Hotel Management System

By

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Spring, 2022

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May 10, 2022

Dissertation submitted in partial fulfillment for the degree of Bachelor of Science in Computer Science

Department of Computer Science & Engineering

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Attestation

This is to certify that the report is completed by me, Sadia Afroz Alma (ID: 1730407), submitted in partial fulfillment of the requirement for the Degree of Computer Science and Engineering from Independent University, Bangladesh (IUB). It has been completed under the guidance of Sanzar Adnan Alam. I also certify that all my work is genuine which I have learned during my internship. All the sources of information used in this project and report has been duly acknowledged in it.

Signature	Date
Sadia Afroz Alma	
Name	

Acknowledgement

I would like to firstly like to thank the **Almighty Allah (SWT)** for giving me the endurance and the ability to work hard, and for giving me the ability to write and for giving me the chance to be able to do my internship at Zaman IT. Also, my parents for their unconditional love and support that have sustained, nurtured, and got me ready for this challenge.

I would like to thank my honorable faculty and supervisor **Sanzar Adnan Alam**, Lecturer Department of Computer Science and Engineering, Independent University, Bangladesh, for his invaluable guidance, patience, time, constructive criticism and thoughtful advice regarding various aspects of my internship and preparation of this report. Then I would like to express my gratitude to **MD. Emran Gazi**, Project Manager, for giving me the opportunity to complete my internship at Zaman IT. Team member for their guidance and support in this three months' internship program. The learning and experiences I have gathered here have helped me a lot as a System Analyst, Customer Requirement analysis and resource planning and this will surely help me in the next phase of life. I would also like to express my gratitude to all my colleagues for helping me throughout and making the Internship process so much enjoyable. Without them, this journey would have not been easy.

Last but not the least, I would like to thank my parents and other family member's for their eternal support given to me.

Letter of Transmittal

15th January, 2022
Sanzar Adnan Alam
Internship Supervisor Lecturer
Department of Computer Science and Engineering
School of Engineering, Technology and Sciences
Independent University, Bangladesh

Subject: Internship Report Submission on "Hotel Management System".

Dear Sir,

With due honor and respect, I, Sadia Afroz Alma, from Spring 2022, would like to submit my Internship report. This report is written to kindly inform you that I have completed my internship program and its report. It is a great achievement to work under your active supervision. This report is based on, "Hotel Management System". I have got the opportunity to work at Zaman It for three months, under the supervision of MD Emran Gazi, Project Manager, Zaman It.

This internship has given me both academic and practical exposures. The internship has given me the opportunity to develop a network with the corporate environment. I tried to make this report as much informative as possible with the experience I have gained during my internship period. In order to prepare a well-organized internship report, I have followed the guidelines and described the required fields with sufficient details. I, however sincerely believe that this report will serve the purpose of my internship program.

I shall be highly obliged if you are kind enough to receive this report and provide your valuable judgement. It would be my immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,
Sadia Afroz Alma
ID- 1730407
Department of Computer Science and Engineering
Independent University, Bangladesh

Evaluation Committee

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Signature

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Sanzar Adnan Alam

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Supervisor

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Signature

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Internal Examiner

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External Examiner

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Convener

Abstract

ZAMAN IT is a website design and development company in Bangladesh. They are also a software company. They are committed to providing quality IT solutions like software solutions, website design & development, mobile apps development, digital marketing, SEO services etc. through an experienced IT team. They also provide Email service for marketing and promotions of products. In order, to have a good communication between companies and customers for promoting and selling their products. These business processes needs to be managed and handled in an organized manner, so that all the workflow and business process is fast, smooth, scalable, and centralized.

I had to finish my learning sessions before working on any project, and in this learning session, I was assigned to work on a company project where my task was to work in a team to develop a web application called HOTEL MANAGEMENT SYSTEM .I was allocated to develop landing page, dashboard, different interface for different parts and some back-end codes. It was almost like a skill test before the actual project was assigned.

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Chapter 1

Introduction

1.1 Overview/Background of the Work

In our project, on "Hotel Management System", I have tried to show how the Data / Information in hotels is managed. This is just an overview of management in hotels. This has been achieved by dividing the project into various modules. Customer is provided with different services like checking in, checking out, and editing entries or make payments etc. If the customer wants he/she can cancel his/her booking. Enquiry about any customer can be made either by customer Id or customer name. Enquiry about rooms available can also be made. It will generate reports for customer, employees (working in the hotel) and Bill for customer is generated when the customer will check out from the hotel. We have included only few modules, as our purpose is to only have the idea or to study about how the management is done in hotels. By adding many more modules this type of project can have scope in various hotels. After going thought the existing system, problem was identified and the scope of development was finalized.

1.2 Objectives

Project objectives are what we plan to achieve by the end of our project. Objective of a project is specific, measurable and must meet time, budget and most importantly meet the client's requirement. The main goal of this project is to create a hotel management framework for use in a hotel. The system should be as adaptable as possible, allowing it to be used in a variety of hotels. To learn about the various techniques that hotels have used. We need to figure out what protocols hotels use, and then build a machine that follows those procedures. We need to look up how a hotel system functions on the internet, use our own knowledge. This project aims to make record updating, maintenance, and searching more user-friendly. The entire information has been stored in the database or archives, and anyone who wishes to retrieve it will be unable to do so; only authentication

will be able to retrieve the correct information from the files.

1. To handle all aspects of the hotel's information and booking system.
2. Customer can easily register at any time sitting home and login for further process.
3. Provide an adaptable system that would be used in a variety of hotels.
4. To provide complete organizational and reliable system with least possibility of errors.
5. To provide user-friendly system to make record updating, maintenance and searching more.

1.3 Scopes

Guest management: It is use to manage and analyze the all activities that happens with guest. It will help hotel admin with securing of all guest information and accommodation.

Room and accommodation management: It'll check and update all rooms and accommodation status to provide the guest quality services.

Reservation management: It's a first interaction between hotel and guest. Through reservation they can choose the accommodation that they want and avail the services they desire.

Payment management: It'll help guest to pay online and secure all the transaction made by guest. It also helps hotel admin to keep information about all transaction and payment details.

Dashboard: It give the users all information about hotel booking including schedule, cost, discount etc.

Management of room inventory and allocation: It prevents overbookings and duplication of bookings.

Front desk operation: It provide offline and online based front desk operation including booking confirmation, cancellation or arrival of guest.

Cancellation management: It handle the cancellation part from customer or admin side. A reservation cancellation informs the hotel that a previously reserved room is once again available, and helps the front desk more effectively manage its room inventory. Hotels should make processing cancellation easy and efficient.

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

As studying Computer Science designing (CSE), scarcely any courses can be connected with my work. As my work is coding and investigation based, the given courses from scholarly helped in my corporate's 203, Data Structures: This is the most basic course that helped us with the ideas of several data structures and their applications such as Stack, Queue, Linked List, Array, and Pointer and so on. CSE 213, Object-Oriented Programming: This course taught how to plan for a project step by step and more about the backend coding for a project. It also taught how to write modular programs which made codes less repetitive and more reusable. CSE 303, Database Management: This course helped in learning of plans needed for the project. The architecture of the system and more about fetching data, that is about databases. It covered popular planning and strategy practices such as Six Element Analysis, Problem Analysis, System Development Life Cycle, Rich Picture, Requirement Analysis, Entity Relationship Diagram, Business Process Model, and Normalization CSE 307, System Analysis and Design: This course gives an overview of Used Case Diagram, Used Case Scenario, SDLCs and how to adopt each one of them to the project. CSE 309, Web Application and Internet: This is the course where the development of web applications was taught. It covered very important technologies that are highly in demand in the industry, such as HTML, CSS, JavaScript, jQuery, Node.js, Front end framework, developing responsive and mobile-first websites CSE451 Software Engineering: This course helped me learn how to gather requirements, information and methodologies for the system. And also which method needs to be used in which project and also SDLC

2.2 Related works

We have researched about various Hotel Management System. In Bangladesh, most of the hotel such as Hotel Sultan, Hotel Unique, Anada Hotel use Cosmo Hotel Management System. Cosmo Hotel Management System provide several services including manage reservation, increasing bookings, and house-keeping and provide reports. Any hotel have to set up first with this cosmo management system to configure user roles, room rates, customize guest forms etc. It manages reservations of guests with their details of previous stays and their preferences. It use booking.com website to book online room services to save time.

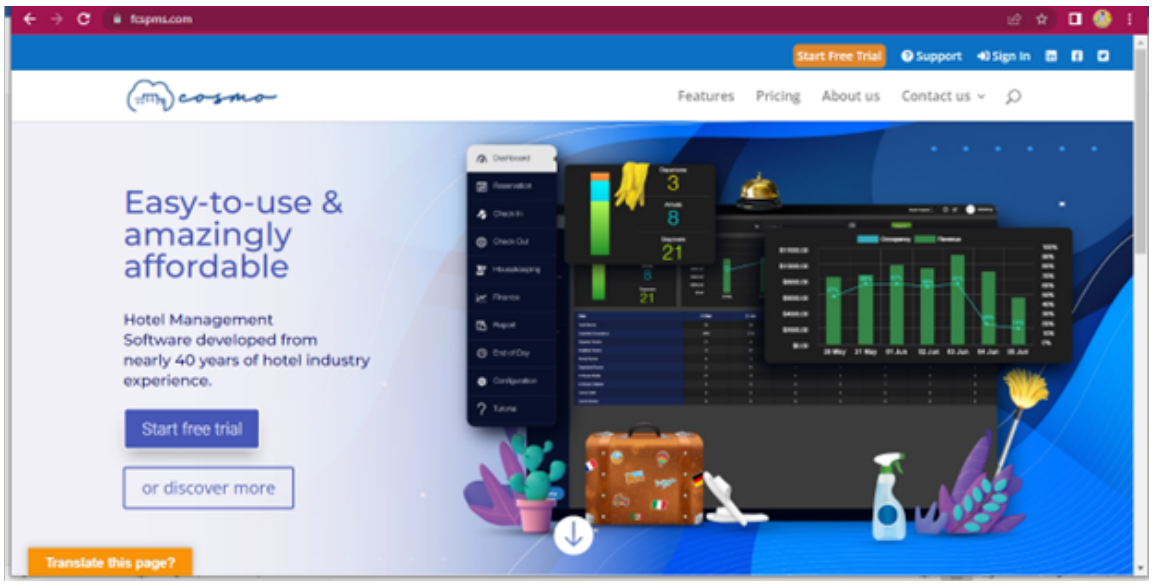

Figure 2.1: Related works

They provided automated housekeeping operation to cleaning room and they also provide annual growth report to increase profit. Despite of having so many feature this system has some limitations such as it doesn't have it's own booking site. User can't book any room with their website. They have to follow booking.com for reservations. It has one major limitations that it can't provide online payment services. Except this, it doesn't collected feedback of customers about how's their experience during visiting this hotel. To abolish this limitations I would like to propose "Hotel Management System " Our proposed system has online reservations facilities without overlapping, it also provide online payment services sitting at home whenever customers prefer. Our system also collected review of customers during they stay and after leaving to improve service quality.

