DESIGN AND IMPLEMENTATION OF ONLINE SULI GUIDE SERVICE SYSTEM

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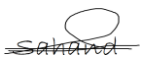

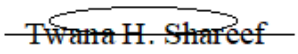

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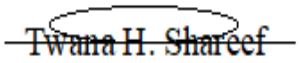
Signature	:	
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DESIGN AND IMPLEMENTATION OF ONLINE SULI GUIDE SERVICE SYSTEM

SAHAND AZAD ABDUL

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Bachelor of Software Engineering

School of Computing
Faculty of Engineering
Universiti Teknologi Malaysia

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DEDICATION

This thesis is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

ACKNOWLEDGEMENT

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ABSTRACT

In today's world, an online tourism system is implemented as a new website for Tourists. For many people all across the world, cell phones have become an essential device. This website assists tourists by providing them with the necessary information, such as images, attractive locations, and descriptions of the destinations they wish to visit. It is especially handy for those who want to visit places where they have no prior knowledge. The descriptions offered on the Website can help users have a better understanding of the places they desire to visit. Users can choose from a number of tour and travel destinations within the city and have the ability to make reservations of Hotels, Restaurants and Cafés. This Proposed project is a website that has 4 users, Customers who can interact the most with the website by having the ability to reserve seats in restaurants or café, booking hotel and have the ability to look up at the places that a tourist would visit, Hotel receptionists who can accept or decline the request of the customers that want to book rooms for themselves, Café or Restaurant Cashiers who can accept or decline the request of the customers that want to reserve table in the place, and finally Admin who can manage all the users, and manage the website. The Methodology that is used for implementing this project is Agile Software Development Cycle, since the project is gone through some phases and one can update the product based on the feedbacks the software developer gets from the customers or the users of the project. The technologies and tools that are used to develop the proposed project are Visual studio IDE, HTML, CSS, PHP, JavaScript and Bootstrap for the coding part, Lucid chart for the diagrams, and Adobe XD for the Prototype (Interface) of the project

ABSTRAK

Dalam dunia hari ini, sistem pelancongan dalam talian dilaksanakan sebagai laman web baharu untuk Pelancong. Bagi kebanyakan orang di seluruh dunia, telefon bimbit telah menjadi peranti penting. Laman web ini membantu pelancong dengan memberikan mereka maklumat yang diperlukan, seperti imej, lokasi menarik, dan penerangan tentang destinasi yang ingin mereka lawati. Ia amat berguna untuk mereka yang ingin melawat tempat yang mereka tidak mempunyai pengetahuan awal. Penerangan yang ditawarkan di Laman Web boleh membantu pengguna memahami dengan lebih baik tempat yang mereka ingin lawati. Pengguna boleh memilih daripada beberapa destinasi pelancongan dan pelancongan di dalam bandar dan mempunyai keupayaan untuk membuat tempahan Hotel, Restoran dan Kafe. Projek Cadangan ini adalah laman web yang mempunyai 4 pengguna, Pelanggan yang paling boleh berinteraksi dengan laman web dengan mempunyai keupayaan untuk menempah tempat duduk di restoran atau kafe, menempah hotel dan mempunyai keupayaan untuk melihat tempat-tempat yang akan dikunjungi pelancong, Penyambut tetamu hotel yang boleh menerima atau menolak permintaan pelanggan yang ingin menempah bilik untuk diri sendiri, Juruwang Kafe atau Restoran yang boleh menerima atau menolak permintaan pelanggan yang ingin menempah meja di tempat tersebut, dan akhirnya Admin yang boleh menguruskan semua pengguna, dan menguruskan laman web.

Metodologi yang digunakan untuk melaksanakan projek ini ialah Kitaran Pembangunan Perisian Agile, memandangkan projek itu melalui beberapa fasa dan seseorang boleh mengemas kini produk berdasarkan maklum balas yang diperoleh oleh pembangun perisian daripada pelanggan atau pengguna projek.

Teknologi dan alatan yang digunakan untuk membangunkan projek yang dicadangkan ialah Visual studio IDE, HTML, CSS, PHP, JavaScript dan Bootstrap untuk bahagian pengekodan, carta Lucid untuk gambar rajah, dan Adobe XD untuk Prototaip (Antara Muka) projek..

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This Project is about implementing an online tourism website in the cities, users can use this website for discovering places in the city or to check out the places to visit, to reserve seats in restaurants and to book Hotels. HTML, CSS and PHP are used in this project for the creation of the project.

It is to support a user to get information of the places that the user wants to go to, the tourism website acts as a tour advisor. Even if a visitor can find new destinations via the internet, getting necessary information about the places to visit is time consuming when the tourist is unfamiliar with the area (Alghamdi, Zhu and El Saddik, 2016, pp. 185-188). This paper discusses a website that improves the tourist's tourism experience.

It will assist one in obtaining information on places to visit, hotels to stay at, restaurants to dine at, and checking out images that narrates the area description that they are now visiting without the use of a traditional guide. When a traveler visited famous spots in the past, they hired a guide who gave them detailed descriptions of the locations (Pawar1 and Patwardhan, no date, p. 2668-2672). When tourists are on vacation, they are unable to get accurate information about destinations. The proposed solution does not require the use of a traditional physical guide. Visitors who are unfamiliar with the area can get better directions before going to the place they want to visit (Watkar1 and Shahade, no date, online).

1.2 Problem Background

Tourists today expect personalized access to tourism information at any time, from any location, and through any platform, but they often receive outdated information. In answer to queries posted on the Internet, people receive an excessive amount of useless content alongside necessary information. Being a tour guide is a difficult job, and today's tourists are more demanding than ever, with complicated and multilayered desires and needs. In the existing websites lack of information is seen proposed for the users.

1.3 Project Aim

To develop an online tourism system using HTML, CSS and PHP to be employed in today’s world for tourists. To have the proposed project of the ability to showcase the information about places, attraction places, historical buildings and the ability to reserve seats in Restaurants/Cafés and to book Hotels. To help the tourist’s tourism experience within the city.

1.4 Project Objectives

The objectives of the project are:

- To analyze problems in the existing Tourist system in Sulaymaniyah / Kurdistan.
- To design online Tourist service system.
- To develop online Tourist Service System.
- To evaluate and conduct testing for online Tourist Service System.

1.5 Project Scope

When tourists travel to a place, they are unfamiliar with or can't determine where to go or why to go, they can use this website to find restaurants, attractive places, theme parks, museums, shopping malls, and historical places. Users can make reservations for themselves in a restaurant using this website, which provides information, images, and videos.

Additionally, the website also has information about the locations. The size of implementing this project will not be that big, only some restaurants might be included for reservation since there are a lot of restaurants in cities and implementing reservation in many restaurants will be hard.

1.6 Project Importance

The study will assist tourists in deciding which tourist destination to visit and as a result, what information will provide the most satisfaction. It will be able to:

- Provide a system that can be accessed from a mobile phone or a computer.
- It assists tourists in making travel plans before they visit a location.
- Assist tourist with time estimation for finding places that they want to visit.

Helps the economic growth by attracting more travelers and making it easier for tourists to travel inside the city.

1.7 Report Organization

In this chapter the introduction of the system, problem background, project aim, objectives, scope and importance of the project have been discussed about.

The idea of the project on how it is and how it is going to be is: Helping tourists mostly for finding attractive locations within a city and reserving tables for themselves in a restaurant, reading information about the locations they visit or want to visit.

In the next chapter literature review will be implemented, comparing other articles and projects to this one and the difference between them.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter Literature review will be implemented as a report, in the Inter-organization Case Study part gathering requirements to understand low and source of problems will be gathered, Survey is made through Tourists and students of university to understand the problems of them while traveling to a place for looking up places, booking hotels and reserving restaurants/cafés. The current system analysis is reviewing currently available system(s) or prototype(s) and finding the advantage or disadvantages of the system, there is a system in Kurdistan that is for Tourists, the Tourists can check out the places to visit but the website doesn't have many functionalities for a user to be satisfied and the system is outdated. In Compare between existing systems ensuring the strength and weakness between the systems will be implemented, some researches have been made to find systems about Tourism Websites/Applications that are similar to the proposed system but not with the desired functions that we want to implement in the proposed system, so we will discuss the differences about the current systems and the proposed system. Literature review on technologies used will be written also declaring the technologies that have been used making the project, by specifying what the technologies used are, what they do, and how they implement the project.

2.2 Case Study (If any)

Based on a survey that was made through Tourists, Hotel Receptionists, Café Cashiers, Locals, and Students of University of Male and Female in the ages between 18-50, answers to many questions that were supposed to be asked were collected through them.

Based on the survey, on the answers of the people answered this survey the majority finds it hard for them to use the current systems for finding hotels to stay in. And also, they have had hard times while booking hotels. So, by the answers to these 2 questions, we can see that there should be a new system that will be easy to use and users find it easy to find hotels in the places that they desire.

Based on the survey, majority of the users when they travel to somewhere, they find places to visit from a guide, so they must hire a guide to tell them the places and take them with their selves and also, they don't get enough information about the places that they visit, for example when you visit a historical place you desire to know the history of that place, but unfortunately Guides can't always deliver the information very well to the tourists.

Based on the survey, the majority find it hard to find the desired Restaurant/Café to visit and to dine in or to enjoy their time in the place when they are still in that place. And also, they have had hard times finding Seats/Tables in a Restaurant/Café for not making a reservation. And why not make a reservation? Because most of the Restaurants/Cafes make reservations by phone calls and this is not easy for all of the customers to deal with.

Based on the survey, Tourists want to see Photos/Videos of the places that they want to visit, to see how the place is or looks, in reality, to decide whether to go to or not.

At the end of the survey people think that making an Online web-based system that provides Hotel Booking - Restaurant/Cafe Reservations - Information providing about the places, would be a good idea.

2.3 Current System Analysis

2.3.1 Current System Analysis

In the current system of Tourism in Kurdistan, there is a system that was made by the Board of Tourism in Kurdistan. The website includes About Kurdistan where you can find Facts, Arts & Culture and Kurdistan in General, Destinations which includes the resorts most of the cities of Kurdistan, Things to do that includes Shopping, Arts & Culture, Parks & Attractions, etc. Where to stay where you can see the Accommodation places to stay in, Events & Festivals and Finally Plan your Trip where to go. (bot.gov.krd, n.d).

Those were the positive sides of the current system that exists and they are very useful for someone when they come to Kurdistan and don't know much about the place. But some points should be mentioned about the current system which makes it the negative parts of the system:

1. The system is outdated: Some places are not on the website like new places that have been opened in the last few years.
2. Lack of information: There isn't much information on the places, hotels, restaurants, and events.
3. The Website doesn't have a reservation feature: The users can't interact with the system that much to reserve a Restaurant or to book a Hotel.
4. Navigation Map not working: The user can't find the Hotels and Places on the map.
5. The Website doesn't have a filtering search: When a user searches for a place they don't have the option to filter some options to find the perfect place, hotel, or restaurant for themselves.

The proposed system differs from the current system in these ways:

1. The proposed system will be updated, the system will include the newly made Restaurants, Cafés, Hotels, and Attractions places.
2. The proposed system will include much information about the Restaurants, Cafés, Hotels, and Attractions places so that when someone looks it up, they know how are the places and how many ratings they have.

3. The proposed system will have a reservation feature only for Restaurants/Cafés and bookings for Hotels.
4. The proposed system will have a Navigation Map and the places of Attractions, Cafés, Restaurants, Hotels, and other places will be on the map so that someone knows where the place is located at.

These features mentioned above will be added/improved in the newly proposed system since the current system doesn't provide them.

2.3.2 **Proposed System**

This Project is about implementing an online tourism website in the cities, users can use this website for discovering places in the city or to check out the places to visit, to reserve seats in restaurants, and to book Hotels. HTML, CSS, and PHP are used in this project for the creation of the project.

It is to support a user to get information of the places that the user wants to go to, the tourism website acts as a tour advisor. Even if a visitor can find new destinations via the internet, getting necessary information about the places to visit is time-consuming when the tourist is unfamiliar with the area (Alghamdi, Zhu and El Saddik, 2016, pp. 185-188). This paper discusses a website that improves the tourist's tourism experience.

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2.4 Comparison between existing systems

In the existing systems, each system is different from the other. Some systems are mentioned below and we can see which system has what functionality and how it is different from the new proposed system.

2.4.1 Design and development of tour management system using android

The travel management system android application which is installed on the tourist's cell phones acts as tour advisors. Even if the tourist can find new places through the internet, it is tedious to obtain necessary information about the places to visit, when the tourist is not familiar with the place (Bhat et al, 2017, pp. 1-5) The Tour Management system using android is an application that guides the tourists, offers them with all the relevant information such as images, weather condition and description about the places they want to visit. It is especially useful for the users to visit the places having no idea regarding the place. The users can get better guidance about the places they want to visit by making use of the Google Maps service provided in the application. Users can view various tour and travel destinations. (Bhat et al, 2017, pp. 1-5) From this project we can see that the system only provides the users to get better guidance so that they can claim where they want to visit that they desire the most, it doesn't provide users hotel bookings and restaurant bookings where we can see that the proposed system will be a website and it will implement hotel bookings, Restaurant/Cafés reservations and information about the places of attractions but what also differs from this system is that the current system is an application and tourists can download the application on their mobile phones but, the proposed system is a website and it won't be downloaded on mobile phones so, it needs Wi-Fi or internet connection to use it.

2.4.2 **Application of real-time streaming technology in tour**

Application of Real-Time Streaming Technology in Tour Mediation is another Research that was made by Dr. Stanley M Githinji in 2017, The streaming component provides live experience on destination attractions to potential tourists to assist them to make informed travel decisions. The streaming component allows potential tourists to authenticate destination attractions and to perform emotional interpretations resulting from cognitive and affective components. (Githinji, 2017, pp. 40-42) The findings of this study provide new areas for further researches. This application also doesn't provide reservations of restaurants and bookings of hotels and also doesn't share information about the places, doesn't act as a guide.

This application is like a decision making for tourists so that they know where to go to in the city that this application is implemented or the tourist is in, and the proposed system also includes the information, photos, and videos of the places so Tourists can also decide by watching photos, videos or reading the information about the place they want to visit.

2.4.3 **Tourist place recommendation system**

Many times, a tourist cannot decide which place to visit, or where to stay, also the cost associated, the point of interest of each user, and many such factors. So, we are going to propose a website which will recommend places of attraction to the users. (Swamy et al, 2020, pp. 345-348) This website is only for recommendation system that helps users and tourists to decide where to go and to decide the place that they desire to go to. So, this application is also different from the other apps as well and it is different from the proposed system as well.

In Tourist Place Recommendation System as we mentioned also in the previous system Tourists can decide for themselves by watching photos, videos or reading information about the places that they want to visit, this application is for recommending the most visited or let's say the most famous places in the city or the

place that the tourist has traveled to, and it doesn't provide bookings or reservations, but our proposed system includes also the information of the place so that the tourist can decide whether to go to that place or not and also the ability of the tourists to book a hotel or reserve tables in Restaurants/Cafés.

2.5 Literature Review of Technology Used

Coding: Visual Studio – Microsoft Visual Studio is Microsoft's IDE and is used to develop various types of software such as computer programs, websites, web apps, web services, and mobile apps. It includes complimentary tools, compilers, and other features to facilitate the software development process. We have used visual studio because it supports HTML that stands for HyperText Markup Language and is a language for making or creating web pages it describes the structure of a web page it tells the browser how to display the contents on the website, CSS which is for styling HTML contents in a website, it describes how the HTML contents should be displayed on the Website, JavaScript is a text-based programming language used both on the client and server sides to allow you to design websites interactively, JavaScript web pages provide interactive elements that appeal to users. and PHP stands for Hypertext Preprocessor it scripts are executed on the server. We use this coding so that we can create the website with its coding. And the visual studio is an easy-to-use tool and to work with that's why it is used in this project.

Database: MySql – is used so that we can connect to the database via MySql save the data of the contents of the system into the database. And MySql is an easy tool to use that's why it is used in this project.

A database is a place in which data is stored and organized, it is simply a structured collection of data. MySql implements a client-server model it uses a domain-specific language – Structured Query Language the Client requests the server and the server responds to the client from the database.

2.6 Chapter Summary

In this chapter, we discussed the Literature Review and implemented an inter-organization study via doing a Survey and got the answers back via the people that we interviewed and asked.

In the current system analysis, we discussed the current system that exists in Kurdistan and its Positive sides and Negative sides.

In Comparing existing systems, we discussed the articles and their differences from each other and our proposed system.

Literature Review on technologies used we discussed the technologies that are used to create this project and how they are.

CHAPTER 3

SYSTEM DEVELOPMENT METHODOLOGY

3.1 Introduction

In this chapter methodology type of the approach to the system development will be discussed and how the system will be developed phase by phase and how it will be implemented, so that the project can be managed well and efficiently. In each project creation there must be a methodology type chosen that works best for the project in hand, each methodology type has their strengths and weaknesses. In the phases of the chosen methodology, the phases of the methodology type will be discussed with the implementation of this project.

In 3.4 the technologies or tools used to develop the system, description of the tools and technologies that are used to implement this project is going to be discussed and to describe what are the technologies and tools are used for and what we use. In 3.5 system requirements is going to be discussed the Hardware and the Software requirement for the user to run and to use the website that is going to be implemented, and describes what is used for development and running of the system. Finally, the chapter summary is going to be the summary of this chapter (Methodology).

3.2 Methodology Choice and Justification

For this project Agile methodology type is going to be chosen, because this project is mainly made for tourists' attractions that visit a city and based on their requirements the system is going to be made and after that if you get any feedbacks, you can update the system to a new one.

Agile is a project management and software development style that allows teams to offer value to clients more quickly through iterative development. The agile technique is the polar opposite of the waterfall methodology. Instead of treating requirements, design, and testing as separate activities, an agile approach views them as ongoing processes involving developers, management, and customers. Agile techniques are product development approaches that adhere to the Agile Manifesto's values and principles for software development. Agile techniques strive to create the best possible product by developing small cross-functional self-organizing teams that supply little pieces of functionality on a regular basis, enabling for frequent user feedback and course correction as needed. The main advantage of agile software development is the ability to release software in iterations. Iterative releases boost productivity by allowing teams to identify and correct faults early in the development process, as well as align expectations. With regular incremental upgrades, they also enable users to reap the benefits of software sooner. (Synopsis, 2021).

3.3 Phases of the Chosen Methodology

The Key agile software development lifecycle phases are six phases for the chosen methodology – Agile development process:

1. Phase 1: Requirements

Stakeholders will gather requirements and evaluate the entire project to calculate the deal of time and energy required to finish the development process. Simultaneously, the owner identifies the risks and ranks the various functions in order of significance to the System. (Relevant, 2021)

For the proposed project, requirements have been gathered in Chapter 2 – 2.2 Inter-organization Case Study, and it has been discussed that the tourists are not satisfied with the current system that exists and the proposed system must contain the tourists' requests for such system that customer satisfaction is the top priority.

2. Phase 2: Design

The software developer meets with the software development team to determine the order of introducing features and to define the project's necessary tools. At the same time, prototypes for the planned User Interface can be developed. (Relevant, 2021)

For the proposed system, a user interface is going to be made with a prototype so that the developer can decide easily and chooses the best UI possible for such project, and this system mostly interacts with customers, so customers satisfaction is the priority, an easy-to-use or interact with interface must be made so that everyone understands and gets satisfied by the work also foreigners can understand.

3. Phase 3: Development and Coding

The product will be released in stages, with each sprint working to improve on the previous iteration. Many adjustments are planned to be made to the first edition in order to improve functionality and add new features. Every cycle needs testing, as does the ultimate product. (Relevant, 2021).

For the proposed system, in this phase which is development and coding the coding part of the project will be written and they will be implemented.

4. Phase 4: Integration and Testing

When the product is made accessible to the public, the team must undergo a number of testing to make sure that it is completely functional. The developers will repair any possible defects or errors as soon as they are detected. At this time, they also received user feedback. (Relevant, 2021).

For the proposed system, in this phase the system will be released to the users of the system for use and it will be tested before to see if it has any flaws and it’s fully working, also when the system is released, feedbacks will be gathered that are from the users.

5. Phase 5: Implementation and Development

Customers may now access the software because it has been implemented. As a result of this action, it is currently in the maintenance phase. Throughout this phase, the software developer offers ongoing assistance to ensure that the system remains operational and that any new issues are rectified. Additional iterations to update a current product or add new features are possible at any moment. (Relevant, 2021).

For the proposed system, this phase is where the system is fully developed and ready for launch, the system will be launched and based on the feedbacks that the developer gets, they update the system based on the requirements of the users, because as we said the customers satisfaction is the top priority in this project. And as moving on with the system you update it with any changes that you make in the future if any errors are faced, the developer must fix it and make it maintained.

6. Phase 6: Review

At this time, the Agile development cycle comes to an end. After accomplishing all previous rounds of production, the development team displays the owner the output accomplished in satisfying the objectives. The Agile software development phases are then restarted, whether with a new iteration or by proceeding to the next step and scaling up Agile. (Relevant, 2021).

For the proposed system, the end of the agile process is in this phase, in the making of this project there aren’t any team members, this project or system is made alone so what remains is only the software developer himself to do them by himself.

3.4 Technology Used Description

In this section we will discuss the technologies and the tools that are used for implementing this proposed project and we will discuss their benefits to the project.

3.4.1 **Visual studio**

Microsoft Visual Studio is Microsoft's integrated development environment (IDE), and it is used to create a variety of software, including software programs, sites, web applications, online services, and smartphone apps. Visual studio contains complementary tools, compilers, and other capabilities to help with the software development process. It supports different programming languages for coding (Incredibuild, 2021), Visual studio is used for this project to implement all the coding in the IDE.

3.4.2 **HTML**

HTML the short for Hypertext markup language is a programming language used to develop websites. It specifies the structure of a website page and instructs the browser how to display the data on the website. It is used to create the website for this work and defines the structure of the website. (MDN, n.d) Most of the coding of the project is written in HTML.

3.4.3 **CSS**

CSS stands for Cascading Style Sheets, which is used for designing the website, styling HTML contents of a website, describing how the HTML contents should be shown on the website, and coloring website contents. (Devmountain, n.d) CSS is used for styling in this proposed project.

3.4.4 **PHP**

PHP stands for Hypertext Preprocessor it scripts are executed on the server; it is used in this project so that it can connect to the database. It is used for server-side scripting. (freeCodeCamp, 2021)

3.4.5 **MYSQL**

MySql is an open-source relational database management system, it is used so that we can connect to the database via MySql save the data of the contents of the system into the database. And MySql is an easy tool to use that's why it is used in this project.

