Web Development of " Smart Hotel Management & Booking System"by

React in

Techno Valley

An undergraduate internship report submitted by

Emon Palowan Alif

has been approved on --/--/--.by

Mohammad Noor Nabi(SIR)

Internship Supervisor & Senior Lecturer

in

Department of Computer Science & Engineering

Independent University, Bangladesh

In consideration of the partial fulfillment of the requirements for the degree of BACHELOR OF COMPUTER SCIENCE in

Department of Computer Science & Engineering

Spring 2021

Attestation

I certify that this report is my own work, based on my personal work by me during my Internship. And that I have acknowledged all material and sources used in this report.

I also certify that this report has not previously been submitted for assessment in any other unit and that I have not plagiarized the work of other students or persons. However, following the internationally accepted academic guideline of using other's written work and/or software (in the form of code) in my University project is properly cited if used in any part of this work.

_____ _____

Signature: Date:

_____

Name

Acknowledgements

First and foremost, I desire to express my deepest sense of gratitude to Almighty Allah, it is because of His mercy and blessing that I have come so far. It has been a great privilege to work for Techno Valley as an Intern. I have received so much support and encouragement from the individuals of Techno Valley who have years of experience in Software Development.I express my gratefulness to my internal supervisor Mr. Mohammad Noor Nabi (SIR) Senior Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh (IUB) and my external supervisor Fahmeed Khan Nezam, Chief Technology Officer(Software developmet), Techno Valley, for his invaluable instructions, continuous guidance, support and motivation during my internship period and preparation of this report. My gratitude also extends to all other employees of Techno Valley who helped me learn so much in my own skill development process and made me fit right in the environment. Many many Thanks to co-developers of this project, specially Ariful Islam, Al Moin Amin, Sadia Rahman for their time, effort and expert skills. Special Thanks to Faiaz Ahmed for designing and drawing the application's logo.

Emon Palowan Alif

4th April, 2021

Letter of Transmittal

4th February 2021

Mr Mohammad Noor Nabi (Sir)
Senior Lecturer,
Department of Computer Science and Engineering,
Independent University, Bangladesh

Subject: Letter of Submission for Internship Report,
Spring 2021 Dear Sir,

This is to inform that with due honor and respect, I, Emon Palowan Alif (ID: 1720670) from Internship Course of Spring 2021 Semester, Section 1, would like to submit my Internship report. This report is based on my internship program and the project I have worked on. My internship was conducted from 4th February 2021 to 5th May 2021 and it has been completed at Techno Valley.This report is based on my experience and the work I did at Techno Valley during my internship program. The primary goal for my internship was to gain experience from working in the software engineering industry and familiarize myself with all the different technology related fields of the company. Over the period of my internship at Techno Valley, I had to learn and adapt to the evolving technologies being used in different situations and requirements and to be able to apply them in real life projects. I hope the following report can achieve your approval and is adequate.

Sincerely,

Emon palowan Alif
Email: 1720670@iub.edu.bd

Evaluation Committee

Signature: .....

Name: .....

Supervisor: .....

Signature: .....

Name: .....

Internal Supervisor: .....

Signature: .....

Name: .....

External Supervisor: .....

Signature: .....

Name: .....

Convener: .....

Abstract

To deal with such a situation, a certain group of developers at ; Techno Valley decided to work on a this application that involves peoples at their need. It has been decided to call the application, "Smart Hotel Management System". The background, scope, objectives and other analytical points about this application will be discussed in detail in this report. Company Profile of Techno Valley will also be addressed. Since the emergence of the electronic computer, decision making and information processing has been straightforward, data can now be stored on a computer in considerable low space and retrieved within a short period compared with the manual method, which is tedious and time-consuming as the size of the file increases Though, the ability of a computer to store, retrieve and process data can also be done by a human. Still, the significant difference is that a computer can reliably execute millions of instructions within a nanosecond and store the result. At the same time, it takes a more extended period for the human being to accomplish. Hotel Management System is a software system where the management of an entire hotel is computerized. The application stores customer record and daily activities performed in the hotel such as customer details, reservation details, creating a new room, vacating the rooms, etc. all are computerized, and the management is done without any difficulty.

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CHAPTER 1

INTRODUCTION

1.1 Background of the work

Smart Hotel Management System is a web-based application that allows the hotel manager to handle all hotel activities online. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient. The hotel manager is a very busy person and does not have the time to sit and manage the entire activities manually on paper. Internship is known as gaining sensible experiences from the different Organizations that helps a lot to make a relation between the theoretical and practical knowledge. Internship is three credit compulsory courses for the students graduating from Independent University, Bangladesh (IUB). A student from School of Engineering and Computer Science (SECS) should go for these three credit hours practical course that is related to their relevant field. It is very important because it is the first time for a student to acquire a keen practical knowledge from the different organizations. As a student of Computer Science of Independent University, Bangladesh (IUB) I have studied a lot of programming courses during last four years. So, when I got a chance to do my internship at Techno Valley, I got a scope to work and learn with the developer team. My project paper is on "Smart Hotel Management System". This report covers the whole project, which I have learnt during the Internship period. This report will be helpful for those who want to learn more about Smart Hotel Booking System.

1.2 Executive Summary

Internship is known as gaining sensible experiences from the different Organizations that helps a lot to make a relation between the theoretical and practical knowledge. Internship is three credit compulsory courses for the students graduating from Independent University, Bangladesh (IUB). A student from School of Engineering and Computer Science (SECS) should go for these three credit hours practical course that is related to their relevant field. It is very important because it is the first time for a student to acquire a keen practical knowledge from the different organizations. As a student of Computer Science of Independent University, Bangladesh (IUB) I have studied a lot of programming courses during last four years. So, when I got a chance to do my internship at Techno Valley, I got a scope to work and learn with the developer team. My project paper is on "Hotel Management System". This report covers the whole project, which I have learnt during the Internship period. This report will be helpful for those who want to learn more about Hotel Management System .

1.3 Limitations Of The Report:

There are some limitations in our study. I faced some problems during the study which I mentioning below

Lack of Time :The time period of this preparing report is very short. I had very short time in my hand to complete this report, which was not enough. So I could not go in depth of the study. Most of the times the 10 relevant officials were busy and not able to give us time. I also was busy in my assigned jobs in my office.

Insufficient Data :Some desired information could not be collected due to confidentiality of business and proper communication with the competent authority.

New Challenges :Every knowledge in life is important. In this short period of time I had to learn about software management before going through my specific field of IT.

Other Limitations: As I prepared this report with lack of previous experience many practical matters have been written from my own observation that may vary from person to person

1.4 Objectives

To increase the global reach of a hotel website. Through it, hoteliers can launch a hotel website so that various users worldwide can access the website. Thus, it increases the chances of several bookings. Also, it saves a lot of time and effort for customers as they can conveniently book hotel rooms from their homes.

1.4.1Origin of the Report:

Internship Program of Independent University, Bangladesh is a graduation requirement for the students, which is also a partial requirement of the Internship program. The main purpose of internship is to get the student exposed to the job world. Being an intern, the main challenge is to translate the theoretical concepts

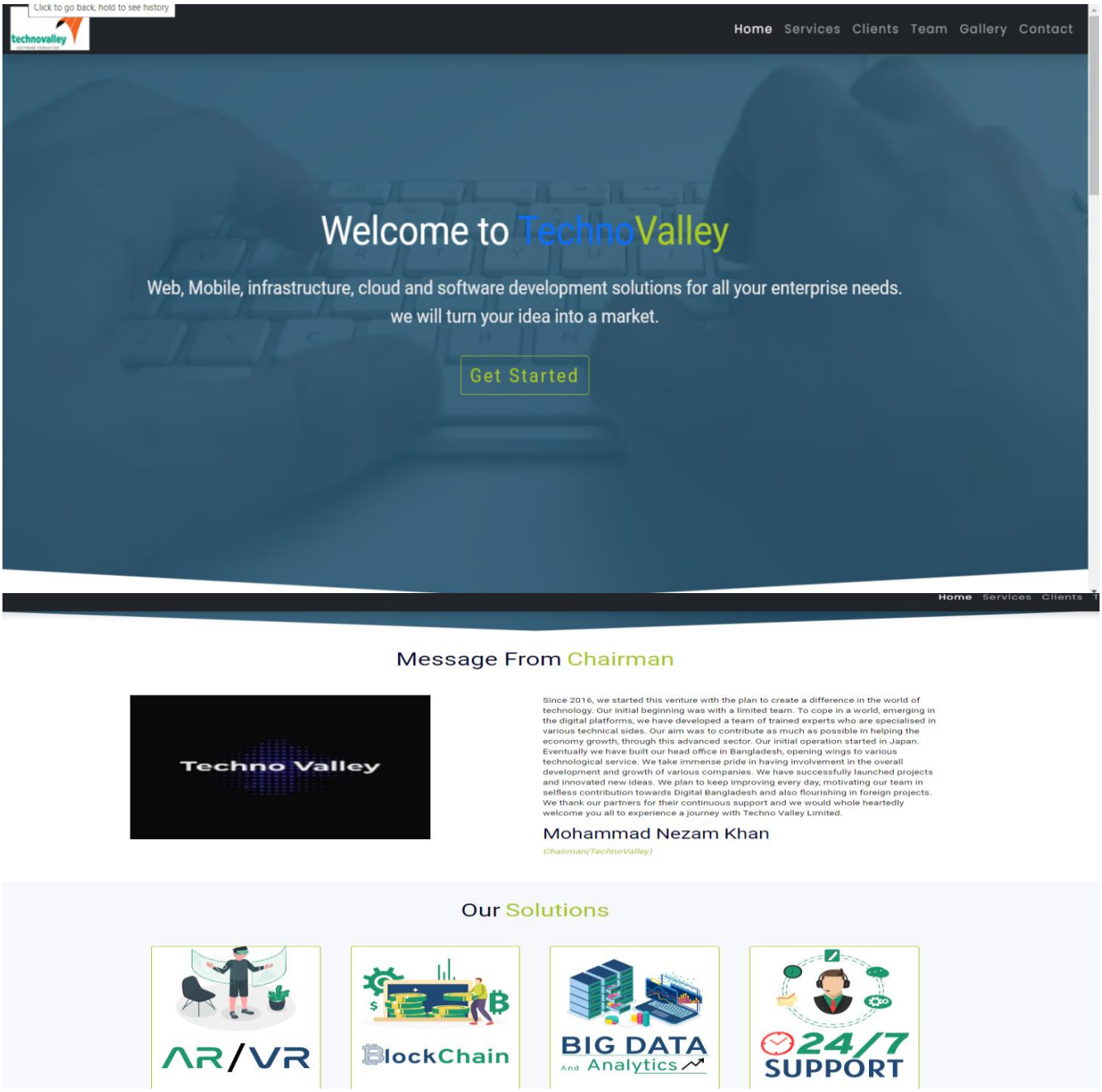
1.4.2Scope of the Project:

The system will cover; booking, accommodation, meals, and accounts details. Moreover, specialservices such as laundry, ironing and room service will be automated by the system also, not toforget the additional facilities information that will be efficiently handled by the system.To help the system smoothly carry out its intended purpose to meet the hotel management needs,the following tables will be used to store data.