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

A typical productivity tip for making work better manageable and accessible is to break it down into smaller tasks. The Work Breakdown Structure (WBS), which is one of the most essential project management documentations, is the instrument that employs this method for projects. It combines scope, cost, and schedule baselines on its own, ensuring that project plans are in sync. For this project this clearly demonstrates an approximate plan

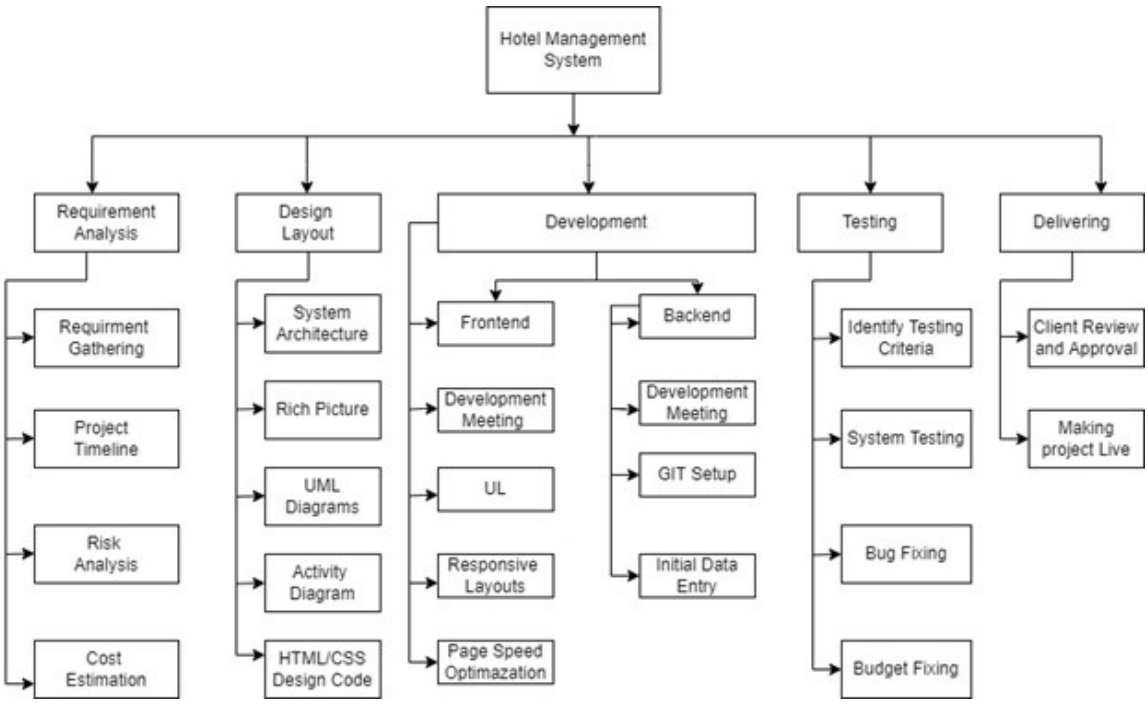

Figure 3.1: Work Breakdown Structure

3.2 Process/Activity wise Time Distribution

The project will approximately take almost 3 months to complete, and the processes of each stage are divided according to that. The time distribution was created using the critical path method. The critical path method (CPM) is a strategy for determining schedule flexibility and identifying activities that are required for project completion. In project management, a critical route is the longest series of operations that must be completed on time in order for the project to be completed

Time distribution of the project:

Task	Days	Work Percentage
Requirement Analysis	15	15
Design	14	20
Implementation	30	40
Testing	15	15
Deployment	10	10
Total	84	100

Figure 3.2: Activity wise Time Distribution Table

3.3 Gantt Chart

A Gantt chart is a chart that shows all of the different sub-tasks of a project and how they relate to each other over time. A Gantt chart shows all of the tasks that need to be done, the amount of time each task is expected to take, the time frames in which individual tasks are to be completed, and the relationship between various tasks. This way, everything gets done on schedule, and you never waste time waiting for a task to be completed that should have been done already. For these projects, a Gantt chart was used in the planning phase of the application. Gantt charts are commonly used for tracking projects schedules, and they're especially useful in project management.

PROJECT NAME	Hotel Management System	START DATE	END DATE	OVERALL PROGRESS	PROJECT DELIVERABLE	
PROJECT MANAGER	Md. Imran Gazi	02/20	04/30	100%	SCOPE STATEMENT	
TASK NAME	RESPONSIBLE	START	FINISH	DURATION in days	STATUS	COMMENTS
SPRINT 1		02/20	03/12	18		
Planning	Sadia Afroz Alma	02/20	02/25	5	Complete	Completed
Learning	Sadia Afroz Alma	02/26	03/09	11	Complete	Completed
Requirement specification, relevant ERD and process diagram and System analysis	Sadia Afroz Alma	03/10	03/12	2	Complete	Completed
SPRINT 2		03/13	04/06	24		
System analysis	Sadia Afroz Alma	03/13	03/20	7	Complete	Completed
Developing the home page and testing the developed feature	Sadia Afroz Alma	03/21	03/29	8	Complete	Completed
Developing the other membership features and contact information and testing the developed feature	Sadia Afroz Alma	03/30	04/06	7	Complete	Completed
SPRINT 3		04/06/22	04/30/22	24		
Developing the other membership features and contact information and testing the developed feature	Sadia Afroz Alma	04/06/22	04/18/22	12	Complete	Completed
Fixing Bugs and redeveloping other pages and features	Sadia Afroz Alma	04/19/22	04/26/22	7	Complete	Completed
Merging front-end with back-end	Sadia Afroz Alma	04/27/22	04/30/22	3	Complete	Completed

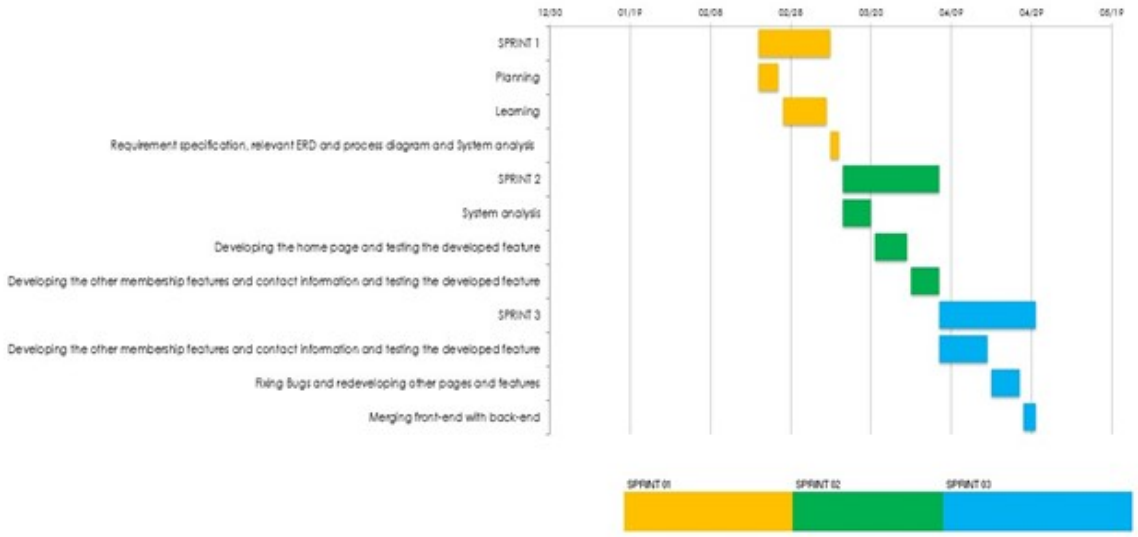

Figure 3.3: Gantt Chart

3.4 Process/Activity wise Resource Allocation

For this project there were several stages and phases that it was divided into. So, according to the need of each process or activity a specific number of employees were allocated along with financing allocation. For this project, we need total 84 days for building the whole system. Following are the details of every step of the project:

- Requirement Analysis: The first stage or task is project management. This is where the main idea of the project and what it is made for, everything in details is explained. For this project, it took 15 working days to manage all the attributes so that the project could get start build as soon as possible. The tasks of every person for the project management are divided. During the first 3/4 of days, the senior developers and CEO were discussing about how the project should be created i.e. what language(s) will be used from top to bottom. Then the project is divided into sub tasks so that time distribution can be planned. Thus setting goals and other deadlines making the project easier for the employees to arrange and complete their tasks. This following part consumed 15% of the total work.

- Design: The designing phase is where designed the features, users and functionality of the system to a few mainstream diagram to show us the bigger picture of the whole scenario. This part considered 20.08% of the total works.

- Implementation: In this stage, all the planning and designing is done. Now the entire application is implemented into framework and test hundreds of times step by step to verify each and every changes that are made to the application. Both the front-end and the back-end are developed and tested as the changes are made. This implementation is a long process and it consumed 40% work of the entire project. Also it took 31 days to complete this task.

- Testing: At the end of the implementation phase unit testing for the application started. There is a dedicated system of testing for all the projects. Usually, they contain 1-2 team members. Although many testing was made by the developer as per the implementation; however, a finial testing of the project must be done by the head of the project. This testing will be done on all conditions that are necessary for the testing. This process is going for 15 days which is approximately 105 working hours and considered 15.82% of the total works.

- Deployment: The deployment is where the project will be put down for practical use by the client. There are different types of deployment depending on the type of project. For this project, since it is a web based application, the deployment will be a website that can be accessed internationally from anywhere in the world. In order to do this, the following project is need to be uploaded on a server that has public IP. For this project, database is provided by the company's server.If all above are done, the application should be able to start giving service from that moment.

3.5 Estimated Costing

The practice of projecting the funds and resources required to accomplish a project within a stated scope is known as cost estimating in project management. Cost Estimation produces a total number that sets a project's budget by accounting for each aspect necessary for the project, from supplies to to labor.

Requirements	Amount
Salary Payments (3 months)	1,20,000
Domain/Server/Hosting (1 year)	4500
Internet Bill (3 months)	3000
Electricity Bill (3 months)	9000
Subtotal	1,36,500

Figure 3.4: Estimated Costing Table

Chapter 4

Methodology

For completing any project, a system must go through some process which is called Software Development Life Cycle (SDLC). SDLC is a process which consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.

There are various software development life cycle models such as:

- Waterfall Model
- Iterative Model
- Spiral Model
- Agile Model
- Big Bang Model

In this project, I used agile model to develop project. It is the best SDLC methodology and also one of the most used SDLC in the tech industry as per the annual State of Agile report. Its one specialties is it allows any requirements changes without negatively impact. Agile Methodologies have overcome the traditional of waterfall model by becoming flexible, fast, lean, responsive, and consistent and methods ore open to changes.

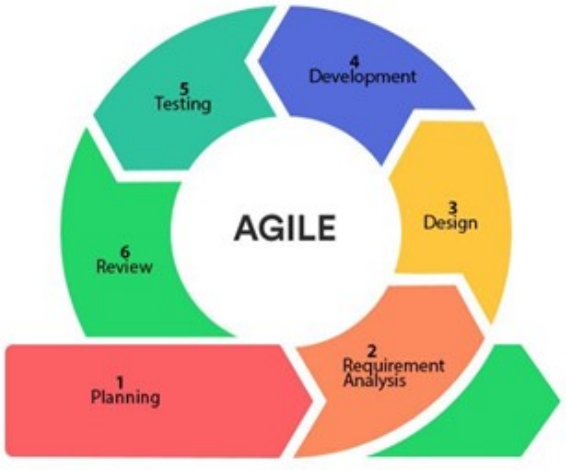

Figure 4.1: Agile Methodology

In this project, I used agile model to develop project because-

1. It allows fast delivery to satisfy customer and adapt any requirement change.
2. It provides higher product quality through testing during develop process.
3. It helps to predict the cost, time and resource through breaking up the project.
4. It also allows customer collaboration and feedback.
5. It is becoming more flexible, fast, lean, responsive and consistent.
6. If anything isn't good or acknowledged decidedly, it very well may be immediately changed in the next cycle.
7. Agile cycle empowers more authority over the undertaking through day by day gatherings.
8. Agile gives the chance when fresher changes should be fused.
9. The purchasers' necessities and inclinations can be adjusted to, in the turn of events measure.
10. A practical prepared to utilize item is made get-together few emphasis subsequently more useful.
11. Every emphasis permits changes to be made to the item effectively causing it to develop and create.

12. Users are given main concern, and this guarantees the item is valuable and attempts to meet their requests each phase of the way.

13. Small groups work better utilizing coordinated improvement measure as on engineer can have different abilities and can use them at a few phases of the cycle without clashes.

Chapter 5

Body of the Project

For the project, I contributed to both the front end and the backend of the application. The frontend was built with HTML5, CSS3, BOOTSTRAP 4, JavaScript, Code Igniter Framework of PHP language was used for backend. MySQL was used in the database.

5.1 Work Description

Hotel Management System is mainly a complete hotel management software that can manage an online booking or reservation system, room management system, customer management, user billing system and more. This software provides an Admin panel and an attractive Website that ensure a hassle-free operation.