A database is a place in which data is stored and organized, it is simply a structured collection of data. MySql implements a client-server model it uses a domain-specific language – Structured Query Language the Client requests the server and the server responds to the client from the database. (Hostinger Tutorials, 2021).

3.5 System Requirement Analysis

This project's system requirements include both hardware and software. Any physical object, such as a gadget or computer equipment, that is used to perform a number of functions such as input, output, calculating, processing, and storage, is referred to as hardware. Software, on the other hand, is a set of instructions that teaches a computer on how to accomplish certain tasks, such as developing code and building a system.

3.5.1 **Hardware justification**

Hardware Requirements is critical in project development to guarantee that the product or the project can run at its best in any given user context. The following table shows the Hardware Requirements:

Hardware	Minimum Specification
Processor	Apple A8, intel(R), Core (TM), i5-8350U @ 1.70GHz, 1.90 GHz
Random Access Memory	4 GB
Hard Drive Capacity	256 GB
Operating System Architecture	64-bit
Input Device	Touch Screen, Mouse and Keyboard
Output Device	iPhone Screen, Monitor and other mobile screens

Table 3.1 – Description of the Hardware system requirements.

3.5.2 **Software justification**

Software requirements are the minimum requirements needed for a platform to run the proposed project, the requirements must be meet for the product. the table below is the minimum specifications of the proposed project:

Software	Minimum Specification
Operating System	IOS 12, Windows 10
Integrated Development Environment	Microsoft Visual Studio
Database Management System	MySql
Web Browser	Safari, Google Chrome, Brave
Visual Modelling & Design Tool	Enterprise Architect, LucidChart
High Fidelity Prototype	Adobe XD

Table 3.2 – Description of the Software system requirements.

3.5.3 **Project planning**

For the project planning part of this project Gantt chart will be used for scheduling the project's timetable planning. The Gantt chart is a popular graphical representation of a project timetable. It's a form of bar chart that displays the start and end dates of project aspects. In project management, the Gantt chart is the most commonly used chart. Such charts are important for project planning and specifying the order of activities that must be completed. The chart is often shown as a horizontal bar chart.

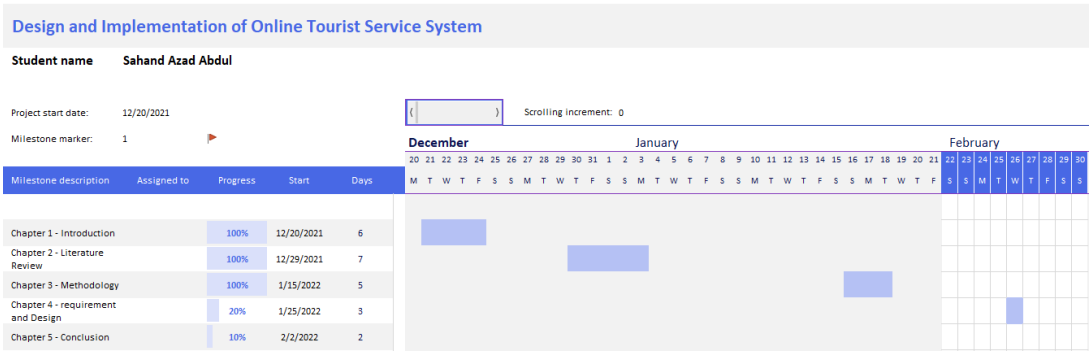


Figure 3.1 – Shows the Gantt chart for the project

3.6 Chapter Summary

Finally, this chapter discusses how to apply the Agile development process technique that was chosen for the project, and after that each phase of the development process is defined and justified in points with the implementation of the phases in this project. Each technology or tools that are used in the project are justified and defined what they are and why they are used in this project. In the system requirements software and hardware requirements are written and the proposed system which is a website can be accessed via Mobile phones, Tablets or Computers.

CHAPTER 4

REQUIREMENT ANALYSIS AND DESIGN

4.1 Introduction

In this chapter which is chapter 4 – Requirement Analysis and Design the Requirement Analysis is going to be discussed which contains the Use Case, Sequence Diagrams and Activity Diagram. After that The Design part is going to be discussed which shows the Class diagram and overall system architecture. Then, the Database Design for the ERD, Normalized tables and Finally, Interface design of the website and its interactions is going to be included.

4.2 Requirement Analysis

Requirement analysis describes the user functionalities and the user's interaction with the system. The overall system includes Four (4) users including Customer, Restaurant/Café cashier, Hotel receptionist and Admin. The users and their functionalities will be described below. Figure 4.1 below shows the User Hierarchy in the system.

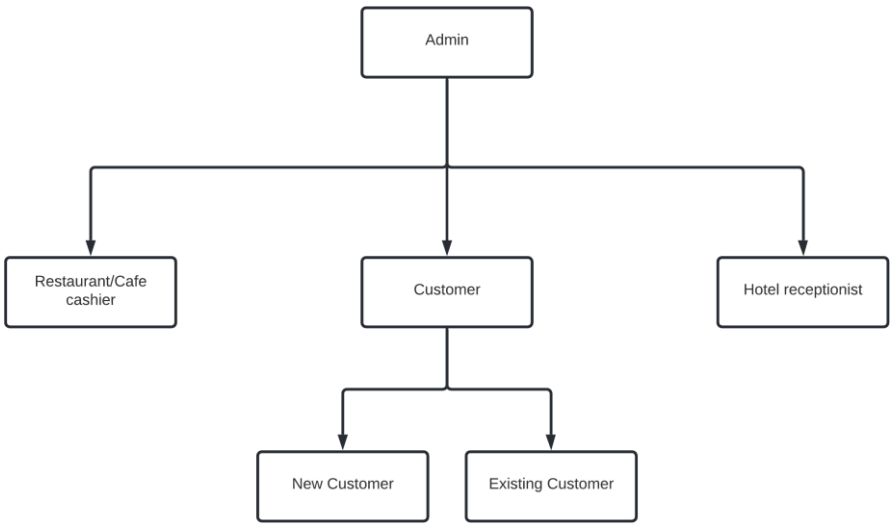


Figure 4.1 – User Hierarchy of Online Tourist Service System (Suli Guide)

No.	Actors	Description
1	Admin	A user who is responsible for managing the users in the website by managing means editing a user or adding a new user to the system. Updating places that are in the website and by updating means Adding a new place or editing an existing place in the website. And having the ability to read the feedback of the users that give to the website.
2	Restaurant/Café Cashier	A user who is either a Restaurant or a Café cashier and works as a cashier in a restaurant or a café, is responsible for reserving seats for customers. And can also give feedback to the system.
3	Hotel Receptionist	A user who is a Hotel Receptionist and works in a Hotel is responsible for booking rooms for customers. And can also give feedback to the website.
4	Customer	A user who can either login or register to the website (if new) and can look up at places that are in the website, search for places, reserve seats in café or restaurants, book room in hotel, and give feedback to the website.

Table 4.1 – Actors and Description

4.2.1 **Use case diagram**

Use Case Diagrams are very helpful for making a new software, a website or a new application. It helps someone understand how the system works and it clarifies its users and their functions that interact with the system. A use case diagram shows the system itself by a huge rectangle shape, it shows the actors that interact with the system by stick figures, it shows the functionalities of the system that an actor interacts with, with a circle shape inside the system. And finally, it shows their relationships. Figure 4.2 shows the UML Use Case Diagram for the proposed website. While Figure 4.3 shows the whole system module for the website.

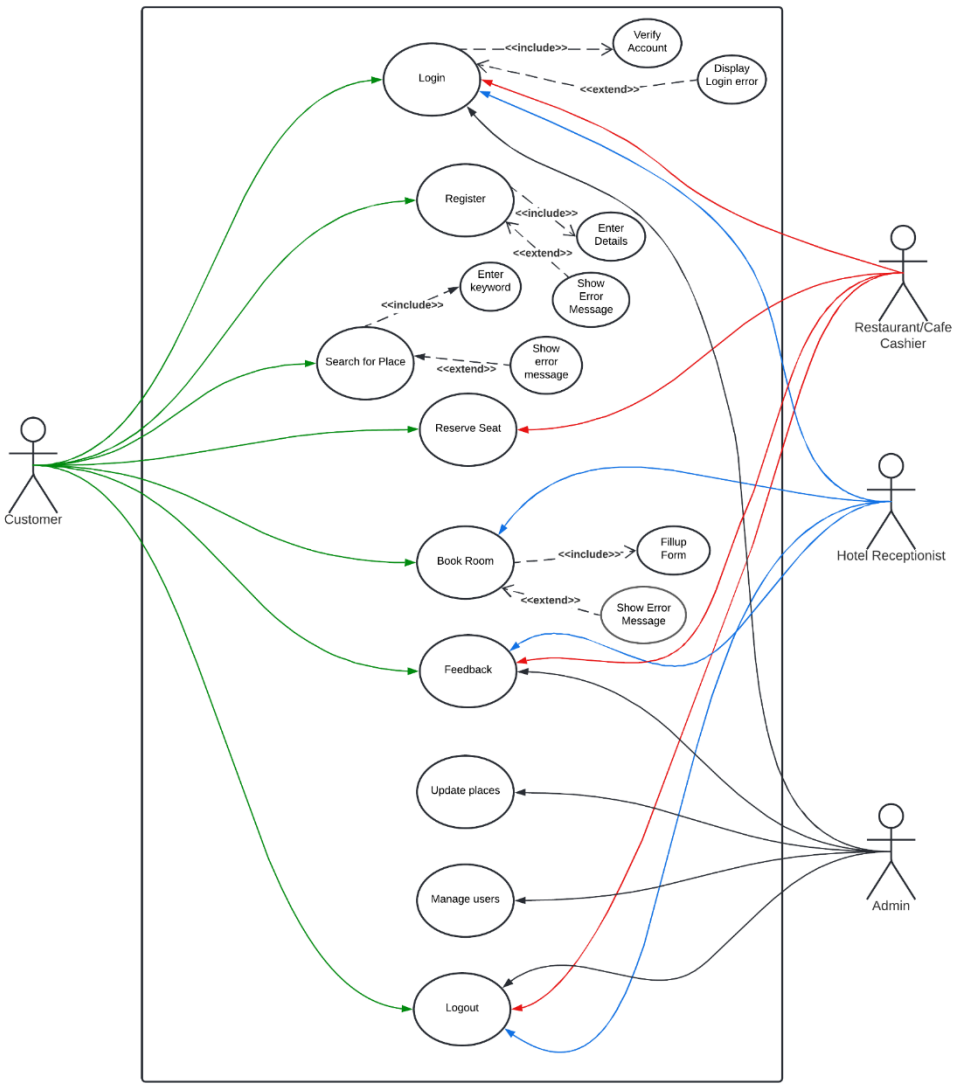


Figure 4.2 – Use Case Diagram for Online Tourist Service System (Suli Guide)

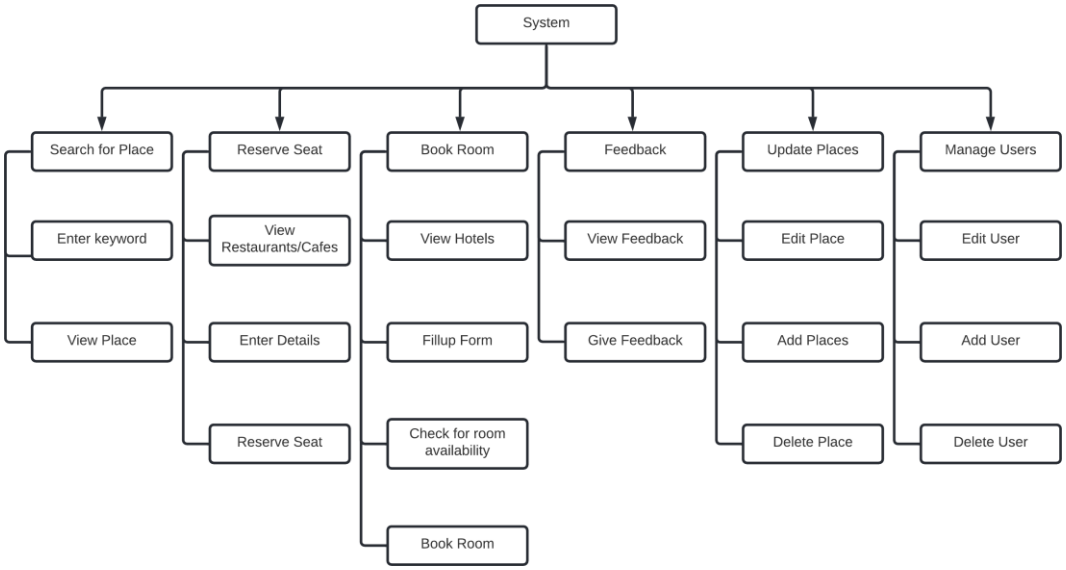


Figure 4.3 – System Module for Online Tourist Service System (Suli Guide)

The functionality of the system based on the use case in Figure 4.2 is summarized and discussed in Table 4.2 below

No.	Use Case	Description
1	Login	Login use case is for logging into your own account. The details entered will be verified if username and password are right then the user will be directed into the website. If not, then an error message will be displayed.
2	Register	Register use case is for registering into the website if a customer doesn't have an account for the website, then they can create an account for themselves. And the account will be saved into the database.
3	Search for Place	Search for Place use case is when a customer searches for a place among the listed places in the website and wants to find a specific place by a keyword. The customer has to enter a valid keyword by the name of the place in order to view the place searched for.
4	Reserve Seat	Reserve Seat use case is for reserving seats in a Restaurant or a Café, the customer enters the reservation page of the restaurant or café and requests for seat reservation. The

		Cashier checks for seat availability in the place and if seats are available then reserves seat for the customer. If not then informs the customer that there aren't seats available for reservation.
5	Book Room	Book Room use case is for room reservations in a hotel. A customer enters the booking page of the hotel then fills up a form and submits the form for booking, and the hotel receptionist checks for room availability and the form validity. If the form is valid and a room is available then books the room for the customer. If not then informs the customer.
6	Feedback	Feedback use case is for giving feedback or viewing feedbacks that are already given for the website. A Customer, Restaurant/Café cashier and Hotel receptionist can give feedbacks to the website. And admin can view the given feedbacks.
7	Update places	Update places use case is for the admin updating the places that are already entered in the website. The admin can add ne place into the website through this functionality, can edit already entered places in the website, and can delete places that are in the website.
8	Manage users	Manage users use case is for admin, the admin can edit a user that is already a user in the website, can add new users to the website, and can also delete users that already have accounts in the website.
9	Logout	Logout use case is or logging out in the system.

Table 4.2 - Use Case summarization and description

4.2.2 **Sequence diagram**

Sequence diagrams are a type of UML Diagrams that show how the objects in the system or classes within code interact with each other, the diagrams show

interaction and the order they take place, they show the sequence of events. In the sequence diagram Actors are represented with stick figures, objects are represented by rectangles, the objects are placed in sequential order from left to right. Lifelines are the vertical dashed lines that shows the existence of an object or actor over time, moving down the lifeline means that more time is passing. The messages between the objects and actors are represented by lines, the solid lines represent messages and dashed lines are return messages. Activation boxes show when and how long an object is performing a process, they are represented by a rectangle box.

4.2.2.1 **login**

This sequence diagram is for logging into the website, the user enters login page, the website requests login page from server ad server responds to the website by displaying the website, the user provides information and clicks on login button, the website sends information to database and the database via the server verifies the account via the server and the database it recognizes the user by its credentials entered. And if the credentials are right the user will be directed into the website. If not, then an error message will be shown. Figure 4.4 shows Sequence Diagram for Login Use Case.

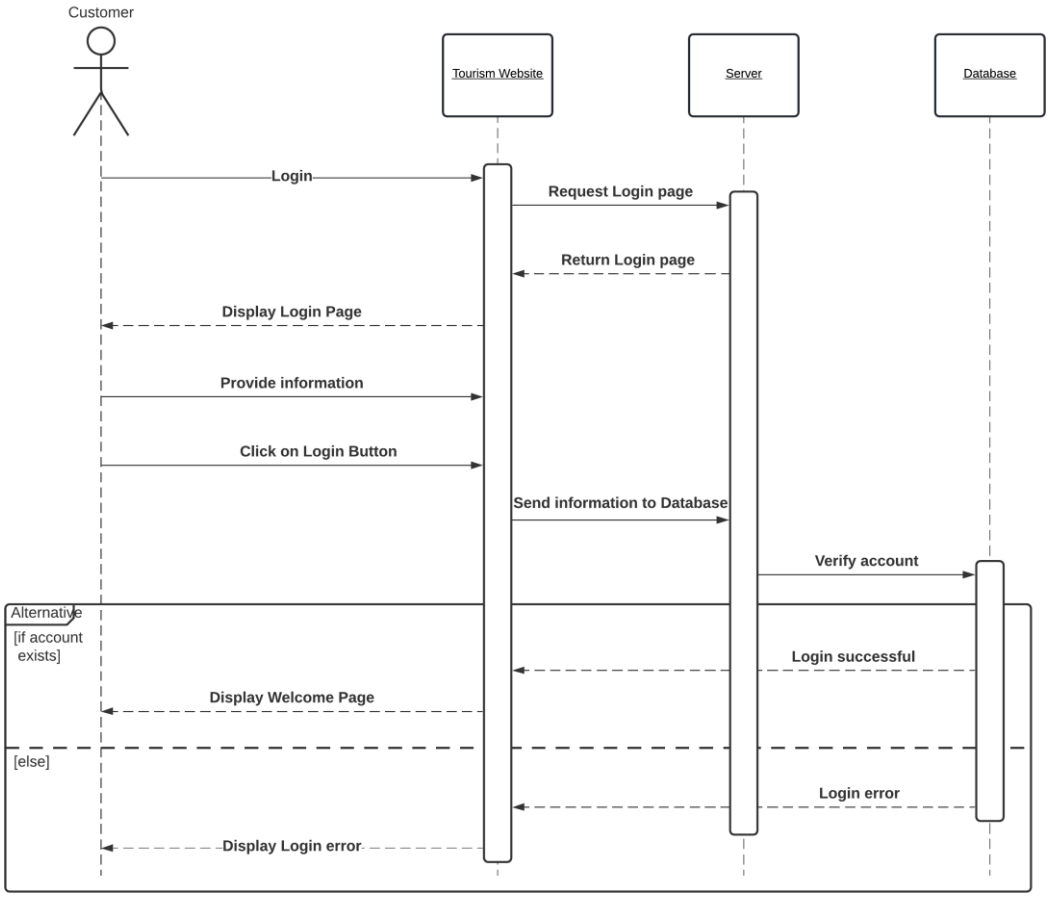


Figure 4.4 – Login Sequence Diagram for Login Use Case

4.2.2.2 **Register**

Register Sequence diagram is for Customers that don't have an account already, they can create a new account for themselves. The customer enters Register page then the website requests for register page and the server responds to the website by returning register page. The customer enters details and clicks on register button, the website sends information to the database via the server and the database verifies account details. If register successful then display login page. If not then show error message to the customer. Figure 4.5 shows the Sequence Diagram for Register.

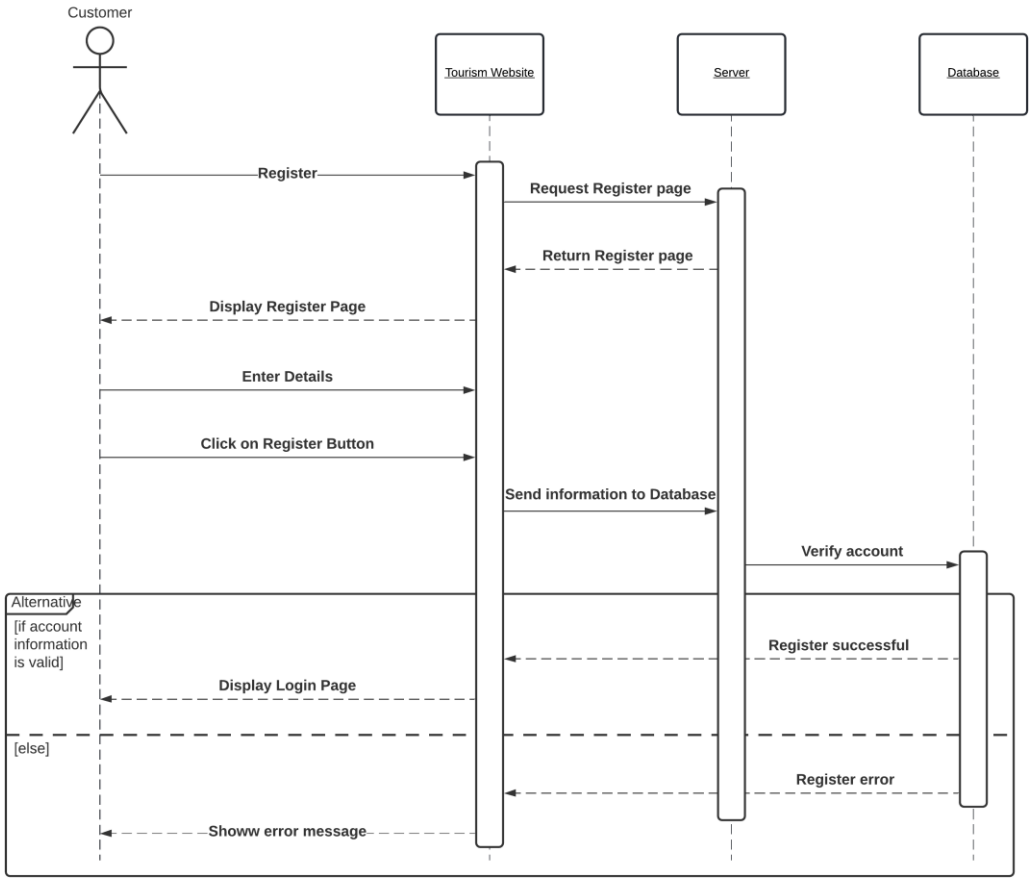


Figure 4.5 – Register Sequence Diagram for Register Use Case

4.2.2.3 **Search for place**

Search for Place Sequence diagram is for Customers while searching for a place in the website the place can be Attraction places, Cafés, Restaurants, Parks etc. The customer opens search page the tourism website requests Search page from server and server returns Search page then the website displays search page to the customer. The Customer enters keyword (Name of the place) and clicks on search button. Then the keyword is sent to the database for check via the server and if the keyword entered exists in the website, then the result will be displayed to the customer. If not then Search error will be displayed. Figure 4.6 shows the Sequence diagram for Search for Place.