1.4.3Out of Scope:

This Software is built up to meet the need for a computerized " Smart Hotel Management System." This system is based on new techniques and based on a new idea. This system is different and beneficial for others to use and understand easily. This Software provides fresher processing of any query and makes information up–to–date. In this project, " Smart Hotel Management System," the main three database files are maintained:" Room details, Customer details, Rent details." In the Customer detail file, all customers related information is described. Customer name, Customer id, and room number can do the searching. When a Customer enters the hotel, all facilities required for a customer are provided. The room maintenance facility is also considered in this project. The rent details file contains the rent information about each room.

1.5 Company Profile



1.5.1Background of the Company:

Techno Valley is a software consulting company based in Dhaka, Bangladesh. It was founded inthe year of 2015. Techno Valley is comprised of a small team of software craftsmen who learn, collaborate, and innovate together..Techno Valley is one of the valuable software company in Techno Valley is the brainchild of some fresh youth brain.

1.5.2Mission, Vision and Values:

The company was set up with the intention to produce high quality software products by training software engineers who can contribute locally and internationally. Techno Valley offers mentorship and internship programs besides hosting regular workshops and tech sessions. Techno Valley work in mission critical environments with large volumes of sensitive data, so their highly experienced team strives to reduce risk,. Techno Valley builds on its experience and specialized skills to provide national scale IT solutions.

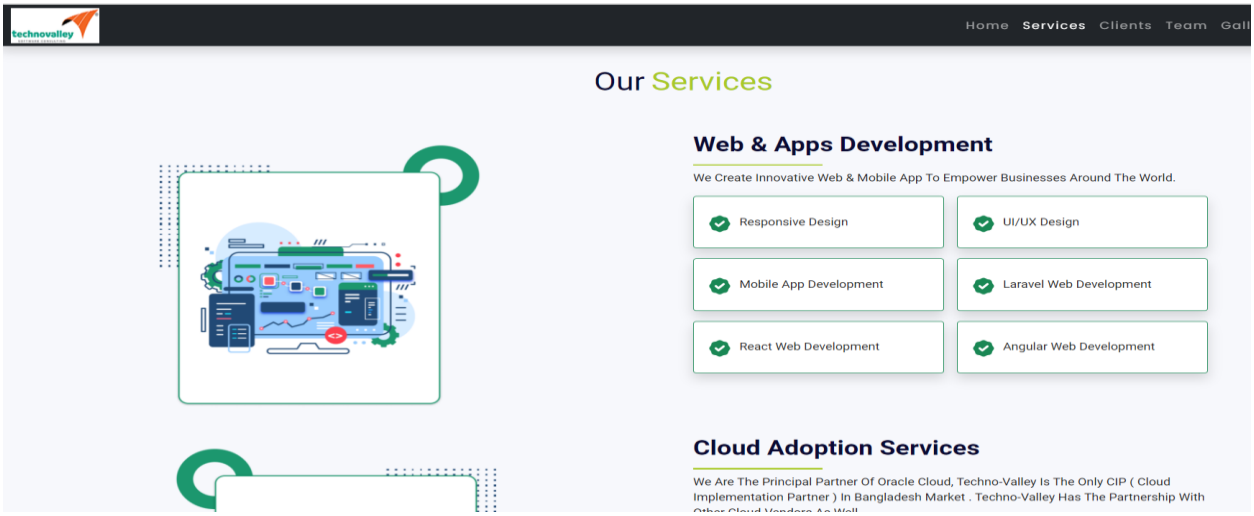
1.5.3Product and Services:

Web Application Development
Mobile Application DevelopmentEvent Hosting:
Game Development
Software Online Marketing
Cyber Security
Great Support

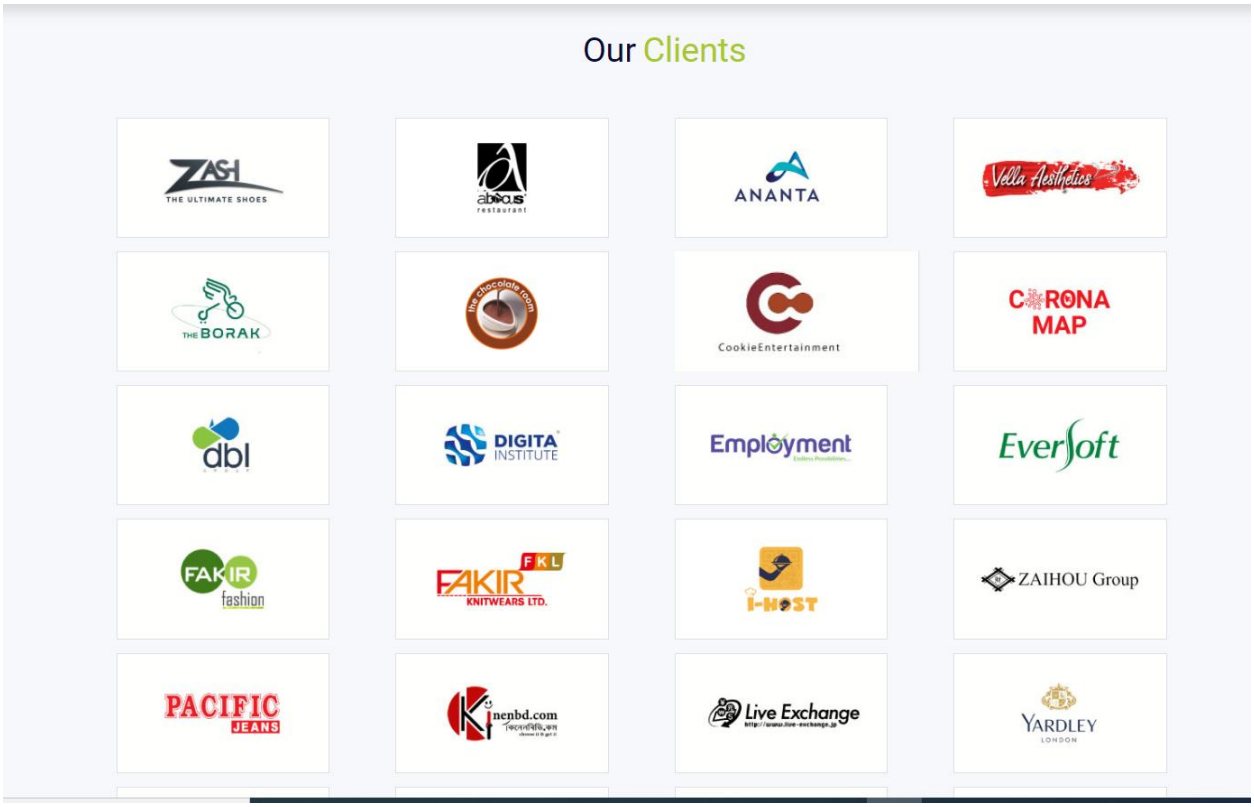
1.5.4Operation Details:

The nature of work conducted at Techno Valley is research and development focused, using both cutting-edge and proven technologies as required for a given project. The Techno Valley team works on a range of projects which include developing voting technologies for the Bangladesh government, considerate video-audio conferencing apps, 3D reconstruction medical software, complex web and mobile applications, and mobile-based games.

1.5.5 Services:



1.5.6Clients of the Company :



1.5.7 Address and Contact Information:
Address: Road 7, House 17, Block 8(b)
Nikunja-01,Khilkhet Dhaka-1229, Bangladesh.
Website : www.technovalleybd.com
Phone : +8801632146855 ,Fax: +880348959345
E-mail: fhameedk.nezam@gmail.com

Chapter 2:

LiteratureReview

2.1.1 Hotel Booking website overview : The project, Smart Hotel Booking System is a web-based application that allows the hotel manager to handle all hotel activities online. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient. The hotel manager is a very busy person and does not have the time to sit and manage the entire activities manually on paper.

2.1.2 Current global scenario of hotel Booking overview : Hotel management project provides room booking, staff management and other necessary hotel management features. Admin has the power of either approving or disapproving the customer's booking request.

2.1.3 Current Hotel management website development scenario in Bangladesh : Nowadys Bangladesh is getting digitalize like same others countries in the world and people are depending in internet or mobile phone before , Bangladesh has soo my tourism sector and people going in the tour and for that they need to book the hotel for this many software developing team in our country going for online hotel management app and by this people can book hotel easily and hotel controller can manage their all system by hotel management .

2.2 Hotel Reservations Process Reservation Department:

2.2.1 Process Name: Hotel Reservations Process:
Reservation is the process of booking a hotel service between two parties i.e. one is a guest/ customer and another one is hotel reservation staff. A reservation process is an act where guests make a call to reserve a room in a hotel for a specific day.The reservation is a place where guest interaction starts with the hotel, during this interaction reservation staff are responsible to make a room booking.