By using this system people can easily book their desired room through the website and can complete their payment process as well whenever they want. This is a web-based application system that overcomes the issue of managing and booking rooms according to user's choice and demands.

This system consists of seven modules. These are

1. Registration and Login: Where customer and admin both can create and Login an account with their email and password.
2. Searching room: Where a customer can search for the rooms by his preference considering available rooms type and cost.
3. Update and modify Profile: Where customer and admin can update their profile and modify any personal information such as contact information, address.
4. Booking: Where customers can book rooms, pay the bill online and get an Invoice after successful payment and admin can accept or reject reservation.

5. Managing Customer: Where admin can view booking list, customer profile, customer details.

6. Contact: Customers can communicate with hotel admin for any kind of query or information.

7. Review: Where a customer allows to leave a review of his/her experience and admin collect feedback to update services.

Description of all modules:

- **Registration and Login:**

1. Customer Account Creation: Customers can create an account with their Full Name, Gender, Email, Phone number, Address, and Password.

2. Admin Account Creation: Admin can create an account with their Full Name, Gender, Email, Phone number, Address and Password.

3. Login Process: Admin and customer can login their account with their registered email id and password.

- **Searching Room:**

Customers can search rooms by the specific room type (Example: Luxury/Standard/Deluxe) with available date, times and cost.

- **Update and modify Profile:**

Customer and admin can update their profile from "Update Profile" section and customer can modify his/her contact information, address or any personal information.

- **Booking:**

Customers can book rooms online at any time sitting at home. He/ She also pays the bill online (Example: Bkash/Nogod/online banking). After paying the bill'.the customer gets an Invoice. Admin can accept or reject reservations.

- **Managing Customer:**

Admin can view a list of booking requests, customer profile who wants to book a room, booking date and time. He'll accept the request and update the booking room status and sent confirmation/ decline mail to customers

- **Contact:**

Customers can communicate with hotel admin with email, live chat or over phones for any kind of query or information. Admin give information they need for further process.

5.2 System Analysis

System Analysis is a detailed study of the various operations performed by a system and their relationships within and outside of the system. Analysis begins when a user or manager begins a study of the program using existing system. During analysis, data collected on the various files, decision points and transactions handled by the present system. The commonly used tools in the system are Data Diagram etc. Flow.

5.2.1 Six Element Analysis

Process	Human	Non-Hardware	Hardware	Software	Database	Communication Network
Login/ Register	Users enters email and password	Mobile Number when registered	Keyboard, Mouse and Computer	Web Browser	Stores register Data and retrieves login data.	Internet
Find Rooms	Users go to the search option and find the room according to their choice	N/A	Keyboard, Mouse and Computer	Web Browser	Retrieves data according to search filtering	Internet
Add New Room	Admin can add a new room if needed.	N/A	Keyboard, Mouse and Computer	Web Browser	MySQL	Internet
Check Reservation	Admin can check how many reservations have been done and their information	N/A	Keyboard, Mouse and Computer	Web Browser	MySQL	Internet
Update and Modify Booking	Admin can update and modify booking information	N/A	Keyboard, Mouse and Computer	Web Browser	MySQL	Internet
Make /Cancel Reservation	User Clicks Cancel reservation if the journey needs to be canceled	N/A	Keyboard, Mouse and Computer	Web Browser	Modify Booking information	Internet
Make Payment/ Billing	User goes through to the checkout process and gateway	Credit Card information / Mobile Banking	Keyboard, Mouse and Computer	Web Browser Payment Gateway	Stores data if payment successful	Internet

Figure 5.1: Six Element Analysis

5.2.2 Feasibility Analysis

Feasibility study is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time. It involves preliminary investigation of the project and examines whether the designed system will be useful to the organization. Months or years of effort, thousand for millions of money and untold professional embarrassment can be averted if an in-conceived system is recognized early in the definition phase .The objective of feasibility study is to determine whether or not the proposed system is feasible. The feasibility is determined in terms of three aspects.

These are-

Technical Feasibility: In this, one has to test whether the system can be developed using existing technology or not. We have used Visual Basic as front-end and MS ACCESS as back-end. It is evident that necessary hardware and software are available for development and implementation of proposed system. We acquired the technical knowledge of working in Visual Basic language, and then only we have started designing our project.

Operational Feasibility: The proposed system offers greater level of user-friendliness. The user needs to have a web interface with reliable connection which through he/she will get access to the application. Users can easily look up for the real view of the available seats' layout. The proposed system produces best results and gives high performance. It can be implemented easily. So, this project is operationally feasible.

Economic feasibility: As a part of this, the costs and benefits associated with the proposed system are compared and the project is economically feasible only if tangible and intangible benefits outweigh the cost. The cost for proposed hotel management system is outweighing the cost and efforts involved in maintaining the registers, books, files and generation of various reports. The system also reduces the administrative and technical staff to do various jobs that single software can do. So, this system is economically feasible.

Legal Feasibility: Legal feasibility determines whether the proposed system conflicts with legal requirements, e.g. the Data Protection Act. It will be done by some legal advisors.

5.3 System Design

5.3.1 Rich Picture

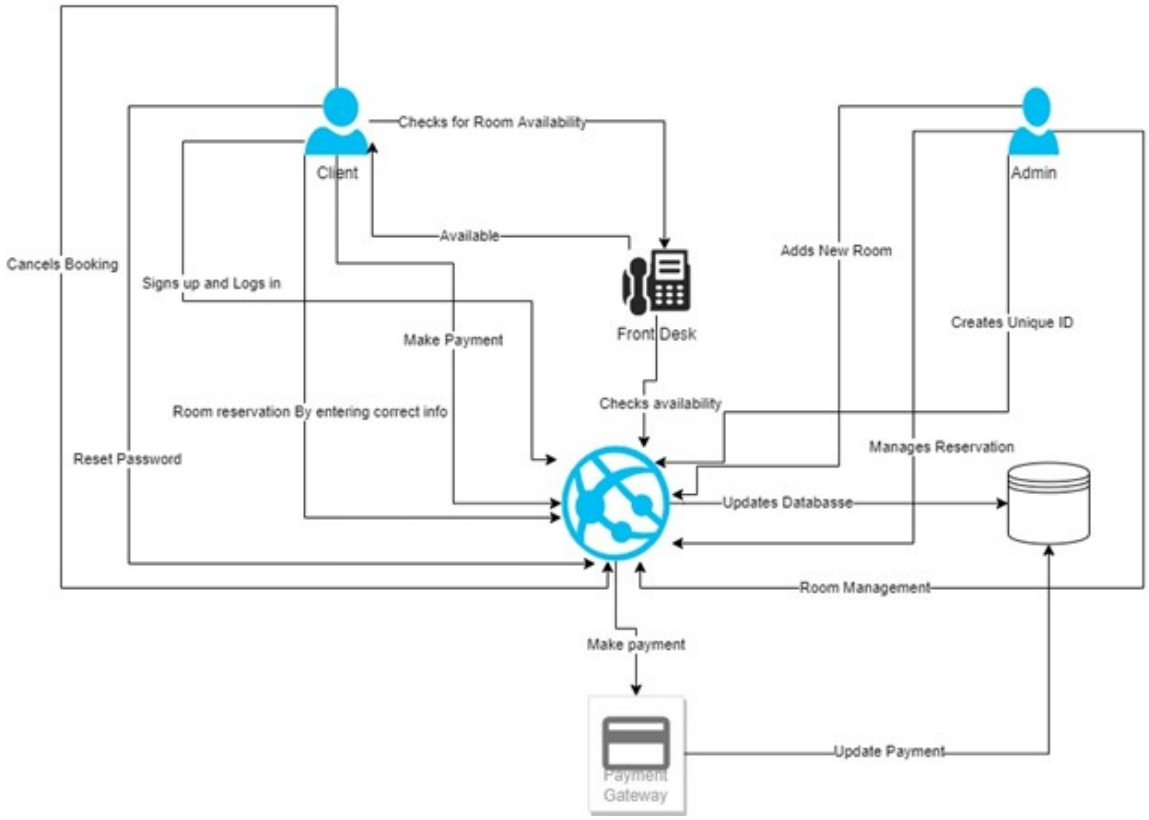

Figure 5.2: Rich picture of hotel management System

5.3.2 UML Diagrams

The Unified Modeling Language (UML) is a standard language for specifying, visualizing constructing, and documenting the software system and its component. It is a graphical language, which provides a vocabulary and set of semantics and rules. The UML focuses on the conceptual and physical representation of the system. It captures the decisions and understandings about systems that must be constructed. It is used to understand, design, configure, maintain, and control information about the systems