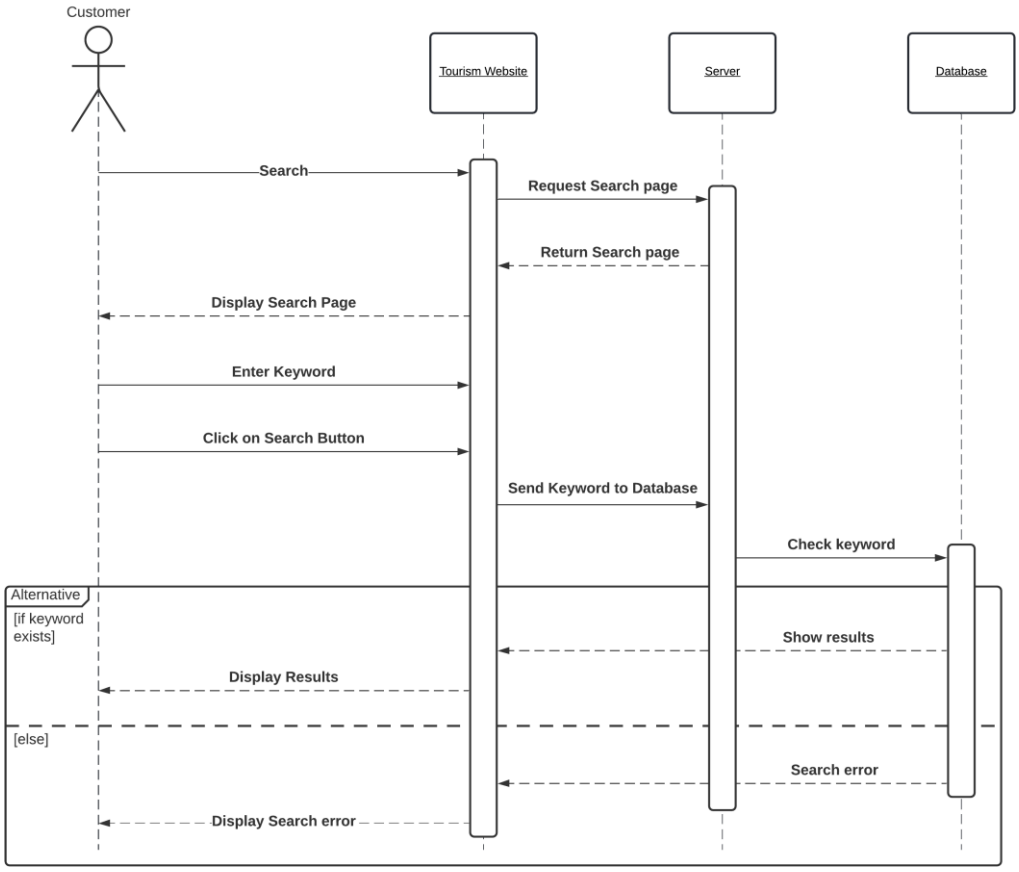


Figure 4.6 – Search for Place Sequence Diagram for Search for Place Use Case

4.2.2.4 **Reserve seat**

Reserve Seat sequence diagram is for Reserve Seat Use Case, the Customer chooses Restaurant/Café Page then the page is returned via the server by the request of the website. The page will be displayed to the Customer. The Customer chooses a restaurant/café, enters details and clicks on Reservation button, and the website sends the details to the Database via the server. The cashier checks for Seat availability and if seats are available then the cashier reserves seat for the customer then displays a message to the customer. If seat is not available then the cashier informs the Customer by displaying a message to the customer that reservation is not available.

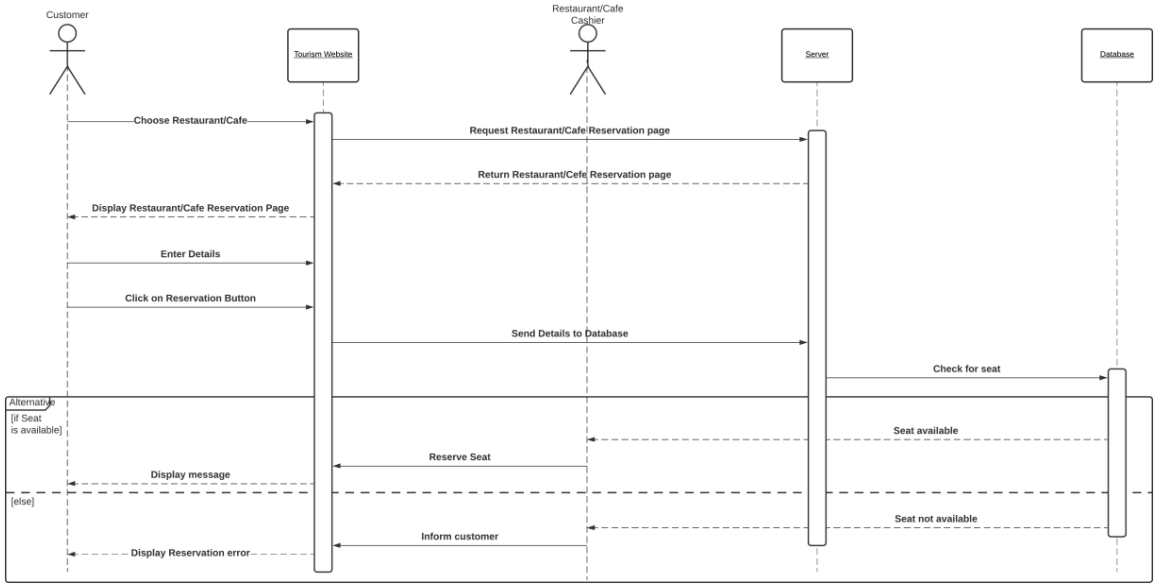


Figure 4.7 – Reserve Seat sequence diagram for Reserve Seat Use Case

4.2.2.5 **Book room**

Book Room sequence diagram is for Customers booking rooms in hotels. The customer chooses Hotels page, the website ill request for Hotels page from the server, then the server will return Hotels page and the website will display Hotels page to the Customer. The customer can choose a hotel and then in the hotel page the customer fills up a form for Booking, then clicks on Reservation button. The Hotel receptionist will check for room availability and sends the Details to the Database. If room is

available then the Hotel receptionist will Book a room for the Customer and display a message. But if room is not available, then the Hotel receptionist informs the Customer by displaying a message. Figure 4.8 shows Book Room sequence diagram for Book Room Use Case.

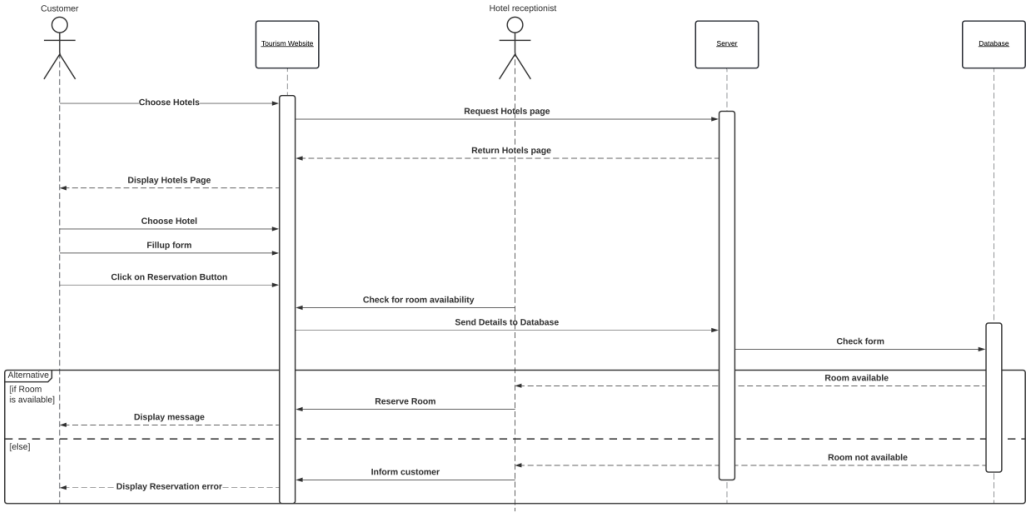


Figure 4.8 – Book Room Sequence Diagram for Book Room Use Case

4.2.2.6 **feedback**

Feedback sequence diagram is for Customers, Restaurant/café Cashiers and Hotel Receptionists to give feedback to the website, and Admin can via the feedbacks that the users give. The user chooses Feedback and the website requests Feedback Page, the server returns Feedback page, the website displays the Feedback Page to the user. The user writes feedback and clicks on submit button. The feedback is sent to the database by the server and then it is returned to the website and the Admin can check the Feedbacks from the Website. Figure 4.9 shows the Feedback sequence diagram.

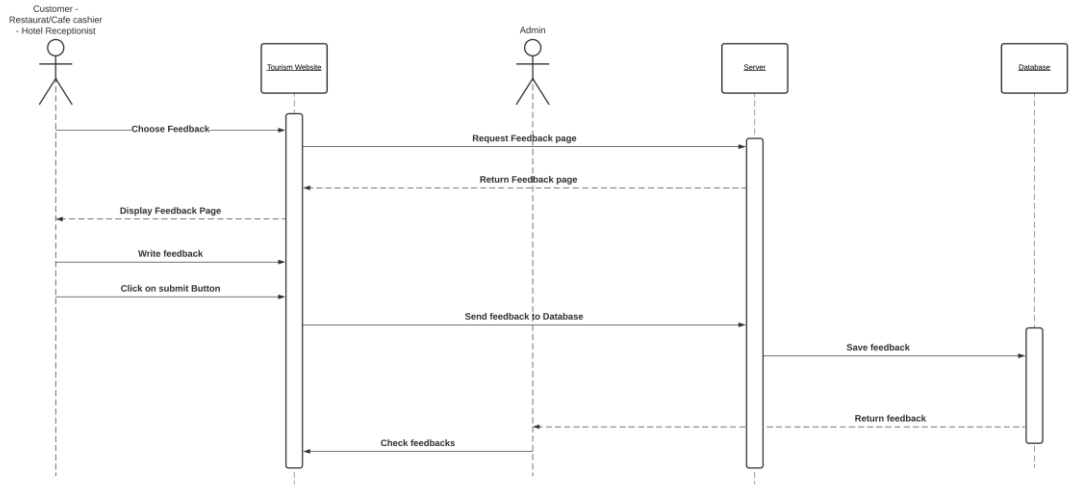


Figure 4.9 – Feedback Sequence Diagram for Feedback Use Case

4.2.2.7 **update places**

Update places sequence diagram is for Admin updating the places. The admin can enter new place into the website, edit an existing place or delete. The admin chooses Update places, the website requests Update Places page, the server returns the page and displays it to the admin. Then the admin can either edit an existing place that is already inserted in the website, the admin can also delete the existing place, or the admin chooses to add a new place into the website and fills up a form and submit. Then the data is sent to database via the server and the data is saved in the database. Then the data is shown in the website.

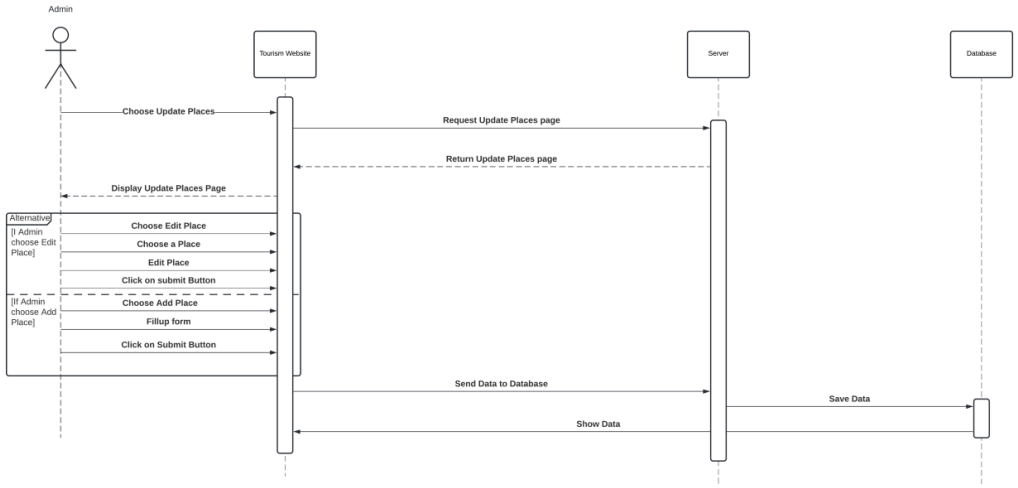


Figure 4.10 – Update Places Sequence Diagram for Update places Use Case

4.2.2.8 **Manage users**

Manage Users sequence diagram is for admin. The admin can manage the users by editing, deleting or adding a new user to the website. The admin chooses Manage Users, the website requests for Manage Users Page then the server returns Manage Users Page, and the website displays Manage Users Page. Then the admin can choose Edit User through this the admin can choose an existing user to edit it or delete it. Or the admin chooses Add User, through this the admin can add a new user to the website. Then click on submit button. The data is sent to database and saved in it. And the data will be shown finally. Figure 4.11 shows sequence diagram for Manage Users for Admin.

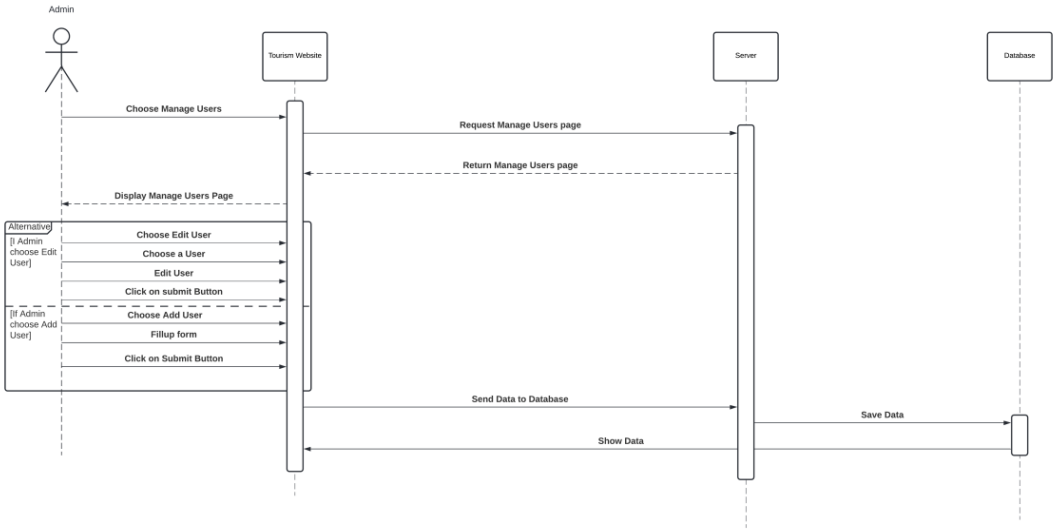


Figure 4.11 – Manage Users Diagram for Manage Users Use Case

4.2.2.9 **Logout**

Logout Sequence Diagram is for Logging out from the system. For all users its in the same order. Figure 4.12 Shows Logout Sequence Diagram.

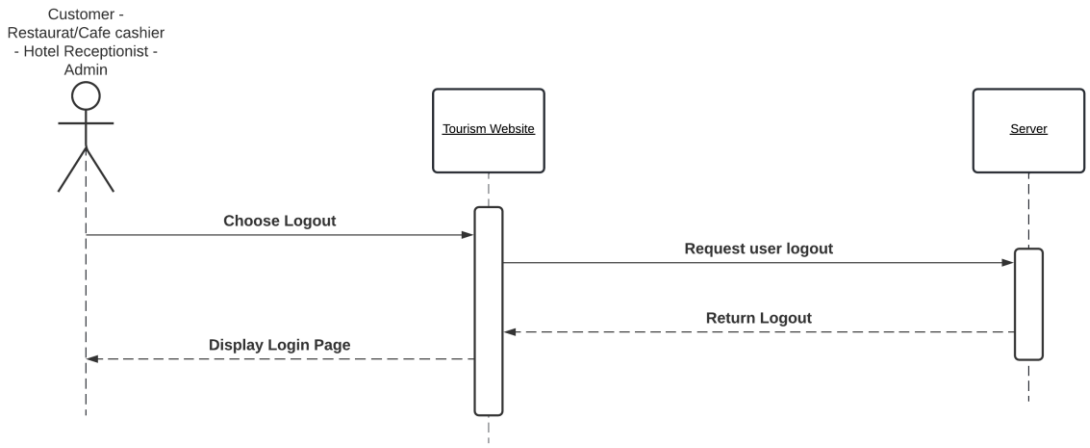


Figure 4.12 – Logout Sequence Diagram for Logout Use Case

4.2.3 **Activity diagram**

The Activity diagram is a flowchart to represent the flow of control among the activities in the system. The flow of operation can be sequential, branched or concurrent. The Starting node is represented with a black filled circle node, the activities symbols are represented with an oval shape and it has a description of the activity that is done. The fork splits single activity flow into two concurrent activities. The join node combines two concurrent activities back into flow. The small filled circle that has outline of border lined circle is the end node.

Figure 4.13 shows an activity diagram of Update Places. This activity involves the Admin to Edit Place, Delete Place or to Add a new place into the system and then clicks on submit then the system saves the new entered data into the database.

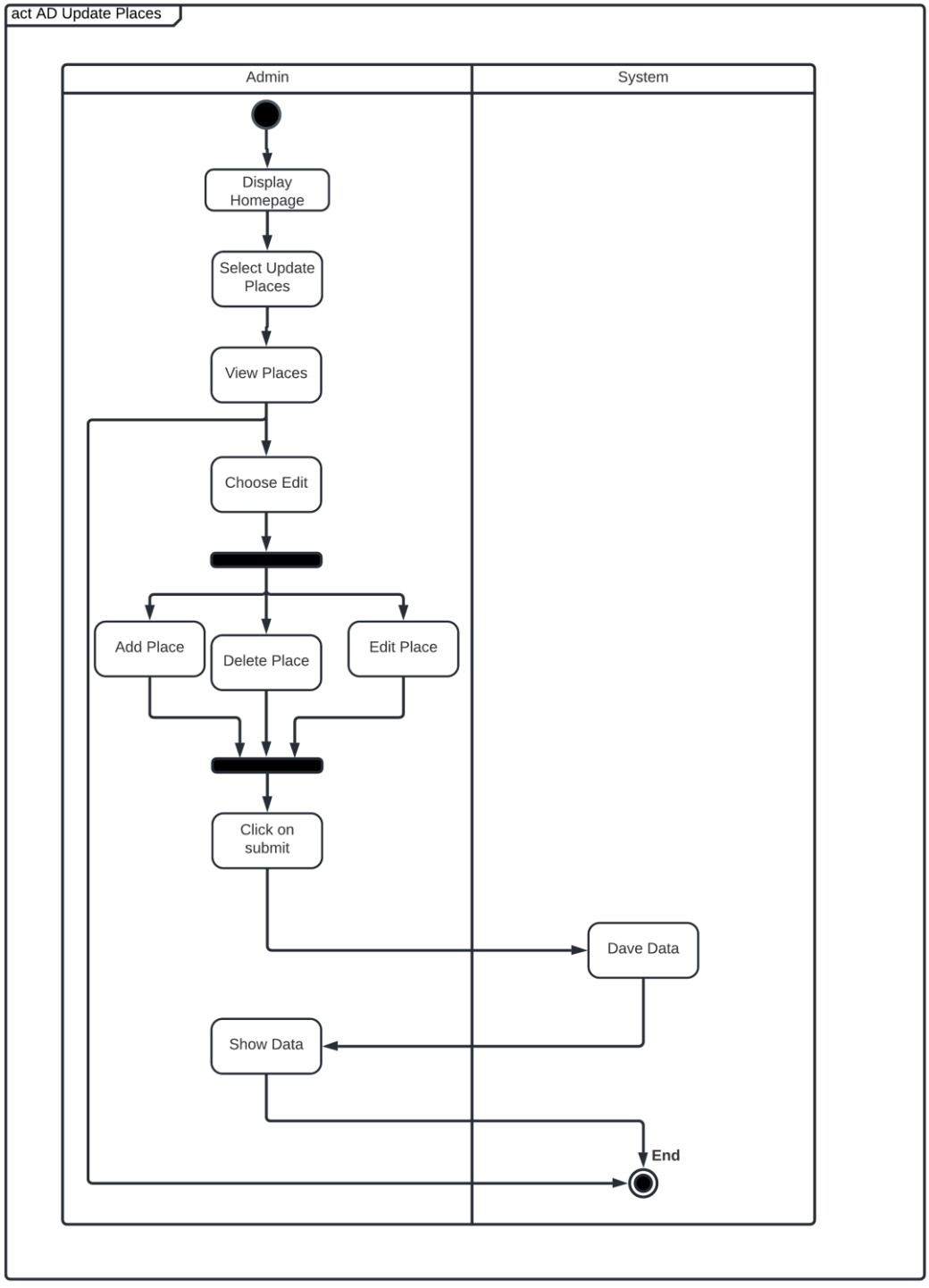


Figure 4.13 - Activity Diagram of Update Places

Figure 4.14 shows an Activity Diagram of Reserve Seat that involves the Customer and the Restaurant/Café Cashier. The Customer chooses a place and enters details for reserving seats in the place. And the cashier either accepts or declines the request.