Reservation is the process of booking a hotel service between two parties i.e. one is a guest/ customer and another one is hotel reservation staff.The reservation is a place where guest interaction starts with the hotel, during this interaction reservation staff are responsible to make a room booking.

Stakeholders**:** The stakeholders of this project are the guests / customers of the hotel who will be reviewing the hotel which eventually goes into advertising agency websites.This can break or make the image of the hotel.

from the company (corporate income taxes), as well as from all the people it employs (payroll taxes) and from other spending the company incurs .

2.2.2 Method to understand the process:

2.2.2.1.Questionnaires**:** The application includes a questionnaire section for both employees and guests to fill in. The questions are short and it is a quick and efficient way to collect information from the users. The questions are open ended. Before the guests can leave they are asked to spare some time to answer the questionnaire which will be asked in a multiple choice question format. The employees can be asked to answer the questionnaire any time.

2.2.2.2Interviews**:** It is the most popular, most widely used and one of the most productive methods for information gathering. The users are interviewed personally face to face by the software analyst. The questions are prepared earlier. Which are usually open ended to make the interview a not so boring one. A software analyst can come to the hotel in a particular time and date set earlier. The employees who have to sit for the interview have to be free from work at that time. Guests who are interested to give the interview could be asked earlier for a spare time and interview time could be set accordingly. This method of data collecting can be used to improvise the system.

2.2.2.3 Ethnography/Observation of the work environment**:** The observation of on-site observation is to get as close as possible to the real system being studied. For this reason it is important that the analyst is knowledgeable about the general makeup and activities of the system. Analysts could visit the hotel before starting working on the project to know about the environment more. The kind of guests who stay at the hotel and what else can be included in the system to improvise the system design.I would use all three of the methods for understanding the process. As the more we understand the process the better we know what our users expect from us and what we need to improvise.

2.3 Project relation to Undergraduate Courses

Knowledge and skills gained from undergraduate courses have helped in the development of "Smart hotel" project. It would have proven more difficult if these courses were not covered before working on this project. Some of the courses are:

CSE 203 Data Structure: this course was about teaching how to handle and manipulate complex arrays, objects, classes, array of objects, objects of array, nested arrays, nested objects, etc. As "Smart hotel" involves many complex data structures, the skills gained from this course made handling them much easier.

CSE 213 Object-Oriented Programming: this course is a deep dive into classes and its objects of programming. It also taught how to write modular programs which made codes less repetitive and more reusable. It helped to design "Smart hotel" code in a modular format. Also, as the application grew bigger, this practice helped avoid writing new modules from scratch by using parts of old modules and adding new functions to them.

CSE 303: Database Management: this was the first course which taught how to design and plan a project. It covered popular planning and strategy practices such as System Development Life Cycle, Rich Picture, Requirement Analysis, Entity Relationship Diagram, Business Process Model and Notation Diagram and many more. These techniques helped in the development planning and strategy of "Smart hotel "and also they helped in writing this report.

CSE 309: Web Applications 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, View Engines (Handlebars and embedded JavaScript), Node.js, Express.js, MongoDB. The tools and technologies learned from this course

immensely contributed to the development of "Smart hotel" as it is a mobile application built with similar web technologies and it has a backend server which had to be deployed to the cloud server as well.

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CHAPTER 3

PROJECT MANAGEMET AND FINANCEING

3.1.1 WBS and Gantt Chart for the project:

1. Registration
   1.0.1 Enter check-in date and check-out date
   1.0.2 Search room availability
   1.0.3 Search room rate IF room available
   1.0.4 THEN Confirm reservation
   1.0.5 ELSE Search again using another check-in date and check-out date
   1.0.6 OR Press cancel to exit from the search engine
2. Login
   2.0.1 enter user name and password.
   2.0.2 validate username name and password.
   2.0.3 if valid username and password redirect to home screen.
3. Notification
4. Wireless room control
5. Generate reports
6. Generate bill

3.2.1 Project Manager.

- Project Scoping.
- Flow Diagram.
- Impact Analysis.
- Rick possibility.

- **Design**
  - Definitive Design.
  - Create UI with XD.
  - Implement the design.
- **Project Administration**
  - Back end function
  - Front end function
- **Testing Process.**
  - Testing Plans
  - Debug.
  - Loading final Data
- **Lunch / Deployment**
  - Establish target date.
  - Create communication plan. ○

  Search engine optimization
  - Deploy the project on a server.

3.2.2. WBS:Work breakdown Structure of "Smart hotel": The WBS is a method for getting a complex, multi-step project done. It is a way to divide andconquer large projects, so things are done faster and more efficiently. Work breakdown structure (WBS) is a hierarchical tree structure that outlines a project and breaks it down intosmaller portions. The goal of a WBS is to make a large project more manageable. Breaking itdown into smaller chunks means work can be done simultaneously by different team memberswhich leads to better team productivity. Below is the WBS of "Smart hotel"

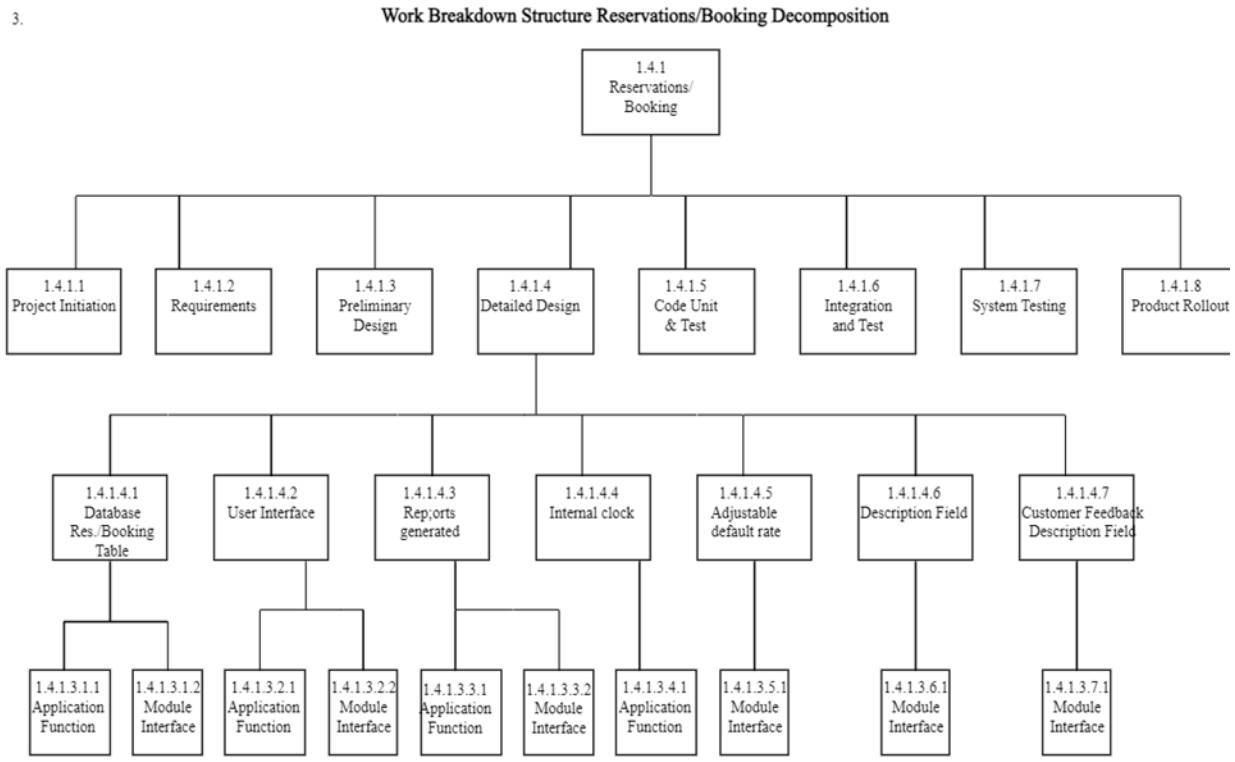

Fig 3.1.3 : Work breakdown Structure

3.2.3 Gantt Chart for the project:

A Gantt chart has been produced to help plan and schedule project tasks. It helped assess howlong the project should take, determine the resources needed and plan the order in which tasks will be completed. It also helped in managing the dependencies between tasks.The Gantt chart was also useful for monitoring the project's progress once it has started. It helped in having a clearer vision of what should have been achieved by a certain time frame and when the project fell behind schedule; appropriate actions were taken to bring it back to course.Below is the produced Gant chart for "Smart hotel".