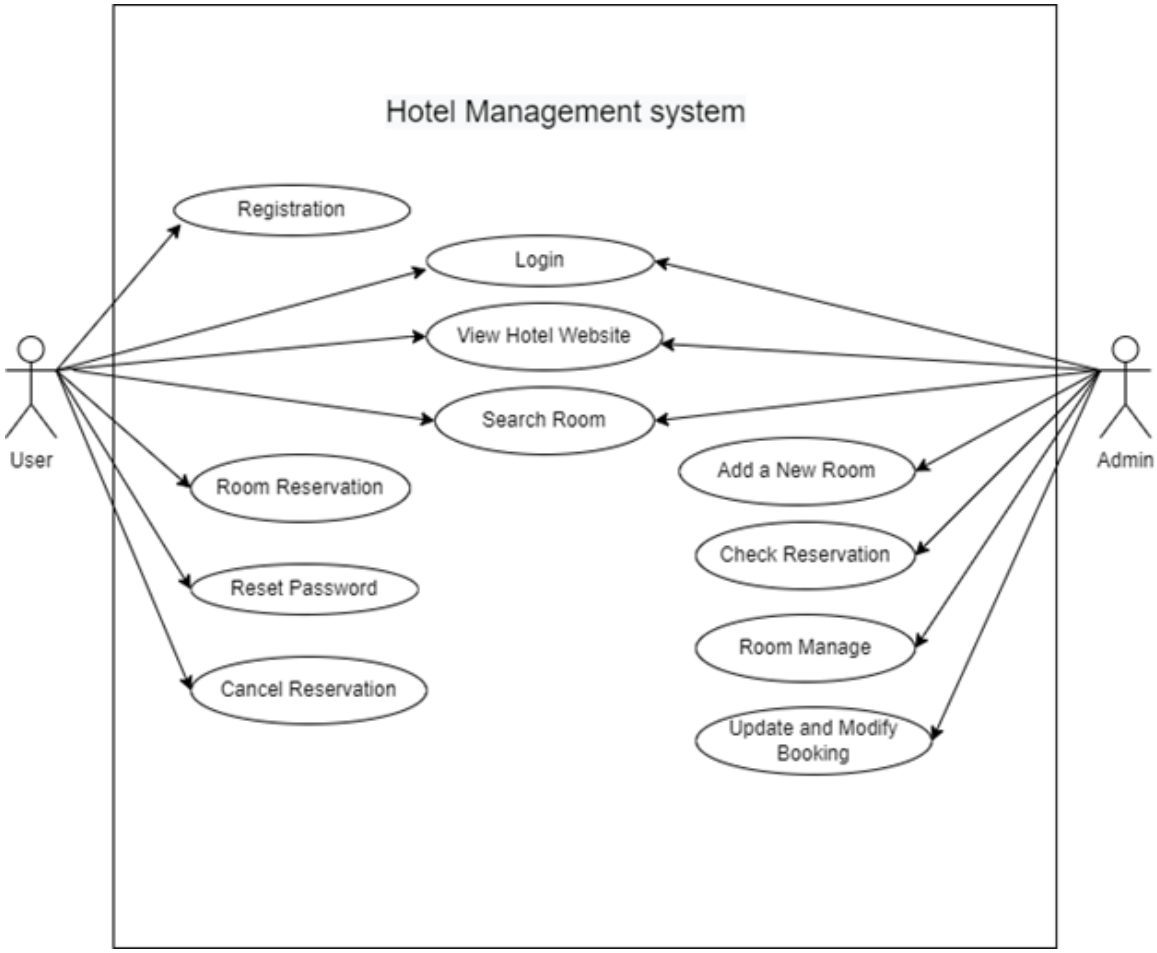

Figure 5.3: Use case Diagram

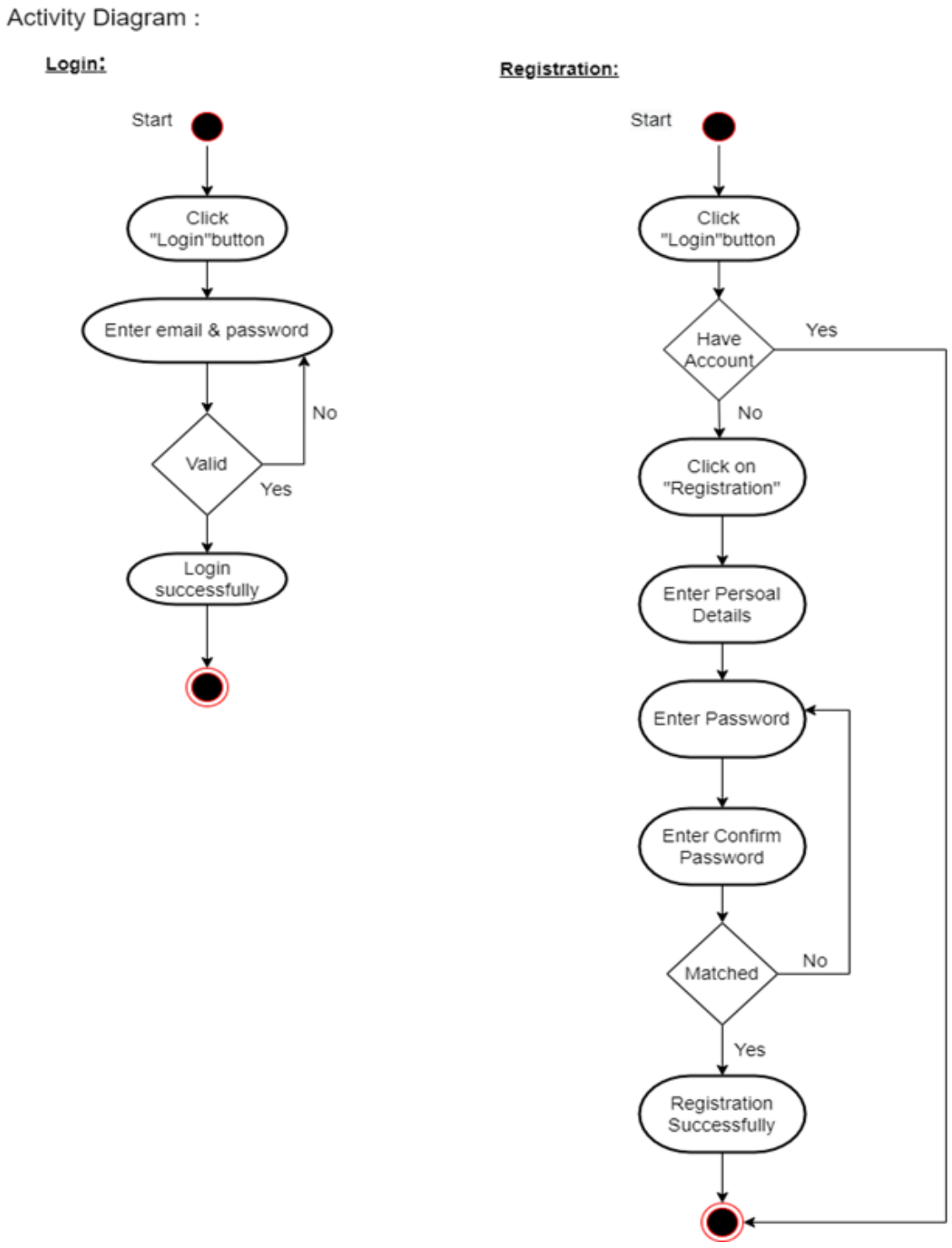

Figure 5.4: Activity Diagram

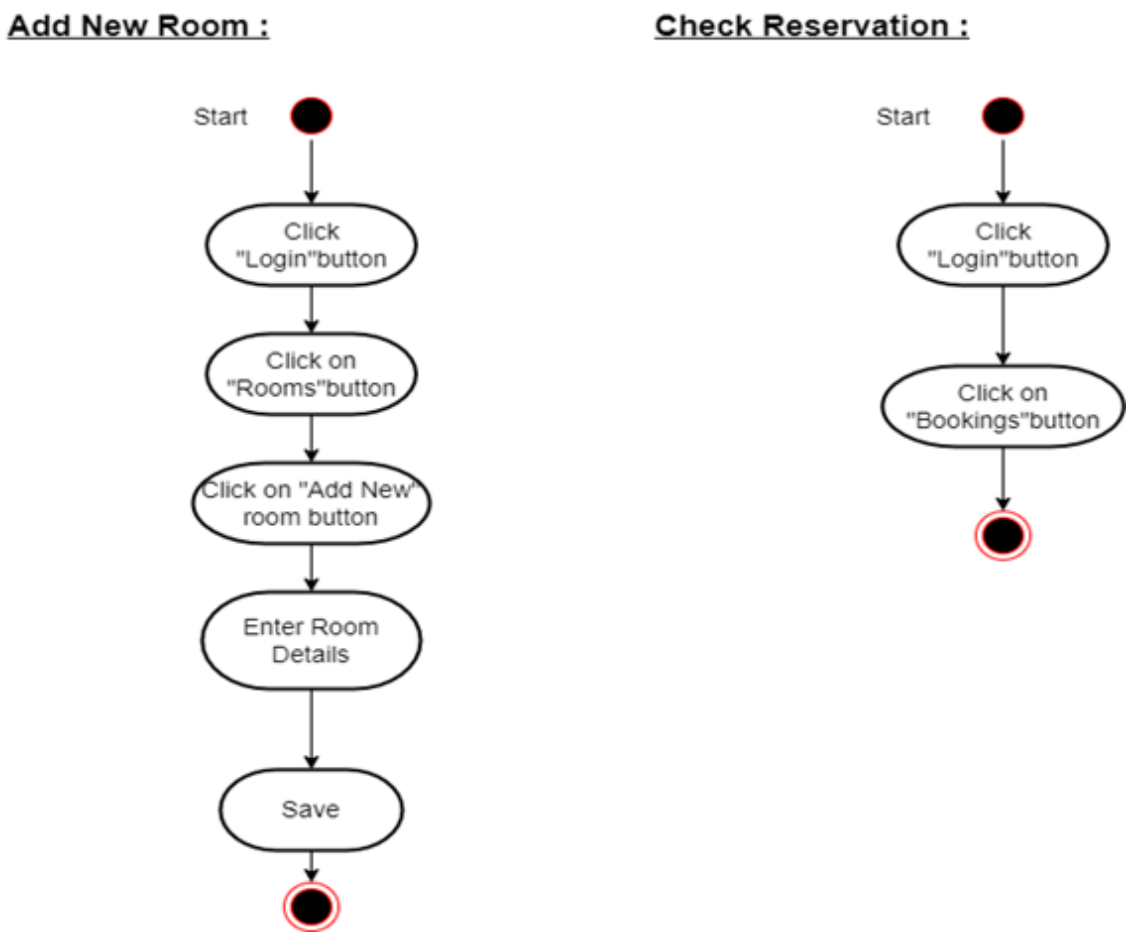

Figure 5.5: Activity Diagram

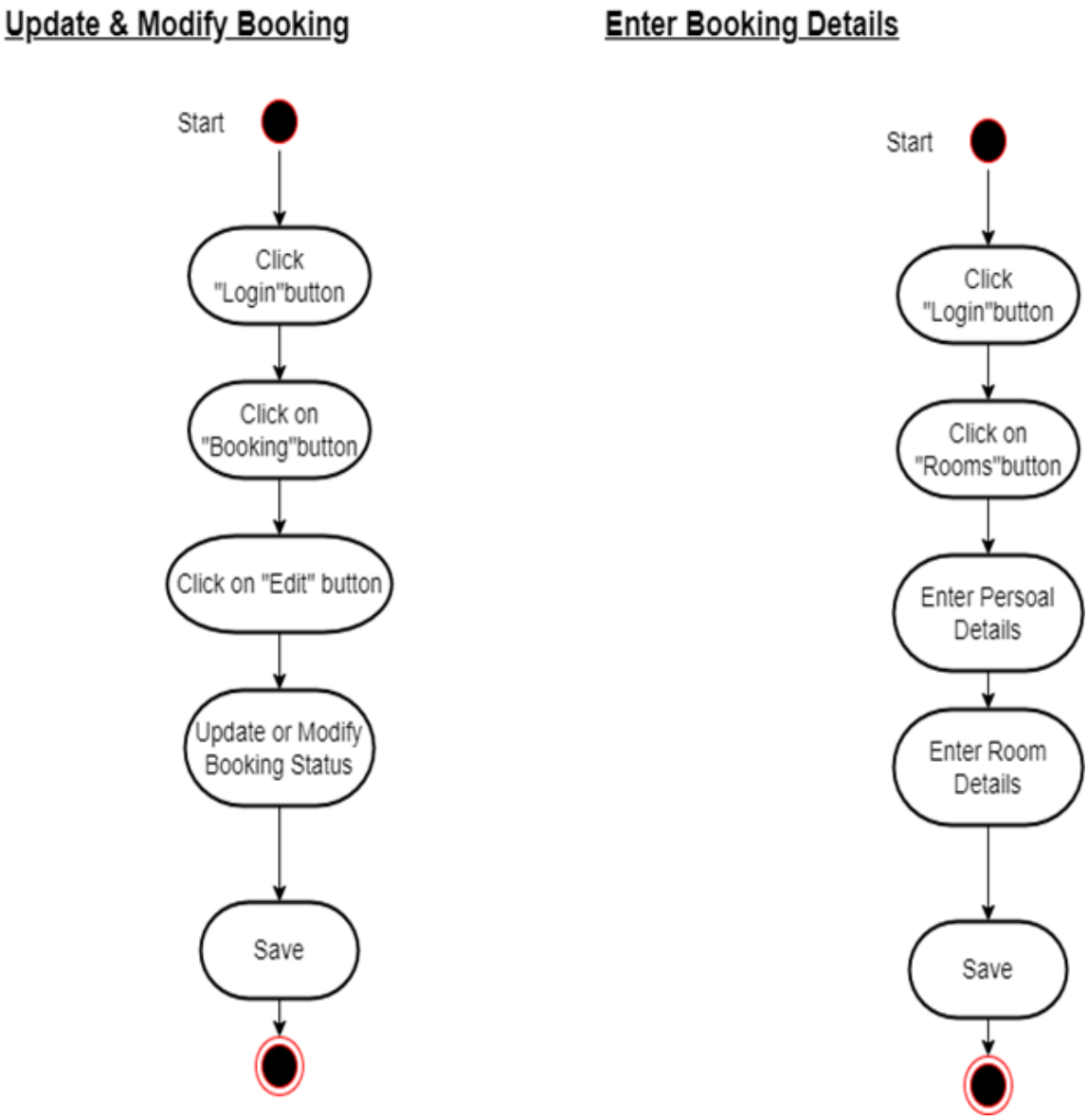

Figure 5.6: Activity Diagram

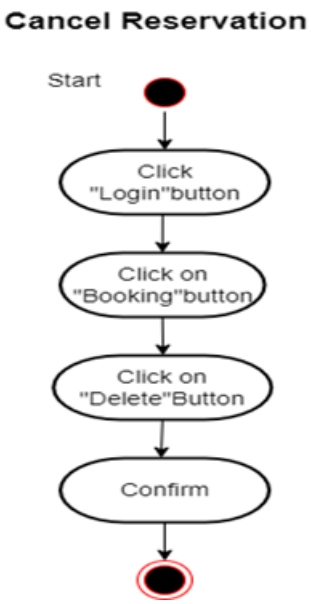

Figure 5.7: Activity Diagram

Entity Relationship diagram

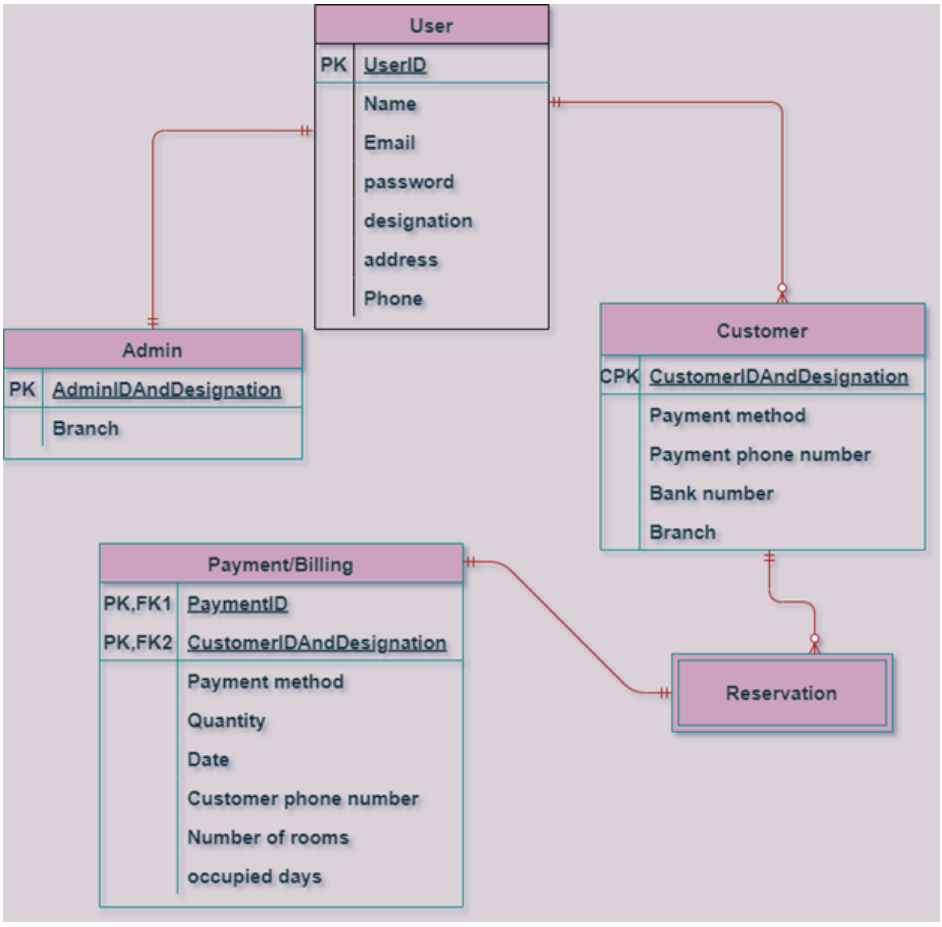

Figure 5.8: Entity Relationship diagram

5.3.3 Functional and Non-Functional Requirements

Functional Requirements

This category includes requirements that are relevant to the operations of software. These specify the software system's internal and external functions and functionality –

- The user has the ability to explore through a variety of files using the search tool.
- Any report should be able to be communicated to management. Users can be organized into groups, and each group can have its own set of permissions.
- Customer rules and management services must be followed.
- Application is designed with maximum compatibility in mind.

Non-Functional Requirements

This category includes requirements that aren't connected to the software's functionality. They are software's implicit or assumed qualities, which users take for granted

Non-functional requirements include -

- Access control,
- Monitoring,
- Storing,
- Configuration,
- Productivity,
- Affordability,
- Compatibility,
- Scalability,
- Backup and recovery,
- and availability

5.4 Product Features

Product features defines the functionality of the product and how that will benefit the users of the product. I have discussed the features of our website below:

Login and sign up: The most basic features of a web application are the user systems, login and registration. As soon as a legitimate registration is completed, the user is informed that the registration was successful. Add Room: Admin can add new room considering room category standard, deluxe, super deluxe and luxury from where guest can choose their preferable rooms.

Room Reservation: Guest can reserve a room by sitting at home at any time through this application. He or she can choose room considering four categories and book a room. Search Room: Guest and admin can search for room using this search feature. Guest can view available room list for reserve or further process.

Cancel Reservation: Cancel reservation allow guest to cancel reservation after reserve a room. Guest can cancel reservation before admin confirm it. Admin also can cancel any reservation for any valid reason.

Update/Edit booking: Update feature allow user to modify his/her personal or booking information. Guest can edit any details using this feature.

5.4.1 Input

The table below lists the procedures and the input fields necessary for each phase.

Process	Fields (Type)
Login	Email - string Password - string
Registration	Name - string Email - string Password - string
Search Room	Room Name – string
Booking Room	Email – string No of adults – integer No of Children – integer Date - string

Figure 5.9: Input Table

5.4.2 Output

Process	Fields (Type)
Login	On success- Redirect to user dashboard. On failure- Show error message "Please enter correct id or password".
Registration	On success- Show success message "Registration successfully done!" On failure- Show error message "Registration not done!"
Search Room	On success- Show specific Rooms profile. On failure- Show error message "Room not Booked!"
Booking Room	On success- Show success message "Room booked successfully!" On failure- Show error message "Room not Booked!"

Figure 5.10: Output Table

5.4.3 Architecture

Internet or intranet web-based applications are applications that may be accessed using a web browser over the internet or intranet. As a result of the browser's easy availability, web applications are extremely popular. A significant reason for their popularity is the ease with which web applications may be updated and maintained without having to distribute and install software on potentially thousands of computer systems.

Front-end:

There are various types of programs that can be used to create a visually attractive front-end, but we used HTML, CSS, and JAVASCRIPT to beautify the project's front-end.

Backend & Database:

PHP is used throughout the backend to ensure it is working smoothly. PHP (hypertext preprocessor) is a popular open-source overall JavaScript framework that is well-suited for web development and can be embedded in HTML. PHP differs from user JavaScript in that the code is executed on the server, resulting in HTML that is then delivered to the client. PHP is widely used during website development due to its simplicity and quality and reliability. We'll be using MySQL for our database.

Chapter 6

Results & Analysis

6.1 Overview

The overall project work started acquiring the requirement gathering. As it was a demanding system for most of the tech companies around the country, we focused to build it as a generic product and customize as per client companies furthermore. Hence, we the developer team had meeting with Higher management about understanding the product we were trying to build. Later we had to conduct survey to make clear idea of the functionalities. Also, the developer team discussed about the User Interface (UI) of the product according to possible client.

6.2 Software Testing

Software testing checks whether new software is safe, accurate, and of high quality. The process of ensuring that the developed computer software meets the clients' needs is known as approval. Software testing's main purpose is to detect faults in the application. The graph below depicts the outcomes of tasks on which I have worked. Each task is unique.

Test ID	Test Case	Description	Steps To Be Executed	Expected Result	Actual Result	Pass/Fail
T1	User Signup	User needs to successfully register	1.Go to "Sign Up "page 2. Input all information's. 3.Click on "Submit"	Information will be stored in the database and open an account for the user.	Information stored in database and account opened for that user.	Pass
T2	User Sign in	User needs to "Sign IN" with registered email and password	1.Go to" Sign In" page 2. Input Email, Password 3.Click on" Submit"	Information will be check in the database if found redirect to user's dashboard	Information checked in the database if found redirect to user's dashboard	Pass
T3	Search Room	User can search room	1.Go to "Home Page" 2.Search Room	Information will be check in the database if found redirect to room's list	Information checked in the database if found redirect to user's dashboard	Pass
T4	Booking	User can book rooms	1.Go to "Booking" section 2.Select Room, check in Date, Check out Date, number of members 3.Click on "Submit"	Information will be check in the database	Information stored in database	Pass
T5	Edit Booking	User can edit or update their booking information.	1.Go to "Booking History " 2.Input information to edit 3.Click on "Submit"	Information will be check in the database	Information stored in database	Pass
T6	Delete Booking	User can delete their booking.	1.Go to "Booking History" 2. Delete Booking 3.Click on "Confirm"	Information will be check in the database	Information stored in database	Pass

Figure 6.1: Testing Result for User

Test ID	Test Case	Description	Steps To Be Executed	Expected Result	Actual Result	Pass/Fail
T1	Admin Sign in	Admin needs to "Sign IN" with registered email and password	1.Go to "Sign In" page 2. Input email, password 3.Click on "Submit"	Information will be check in the database if found redirect to admin's dashboard	Information checked in the database if found redirect to admin's dashboard	Pass
T2	Search Room	Admin can search room	1.Go to "Home Page" 2.Search Room	Information will be check in the database if found redirect to room's list	Information checked in the database if found redirect to user's dashboard	Pass
T3	View Booking History	Admin can view all booking history.	1.Go to "Booking" section 2.View all booking history	Information will be check in the database	Information stored in database	Pass
T4	Add a New Room	Admin can add new rooms if needed	1.Go to "Rooms" section 2. Click on "Add New Room" 3. Input all information and room image 4. Click on "Submit"	Information will be check in the database	Information stored in database	Pass
T5	Edit Booking	Admin can edit or update user's booking information.	1.Go to "Booking History " 2.Input information to edit 3.Click on "Submit"	Information will be check in the database	Information stored in database	Pass
T6	Delete Booking	Admin can delete user's booking.	1.Go to "Booking History" 2. Delete Booking 3.Click on "Confirm"	Information will be check in the database	Information stored in database	Pass