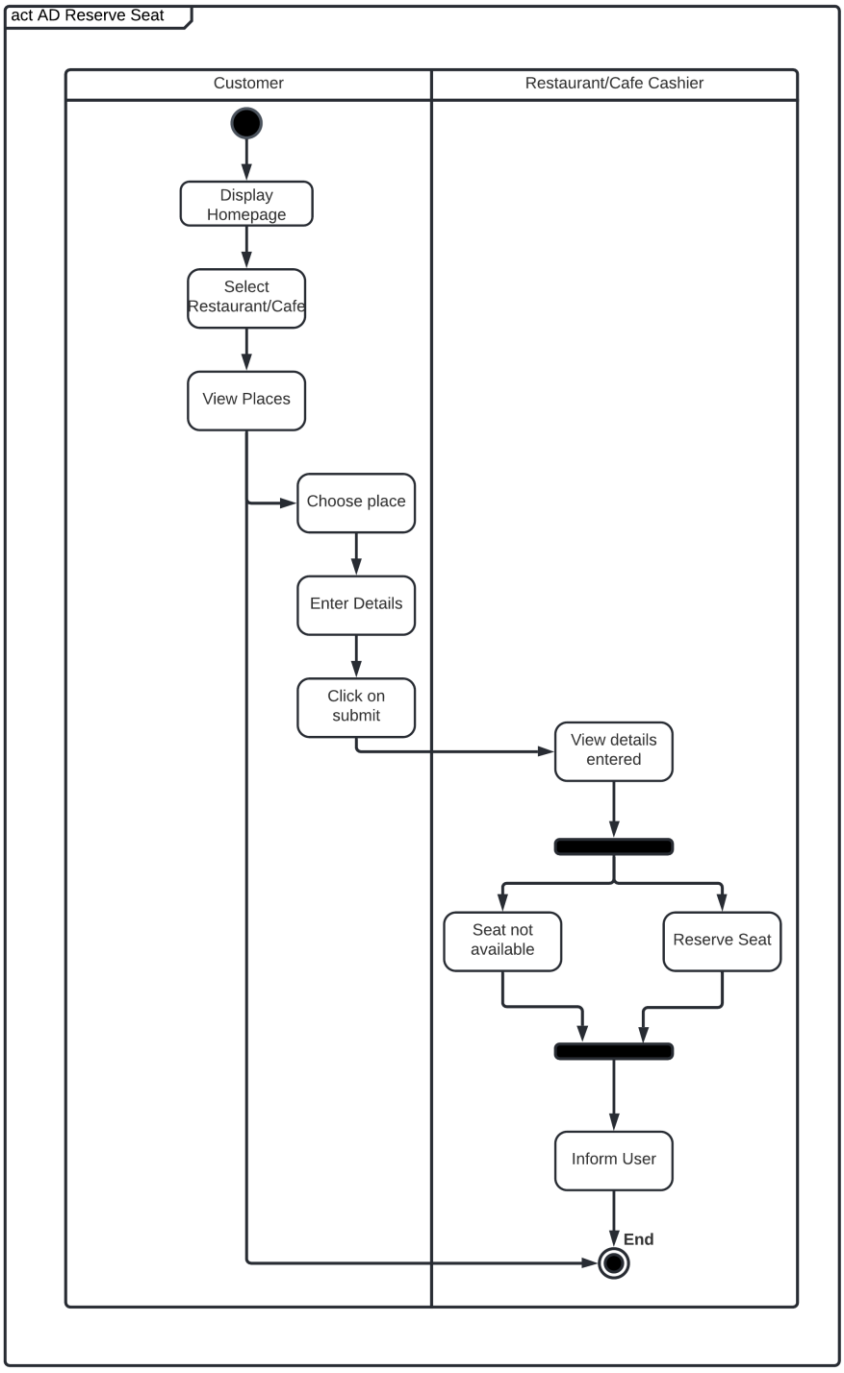


Figure 4.14 - Activity Diagram of Reserve Seat

Figure 4.15 shows the Activity Diagram for Feedback when the Users besides admin give feedbacks to the admin or the website. Then the admin can view the feedbacks given by the users.

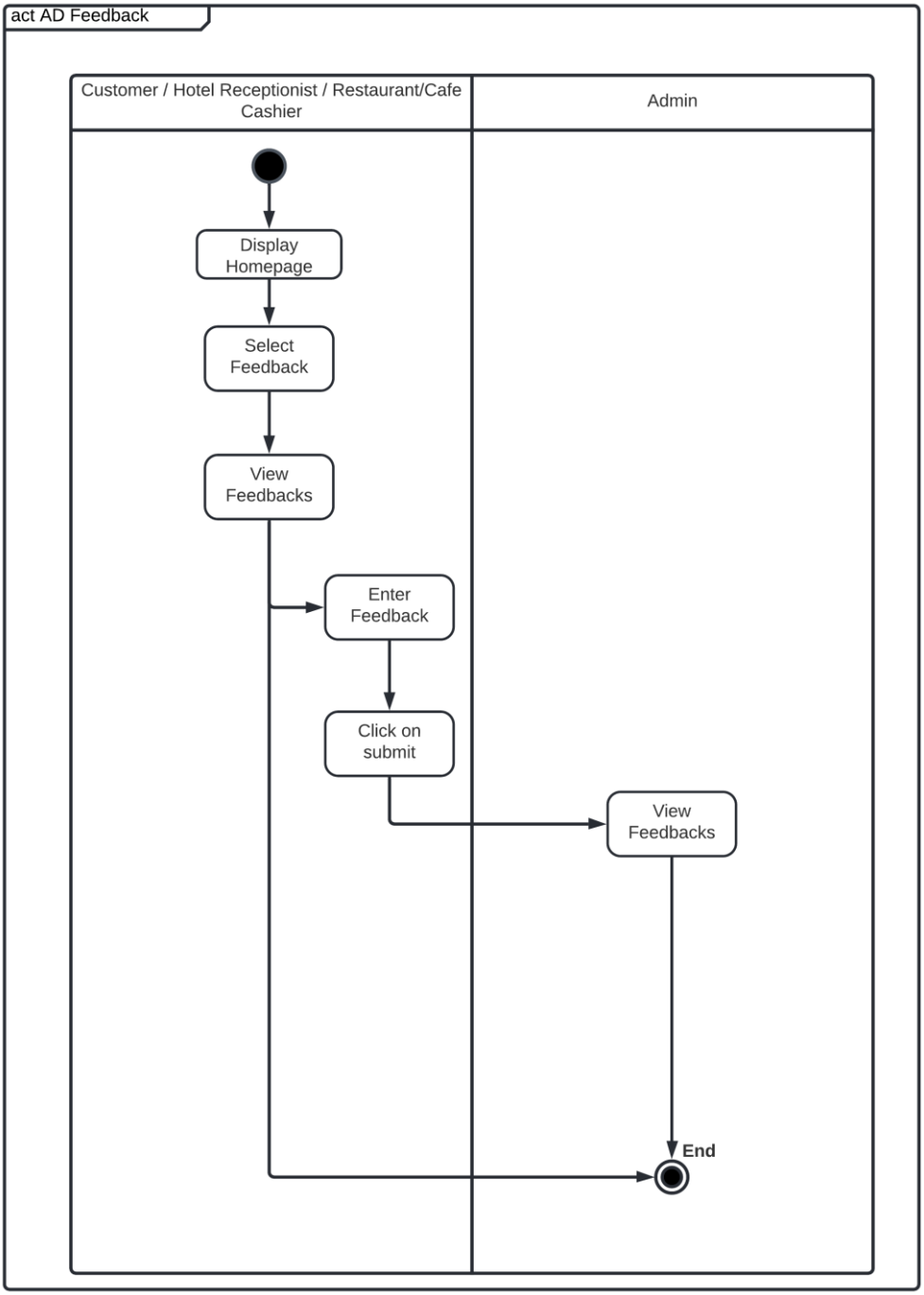


Figure 4.15 - Activity Diagram for Feedback

Figure 4.16 shows the Activity Diagram for Book Room. The customers view the places and they choose the hotel desired, they fill up a form and click on submit. The

hotel receptionist views the form, if a room is available then books a room for the customer, if not then doesn't and Afterall they inform the customer.

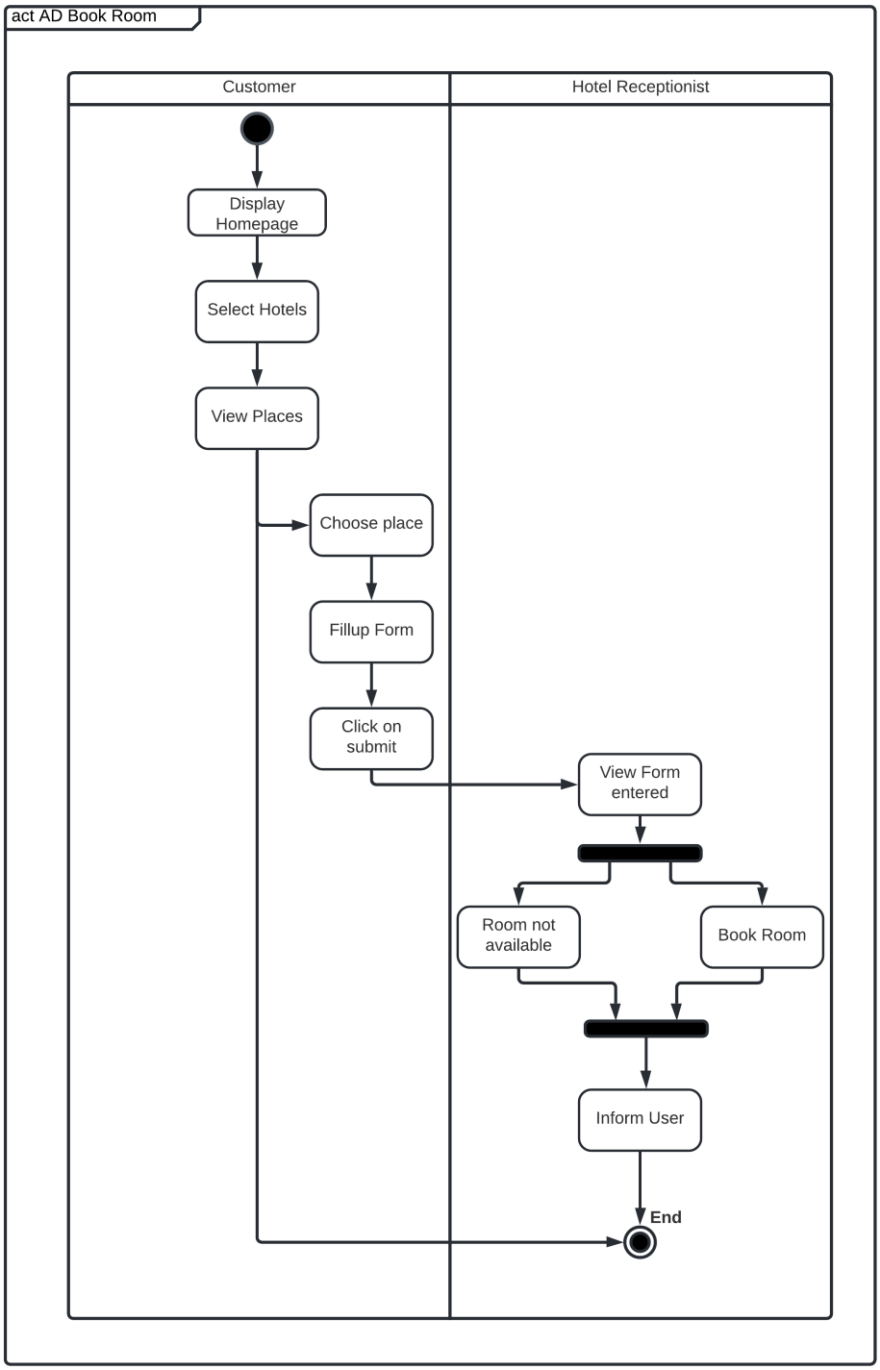


Figure 4.16 - Activity Diagram for Book Room

4.3 Project Design

4.3.1 System architecture

System architecture is an overall overview of the system how the users interact with the system. And how the system interacts with the server and database. From Figure 4.15 we can see that the proposed system (Suli Guide) the users interact directly with the frontend of the website, then the frontend interacts with the server via Network and the Database is connected with the server. The admin can also directly access the database. For the System Architecture of the proposed website Model View Controller (MVC) Architecture is used, Model is the database which contains the data and is responsible for maintaining data, View is the interface that the users interact with, Controller is the server that responds to the requests between the database and the frontend because Controller enables the interconnection between Model and View. Figure 4.17 shows the System architecture for the website, The Model is the Database, View is the Frontend (Suli Guide) and Server is the Controller.

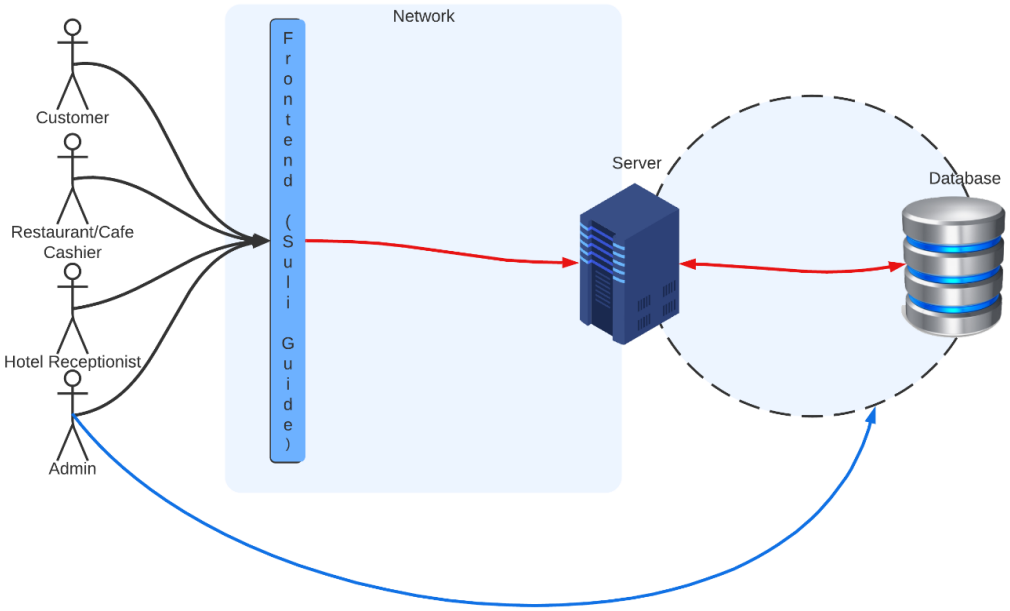


Figure 4.17 – System Architecture for Suli Guide Website

4.3.2 **Class diagram**

Class diagrams are the classes that are within the system and their relationships that connect them together, Class diagrams include the class itself, the attributes and methods, it also contains the relationships that connect them together, its either inheritance, aggregation, composition and many more relations but the main ones are these three. Figure 4.18 is the Class diagram for the proposed project.

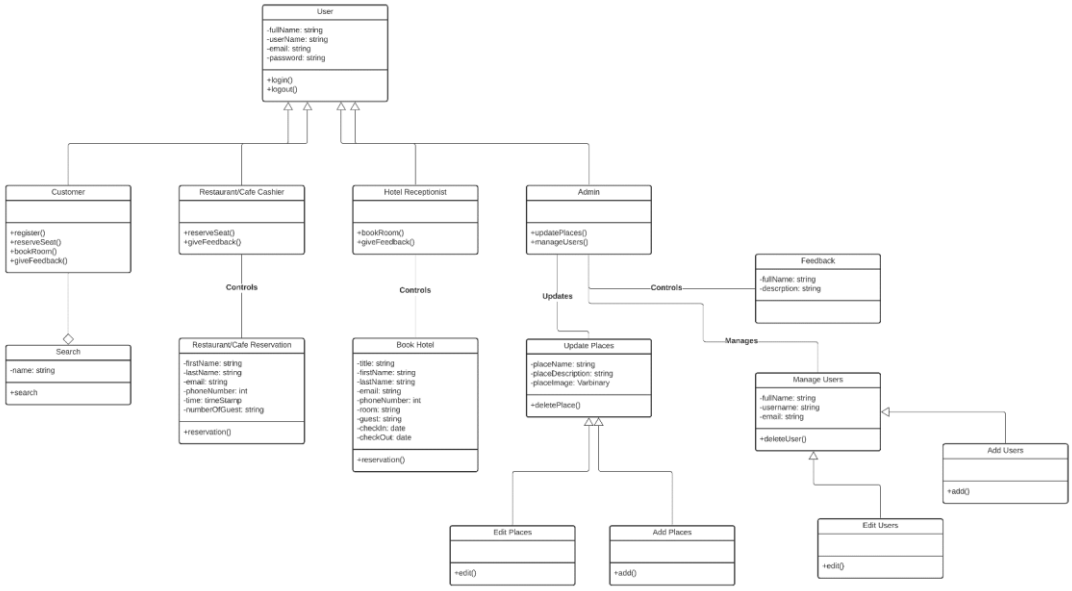


Figure 4.18 – Class Diagram for Suli Guide Website

4.4 **Database Design**

4.4.1 **ERD**

Entity Relationship Diagram is for the starting of your database which you declare the classes with their Keys, its either Primary key which are indicated as (PK),

Foreign Keys (FK), Super Keys (SK) and for the proposed system its ERD is shown in Figure 4.19.

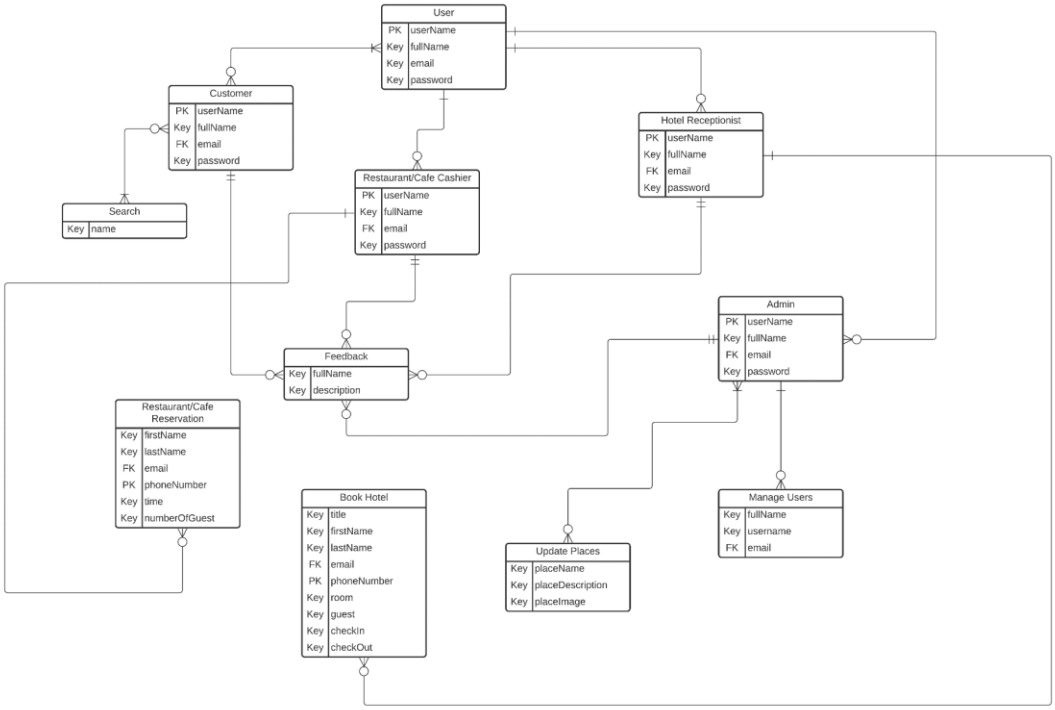


Figure 4.19 – Entity Relationship Diagram for Suli Guide Website

4.5 Interface Design

Interface design plays a very important role in the interaction between humans and the system. The aim of the interface is to illustrate how the system's working. Besides, user-friendly design is essential to ensure that a user can access the system functions and interact more easily and efficiently. Figure 4.17 to Figure 4.39 Show the interface design for the proposed website (Suli Guide).