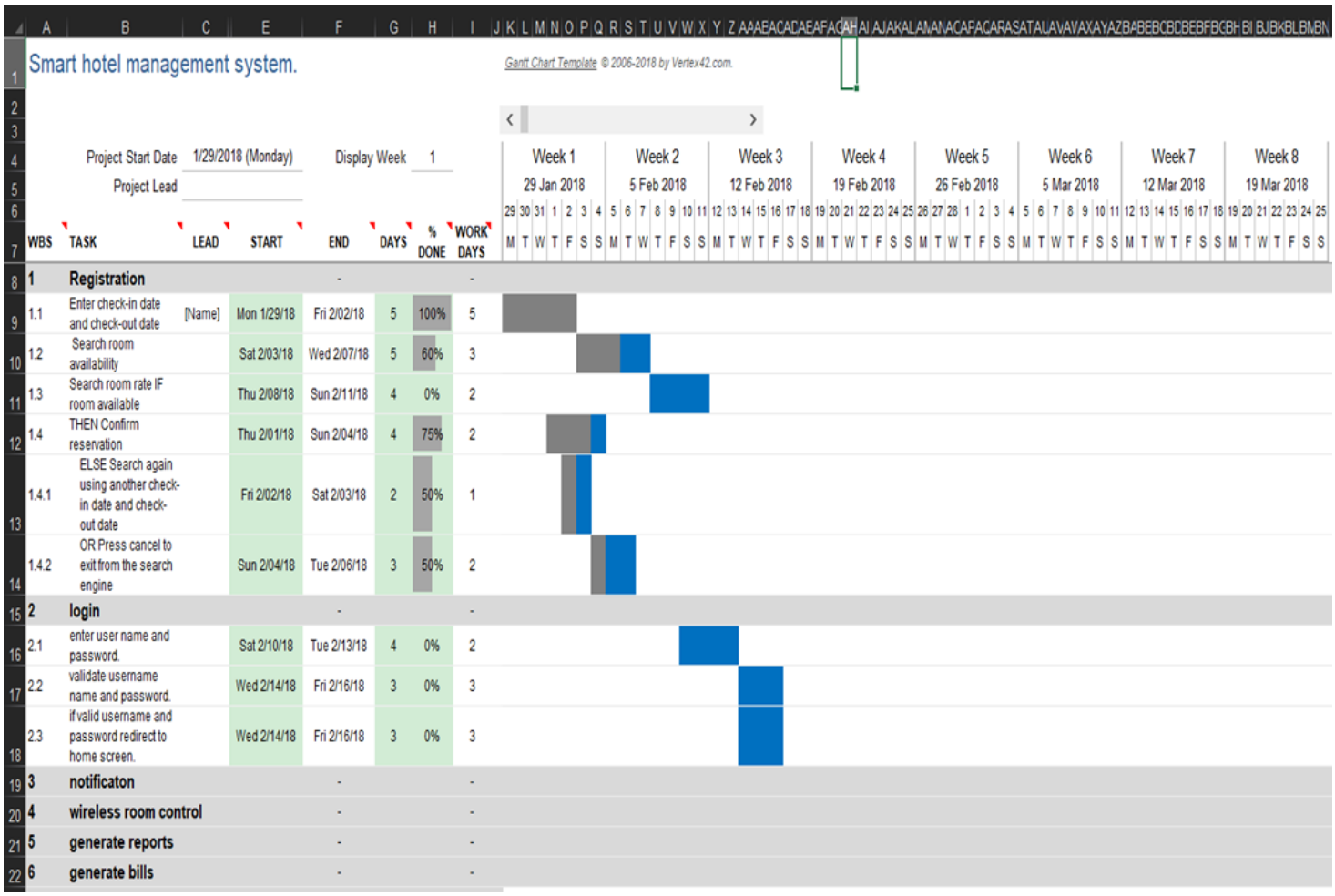

Figure 3.1: Gantt chart template for "OceanView Resort "

3.2.4 Time Distribution Table : Work Breakdown Structure is collected where all the activities are included. Weattempted to total these works in a time outline. Along working with a group extend, overseeing the time and working nearby with group individuals time planning. This entire work is isolated among the venture group. To preserve this workflow conveyance time is assessed is nearly 9 days for the project

Serial	Activity	Days	Work Percentage
1	Project Manager	7	10%
2	UI/X Designer	7	10%
3	Front End Developer	28	30%
4	Back End Developer	33	30%
5	Testing Process	10	5%
6	Result and Analysis	7	5%
7	Deployment	5	10%
	Total	97	100%

3.2.5 Estimation Cost of the Project : The starting Evaluated Costing was around nearly 80,000 BDT. This is the approximate costof the project. It can be expanded on the changes in the software and keeps up fetched.

Serial	Activity	Days	Costing
1	Project Manager	7	10,000 BDT
2	UI/X Designer	7	25,000 BDT
3	Front End Developer	28	10,000 BDT
4	Back End Developer	33	13,000 BDT
5	Testing Process	10	12,500 BDT
6	Result and Analysis	7	5,500 BDT
7	Deployment	5	6,000 BDT
	Total	97	80,000 BDT

Table 3.2: Estimation Cost of the Project

Chapter 4: Methodology

Software Development Methodology

4.1.1 Data Dictionary of Smart Hotel Management System :

Admin_details: This table contains details of the administrator.

Sr No.	Name	Data Type	Size	Constraint	Description
1.	Admin_id	int		Primary key	Id of the admin
2.	User_name	Varchar	25	Not Null	User name of admin
3.	Password	Varchar	30	Not Null	Password of admin

Booking_details: This table stores the record about the booking details like who has booked the hotel, which room for how many days etc.

Sr No.	Name	Data Type	Size	Constraint	Description
1.	Booking_Id	int		Primary key	Book Id of Hotel
2.	First_name	varchar	25	Not Null	Name of user
3.	Last_name	varchar	25	Not Null	Sername of user
4.	Hotel_name	Varchar	30	Foreign key Hotel_details	Name of the hotel From(Hotel_details)
5.	Room_name	varchar	20	Not Null	Name of the room
6.	Check_in_date	datetime		Not Null	Check in date of user
7.	Check_out_date	datetime		Not Null	Check out date of user
8.	No_of_rooms	int		Not Null	No of rooms booked by the user
9.	Total amount	decimal	(18, 0)	Not Null	Total amt of the book hotel.

Room_details: This table contains details of different types of rooms in the hotel.

Sr No.	Name	Data Type	Size	Constraint	Description
1.	Room_Id	int		Primary key	Id of room
2.	Hotel_name	varchar	30	Not Null	Id of hotel
3.	Room_type	varchar	30	Not Null	Type of room
4.	Room_rate	varchar	100	Not Null	Rate room of the hotel
5.	Facilities	varchar	50	Not Null	Facilities provided in the room
6.	Photo_room	varchar	50	Not Null	No of such rooms in the hotel

User_details: This table contains the personal details of the users of the system.

Sr No.	Name	Data Type	Size	Constraint	Description
1.	User_Id	int		Primary key	Id of user
2.	User_name	varchar	30	Not Null	Name of user
3.	Password	varchar	30	Not Null	Password of user
4.	Address	varchar	40	Not Null	address of user
5.	Zip_code	varchar	10	Not Null	User zip code
9.	Phone_no	varchar	15	Not Null	Phone no
10.	Email_address	varchar	30	Not Null	Email id
11.	Gender	varchar	5	Not Null	Gender of the user
12.	Country	varchar	30	Foreign key Country_details	Name of country From(Country_details)
13.	State	varchar	30	Foreign key State_details	Name of state From(State_details)
14.	City	varchar	30	Foreign key City_details	Name of city From(City_details)
15.	Captcha	varchar	20	Not Null	for Security due to virus attacks or spam reduced.

4.2.1 Software Development Life Cycle (SDLC) of the project : In Smart Hotel Management System software engineering or computer programming, a software development process is the process of dividing software development work into distinct phases to improve design, product management and project management. It is also known as a system development life cycle (SDLC). So, it has some basic stages to be followed during the development phase.

Figure 4.1.2: Software Development Life Cycle (SDLC)

The methodology may include the pre-definition of specific deliverables and artifacts that are created and completed by the project team to develop or maintain an application. Fundamentally, programming or framework advancement approach is a system that is utilized to structure, plan, and control the way toward building up a data framework.There are several system development methodologies or models that are used in developments; among them, some of the most used are given below:

- Waterfall Model
- Prototyping
- Agile
- Spiral Model
- Rapid Application Development
- V-Model
- Incremental
- Evolutionary Model.

4.3.1 Extreme Programming (XP) Methodology

For methods, Smart Hotel Management System the developers of Techno Valley follow the most current methods of system development methodologies, that is the Agile method. The five values of XP are communication, simplicity, feedback, courage, and respect:

- **Communication:** XP stresses the significance of the proper sort of correspondence through group gatherings, team meetings and conversations.
- **Simplicity:** do only absolutely necessary things such as keep the design of the system as simple as possible so that it is easier to maintain, support, and revise.
- **Feedback:** Through constant feedback about their previous efforts, teams can identify areas for improvement and revise their practices. It also supports simple design.
- **Courage:** raise issues that are hampering workflow, stop doing something that does not work and try something else, accept and act on unpleasant feedback, etc.
- **Respect:** members of the team need to respect each other in order to communicate with each

4.3.2 Extreme Programming Advantages

Extreme Programming solves the following problems often faced in the software Smart Hotel Management System development projects:

Slipped Schedule: ensure timely deliveries.

Cancelled projects: focus on continuous customer involvement ensures transparency with the customer and immediate resolution of any issues.

Costs incurred in changes: extensive and ongoing testing makes sure the changes do not break the existing functionality. A running working system always ensures

sufficient time for accommodating changes such that the current operations are not affected.

Production and post-delivery defects: emphasis is on the unit tests to detect and fix the defects early.

Misunderstanding the business and/or domain: making the customer a part of the team ensures constant communication and clarifications.

Business changes: changes are considered to be inevitable and are accommodated at any point of time.

4.4.1 Back end Development used of the project for Smart Hotel Management System :

Back-end Development refers to the server-side of development. It is the term used for the behind-the-scenes activities that happen when performing any action on a website or a mobile application. Backend development focuses on databases, scripting, and the architecture of web and

mobile applications.

Back-end Development involves:

Web Development Languages: involves a series of server-side programming languages like Java, JavaScript, Python, Ruby, .Net, etc.

Database: use of various Database Management System (DBMS) technology is another important part of backend development. MySQL, MongoDB, Oracle, SQLServer, Redis are widely used for this purpose.

Server: a computer or computer program which manages access to a centralized resource or service in a network. Current most popular servers are Apache, Nginx, IIS servers and Microsoft IIS. Typically, Linux is used in administering servers.

4.4.2 Application Programming Interface (API): a set of protocols, routines, functions and/or commands that are used to develop software or facilitate interaction between

distinct systems. APIs are available for both desktop and mobile use and are typically useful for programming .

Front End Development of the project:

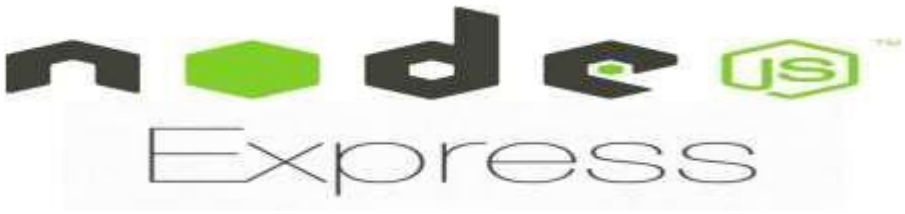

Figure 4.4.2: Node.js and Express Logo

4.4.3 Node.js Node.js applications are event-based and run asynchronously. Code built on the Node platform does not follow the traditional model of receive, process, send, wait, receive. Instead, Node processes incoming requests in a constant event stack and sends small request.