Figure 6.2: Testing Result for Admin

6.3 Graphical User Interface Result Feature

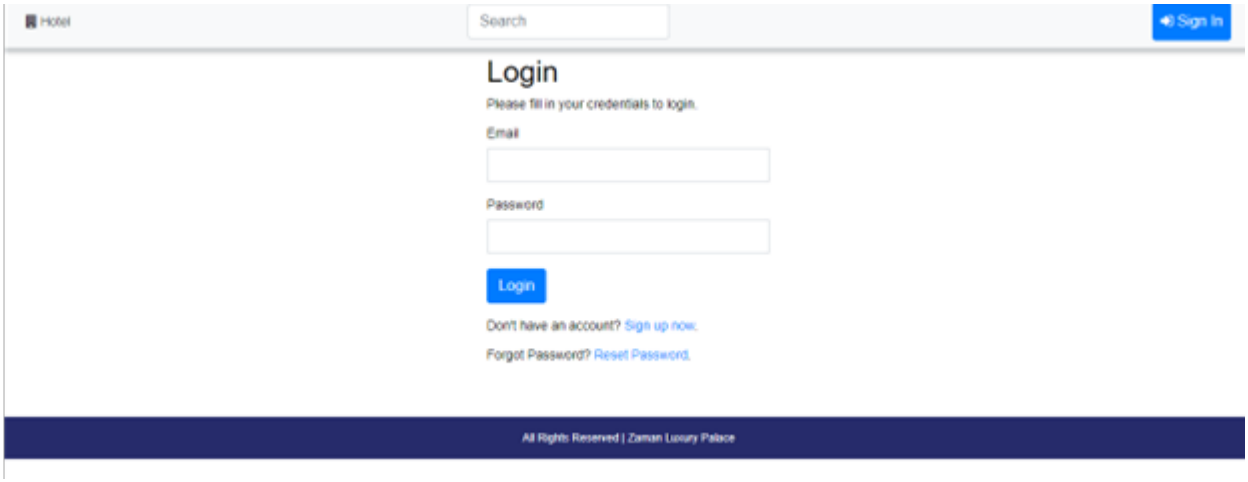

Figure 6.3: Login Page Interface

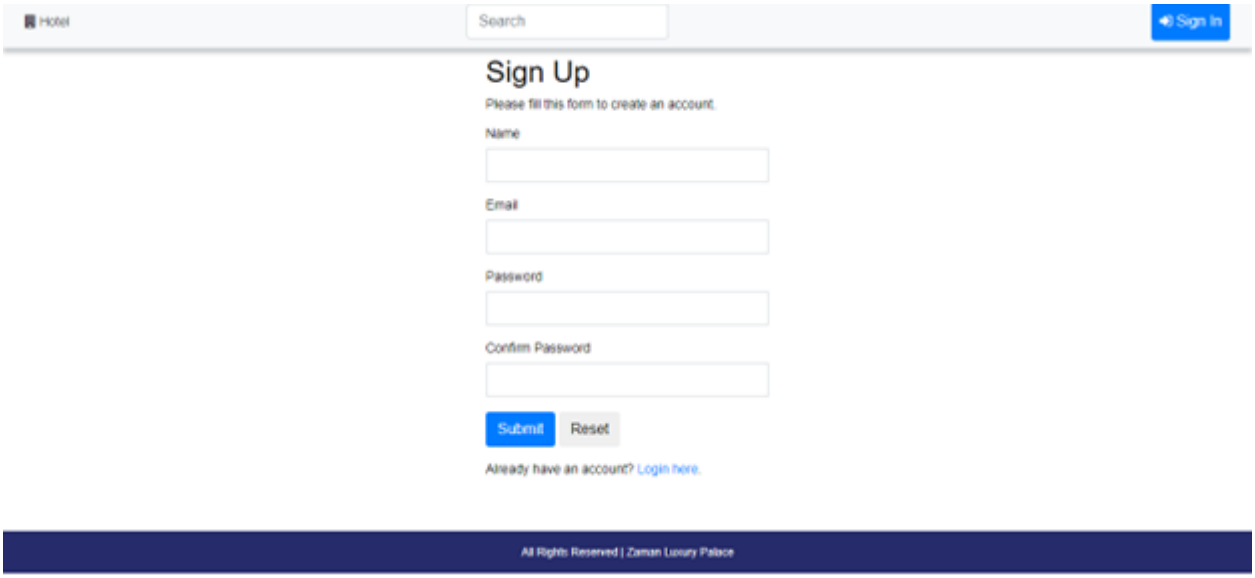

Figure 6.4: Registration Interface

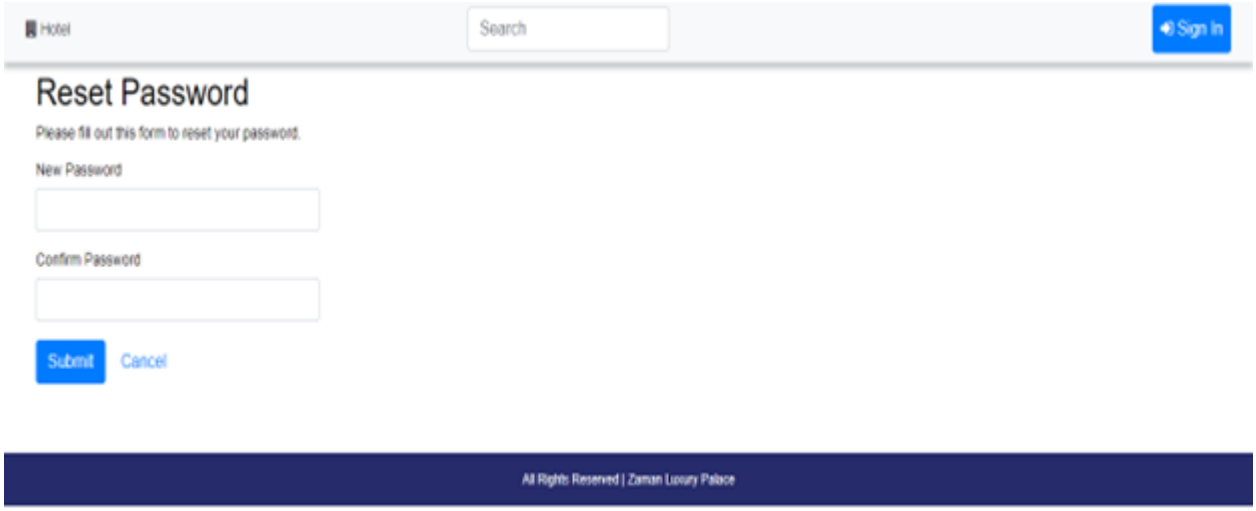

Figure 6.5: Reset Password Interface

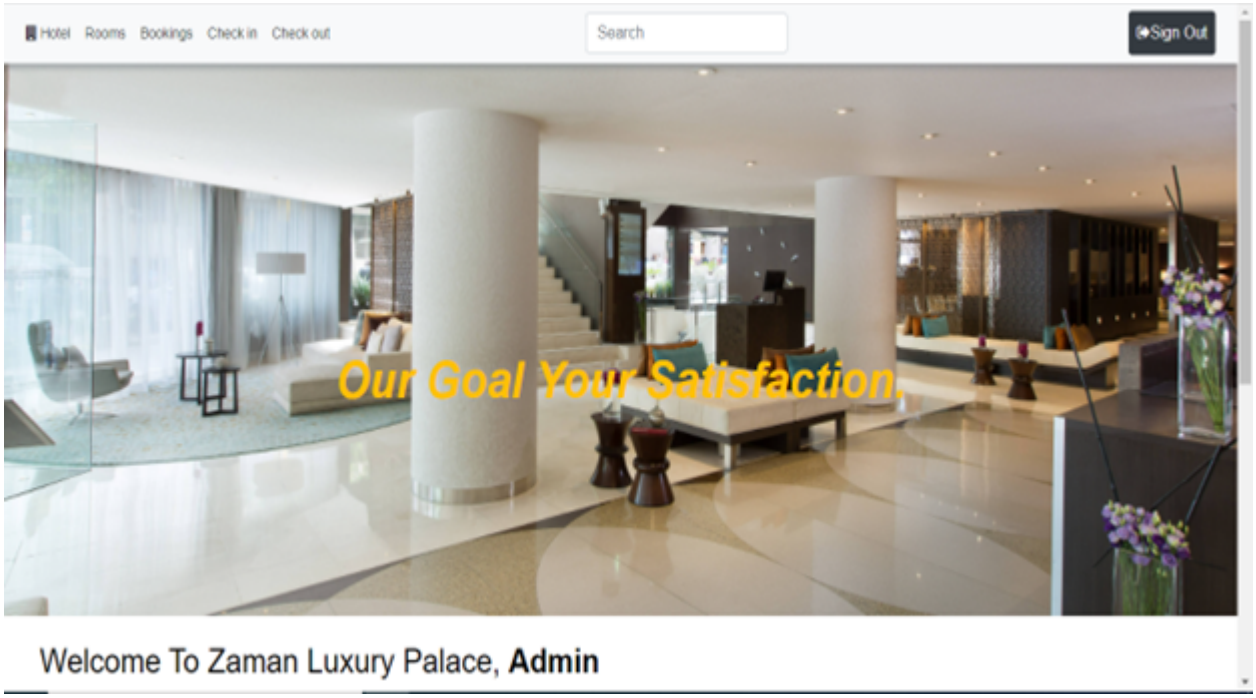

Figure 6.6: Admin (Home Page)

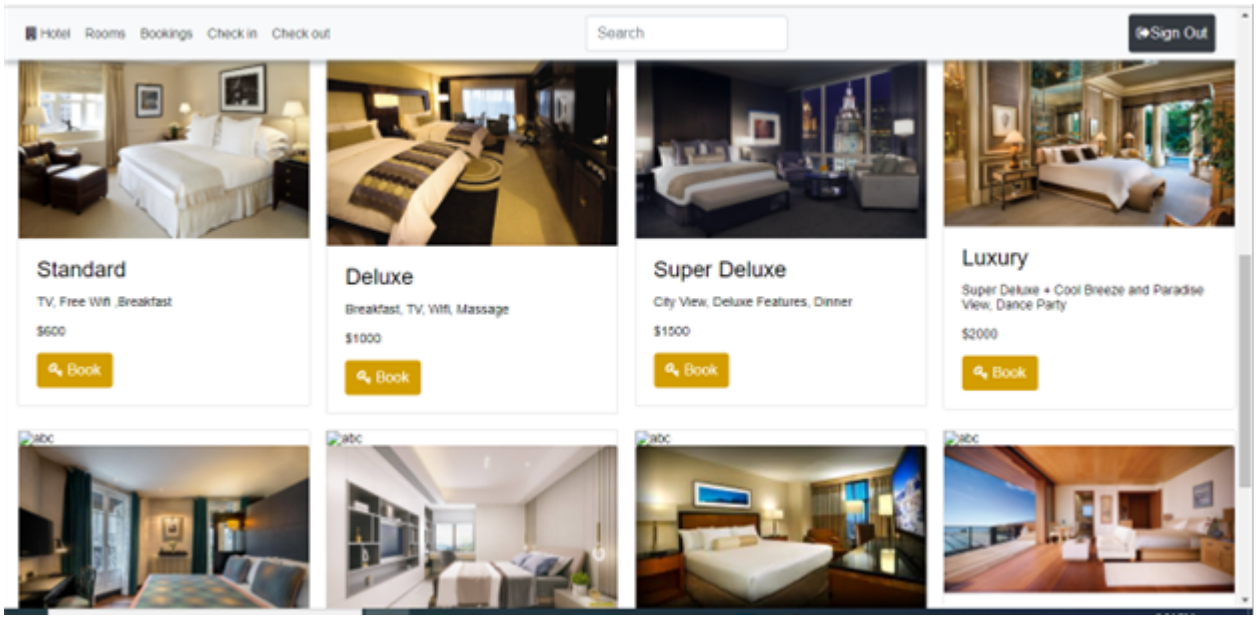

Figure 6.7: Admin (Room category Interface)

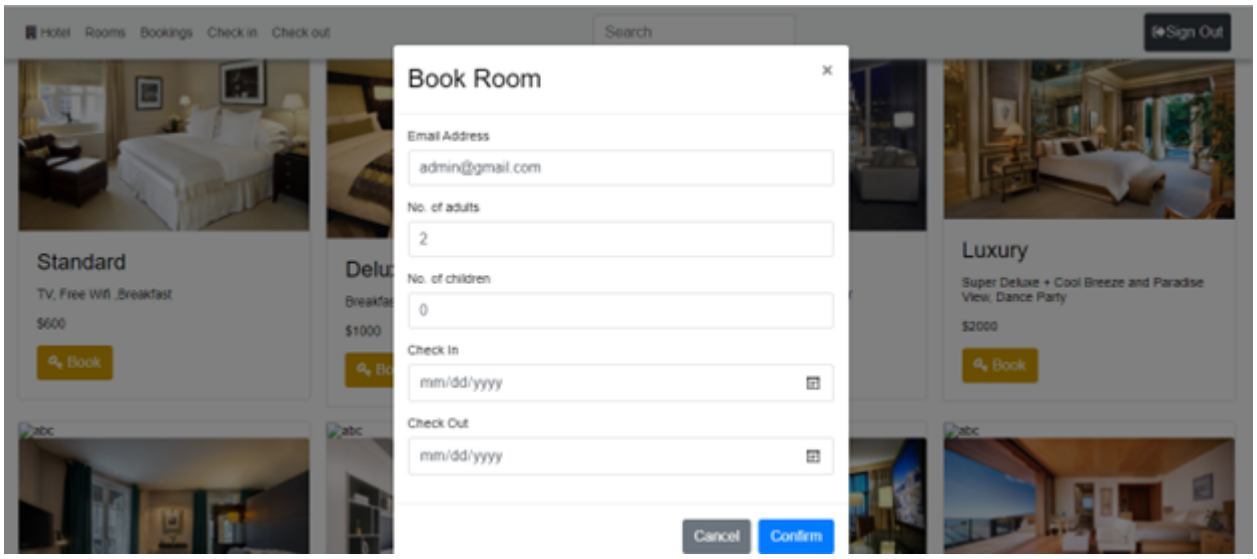

Figure 6.8: Admin (Online Booking Interface)