Figure 4.20 – Welcome page – Login or Register page

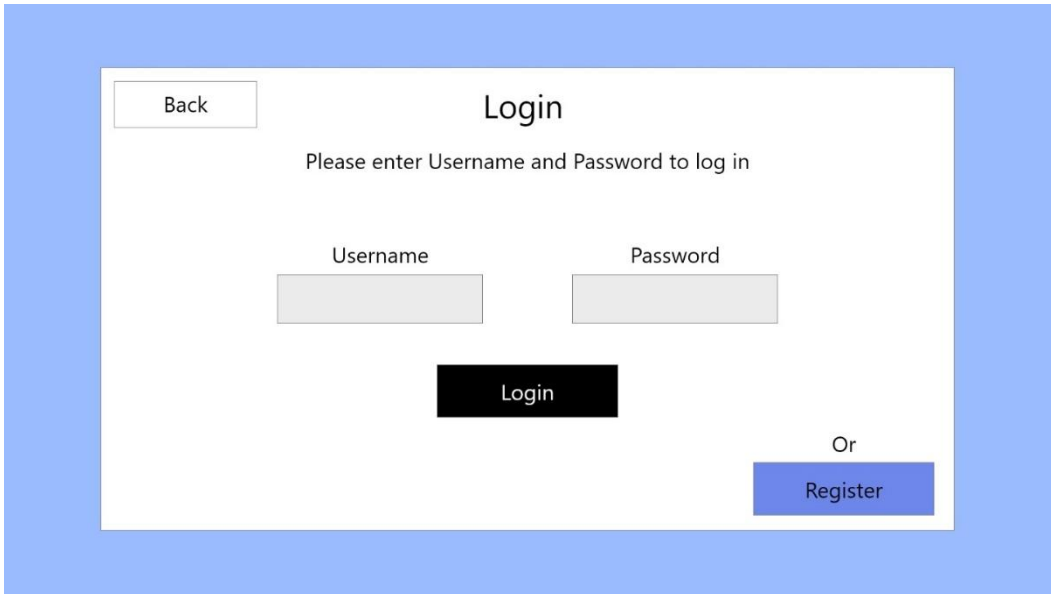


Figure 4.21 – Login Page for all users

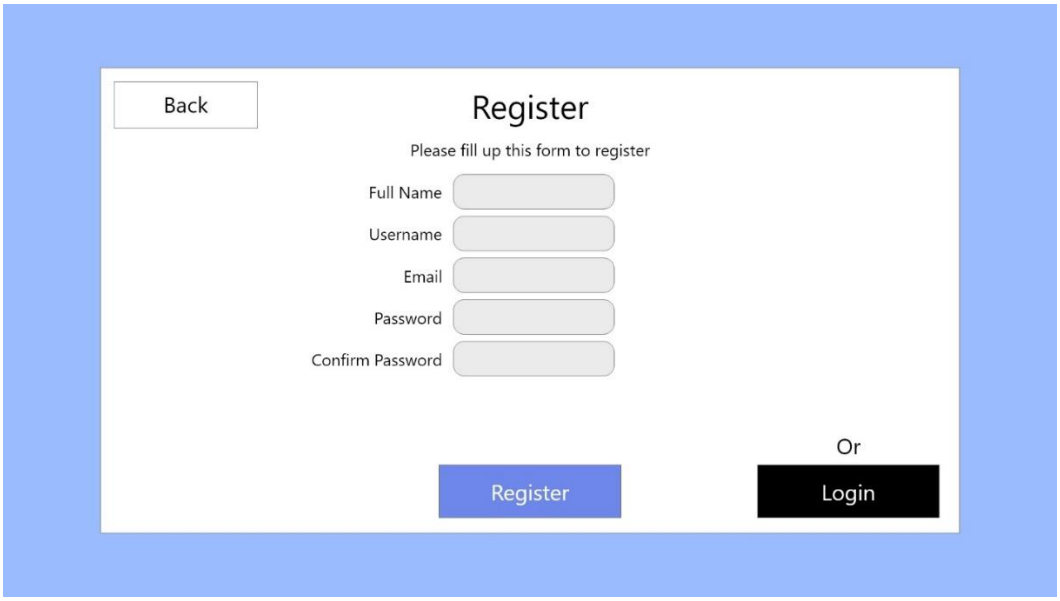


Figure 4.22 – Register Page for Customer

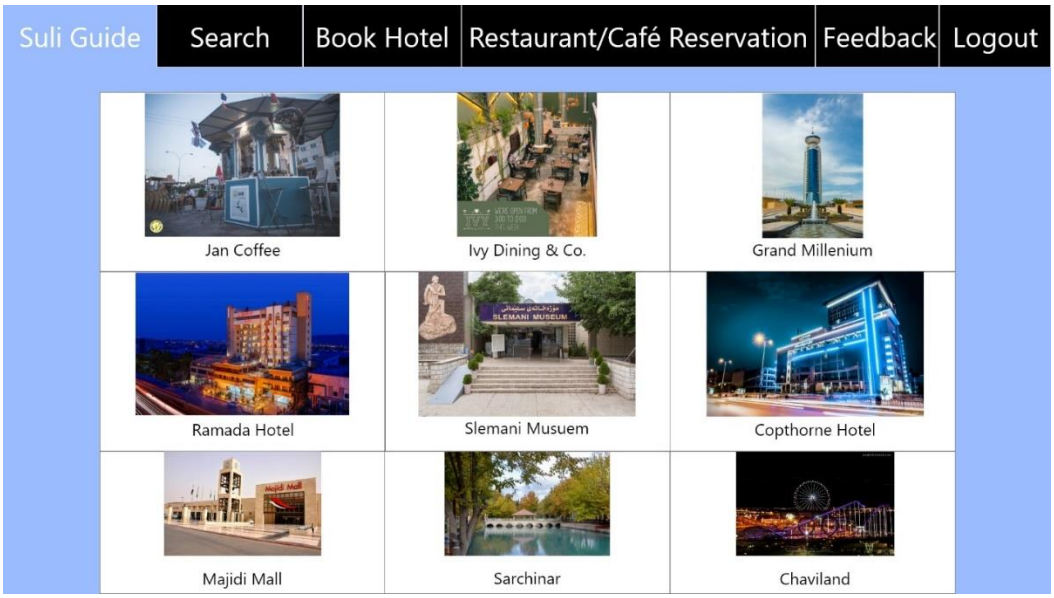


Figure 4.23 – Homepage for Customer

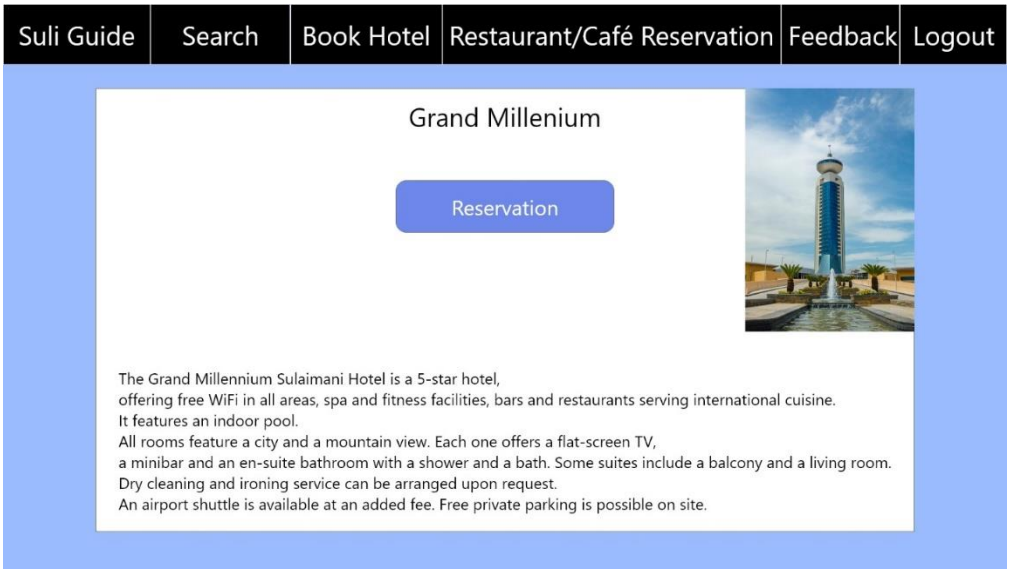


Figure 4.24 – Places Page (The example of a single place is shown) for Customer

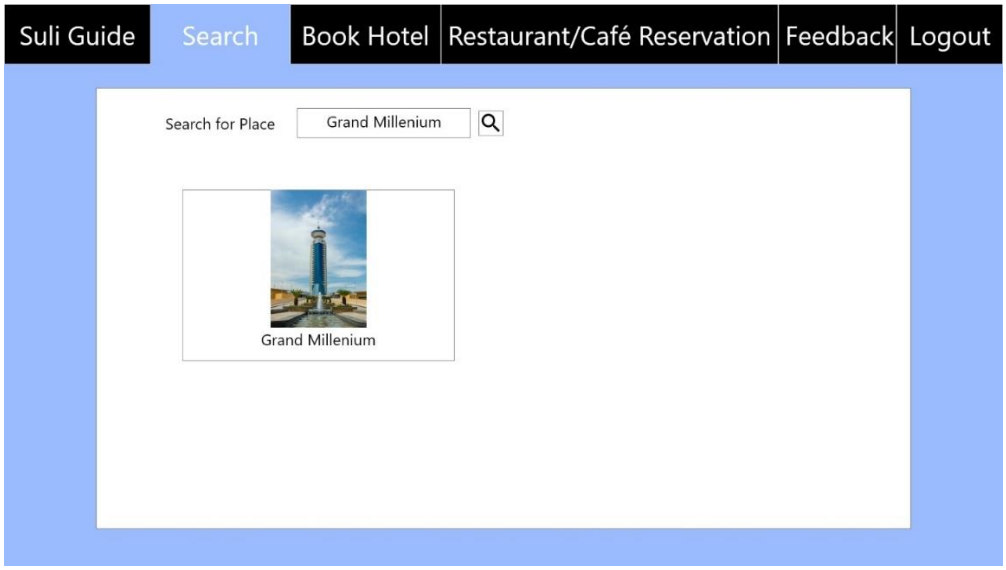


Figure 4.25 – Search for a Place Page for Customer

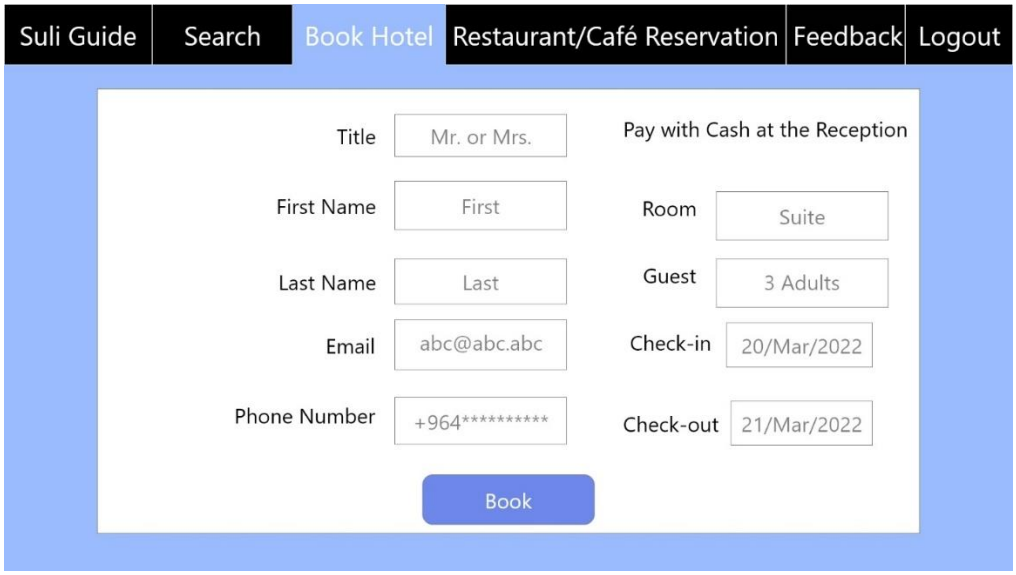


Figure 4.26 – Book Hotel Page for Customer

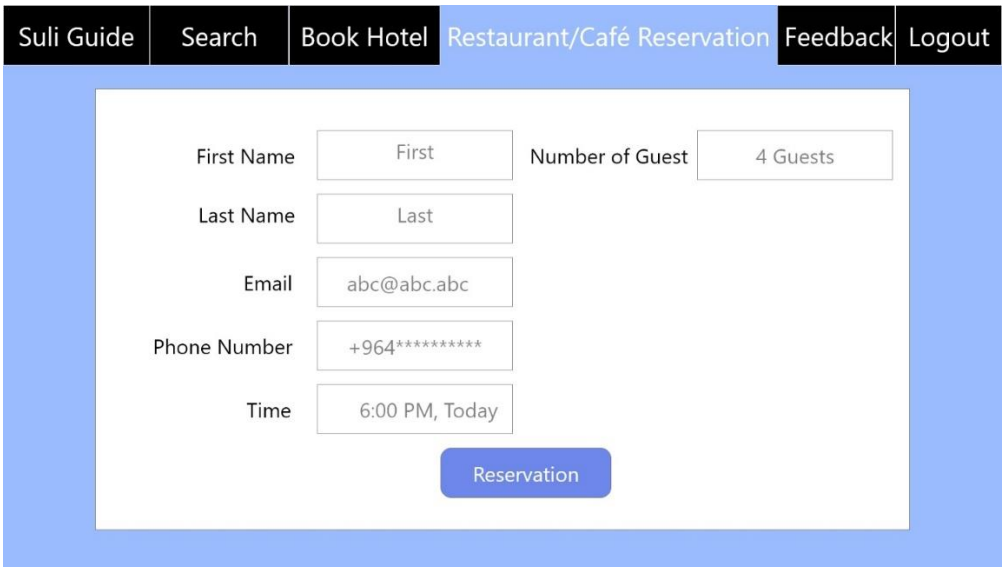


Figure 4.27 – Restaurant/Café Reservation Page for Customer

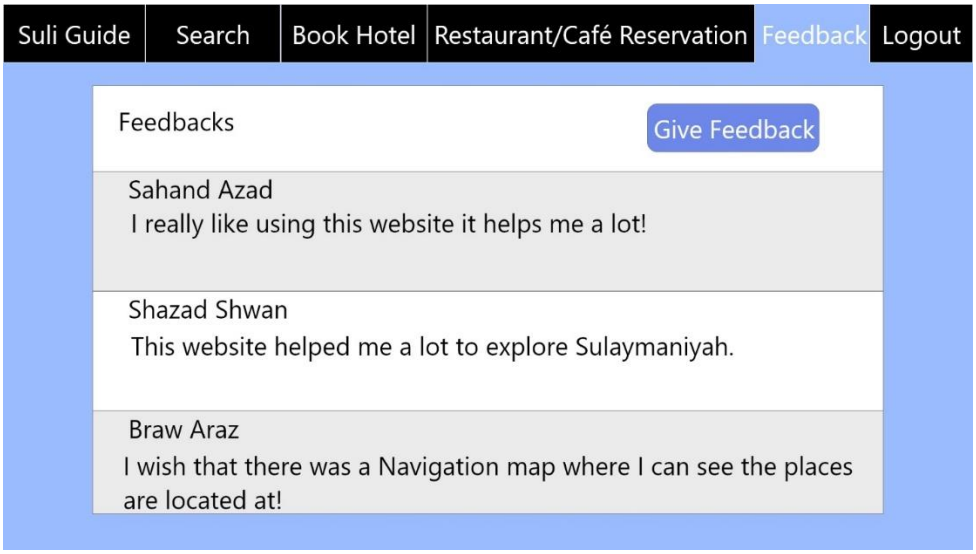


Figure 4.28 – Feedback Page for Customer (Customers can view the Feedbacks)