4.4.4 Software framework use for the project :

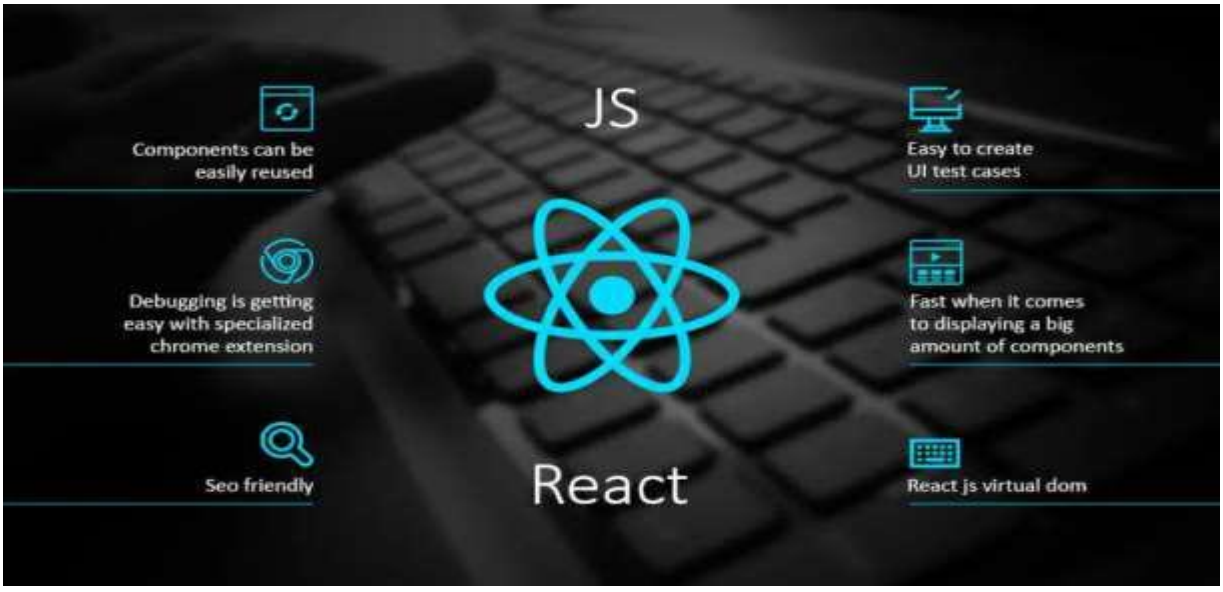

Fig 4,4.4: React log

React js : It is an open-source Java script library which is specially used for building interfaces. ReactJS is specific to single page applications. Handling the view layer for mobile apps and web as well is made very easy through ReactJS. It can help you make reusable UI components. Jordan Walke created ReactJS. He was a software engineer at Facebook. It was first used in Facebook Newsfeed and then on Instagram a year later.ReactJS for mobile app development and Web app development is very useful in changing the data without reloading the page. ReactJS is simple, fast and very functional as well. It can only be used on user interfaces in applications. It is also possible to use ReactJS app development with other JavaScript frameworks.

4.4.5 Why I have used react for the project :

Many options are available to choose a framework. Why would someone opt for ReactJS instead of other frameworks such as AngularJS? The main reason is the simplicity and ease of this framework. It takes a lot of time to learn a framework. If you are confused in many frameworks and looking for the best among them, ReactJS is a good option.

1) Simplicity :It uses a very plain JavaScript which is very easy to learn. It has a component based approach and a well-defined lifecycle. ReactJS app development is very much easier to build professional web and to control it.

2) Reusability :React is very much favorable if you want to use the long code again to do IOS app development or other web developments. It is beneficial in creating mobile applications.

3) Data Binding :One-way data binding and Flux helps you control the flow of data from a single control point which is known as a dispatcher. It is very easier to debug your components of large React JS applications.

4) Performance :React JS can inject dependencies automatically through React JS-di. It does not have any built-in container for it.

4.4.6 .Command Line Interface for the project : Git is a free, open-source distributed version control system. It is used for tracking changes insource code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear workflows

Version control is a system that records changes to a file, or set of files, over time so that specific versions can be recalled later.

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Version control is a system that records changes to a file, or set of files, over time so that specific versions can be recalled later.

Fig: 4.4.5 Git logo

Chapter 5: Project Body

5.1.1 Work Description of the project :

Smart Hotel Management System. It offers tools to manage central reservations, housekeeping, guest relationships,maintenance and club activities. Key features include online booking engine, reservations with built-inyield management, confirmations, check-ins, registration cards, check-outs, guest folios, housekeeping and maintenance. The Internet booking module is commission-free and the third-party billing offers unlimited ios per reservation. It integrates seamlessly with third-party accounting systems like QuickBooks and Sage. The built-in point of sale feature is suitable for both retail and table service, has touchscreen menus on non-proprietary hardware. And the custom reporting can support needs like transport manifests or meal plan reports. Smart Hotel Management System offers multi-property functionality that replicates guest profiles among roperties so agents can welcome back a guest provides room booking, staff management and other necessary hotel management features. The system allows the manager to post available rooms in the system. Customers can view and book room online. Admin has the power of either approving or isapproving the customer's booking request. Other hotel services can also be viewed by the customers and can book them too. The system is hence useful for both customers and managers to portable manage the hotel activities.

This project provided a stimulus recipe of an investigative summary researching the productivity afforded by employing technology to help make the most out of our day-to-day situations. I further dissect the SDLC in putting a solution to the problem found to alleviate the fear relating to cost that incurs trying to take this worthy venture. The rest of the chapters will elaborate on more detailed findings and methods to resolve the problem.The project,Smart Hotel Booking System is a web-based application that allows the hotel manager to handle all hotel activities online. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient. The hotel manager is a very busy person and does not have the time to sit and manage the entire activities manually on paper.

5.1.2 Product Features :

The hotel management has the following features : This project is mainly intended for two types of audiences .One is the customer or the end user and the other is the administrator of the application .Some of the major functions of the product can be categorized under two different categories that are for the administrator and the user .

Customer /End user activities : The above use case diagram depicts all the function or over that a customer can perform on application .They can be discussed in detail as follows .

Home page : Like all the other hotel websites available online ,the user can access the user homepage of the hotel Reservation System ,after he logs into the system here he can look up information regarding fights

Login and Registers : The hotel management aslo comes with the customer registration details page, where the customer can enter his details and register.

Booking Rooms : The customer can also search for the rooms available and reserve his place for the room by booking it .

Administrator Activities :

Login :The administrator has to login first in order to able to make changes to the Hotel Management ,by adding,deleting or modifying the data in Hotel Management Database.

Add/modify Flight Information : The Administrator also has the sole rights to add delete modify the hotel information,Sometimes any room information has to be modified or if any new flight s need to be added to the database ,these option performed by the administrator

5.1.3 Module and Function:

- The manager can easily keep track of all the staff of the hotel as the software smartly handles all the operational and management needs.
- Bills and reports are automatically generated using the data stored in the database.
- Tasks will be automatically appointed by the system to the staff .
- The system can check for room occupancy and also update it when guests checkout,without the need of a staff doing it.
- Guests get Checked-in and Checked-out using the mobile app.
- Room indication with one touch so that the guests do not need any help finding the room nor does the hotel need another staff to help the guest out, find their room.
- Guests have easy control of the room appliances such as Fan/AC, TV, Light, Curtain, geezer with just one touch.
- The app includes smart and interactive maps showing the guests nearby tourist spots, local restaurants and stores. Also in-house facilities such as gym, pool, movie theatre and restaurants as well.
- Payments can be made through the app as well
- Guests date the hotel service through the mobile application which attracts in more guests therefore promoting and boosting sale of the hotel
- Mobile application can be used by users of more than 20 different languages.

5.1.4 Systems Analysis:

Process	System Roles					
	Human	**Non computing hardware**	**Computing hardware**	**Software**	**Database**	**Comm. & Network**
View Splash Screen	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
Sign Up and Login Screen	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
Home Screen	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
View Reservation for user	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
View Logging into the system	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
View Transaction Handling	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN
View Business Management	User	N/A	Functional smartphone / tab/ Web	Any version of Android or iOS	Flutter SQLite	WAN

Table 5.1: Six Elements Analysis of "Smart Hotel"

5.2.1 Feasibility Analysis

Feasibility Study is a study to evaluate feasibility of a proposed project or system. Feasibility study is the feasibility analysis or it is a measure of the software product in terms of how much beneficial product development will be for the organization in a practical point of view.

5.2.2 Technical Feasibility:"Smart Hotel" is built using React Native, Vue.js and Flutter. These are the technologies that are very popular in the modern industry and everyone involved in the making of this project had the skills to work with at least one of the technologies mentioned. Hence, it can be concluded that the project is Technically Feasible.

5.2.3 Operational Feasibility: In Operational Feasibility degree of providing service to requirements is analyzed along with how easy the product will be to operate and maintain after deployment. Along with these, other operational scopes are determining usability of the product and determining whether a suggested solution by the software development team is acceptable.

5.2.4 Economic Feasibility: In Economic Feasibility study cost and benefit of the project is analyzed; a detailed analysis of what will be the cost of the project for development which includes all required cost for final development like hardware and software resource required, design and development cost, operational cost, etc.

5.2.5 System Design of the project :

System design is deriving a solution which satisfies software or system's requirements. We can define software design as translating requirements into software components and interactions among them. Any design may be modelled as a directed graph made up of entities with attributes which participate in relationships.

5.2.6 Architecture of the System: Software architecture is what defines and structures a solution that

meets technical and operational requirements. Software architecture optimizes attributes involving a series

of decisions, such as security, performance and manageability.