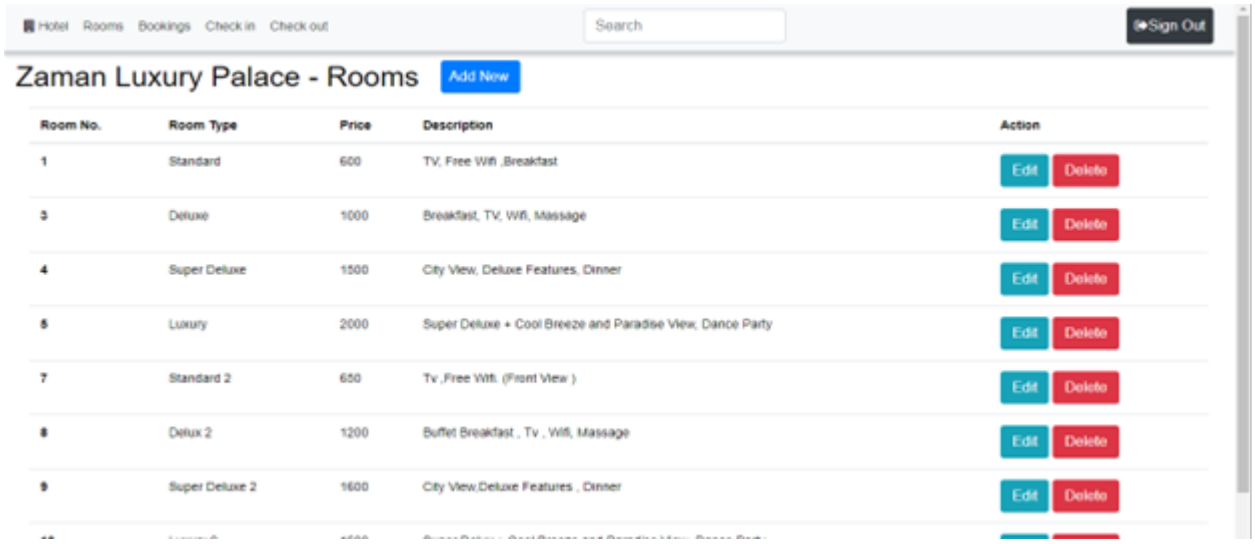

Figure 6.9: Admin (Room History)

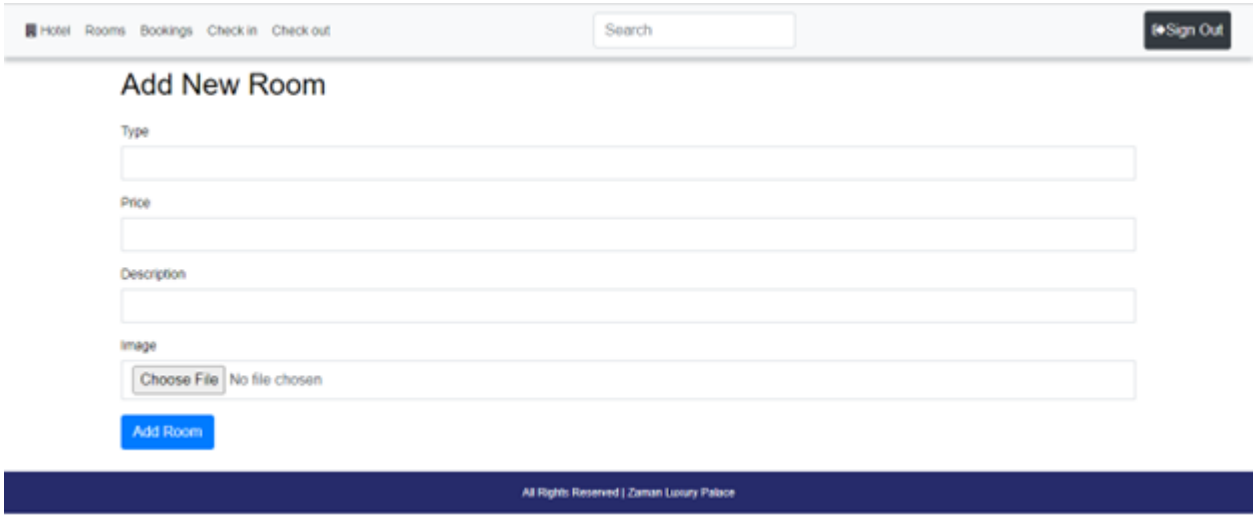

Figure 6.10: Admin (Add New Room)

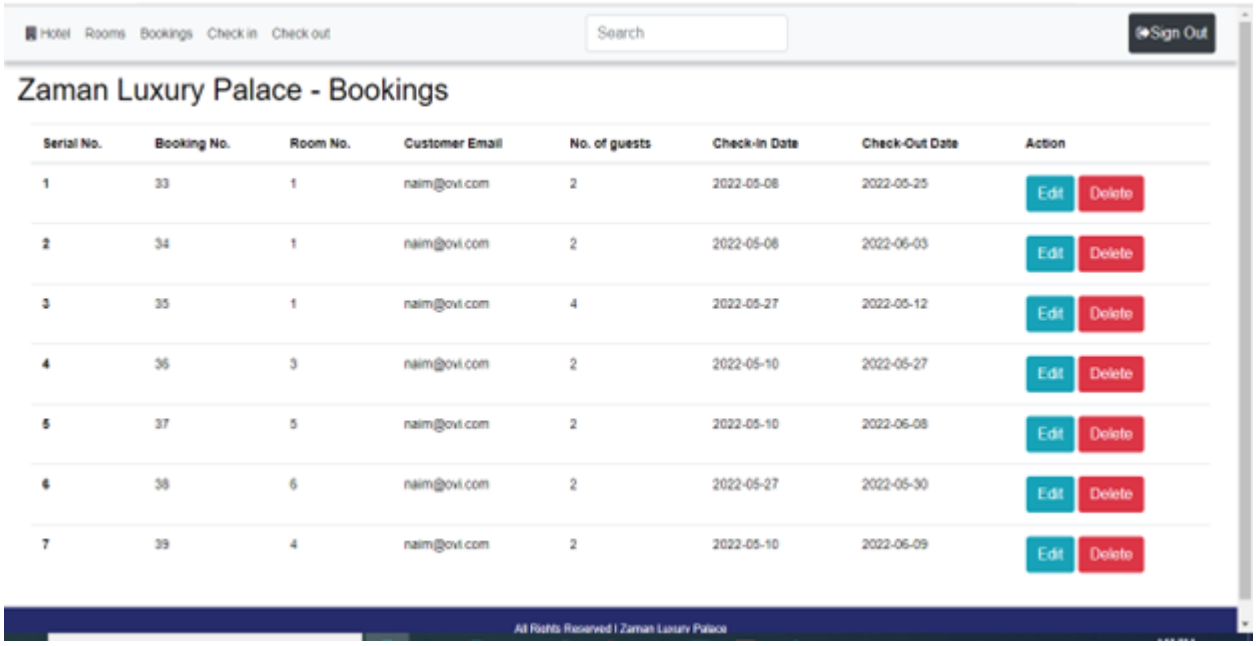

Figure 6.11: Admin (Booking History)

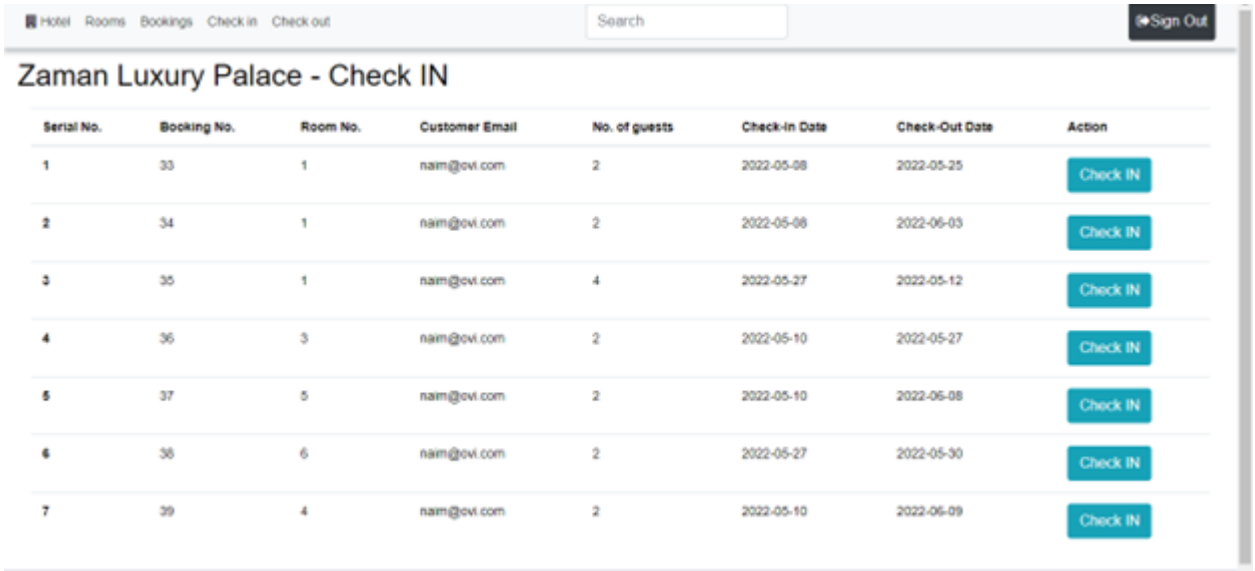

Figure 6.12: Admin (Check-In)

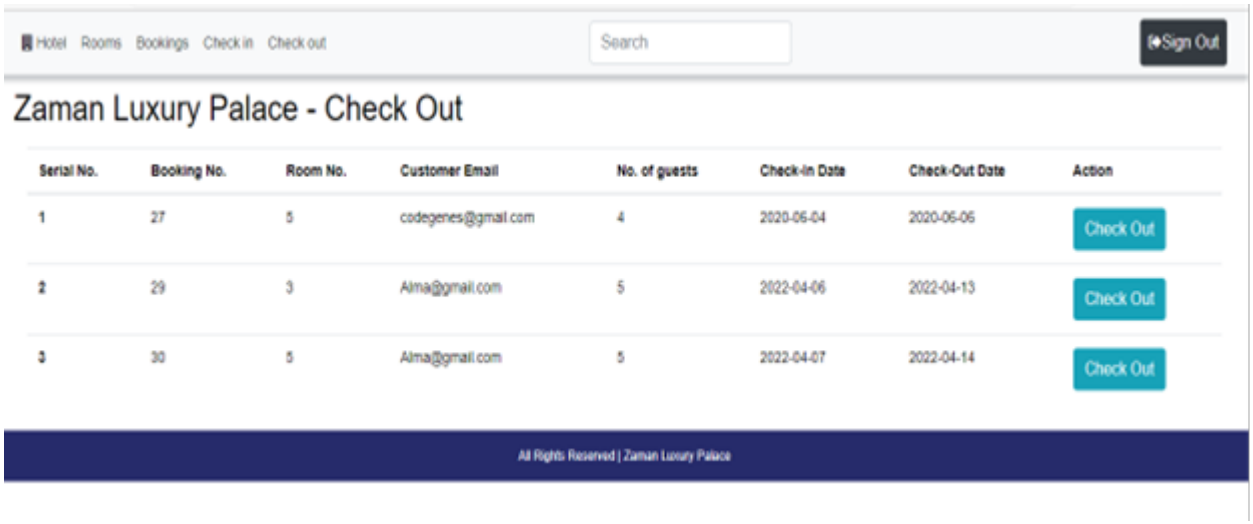

Figure 6.13: Admin (Check-Out History)