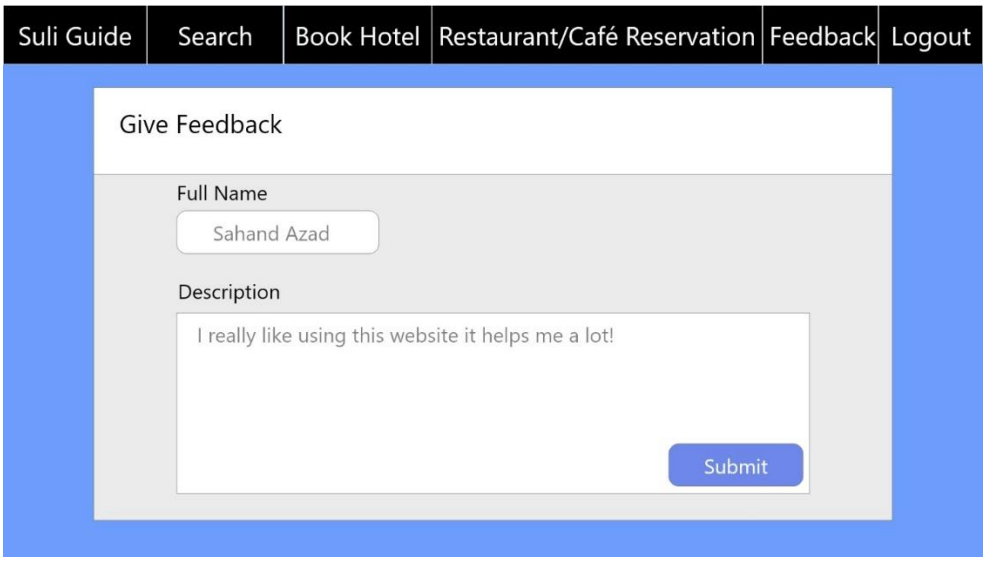


Figure 4.29 – Feedback Form Fill up Page for Customer

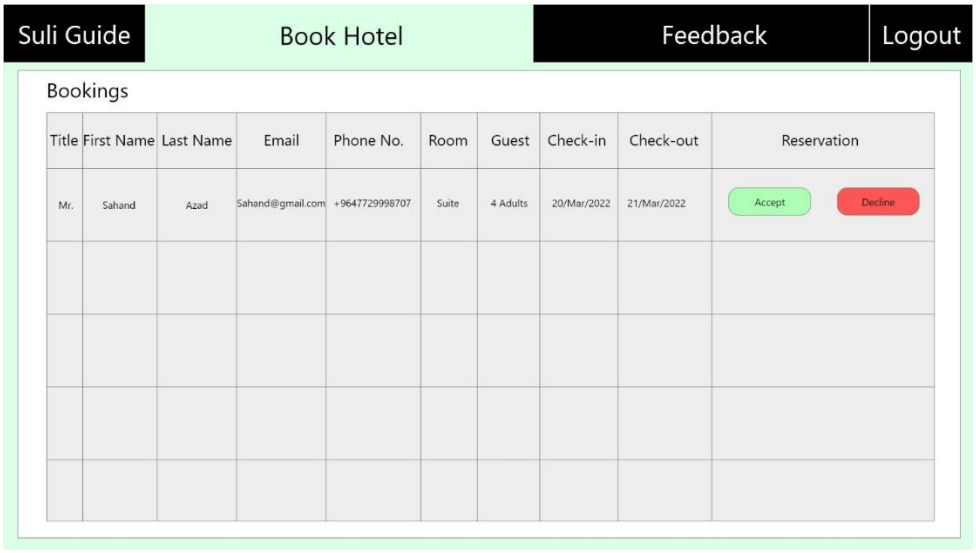


Figure 4.30 – Book Hotel Page for Hotel Receptionist

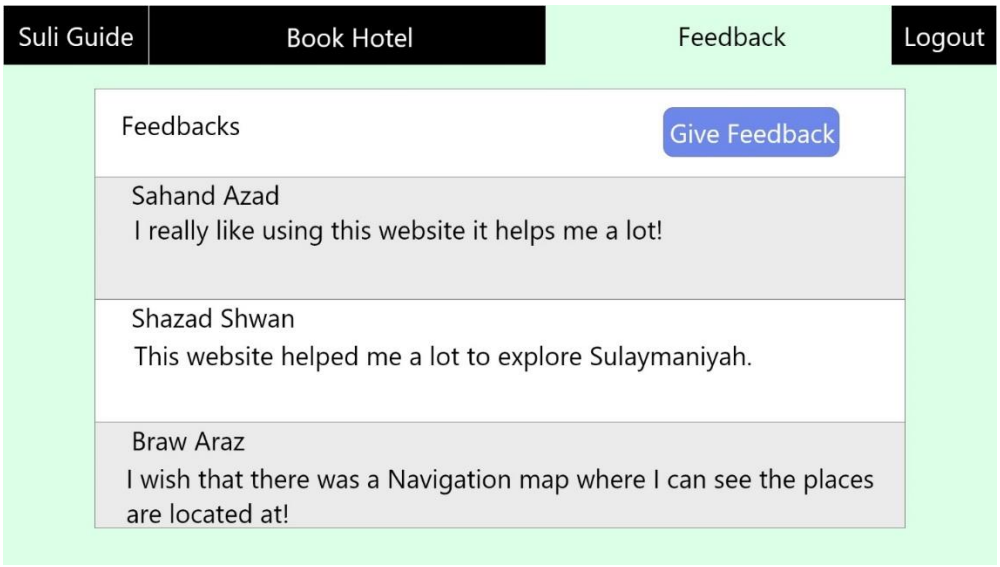


Figure 4.31 – Feedback Page for Hotel Receptionist

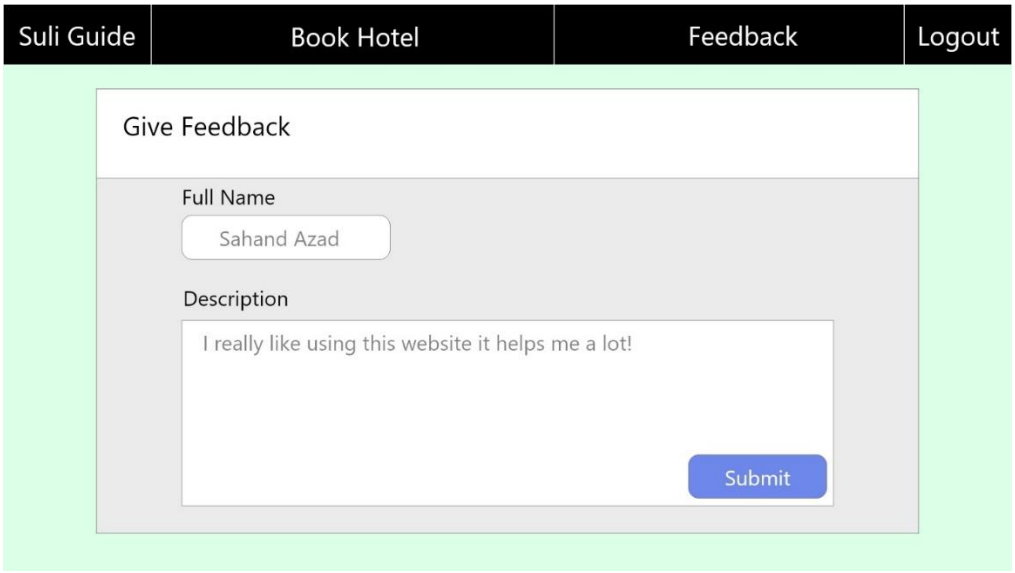


Figure 4.32 - Feedback Form Fill up Page for Hotel Receptionist

Figure 4.33 – Restaurant/Café Reservation Page for Restaurant/Café Cashier

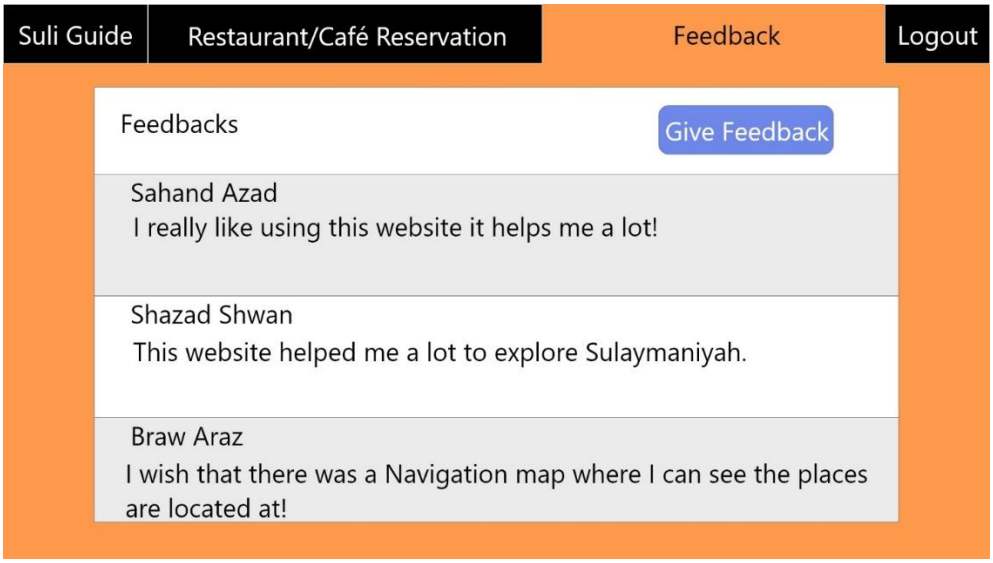


Figure 4.34 – Feedback Page for Restaurant/Café Cashier

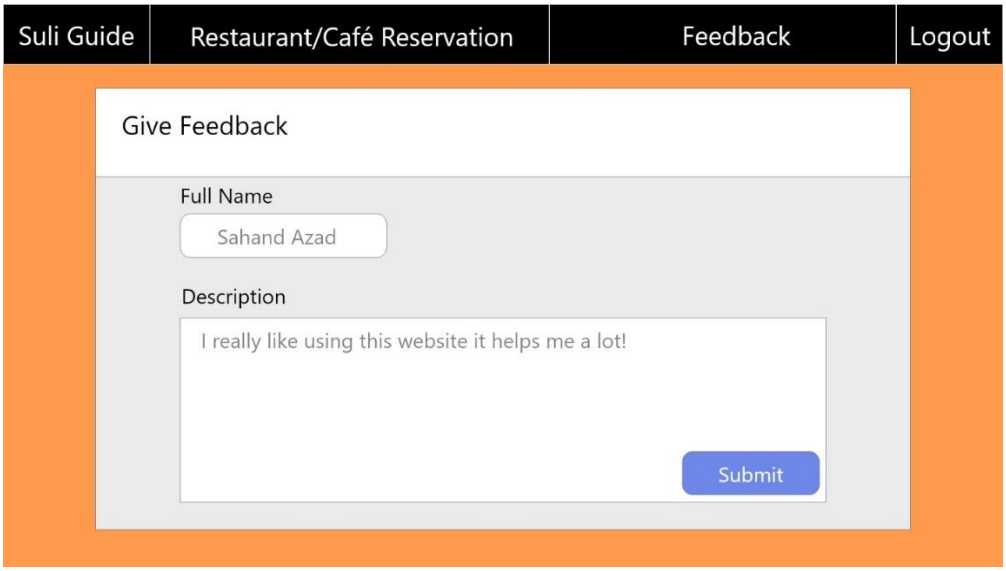


Figure 4.35 - Feedback Form Fill up Page for Restaurant/Café Cashier

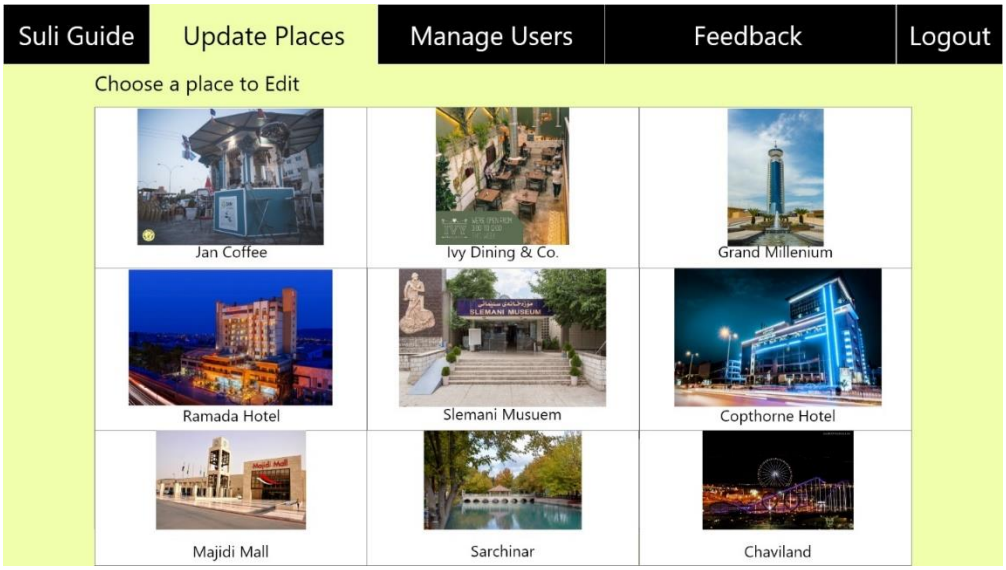


Figure 4.36 – Update Places Page for Admin

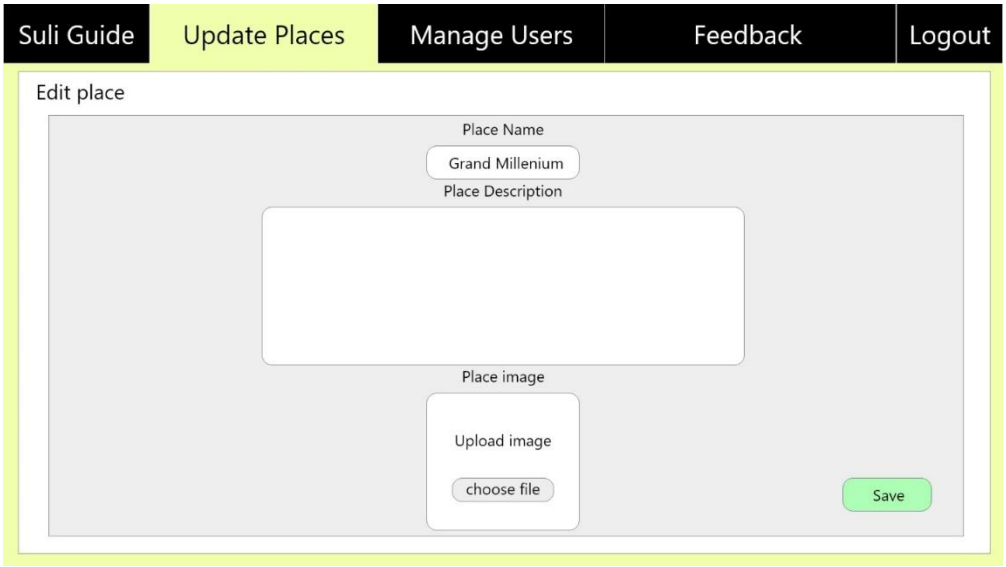


Figure 4.37 – Edit Place Page for Update Places for Admin

Figure 4.38 - Add Place Page for Update Places for Admin

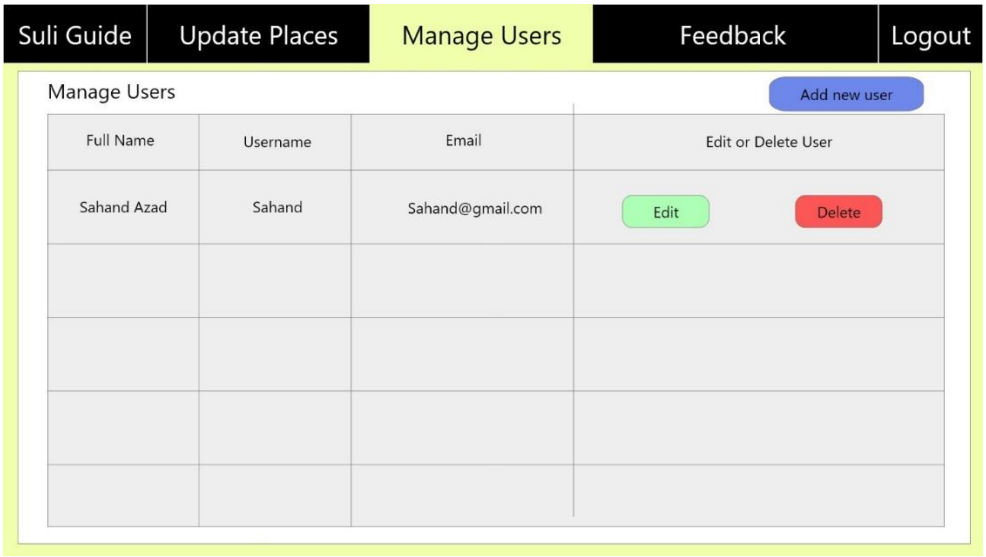


Figure 4.39 – Manage Users Page for Admin

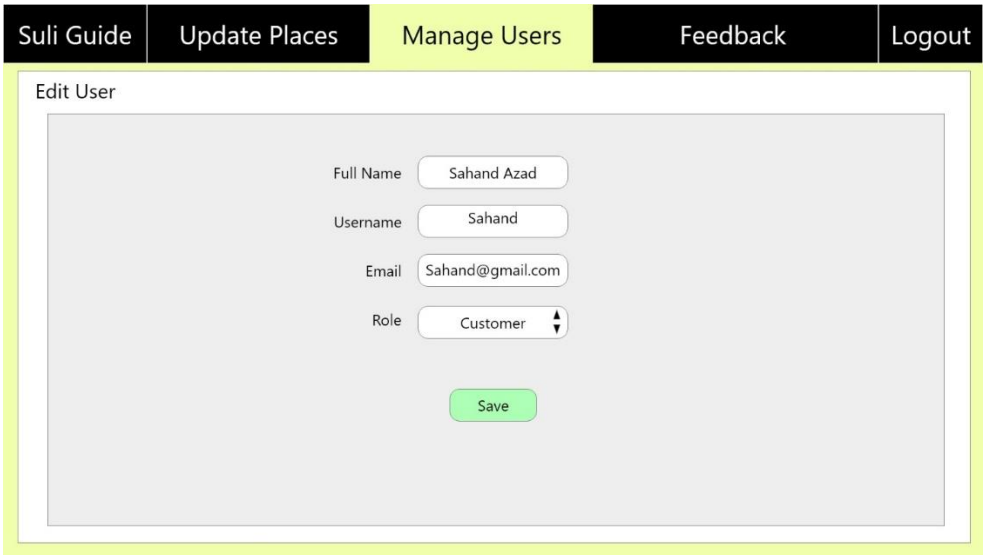


Figure 4.40 – Edit a User Page for Manage Users Page for Admin

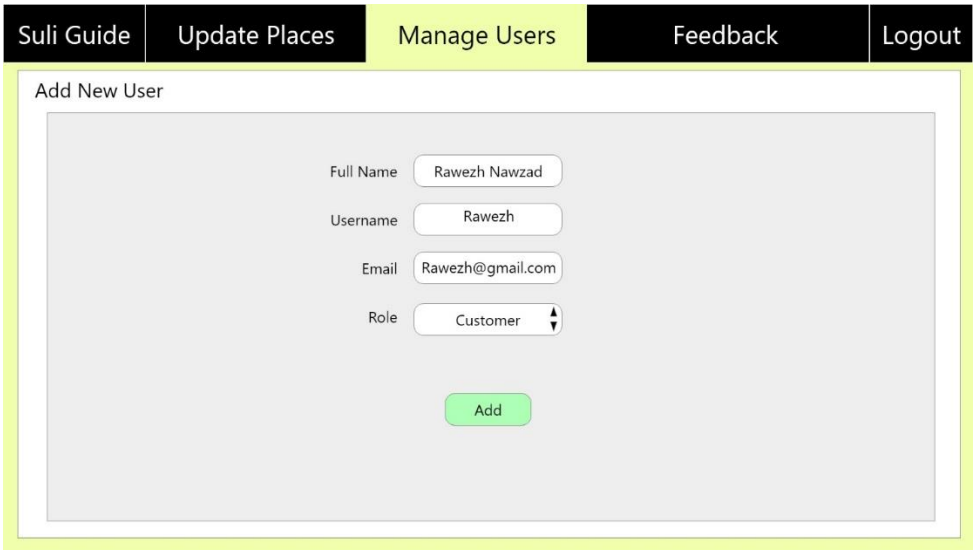


Figure 4.41 – Add a new user Page for Manage Users Page for Admin

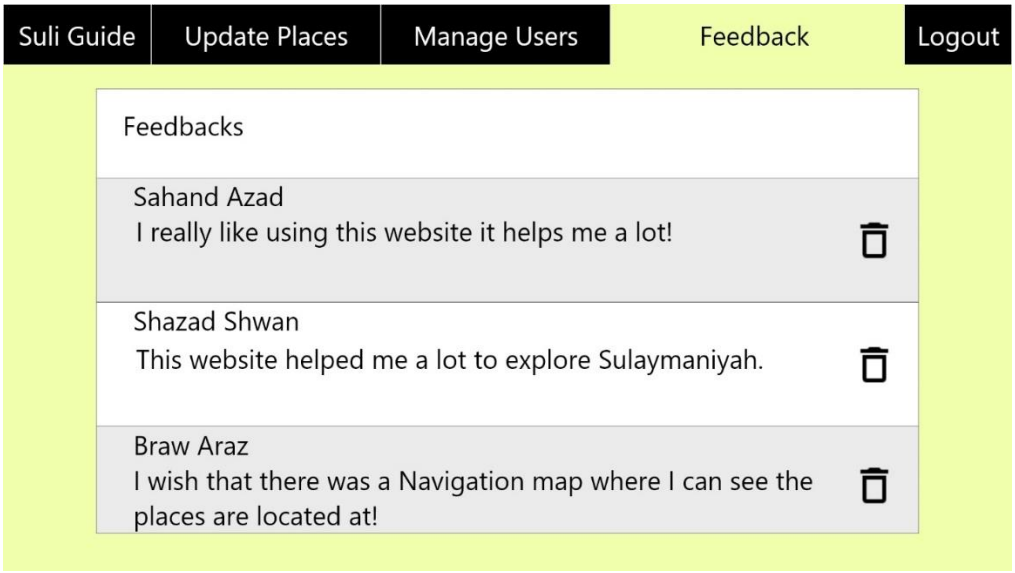


Figure 4.42 – Feedback Page for Admin

4.6 Chapter Summary

In this Chapter which is Chapter 4: Requirement Analysis and Design we have discussed about the use case and this project's use case with their descriptions, the sequence diagrams for each use case with their descriptions also, the design part which has the system architecture on how the system interacts with its users and database with servers, the class diagram of the classes within this system with their attributes and methods. In 4.4 we have the database design which consist of ERD (Entity Relationship Diagram) with its connections within the classes. And in 4.5 we have the interface Design for the system, there might be some changes in the future of the interface design also. And all of the contents and figures are also attached in this chapter for each part.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Introduction

This Chapter will go over the Implementation and Testing phases of the Suli Guide Website, as well as exhibit samples of the key elements of the website code. This chapter will cover both development and testing, as well as testing and coding.

5.2 Coding of System Main Functions

This system was created with HTML, JavaScript, CSS, and Bootstrap for both front-end and back-end designs PHP is used, which is a programming language for the backend, is utilized. And all of these programs are written in Visual Studio IDE, which is an IDE for writing code and creating programming apps or websites. The primary functionality of the website will be covered in this section, and their coding will be shown.

5.2.1 Login

The Login page comes up when someone wants to Book a hotel, reserve a Restaurant/Café or to give feedback, The Users have their own roles and each will be directed to their own page. The roles are Customer, which is the customer perspective that can Book hotels, look up at places or by search, and give feedback also book Restaurant or Café. Admin user who can Manage the users, Update Places, where the admin can also assign users as hotel receptionist or restaurant/café cashier and also can view or delete the feedback of the other users. Hotel Receptionist user who can accept,

decline or leave the forms as pending for the hotel booking that they received. Restaurant/Café user who can also accept, decline or leave the forms as pending for the Restaurant/Café reservation that they received So, the login is based on a session when the user logs in a session will be created by the authentication of the user.

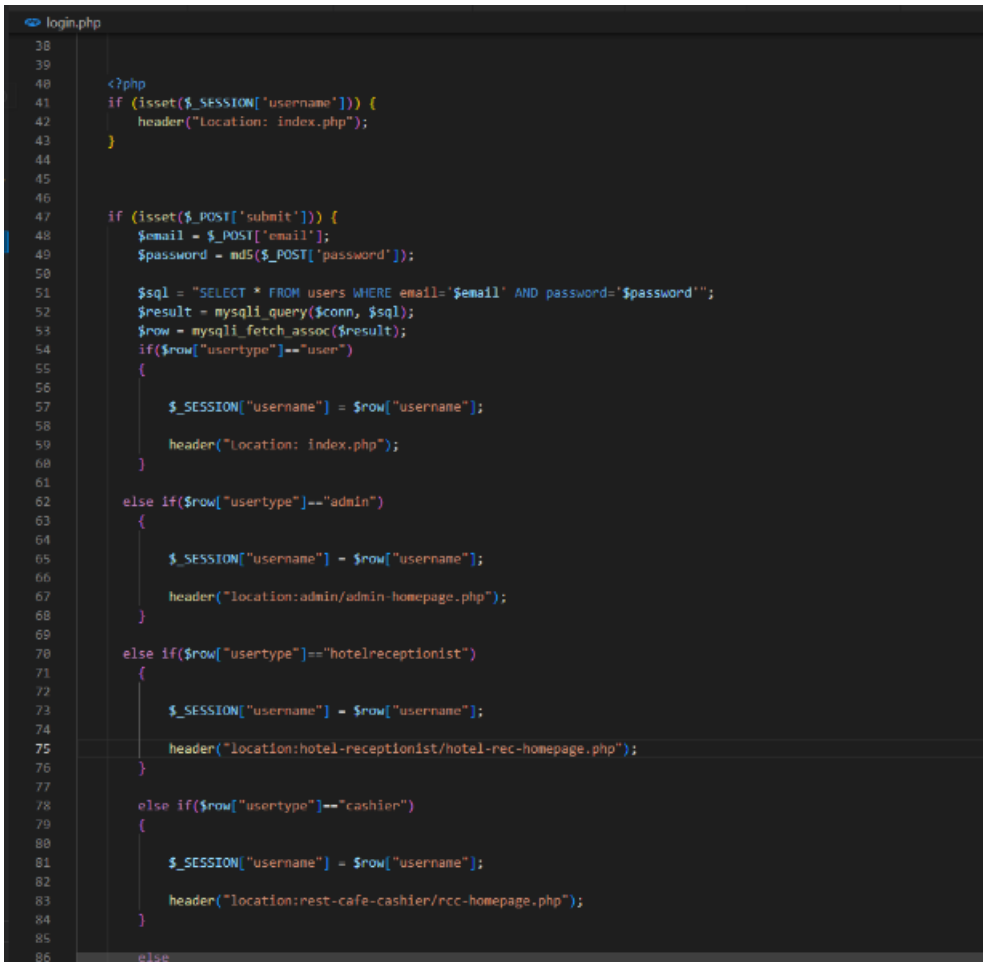


Figure 5.1: Code for Login

5.2.2 **Hotel Booking**

For this function the Customer can book hotels through hotel booking page by filling up a for so that the for will be sent to the Receptionist of the hotel the customer wants to book, so that they can accept the request or decline.

Figure 5.2: Code for Hotel Receptionist edit booking form

5.2.3 **Restaurant / Café Reservation**

For this function also the customer accesses the Restaurant/Café reservation and choose the right Restaurant or Café to book from the page and then when the page opens up the customer has the ability to reserve seat at the place by filling up the for. And the for will be sent to the chosen restaurant or café cashier so that they can accept or decline the request of the customer.

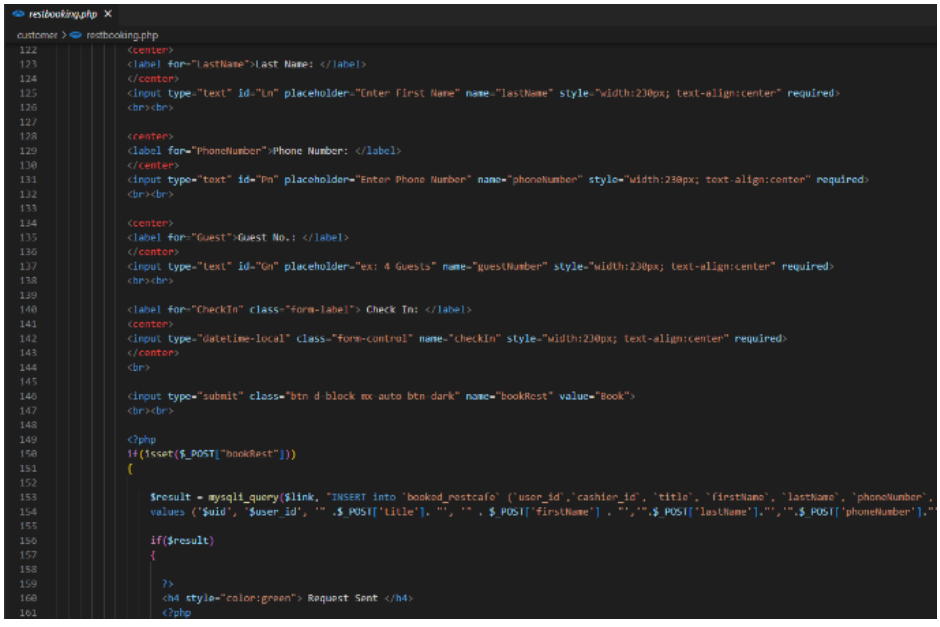


Figure 5.3: Code for Customer fill form of Restaurant or Café Reservation

5.2.4 **Manage users**

For this function the admin controls the users by Inserting, Editing or Deleting the users, the admin can also give the role Customer, Hotel Receptionist, Restaurant/Café Cashier or an admin to another user.