5.2.7 Client server architecture for the project : Client server architecture is one kind of distributed system architecture. Distributed systems are where the system or software runs on a loosely integrated group of cooperating processors linked by a network. It means a set of separate devices that are capable of autonomous operation, linked by a network

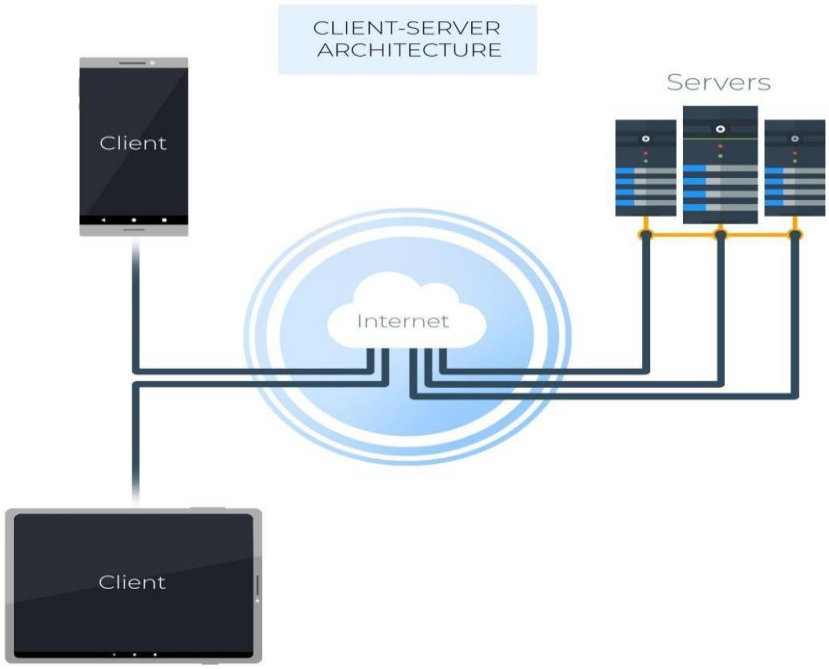


Figure 5.1: Client Server Architecture

In Smart Hotel, each mobile application will have access to the server (provided that it is connected tothe internet). When a user creates an account or do registration, it sends a request to the server and updates the server. When user(s) confirm the contact number or confirmed google accountor Facebook account, the device sends a request to the server for ensuring the verification, savedthe data to the database. For having the centralization of control is the main reason to choose the client server architecture approach. Another reason is that this architecture is easily scalable, with an increase in the number of clients, capacity of server can be increased as well.

5.3 Requirements

The software requirements are descriptions of features and functionalities of the target system. Requirements convey the expectations of users from the software product. The requirements can be obvious or hidden, known or unknown, expected or unexpected from the client's point of view. Requirements can be divided into two types; functional and non-functional requirements.

5.3.1 functional requirements

A functional requirement is a function or feature that must be included in an information system in

order to satisfy the business need and be acceptable to the users. A functional requirement defines what an application and its components are and what these components are supposed to accomplish. The following functional requirements were gathered with our decided requirements gathering methods. The inputs, processes and output are discussed below:

5.3.2 Functional Requirements:

Name of the Function: *Reservation*		
Input: 1. Guest details	**Process**: 1. The system should enable guests to check for availability of rooms. 2. The system should allow guests to check room rates. 3. The Guest should be able to do the booking with their details. 4. Details will be stored in a database automatically. 5. The system shall send verification messages through email.	**Output**: 1. Verification message
Precondition: 1. Mobile app of the hotel should be downloaded.		
Post condition: 1. Guest has successfully booked a room in the hotel. 2. Guest details have been stored in the system database automatically.		
Alternate Options: 1. If the rooms are booked a popup message will be shown on the app screen. 2. The guest will be then asked to book a room for another day.		
Side Effects:		

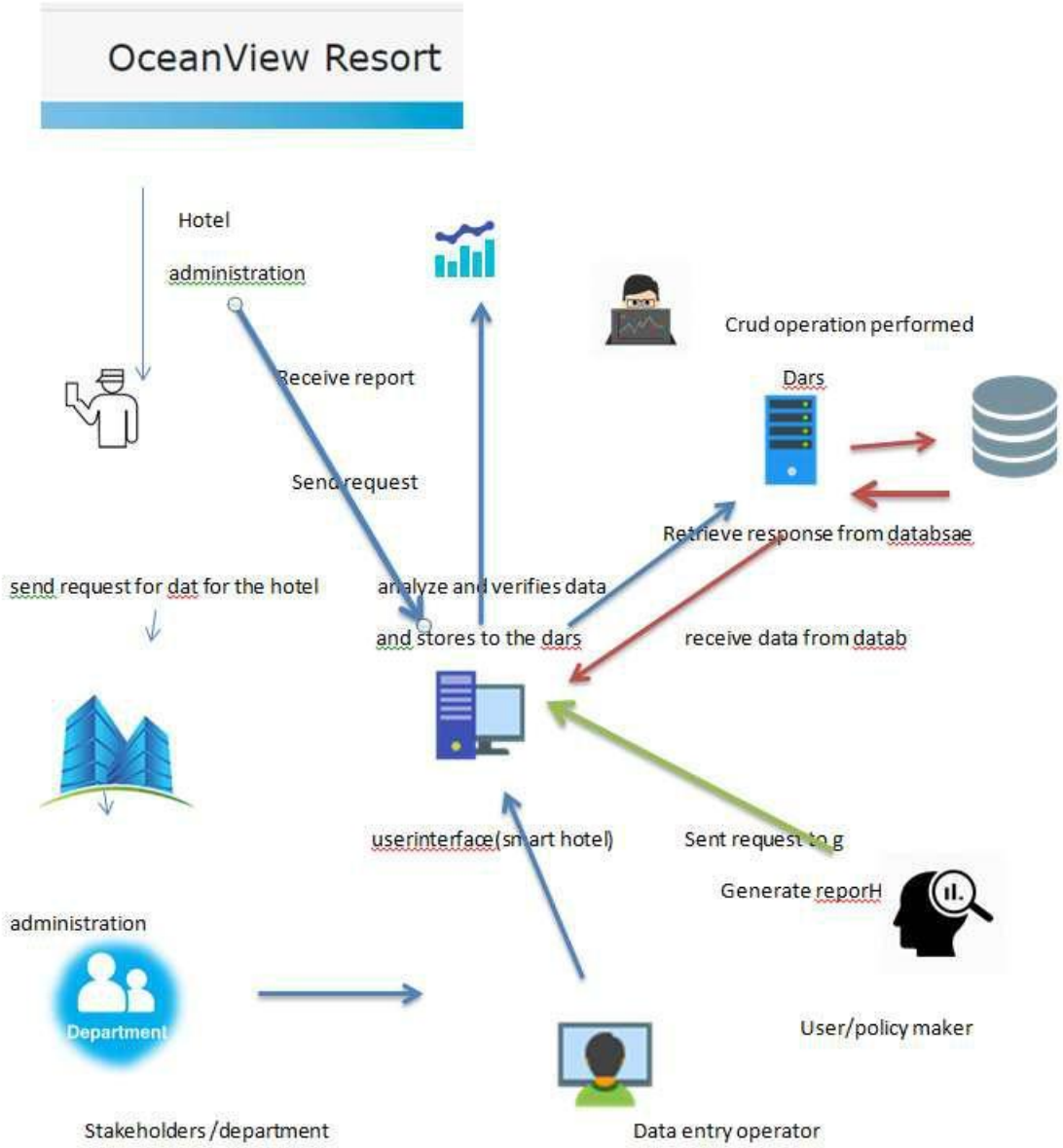
Name of the Function: *Logging into the system*		
Input: 1. User ID and QR code	**Process**: 1. The system should verify the customer email & password against the member database when logging in. 2. The member should be directed to the Home screen. 3. System shall keep track of check-in and check-out dates.	**Output**: 2. Access to the software

5.3.3Non-Functional Requirements:

- Search results should populate within acceptable time limits
- Data in the database should be updated within 2 seconds.
- Users should be helped appropriately to fill in the mandatory fields, in case of invalid input
- System should accept payments via various payment methods
- Keep track of documentation, activities, and respons

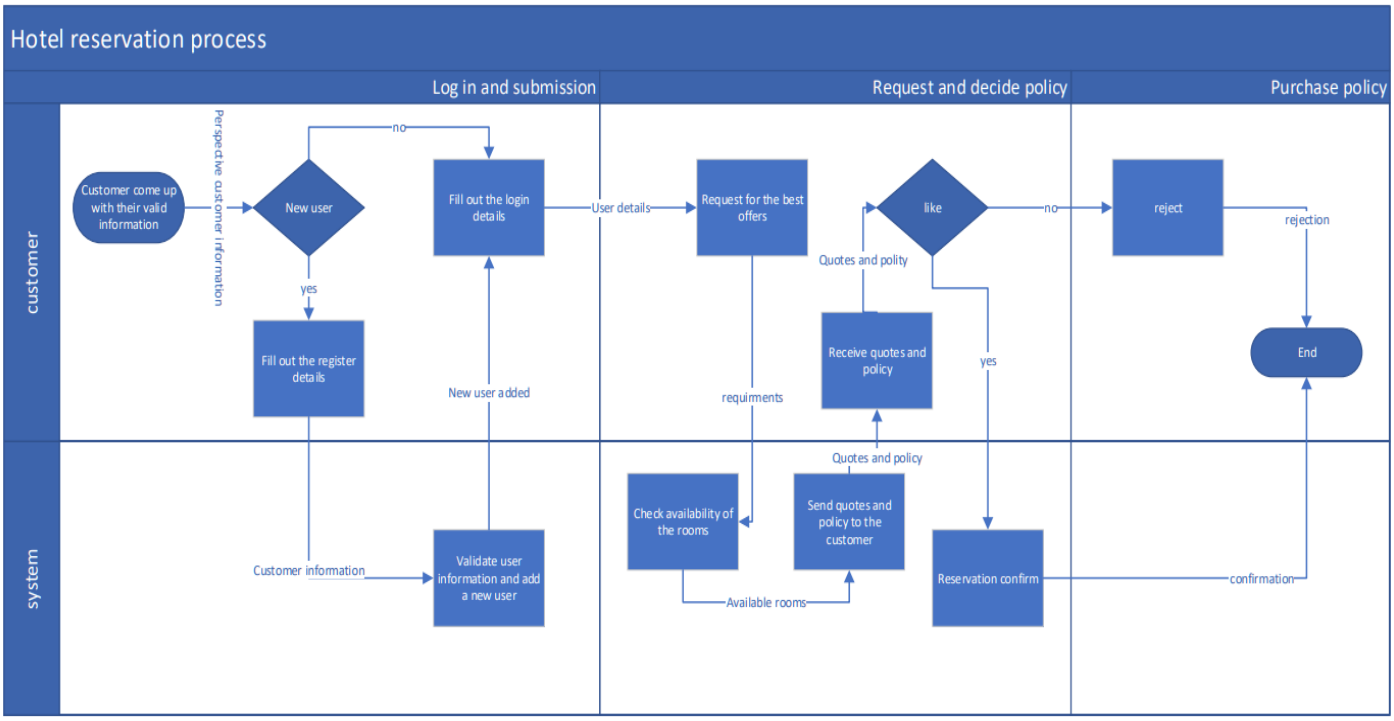
5.4.1 Rich picture Diagram for the proposed System

DARS – Data Analysis and Representation Software
CRUD – Create Read Update Delete
Click or tap here to enter text.