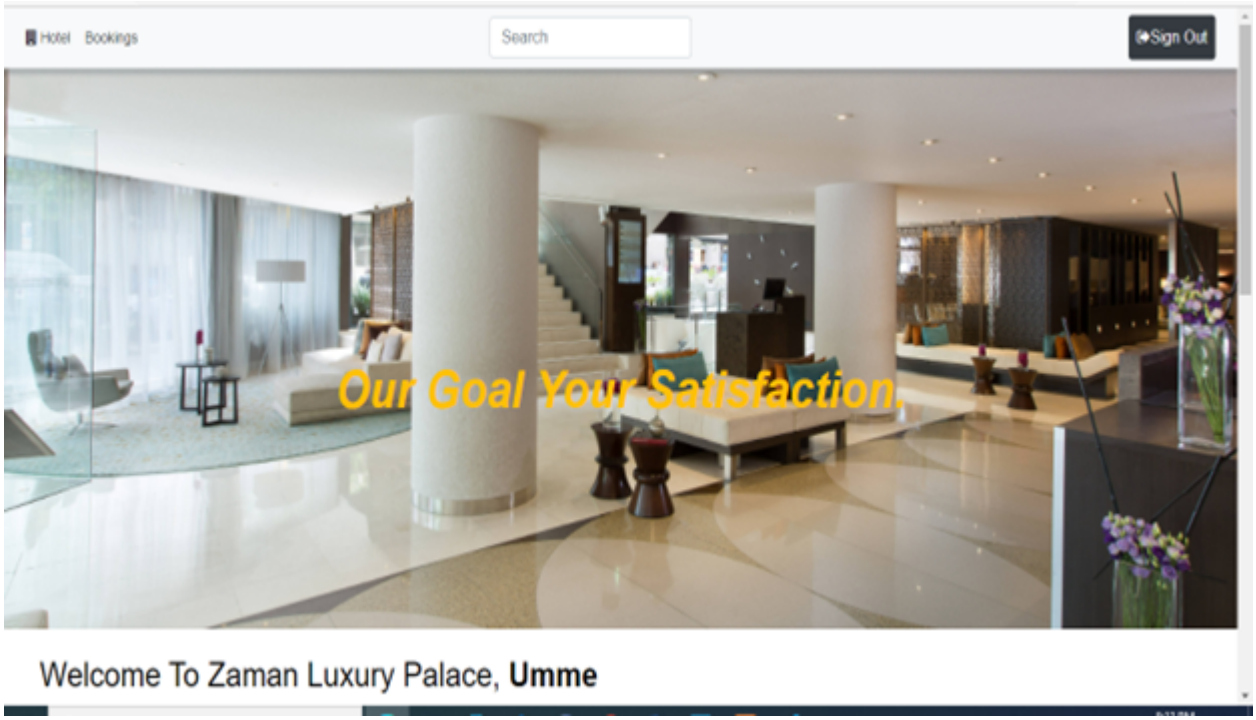

Figure 6.14: Customer (Home page)

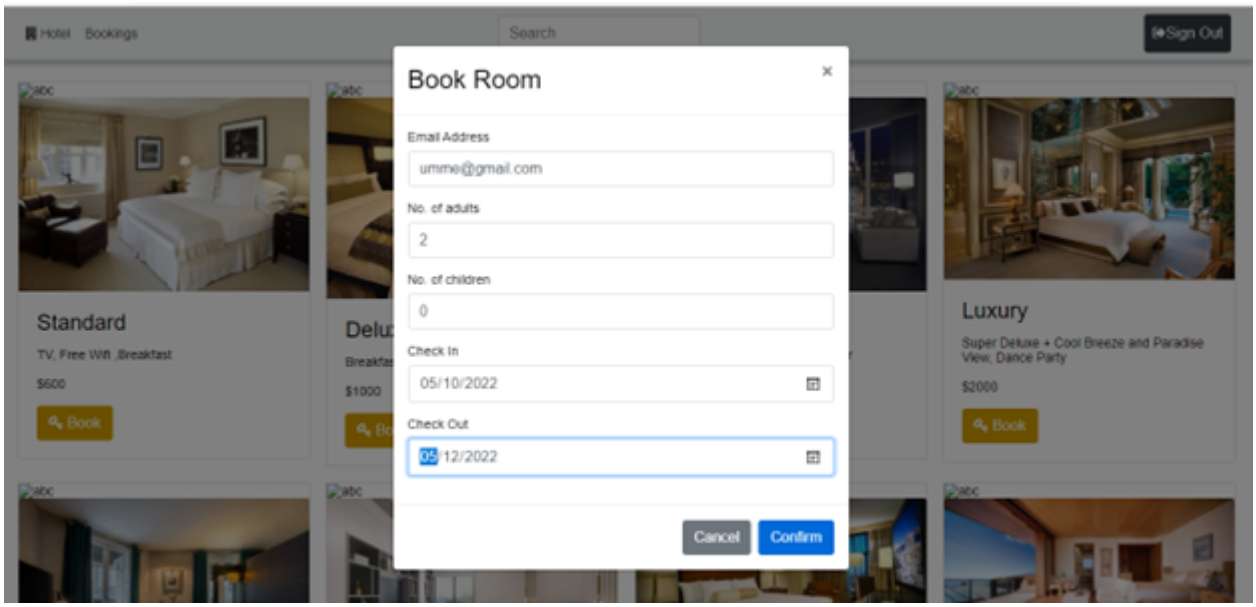

Figure 6.15: Customer (Room Reservation)

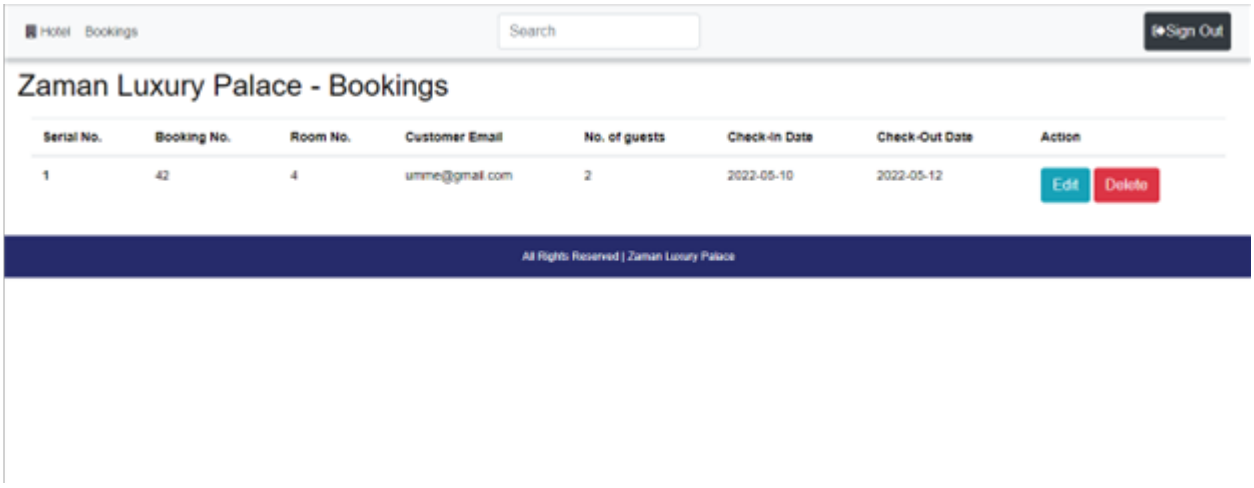

Figure 6.16: Customer (Booking History)

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

The ability of a product to be maintained and upgraded is referred to as its sustainability. Every program released in the current world must be maintained and regularly updated for its user base. The three pillars of sustainability are the economy, society, and the environment. The projects are expected to generate money for the company. Community After the project is completed, we expect the sustainability to be standard. The HOTEL MANAGEMENT SYSTEM is expected to have provided online hotel booking services, check room availability, the ability to pay online and write a review. As a result, people will no longer have to go through the physical trouble of booking a hotel room.

- Financial Sustainability: This pertains to how the application's expenditures will be maintained once it has been released, as well as if it will earn sufficient income to be profitable. Server costs, database storage costs, third-party API costs, and so on are all part of an application's running costs. Hotel management System will be free to use at first, but as the user base increases, new premium services will be introduced, which will eventually be used to earn cash.

- Organizational Sustainability: It has to do with how the company will continue to operate after the application is released. After an application is released, it is frequently maintained by the organization's current team, an extended team, or a brand new team. Additionally, businesses may change their project by adding newer features, pivot to other projects, and expand teams, form new teams, and so on. Many more features are being developed and delivered by Hotel Management System in the future. Because the application has future goals, it will be maintained and upgraded after its initial release, as well as premium services. Finally, the initiative can be described as organizationally sustainable

7.2 Social and Environmental Effects and Analysis

The Social and Environmental Impact Assessment approach detects, predicts, and evaluates the nature and scale of potential biodiversity impacts, as well as conservation possibilities, linked with any commercial operations or projects. The goal is to figure out how health, social, and/or economic effects, as well as their interactions emerge.

To give better services to clients, the hotel management system will work with customers and hotels on a single platform. Because it is more efficient and time saving, customers may reserve rooms from the comfort of their own homes. Because of its user-friendly characteristics, it is more dependable and simple to operate.

The hotel management system will be able to provide online services to manage the entire hotel system, covering both the customer and managerial sides. This will eliminate the effort of maintaining the entire booking process while also updating the services in response to consumer feedback.

7.3 Addressing Ethics and Ethical Issues

In the current computer era, impersonating someone has become quite easy. Without your knowledge, someone could attempt to emulate you and use your credentials to do something illegal or conduct a crime. It became critical to protect user data; otherwise, someone might easily hack the system and steal personal information.

Fraud and Identity Theft: The website does not allow access to the database by any third-party program. No other information is stored except what the customer provides. Customers provided information will be safe from any third party program.

Data security: The server and database system will be accessible only to admin. Without a user name and password, the database is secure.

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

Problem analysis is the process of understanding and defining the problem to be solved. Problem solving identifies solutions that conform to the needs and constrains of the problem. Much of what is done in designing and building information systems is to solve problems, even though the objective of the system may be seen as improving existing systems or taking advantage of market opportunities Working on this Project during my internship program challenged me with numerous hurdles.

Some of these are listed below:

- Adjust with office environment: It was difficult for me to work six days a week from 9:00 a.m. to 5:00 p.m. while also taking one course. During my internship times, I always strived to offer my all. Getting acclimated to the team was difficult because this was my first time working in an environment where everyone contributed as a collaborative effort. Bug resolution was a problem since certain bugs were difficult to locate; even after identifying bugs, it took a long time to fix them.

- Adapting to New Technologies: Because this was my first experience working on a web application in an office setting, I had to learn and adapt to the company's new technologies. Although obtaining the skill set was attainable, using it in real-life scenarios proved difficult.

- Keeping up to speed: Learning new technologies and putting them to use was a slow process for me at first because it was the first time I had used them in an office setting. As a result, meeting weekly targets became increasingly challenging, slowing the overall development of the application.

8.2 Solution of those Problems

- Adjust with office environment: I got new knowledge, skills, and met a lot of new people throughout my internship. I learned about professional practice and the skills that are essential. The internship also allowed me to discover my talents and limitations. Customer Requirement Analysis, User Experience Design, Code Igniter, and Data Structures were among the topics I learned about. Now I understand how to successfully complete a project and what the needs are.

- Adapting to New Technologies: It was challenging for me to adjust to new technology at first. However, with the help of my supervisor and the backing of the web developer team, I became accustomed to the entire process after a few days.

Chapter 9

Future Work & Conclusion

9.1 Future Works

Additional functions will be added in the future. There will be new technology Introduced. The system will include numerous functions. The Hotel Management System's mobile application will be developed in the future. It has many sides for improvement. Some of them are:

- Add payment gateway
- Add new user
- Add Review
- The company aims to add a lot more features and modules to the website as the project progresses to make it even more useful for the employees to work on and to make it appear more appealing.

Furthermore, the software will be updated twice a year to meet the demands and expectations of the company.

9.2 Conclusion

It was a wonderful experience working with ZAMAN IT. I learned a lot and put it to use during my internship. I've learned a lot about creating various types of applications as well as different development styles. I was pressed to adapt to rapid change and find logical solutions. In examining the data, I applied all of my knowledge. I worked with my mentors and seniors to overcome obstacles during my projects. My supervisors, despite their busy schedules, were always available to answer questions and assist me in settling in. This internship has given me the opportunity to learn more about the company's management. I'd like to thank everyone who has contributed to making my life as wonderful as it has been.

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