as shown in the figure (3.16).



The screenshot shows a web interface for 'PATNA CAR RENTAL'. At the top right, there are navigation links: HOME, CLIENT, CUSTOMER, and FAQ. On the left, there is a dark sidebar with three menu items: 'Basics' (highlighted), 'Membership', and 'Chauffeur Services'. The main content area is titled 'FAQ' and is organized into two sections: 'BASICS' and 'MEMBERSHIP'. Each section contains a list of questions, each with a green downward arrow indicating it can be expanded. The 'BASICS' section includes: 'How do I pay for my Rental?', 'What if I find a better rate for a rental car?', 'Will i need a driving license to rent a car?', and 'Is there a fee if i return the car after the due date?'. The 'MEMBERSHIP' section includes: 'Why should i sign up?' and 'How do I become a member?'.

Section	Question	Action
BASICS	How do I pay for my Rental?	Expand
	What if I find a better rate for a rental car?	Expand
	Will i need a driving license to rent a car?	Expand
	Is there a fee if i return the car after the due date?	Expand
MEMBERSHIP	Why should i sign up?	Expand
	How do I become a member?	Expand

Fig (3.16) FAQ window

Chapter Four

Chapter Four

Conclusion And Recommendation

4-1 Conclusion

The project's technology (web-based car reservation system) meets all of the requirements for electronic car reservations and can store data efficiently. Our system's benefits include providing enough information for reservations in a simple, easy, and uncomplicated way for the user. A web-based car reservation system provides detailed information on rental cars, such as what kind of car you want, how long you want to wait for it, and other options provided by the system.

4-2 Recommendation

Several new features and technologies will be included over the course of the development process's latter stages. Therefore, we want to incorporate the most important stage, which is the Internet of Things technology (IOT), which will allow us to broadcast vehicle information through SMS or What's App, among other services that will benefit the community and help us to further develop and expand the system.

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الخلاصة

مع النمو السريع لسكان المدن، يتزايد الطلب على استئجار السيارات الخاصة بمعدل معقول، لأن الناس يفضلون وسائل النقل الخاصة على وسائل النقل العام. أدى انتشار جائحة فيروس كورونا والتباعد الاجتماعي وحظر التجول في معظم دول العالم وفي العراق إلى زيادة الطلب على استخدام الأنظمة الإلكترونية.

تهدف واجهة هذا الموقع إلى أن تكون سهلة الاستخدام للغاية وبسيطة للأشخاص من جميع الأعمار والخلفيات لاستخدام التطبيقات الإلكترونية وإدخال البيانات المطلوبة للحجوزات عبر الإنترنت.

يمكن للعملاء ملء التفاصيل وفقاً لاحتياجاتهم بمساعدة هذا النظام الآلي.

يساعد هذا النظام الآلي المحوسب العملاء من خلال ملء المعلومات الضرورية. يتم استخدامه لمعرفة نوع السيارة التي تريدها والمدة التي تريد انتظارها.

سوف يتعامل المسؤولون مع الإيجارات والحجوزات ومشكلات العملاء ومشكلات السيارات، من بين أمور أخرى، باستخدام هذه الطريقة.

تم إنشاء البرنامج باستخدام PHP و HTML و CSS و JavaScript.

إقرار مشرف

اوكد بأن هذا المشروع الموسوم:
نظام حجز السيارات على شبكة الإنترنت
والذي تم اعداده من قبل الطالبين:

غفران احمد
سعاد رحيم

والمقدم الى قسم علوم الحاسوب – كلية العلوم – الجامعة المستنصرية كجزء من متطلبات نيل شهادة
البكالوريوس في علوم الحاسوب – تخصص تكنولوجيا المعلومات
قد تم تحت اشرافي وتوجيهاتي.

التوقيع:

الاسم: ياسمين مكي محي الدين

المسمى الوظيفي:

تاريخ:



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
الجامعة المستنصرية
كلية العلوم – قسم علوم الحاسوب

نظام حجز السيارات على شبكة الإنترنت

مشروع تخرج مقدم الى كلية العلوم / قسم علوم الحاسوب كجزء من متطلبات نيل
شهادة البكالوريوس في علوم الحاسوب – تخصص تكنولوجيا المعلومات

من قبل

غفران احمد فاضل

سعاد رحيم عوض

بإشراف

ياسمين مكي محي الدين

بغداد، العراق
التاريخ