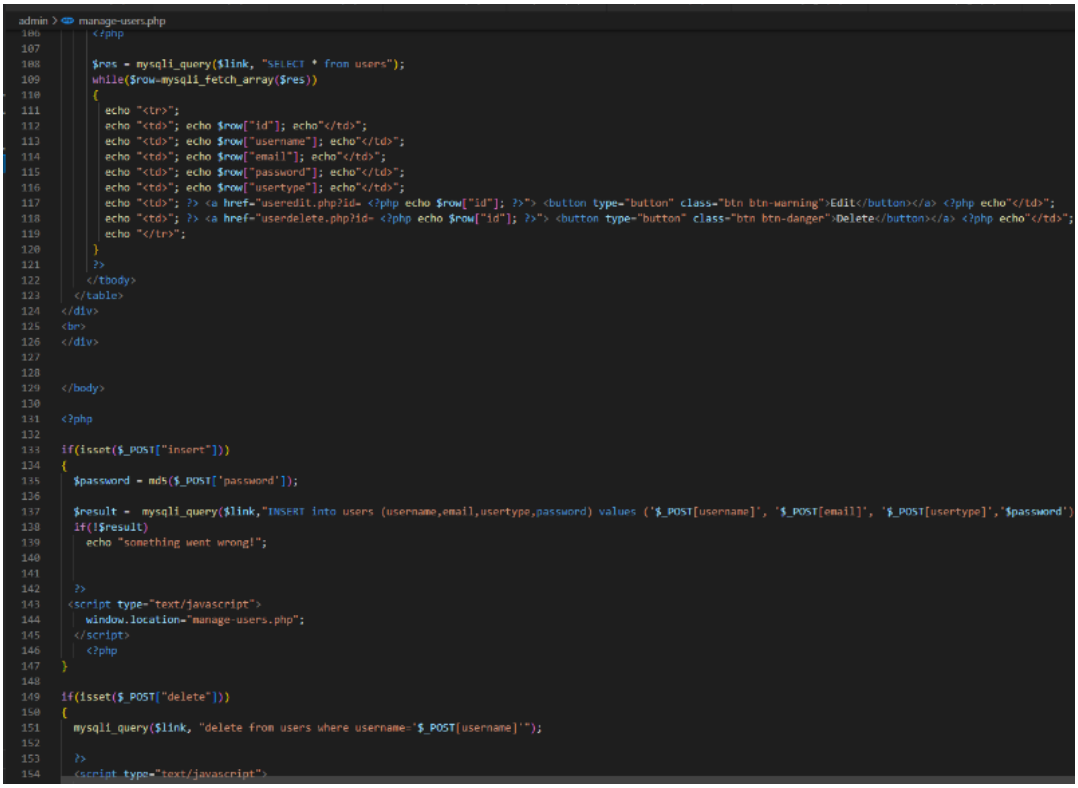
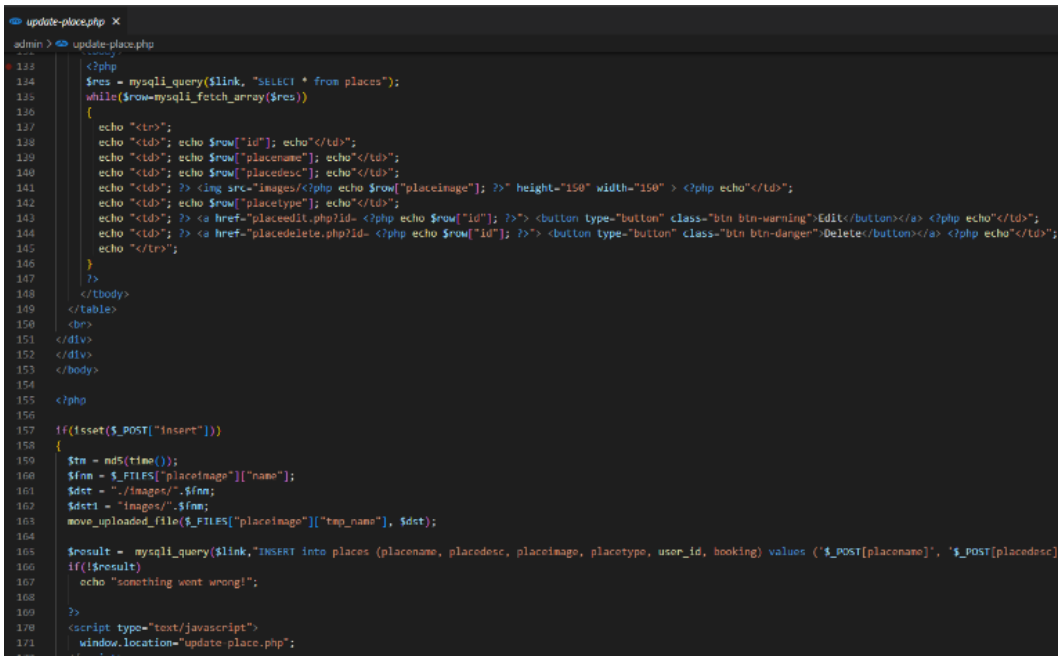


Figure 5.4: Code for Admin Manage Users

5.2.5 **Update Place**

This function is also for the admin who can Insert new places to the system, editing them or deleting them. And the place can be assigned if it has a booking then the place will have a receptionist or a cashier assigned to. The type of the place will also be inserted if its either a Restaurant/Café, a Hotel Receptionist or Others.



```
update-place.php
admin > update-place.php
    <?php
    $res = mysqli_query($link, "SELECT * from places");
    while($row=mysqli_fetch_array($res))
    {
      echo "<tr>";
      echo "<td>"; echo $row["id"]; echo"</td>";
      echo "<td>"; echo $row["placename"]; echo"</td>";
      echo "<td>"; echo $row["placedesc"]; echo"</td>";
      echo "<td>"; ?> <img src="images/<?php echo $row["placeimage"]; ?>" height="150" width="150" > <?php echo"</td>";
      echo "<td>"; echo $row["placetype"]; echo"</td>";
      echo "<td>"; ?> <a href="placeedit.php?id= <?php echo $row["id"]; ?>"> <button type="button" class="btn btn-warning">Edit</button></a> <?php echo"</td>";
      echo "<td>"; ?> <a href="placedelete.php?id= <?php echo $row["id"]; ?>"> <button type="button" class="btn btn-danger">Delete</button></a> <?php echo"</td>";
      echo "</tr>";
    }
    ?>
  </tbody>
 </table>
 <br>
</div>
</div>
</body>

<?php

if(isset($_POST["insert"]))
{
  $tm = md5(time());
  $fnm = $_FILES["placeimage"]["name"];
  $dst = "./images/".$fnm;
  $dst1 = "images/".$fnm;
  move_uploaded_file($_FILES["placeimage"]["tmp_name"], $dst);

  $result =  mysqli_query($link,"INSERT into places (placename, placedesc, placeimage, placetype, user_id, booking) values ('$_POST[placename]', '$_POST[placedesc]
  if(!$result)
    echo "something went wrong!";

 ?>
 <script type="text/javascript">
   window.location="update-place.php";
```

Figure 5.5: Code for Admin Update Place

5.3 Interfaces of System Main Functions

This system's interface is built exactly as it was designed in the prototype, with a user-friendly user interface that anybody can comprehend quickly and easily, and everything appears just like the prototype, from the colour to the content within.

5.4 Testing

The whole and fully integrated software package is validated during system testing. A system test assesses the overall system specifications. Software is typically just one component of a broader computer-based system. Finally, the application is linked to other software and hardware systems. System testing is a set of tests that are meant to put the complete computer-based system to the test.

5.4.1 **Black box Testing**

A black-box tester is unaware of the internal workings of the software system. Black box testing is a high level of testing that focuses on the behavior of the program. It comprises testing from the standpoint of an outsider or end-user.

User Input	Expected Outcome	Actual Outcome	Status
Correct email and password, after that click Login button	Successful and take user to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Successful and take user to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Pass
Incorrect email or password, then click Login button	Error message display of unsuccess Login	Error message display of unsuccess Login	Pass
Left out required field	System shows error message (Please fill out this field)	System shows error message (Please fill out this field)	Pass

Table 5.1: Black Box testing on Login page

5.4.2 **White box Testing**

White-box testing is a sort of testing that investigates the internal processes of the system. This sort of testing is based on coverage of code statements, branches, paths, or conditions. White-box testing refers to low-level testing.

Use Case Name	Login
Use Case ID	UC01
Description	This use case is for logging into the website, it describes the function of it.

Pre-Condition	The user must have an account in the website.
Date	20 June 2022
Tester:	Nwa Hamid

Table 5.2: White box Testing for Login Page

User Input	Expected Outcome	Actual Outcome
Correct username and password	Session created and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Session created and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)
Incorrect username or password	Display error message	Display error message

Table 5.3: White box Testing for Login page

5.4.3 **User Testing**

User Acceptance Testing (UAT) is a type of testing performed by the end user or customer to verify/accept the software system before it is transferred to production. UAT is the ultimate level of testing after functional, integration, and system testing. UAT's primary purpose is to validate the whole business flow. It does not focus on graphical faults, misspellings, or system testing. User Acceptance Testing is carried out in a separate testing environment with data setup similar to that of production. It will be similar to black box testing, but with two or more end users.

For user testing, students from Qaiwan International University tested the Website and the results were great for the task.

Tester: Shazad Shwan
Date: 21 June 2022
Use Case: Update Place

Instruction	Expected Result	Result
1. Enter Place Name. 2. Enter Place Description. 3. Choose Place image. 4. Choose place type (Hotel, Restaurant or Café, Others). 5. Choose if place have booking or not. 6. Assign to a user. 7. Press “Insert” button.	1. Successfully add new place to the website. 2. List of Places updated.	Pass

Table 5.4: User Acceptance Testing for Update Places Use Case

Tester: Shazad Shwan		
Date: 21 June 2022		
Module: Book Room		
Instruction	**Expected Result**	**Result**
1. Choose a hotel to Book. 2. Press Book Hotel. 3. Insert Title. 4. Insert First Name. 5. Insert Last Name. 6. Insert Phone Number. 7. Insert Room Type. 8. Insert Guest Number. 9. Choose Check In date. 10. Choose Check Out date. 11. Press “Book” Button.	1. System display Request Sent. 2. Form sent to the Hotel user that the customer booked.	Pass

Table 5.5: User Acceptance Testing for Book Room Use Case

5.5 Chapter Summary

This chapter addressed the system's core features, as well as its code and interface. The testing portion is also completed, which describes the instruction, expected result, and result itself, and the testing kinds are stated by which type this project is tested.

CHAPTER 6

CONCLUSION

6.1 Introduction

This project is about implementing an online tourist service system, the system will be available in Sulaymaniyah city in Iraq. The project consists of 4 users the users are Customers, the Customers have the ability to Book Hotels in Sulaymaniyah, Reserve Seats in Restaurant or Cafés in Sulaymaniyah, give feedbacks to the system which is the Website, can search for places within the system and inserted by admins into the website, the website will have information, photos, and many more about the places that are inserted in the system. The Website acts as a guide for the Customers which are tourists mostly.

The second user is Restaurant or Café Cashiers, the Cashiers can use this system for their place so that when the customers want to make reservation in their place, they can either accept their request or decline.
The third user is Hotel Receptionist, they can use this system for their hotels, so if a customer wants to make reservations in their hotel the Receptionist can either accept or decline the request from the customer. And the customer can view a form that have been filled by the customers they can see what they have inserted into the form.

The fourth user is Admin, the admin has the ability to manage the users that have accounts in the system, they can delete, edit and add users for the system. They have the ability to insert places into the system with the place name, description and photo of the place for the customers.

6.2 Achievement of Project Objectives

The achievement that has been gained from literature review was finding other related systems for tourism, but each one was different from the idea of the proposed system. Some systems were mobile application but the proposed system is a website. Some systems included other contents while this system includes much more functionalities including Hotel Reservation and Restaurant/Café Reservations.

For the objectives that have been declared in Chapter 1, the problems have been identified for the existing system which is implemented in Sulaymaniyah.

Requirements have been gathered for the online tourist service system that is going to be implemented in Sulaymaniyah in the name of Suli Guide.

For the two (2) other objectives which are:

- To develop Online Tourist Service System.
- To evaluate and conduct testing for Online Tourist Service System.

6.3 Suggestions for Future Improvement

The plan for the proposed project is to start early for the implementation part, because this system is a big work to do and implement it. There might be some changes in the future of the interface that has already been attached in Chapter 4. and this is because there might be some better interfaces that someone can see in the future. One more point that will be added in the interface for future is that pages will be added in the landing page so that it doesn't load up every place within one page. And some more functions may be added in the future of this project such as rating places so that the customers know how much of a rating the place have. If the project has many users from the stakeholders and if they are satisfied maybe the system will be implemented in other cities also such as Erbil, Duhok and if this grows much more than in other countries also so that it becomes a global website.

REFERENCES

Alghamdi, Hamzah, et al. “ETourism:Mobile Dynamic Trip Planner.” IEEE International Symposium on Multimedia (ISM), 2016, pp. 185–188, DOI:10.1109. / ISM.2016. 0044.

Bhat, Aishwarya, et al. “Design and Development of Tour Management System Using Android.” INTERNATIONAL JOURNAL of ENGINEERING RESEARCH & TECHNOLOGY (IJERT) NCETAIT, vol. 5, no. 6, 2017, pp. 1–5.

bot.gov.krd. (n.d.). Unbelievable Kurdistan - Official Tourism Site of Kurdistan |. [online] Available at: http://bot.gov.krd [Accessed 4 Jan. 2022].

D. Watkar1, Pooja, and Prof. M. R. Shahade. Smart Travel Guide:Application for Mobile Phone. ijrise.org/asset/archive/15SANKALP14.

Devmountain Blog. (n.d.). What Is CSS and Why Should You Use It? [online] Available at: https://blog.devmountain.com/what-is-css-and-why-use-it/ [Accessed 20 Jan. 2022].

freeCodeCamp.org. (2021). *What is PHP? The PHP Programming Language Meaning Explained*. [online] Available at: https://www.freecodecamp.org/news/what-is-php-the-php-programming-language-meaning-explained/ [Accessed 20 Jan. 2022].

Hostinger Tutorials. (2021). What is MySQL: MySQL Explained For Beginners. [online] Available at: https://www.hostinger.com/tutorials/what-is-mysql [Accessed 20 Jan. 2022].

Incredibuild. (2021). *What is Visual Studio?* [online] Available at: https://www.incredibuild.com/integrations/visual-studio [Accessed 20 Jan. 2022].

Learn web development | MDN. (n.d.). *HTML basics - Learn web development: MDN*. [online] Available at: https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics [Accessed 20 Jan. 2022].

M Githinji, Dr. Stanley. “Application of Real-Time Streaming Technology in Tour Mediation.” INTERNATIONAL JOURNAL of ENGINEERING RESEARCH & TECHNOLOGY (IJERT), vol. 6, no. 12, 2017, pp. 40–42.

R. Pawar1, Lalita, and Sarvesh S. Patwardhan. Problems & Suggestions for Android City Tour Guide System Based on Web Services for Mumbai. Vol. 4, no. 6, pp. 2668–2672.

Relevant Software. (2021). Agile Software Development Lifecycle Phases Explained. [online] Available at: https://relevant.software/blog/agile-software-development-lifecycle-phases-explained/ [Accessed 20 Jan. 2022].

Software Integrity Blog. (2021). *Top 4 software development methodologies: Synopsys*. [online] Available at: https://www.synopsys.com/blogs/software-security/top-4-software-development-methodologies/ [Accessed 19 Jan. 2022].

Swamy, Pravinkumar, et al. "Tourist Place Recommendation System." INTERNATIONAL JOURNAL of ENGINEERING RESEARCH & TECHNOLOGY (IJERT), vol. 9, no. 3, 2020, pp. 345–348.

Appendix A Software Requirement Specification (SRS)

1. Introduction

1.1 Purpose

The purpose of this (SRS) Software Requirement Specification is that it describes the detailed specification of the system that is developed. It is a document that describes how the system will do and how it will be expected to perform.

1.2 Scope

When tourists travel to a place, they are unfamiliar with or can't determine where to go or why to go, they can use this website to find restaurants, attractive places, theme parks, museums, shopping malls, and historical places. Users can make reservations for themselves in a restaurant using this website, which provides information, images, and videos.

Additionally, the website also has information about the locations. The size of implementing this project will not be that big, only some restaurants might be included for reservation since there are a lot of restaurants in cities and implementing reservation in many restaurants will be hard.

1.3 Definitions, Acronyms and Abbreviation

Abbreviation	Definition
SRS	Software Requirement Specification
UC	Use Case

Table A.1 Abbreviations and Definitions

1.4 References

SearchSoftwareQuality. (n.d.). Software Requirements Specification (SRS). [online] Available at: https://www.techtarget.com/searchsoftwarequality/definition/software-requirements-specification#:~:text=Purpose%20of%20an%20SRS [Accessed 24 Jun. 2022].

1.5 Overview

This Document will be divided into three parts. First is the introduction which contains the purpose, scope, definitions, References and Overview. Second is the Overall Description which contains product perspective, system interface, product function, user characteristics, constraints, assumptions and dependencies. Third is Specific requirements which contains system features, performance requirement and other requirement.

2. Overall Description

The Suli Guide Website is made up of (4) Modules. The modules are listed below here:

1. Manage User
2. Update Place
3. Book Room
4. Reserve Seat

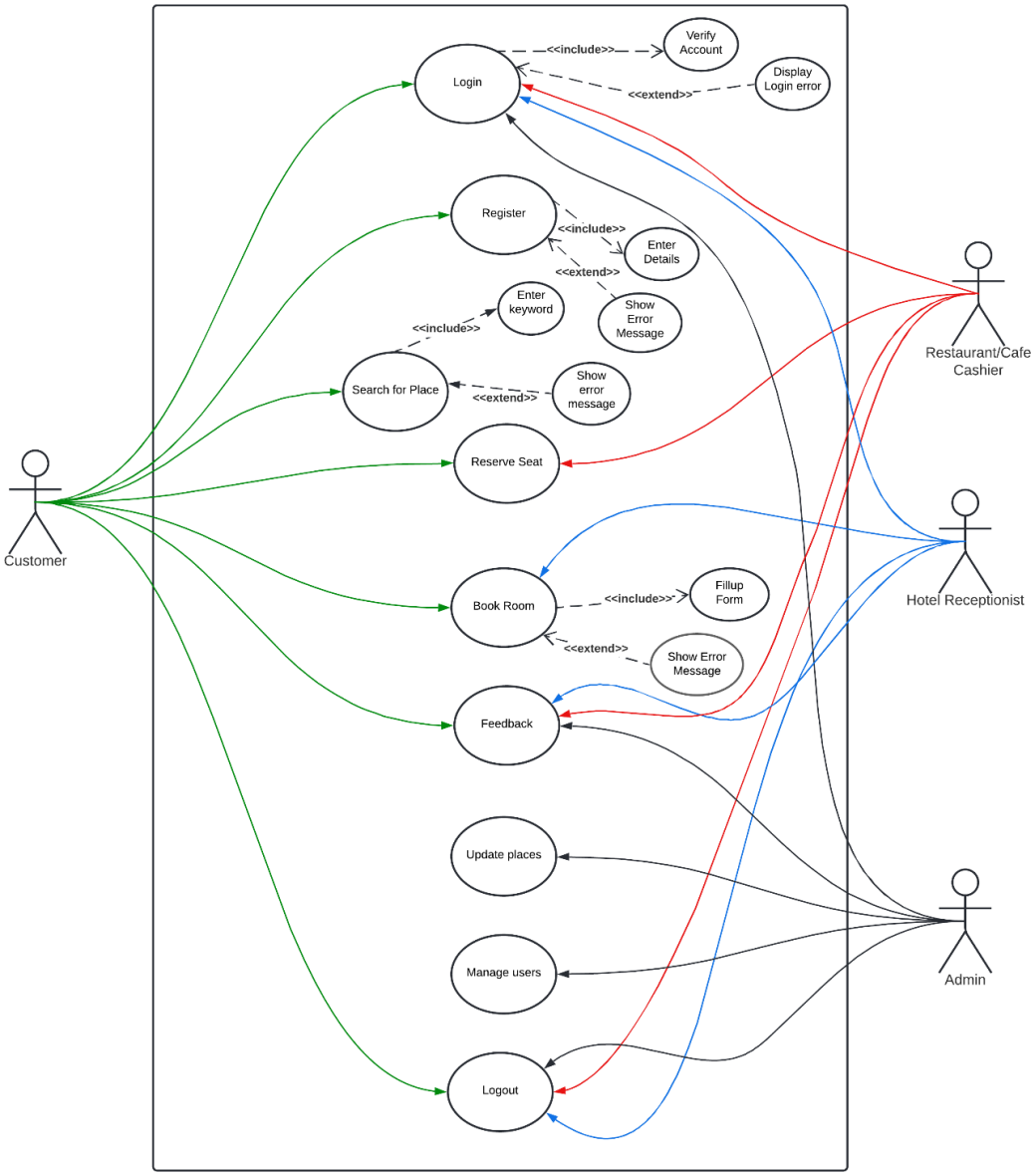


Figure A.1: Use Case Diagram of <Suli Guide>

2.1 Product Perspective

This website is useful for customers such as Tourists that come to the city of Sulaymaniyah in Iraq and people in the city itself that want to visit the places that are attraction places or wanting to book rooms of hotel or reserving seat in a restaurant or a café. It is useful for hotel receptionists also because it eases the job for them, they get the forms of the customers and then it is one or two clicks from booking the rooms. It is useful for Restaurant or Café cashiers because they receive reservation for seats by the system and it is only one or two clicks for accepting or declining the request. The system needs to interact with its database that its set for so that the data are saved inside.

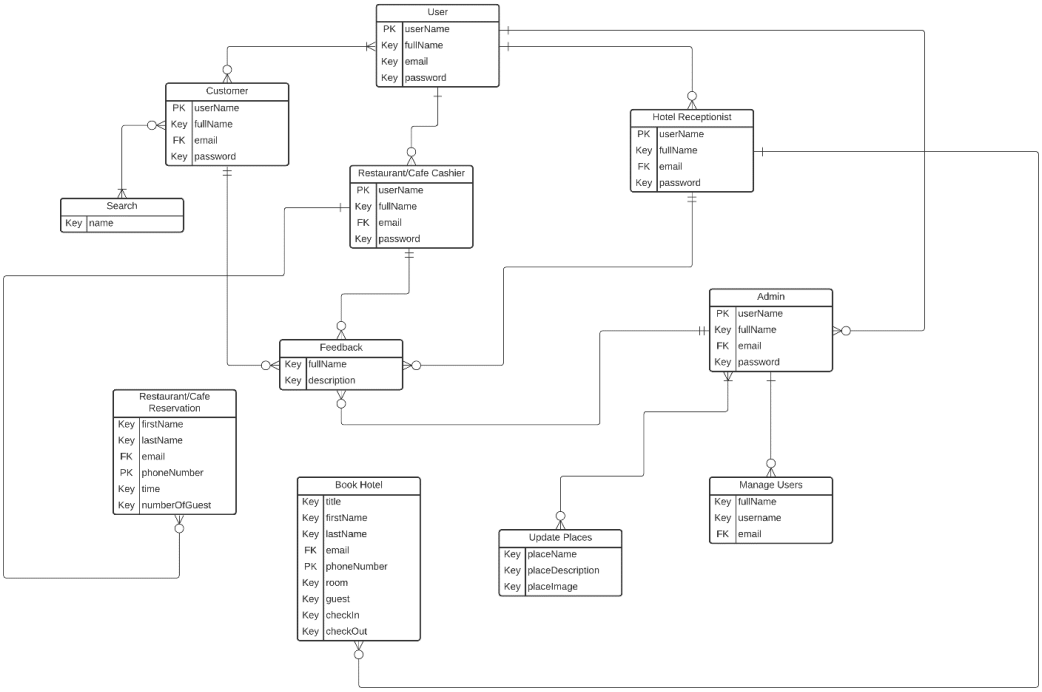


Figure A.2: Entity Relationship Diagram for Suli Guide

2.1.1 System Interfaces

The interface of Suli Guide is a very friendly interface for each of the users, the users are four (4) types of actors. All of the actors have their own different functionalities and their own interface for their modules. The interface is simple

looking but it is understandable by everyone. The Customer type user has 4 Modules (Search, Hotel Booking, Restaurant/Café Reservation, Feedback). The Admin has 3 Modules (Manage Users, Update Places, Feedback). The Hotel Receptionist Has 2 Modules (Hotel Booking, Feedback). The Restaurant/Café Cashier has 2 Modules (Restaurant/Café Reservation, Feedback). Each module has its own interface and functionalities.