5.4.2 Process

Visio studio is used to draw the process of hotel reservation



5.4.3 Entity Relationship Diagram for the system :

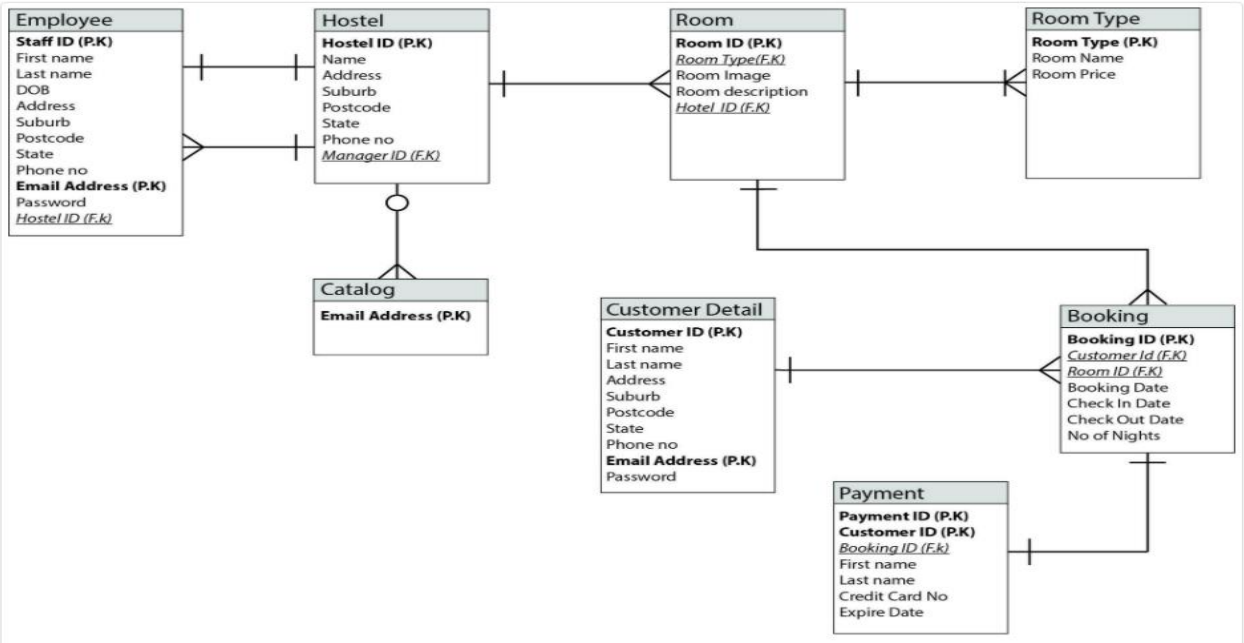


Figure 5.2: Entity Relationship Diagram of "Smart Hotel"

5.4.4 Estimation:

	Complexity Factors				
Module Name	High (10)	Medium(5)	Low (2)	Funtion Points(FP)= No of module * Complexity Factor(10/5/2/)	1 Funtion Point(FP) =2 days
Registration	2	1	1	27	1 Work Day= 8 hours
Login	1		1	12	
Notification	2	1	1	27	
Wireless Room Control	2		1	22	
Generate Report	1	1	2	19	
Generate Bills		2	1	12	
Total Funtion point				119	
Total no of days (FP*2)				238	
Total No of hours (FP*8)				1904	

Activity wise days of work distribution			
		Expected days	Considered Days
Project Management	10%	23.8	24
System Analysis	20%	47.6	48
Desing	15%	35.7	36
Coding	30%	71.4	72
Testign	15%	35.7	36
Implementation and Deployment	10%	23.8	24
	100%		

5.4.5 Use Case Diagram:

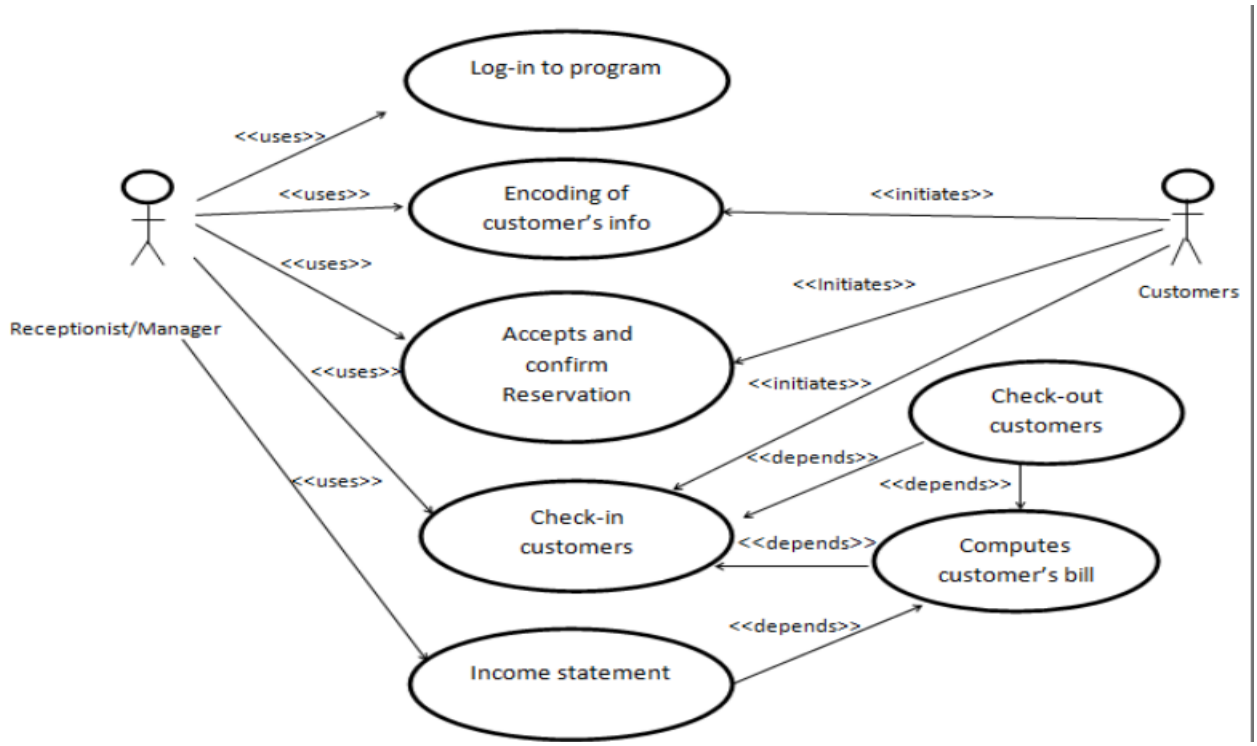
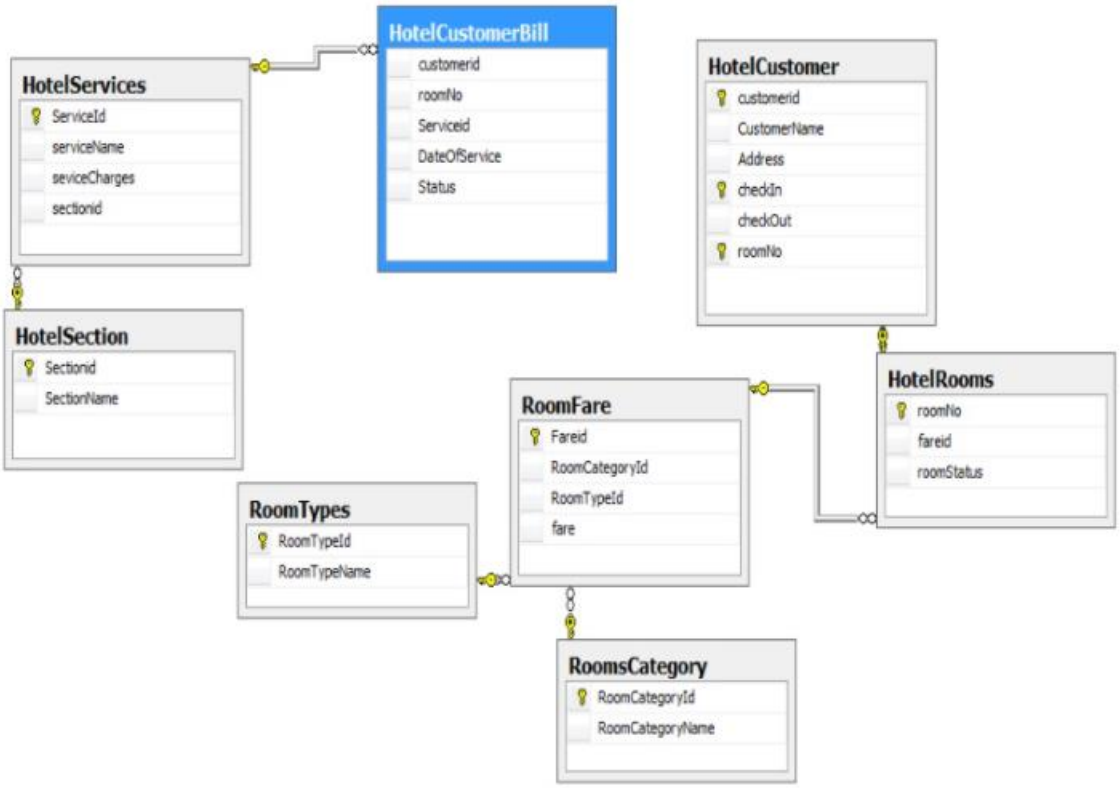


Figure 5.3: Use Case Diagram of Smart Hotel

5.4.9 CLASS DIAGRAM :



5.8.10 Class Description :

Room Types :

1.RoomTypeId
2.RoomTypeName

The attribute for the room types table are roomtypeid,which is a unique key and roomtypename.