2.1.2 Hardware Interfaces

Processor: Apple A8, intel(R), Core (TM), i5-8350U @ 1.70GHz, 1.90 GHz
Random Access Memory: 4 GB
Hard Drive Capacity: 256 GB
Operating system architecture: 64-bit
Input device: Touch Screen, Mouse and Keyboard
Output device: iPhone Screen, Monitor and other mobile screens

2.1.3 Software Interfaces

Operating System: IOS 12, Windows 10
Integrated Development Environment: Microsoft Visual Studio
Database Management System: Xampp
Web Browser: Safari, Google Chrome, Brave
Visual Modelling & Design Tool: LucidChart
High Fidelity Prototype: Adobe XD

2.2 Product Functions

No.	Use Case	Description

1	Search	The Users can search for the places within the system without even logging into the system.
2	Book Room	Customer user can use this for booking rooms in hotels they will fill up a form and it will be sent to a receptionist they either accept the request or deny it.
3	Reserve Seat	Customer user can use this for Reservations of Restaurant or Café they will fill up a form and it will be sent to a Cashier they either accept the request or deny it.
4	Feedback	The users can give feedback to the website, admins can see the feedbacks and can delete them.
5	Update Places	The admin can update places by adding new places, editing or deleting them in the system.
6	Manage Users	The admin can Manage the users in the website by adding them, editing or deleting them.

Table A.2: Data Description

2.3 User Characteristics

No.	Actors	Description
1	Customer	Customer is a user who can register new accounts from the registration page, they can use the site without logged in but not having the ability to book hotel or reserve café or a restaurant or give feedback. But when they login they have all of the functionalities listed.
2	Hotel Receptionist	Hotel Receptionist is a user who can login to the system, Accept or decline the request of customers forms for Hotel Booking and give feedback.
3	Restaurant/Café Cashier	Restaurant/Café Cashier is a user who can login to the system, Accept or decline the request of customers forms for Restaurant or Café reservation and give feedback.

4	Admin	Admin is a user that can login to the system, manage users by adding users to the website, editing or deleting them, admin can update places in the website by adding, editing or deleting them.

Table A.3: Description of Users

2.4 Constraints

These are the constraints of Suli Guide website:

1. Performance: The performance of the website must be fast.
2. Usability: The system must have a friendly-user interface so that everyone understands easily.
3. Availability: the system must be available at all times for every user.

2.5 Assumption and Dependencies

Assumptions:

1. The System must view the data that are stored inside the data must be fetched in order to all of the users can see the data.
2. The system must create session for each of login process that happens when someone logs into their account or logs out of their account.
3. The system must insert data into the database of its so that data can be saved.
4. The system must provide the interface that is set for it.

Dependencies:

The users of Suli Guide website will not be able to access the system if the database is not connected or the servers are down.

3. Specific Requirement

3.1 Specific Requirements

3.1.1 UC001: Use Case <Login>

Use Case Name	Login
Use Case ID	UC001
Actors	Admin, Customer, Hotel Receptionist, Café Cashier
Description	The use case describes on how the users can log into the Website.
Pre-Condition	1. The user is connected to internet. 2. Fill in email and password correctly. 3. The user must have an existing account.
Normal Flow	1. Open the website. 2. Display Login Page. 3. Enter email and password. 4. Click Login button.
Exception	Error message display.
Post-Condition	1. User successfully logged into the website. 2. Directed to the homepage

Table A.4: Use Case Description for <Login>

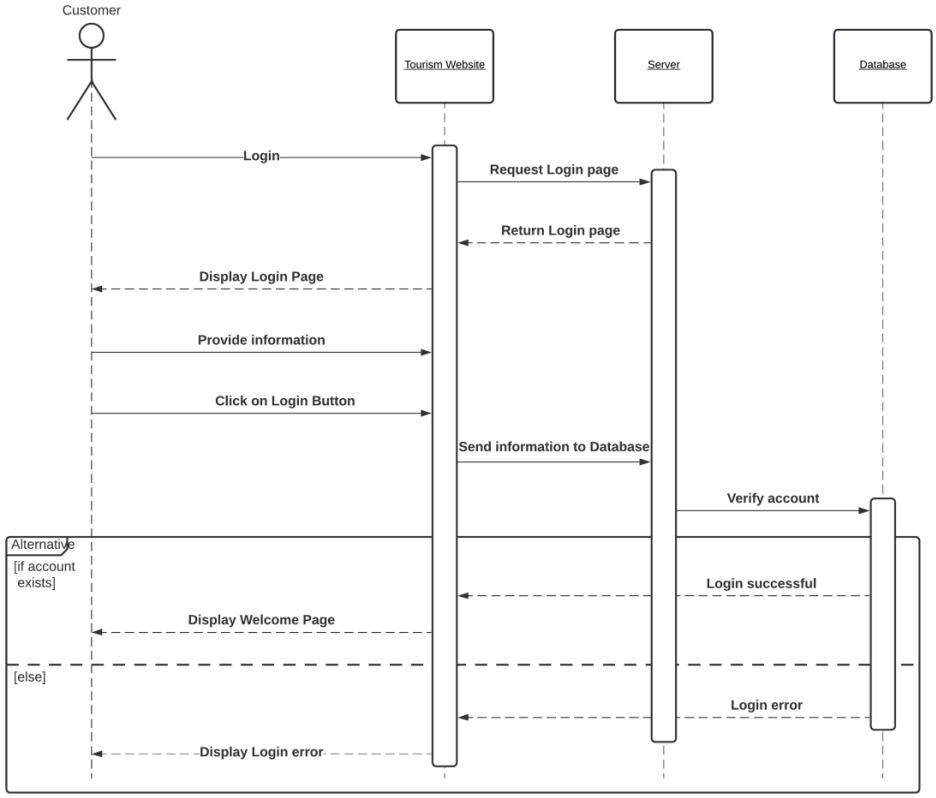


Figure A.3: Sequence Diagram of Login

3.1.2 UC002: Use Case <Manage User>

Use Case Name	Manage User
Use Case ID	UC002
Actors	Admin
Description	The use case describes on how the admin manages users in the website.
Pre-Condition	1. The user is connected to internet. 2. Admin is signed in. 3. User must have an existing account for edit and delete. 4. Access Manage users page.
Normal Flow	1. Fill blanks for new user. 2. Press “insert” button. 3. When the admin wants to edit a user, alternative flow 1.

	4. When the admin wants to delete a user, alternative flow 2.
Alternative	1. Edit a User 1.1 Press “Edit” button next to the user itself. 1.2 Fill blanks by changing details. 1.3 Press “Update” button. 2. Delete Existing User 2.1 Enter username of user 2.2 Press “Delete” button. Or 2.1 Press “Delete” button next to user itself.
Exception	Please fill the form.
Post-Condition	Insert, Edit or Delete users.

Table A.5: Use Case Description for <Manage User>

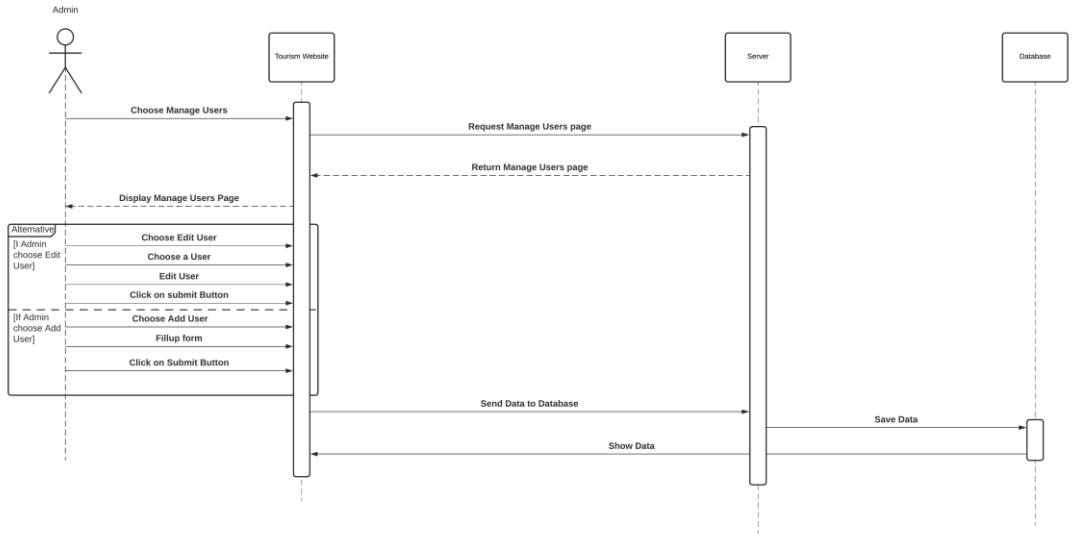


Figure A.4: Sequence Diagram of Manage Users

3.1.3 UC003: Use Case <Update Places>

Use Case Name	Update Places
Use Case ID	UC003
Actors	Admin

Description	The use case describes on how the admin can add, edit or delete places in the website.
Pre-Condition	1. The user is connected to internet. 2. Admin is signed in. 3. User must have an existing account for edit and delete. 4. Access Update Places page.
Normal Flow	1. Fill blanks for new place. 2. Press “insert” button. 3. When the admin wants to edit a place, alternative flow 1. 4. When the admin wants to delete a place, alternative flow 2.
Alternative	1. Edit a place 1.1 Press “Edit” button next to the place itself. 1.2 Fill blanks by changing details. 1.3 Press “Update” button. 2. Delete Existing place 2.1 Enter name of place 2.2 Press “Delete” button. Or 2.1 Press “Delete” button next to place itself.
Exception	Please fill the form.
Post-Condition	Insert, Edit or Delete places.

Table A.6: Use Case Description for <Update Places>

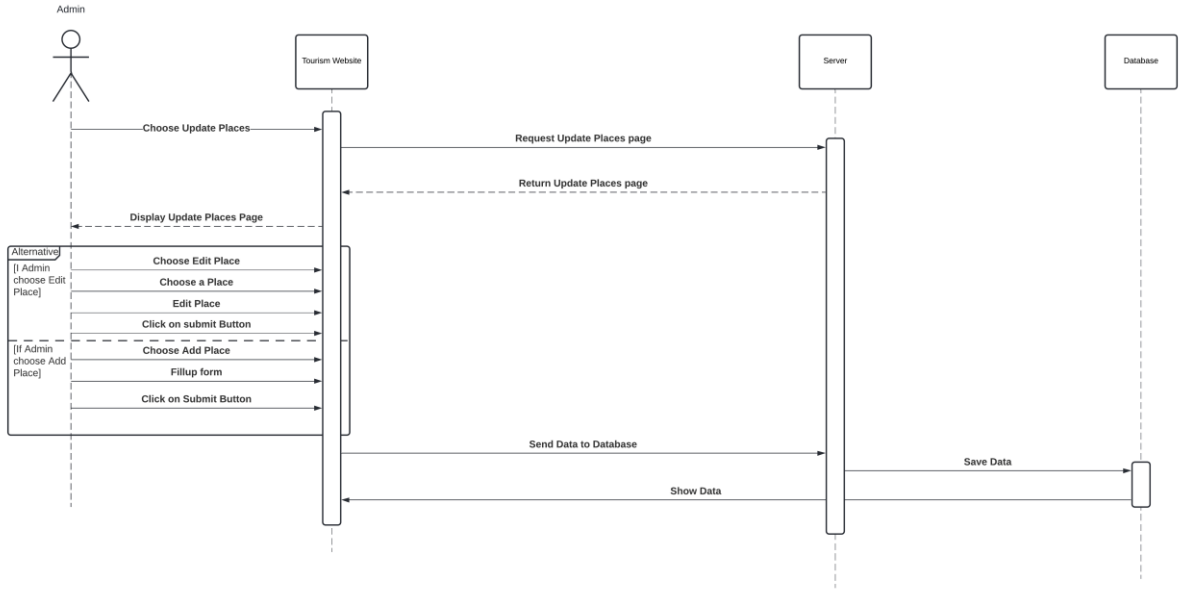


Figure A.5: Sequence Diagram of Update Places

3.1.4 UC004: Use Case <Book Room>

Use Case Name	Book Room
Use Case ID	UC004
Actors	Customer, Hotel Receptionist
Description	The use case identifies how the Customer can book rooms and how the hotel receptionist accepts or declines it in the system.
Pre-Condition	1. The user is connected to the internet. 2. Both users must be signed in.
Normal Flow	Customer: 1. Customer open a hotel page. 2. Customer press “Book Hotel Now” button. 3. Customer fill out the form. 4. Customer press “Book” button. 5. Customer check Profile to see if accepted or not. Hotel Receptionist: 1. Open Hotel Booking. 2. Press “Edit” next to form received.

	3. Set “Status” as “Accept” or “Deny”. 4. Press “Update”.
Alternative	
Exception	Customer fail to fill out form then display error message please fill out this field.
Post-Condition	Book Room

Table A.7: Use Case Description for <Book Room>

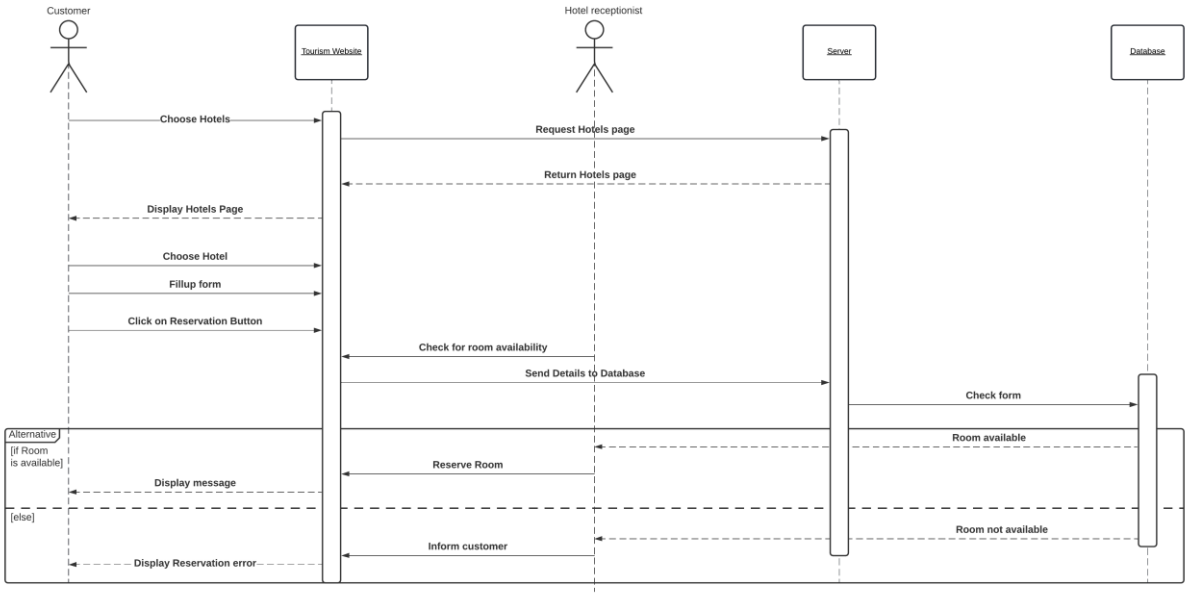


Figure A.6: Sequence Diagram of Book Room

3.1.5 UC005: Use Case <Reserve Seat>

Use Case Name	Reserve Seat
Use Case ID	UC005
Actors	Customer, Restaurant/Café Cashier
Description	The use case identifies how the Customer can book rooms and how the hotel receptionist accepts or declines it in the system.
Pre-Condition	1. The user is connected to the internet. 2. Both users must be signed in.

Normal Flow	Customer: 1. Customer open a Restaurant/Café page. 2. Customer press “Book Restaurant/Café Now” button. 3. Customer fill out the form. 4. Customer press “Book” button. 5. Customer check Profile to see if accepted or not. Restaurant/Café Cashier: 1. Open Restaurant/Café Reservation. 2. Press “Edit” next to form received. 3. Set “Status” as “Accept” or “Deny”. 4. Press “Update”.
Alternative	
Exception	Customer fail to fill out form then display error message please fill out this field.
Post-Condition	Reserve Seat

Table A.8: Use Case Description for <Reserve Seat>

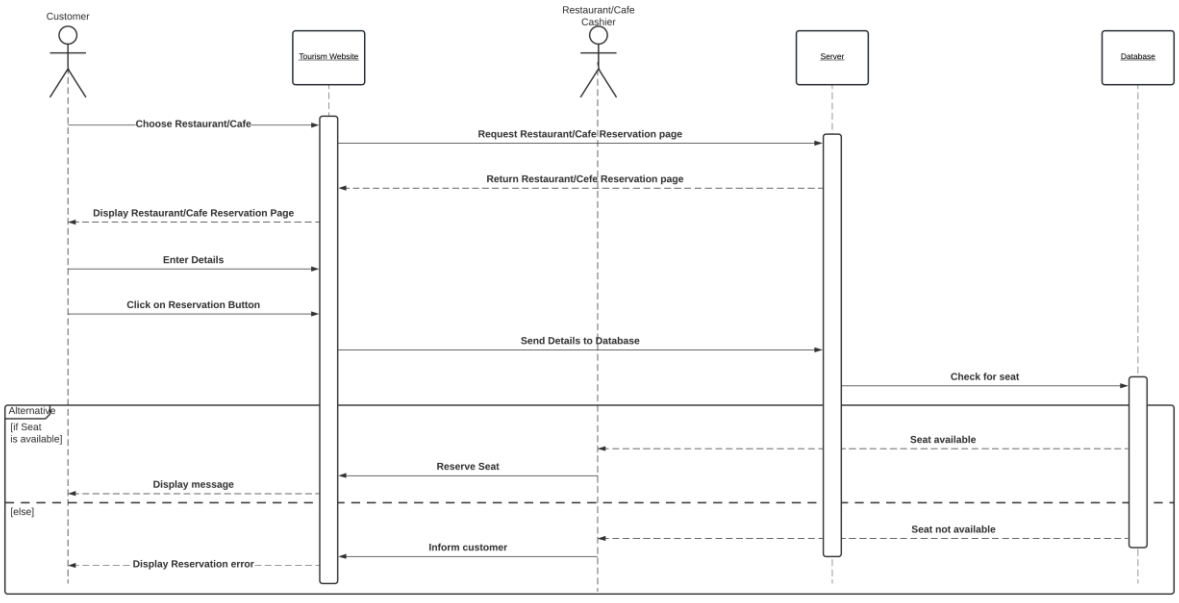


Figure A.7: Sequence Diagram of Reserve Seat

3.2 Performance Requirements

The process of each task should be very fast and must not take more than 5 seconds.

3.3 Other Requirements

- Interface should be understandable by everyone.
- Interface should be easy to use for the users that use the system daily

Appendix B Software Testing Document (STD)

1. Introduction

1.1 Purpose

The system testing is a very important phase in every software product creation especially websites, to test the website before deploying it into the world so that you know everything works perfectly. In this website developed we have tested the website by Three methods, Black Box testing, White Box Testing and User Acceptance Testing.

1.2 Scope

This STD is tested by the students of Qaiwan International University.

1.3 Definitions, Acronyms and Abbreviation

Abbreviation	Definition
STD	Software Testing Document

Table B.1: Abbreviation and Definition

1.4 Overview

In this document the introduction of the STD of the website is described and also in the second part we discuss the three testing methods that was done for testing the website which are: Black Box Testing, White Box Testing and User Acceptance Testing.

2. Testing

2.1 Black Box Testing

A tester in black-box testing has no knowledge of the internal workings of the software system. Black box testing is a high level of testing that focuses on the software's behaviour. It entails testing from an outside or end-user perspective.

Input	Expected Result	Actual Result	Status
Correct username and password, then click Login button	Successful and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Successful and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Pass
Incorrect username or password, then click Login button	Unsuccessful Login and error message display	Unsuccessful Login and error message display	Pass
Left out required field	System displays please fill out this field	System displays please fill out this field	Pass

Table B.2: Black Box testing on Login page

2.2 White Box Testing

White-box testing is a type of testing that examines the system's internal operations. This type of testing is based on code statement, branch, path, or condition coverage. Low-level testing is referred to as white-box testing.

Use Case Name	Login
Use Case ID	UC01
Description	This use case is for logging into the website, it describes the function of it.
Pre-Condition	The user must have an account in the website.
Date	20 June 2022
Tester:	Nwa Hamid

Table B.3: White box Testing for Login Page

Input	Expected Result	Actual Result
Correct username and password	Session created and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)	Session created and redirect to Homepage page (Customer, Hotel Receptionist, Restaurant/Café Cashier, admin)
Incorrect username or password	Display error message	Display error message

Table B.4: White box Testing for Login page

2.3 User Acceptance Testing

User Acceptance Testing (UAT) is a sort of testing conducted by the end user or customer to verify/accept the software system before it is moved to the production environment. After functional, integration, and system testing, UAT is performed in the final step of testing. The primary goal of UAT is to validate the end-to-end business flow. It does not concentrate on visual flaws, misspellings, or system testing. User Acceptance Testing is performed in a separate testing environment with production-like data configuration. It will be a type of black box testing with two or more end users.

For user testing, students from Qaiwan International University tested the Website and the results were great for the task.

Tester: Shazad Shwan		
Date: 21 June 2022		
Use Case: Update Place		
Instruction	**Expected Result**	**Result**
1. Enter Place Name. 2. Enter Place Description. 3. Choose Place image. 4. Choose place type (Hotel, Restaurant or Café, Others). 5. Choose if place have booking or not. 6. Assign to a user. 7. Press “Insert” button.	1. Successfully add new place to the website. 2. List of Places updated.	Pass

Table B.5: User Acceptance Testing for Update Places Use Case

Tester: Shazad Shwan		
Date: 21 June 2022		
Module: Book Room		
Instruction	**Expected Result**	**Result**
1. Choose a hotel to Book. 2. Press Book Hotel. 3. Enter Title. 4. Enter First Name. 5. Enter Last Name. 6. Enter Phone Number. 7. Enter Room Type. 8. Enter Guest Number.	1. System display Request Sent. 2. Form sent to the Hotel user that the customer booked.	Pass

9. Choose Check In date. 10. Choose Check Out date. 11. Press “Book” Button.		

Table B.6: User Acceptance Testing for Book Room Use Case