5.8.11 ROOM CATEGORY:

1.RoomCatagoryId
2.RoomCategoryName

The attribute for the rooms category table are roomcategoryID,which is a unique key and roomcategoryname.
The functions of the above two table are that the admin can search for the type and category of the rooms.

5.8.12 ROOM FARE :

1.FareId
2.RoomCategoryId
3.RoomTypeId

4.Fare

The attribute for the ROOMFARE table are fareid,which is a unique key , roomcategoryid, roomtypeid which are foreign and fare .the function of this table can enter the room fare corresponding to the room category.

5.8.14 Hotel Services :

1.ServiceId
2.serviceName
3.serviceCharges
4.sectionId
The attributes for the HotelSection are sectioned which is the primary key and Section name.

5.9.1 FUNCTIONS :

The function of the of the above two tables are :Admin can add the section and its corresponding services that are provided in the hotel to the customers.

5.9.2 HOTEL CUSTOMER:
1.CustomerId
2.CustomerName
3.Address
4.CheckIn
5.CheckOut
6.RoomNo

The attributes of this table are customerId,which is a primary key, CustomerName, Address, CheckIn, Checkout and RoomNo.

The functions of this form is :The admin enters the customer details that are required by hotel for customers check in .The admin asks the customer for his/her details and seeks for which type and category room he/she is availing for ,then assigns the corresponding room.

5.9.3 Customer Bill :

1.CustomerId
2.RoomNo
3.ServiceId
4.DateOfService
5.Status

The function of this table is The Admin retrieves the information about the customer stay in the hotel.He adds the room no in which the customer was staying also he checks the service that a customer has the stay Finally he enters the status whatever the bill has paid or it is pending.

Chapter 6: Results

6.1.1 Testing

Testing is the process of detecting errors. Testing performs a very critical role for quality assurance and for ensuring the reliability of software. The results of testing are used later on during maintenance also.

6.1.2 Psychology of Testing :

The aim of testing is often to demonstrate that a program works by showing that it has no errors. The basic purpose of testing phase is to detect the errors that may be present in the program. Hence one should not start testing with the intent of showing that a program works, but the intent should be to show that a program doesn't work. Testing is the process of executing a program with the intent of finding errors.

6.1.3 Testing Objectives:

The main objective of testing is to uncover a host of errors, systematically and with minimum effort and time. Stating formally, we can say

1. Testing is a process of executing a program with the intent of finding an error.
2.A successful test is one that uncovers an as yet undiscovered error.
3. A good test case is one that has a high probability of finding error, if it exists.
4. The tests are inadequate to detect possibly present errors.
5.The software more or less confirms to the quality and reliable standards. Levels of Testing:

In order to uncover the errors present in different phases we have the concept of levels of testing. The basic levels of testing are as shown ,\

6.2.1 Test Case For "OceanView Resort":

Test Case No	Test Case Name	Purpose	Precondition	Test Steps to Data	Expected Result	Actual Result (P/F) Data Used	Status	Remarks
1.	Login for users	Check whether the user can login to the software or web app.	1. Should give their email and password to enter. 2. Can check radio button to remember password and email. 3. Need to go the site with a device.	1. Fill up the require field with correct credential. 2. Then press "submit" button.	1. If the given credential has no problem. The user will be able to login. 2. If not any error message will be show	website show "Login is done successfully" massage.	Works.	No.
2.	Create a new employee and manager.	Adding a new employee or manager in the system to give access for their dependent work.	1. Must fill up the form with appropriate information. 2. Make sure the required fields are completed.	1. Need to click the "Submit" button on the end of the form. 2. After submission, the data will be saved in the database.	1. A validation will be shown for both cases. 2. The page will redirect to same form page.	The application will show "A new employee/ Manager is created successfully " as an alert.	Works.	No.
3.	Edit profile	Edit employee and manager	1. Must be login as admin. 2. Have to visit the profile page of the particular user and	1. Click the edit button a form will appear. 2. Old data will be shown the input field. 3. Need to press "Update" button to	1. A validation will be thrown on the case of acceptance/ rejection. 2. The change data will be	On creation a alert will be shown "Update is successfully ".	Works.	No.

			press the edit option.	change the history.	display on the user profile.			
4.	Create Room category,	Create Room category,	1. Must be login as admin. 2. Need to go the create side. 3. Fill up the form with required fields with appropriate information.	1. Need to click the "Submit" button on the end of the form for saving the data. 2.After submission the data will be saved in the database and the will be available to see.	1.A validation will be thrown on the case of acceptance/ rejection. 2. The page will redirect to same form page.	App show "A new product/ category/ created successfully " the message and route to the create form page.	Works.	No.
5.	Edit process for Room, category	Edit Room	1. Must be login as admin. 2. Must visit the particular page and press the edit option.	1. Click the edit button a form will appear. 2. Old data will be shown the input field. 3. Need to press "Update" button to change the history.	1. A validation will be thrown on the case of acceptance/ rejection. 2. The change data will be display on the edit form.	On creation a alert will be shown "Update is successfully ".	Works.	No.
6.	Delete process for Booking	Delete category	1. Must be login as admin. 2. Go to the list and a delete press the delete button.	1. After press delete the data record will disappear from the record. 2. The data record will be deleted from the database as well.	1. A confirmation alert will be there to confirm the data has been deleted. 2. After reloading to the list again the data will be missing.	After processing an alert message will be show ("The Product/ category / brand has been deleted successfully. ")	Works.	No.

6.1.2 List of activities of Ocean View Resort :

Step 1: User login and submission

Fill out the login details (username and password).

If new user, registration required.

Information sent to the system.

Step 2: Request/ Enquiry for booking and decide best offer.

System check status of the hotel rooms.

System provides availability to customers.

Customer determines the best offer.

System approved the offer and booked the offer for the respective customer.

Step 3: Pouches policy

If the offer is liked by the customer.

i) If yes - customer provides details and gets the offer.

ii) If no - reject.

6.1.3 Product Features :

Administrator Activities : The hotel management has the following features : This project is mainly intended for two types of audiences .One is the customer or the end user and the other is the administrator of the application .Some of the major functions of the product can be categorized under two different categories that are for the administrator and the user .

Login :The administrator has to login first in order to able to make changes to the Hotel Management ,by adding,deleting or modifying the data in Hotel Management Database.

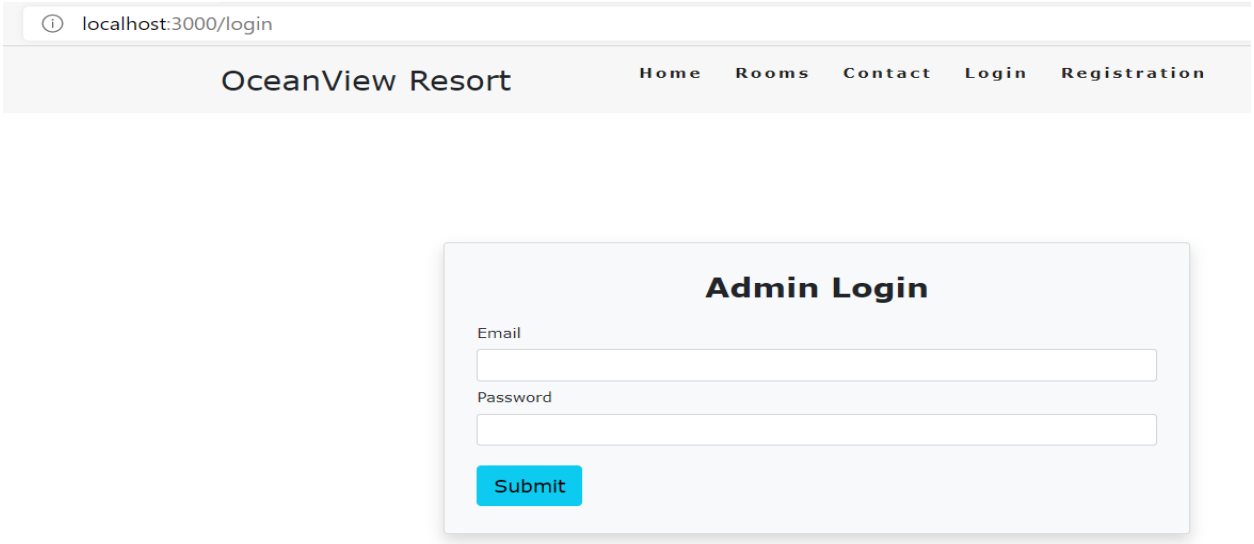


FIG : 6.1.3 Login Page of "OceanView Resort

Home page : Like all the other hotel websites available online ,the user can access the user homepage of the hotel Reservation System ,after he logs into the system here he can look up information regarding fights.

Fig : 6.1.2 Homepage of "OceanView Resort "

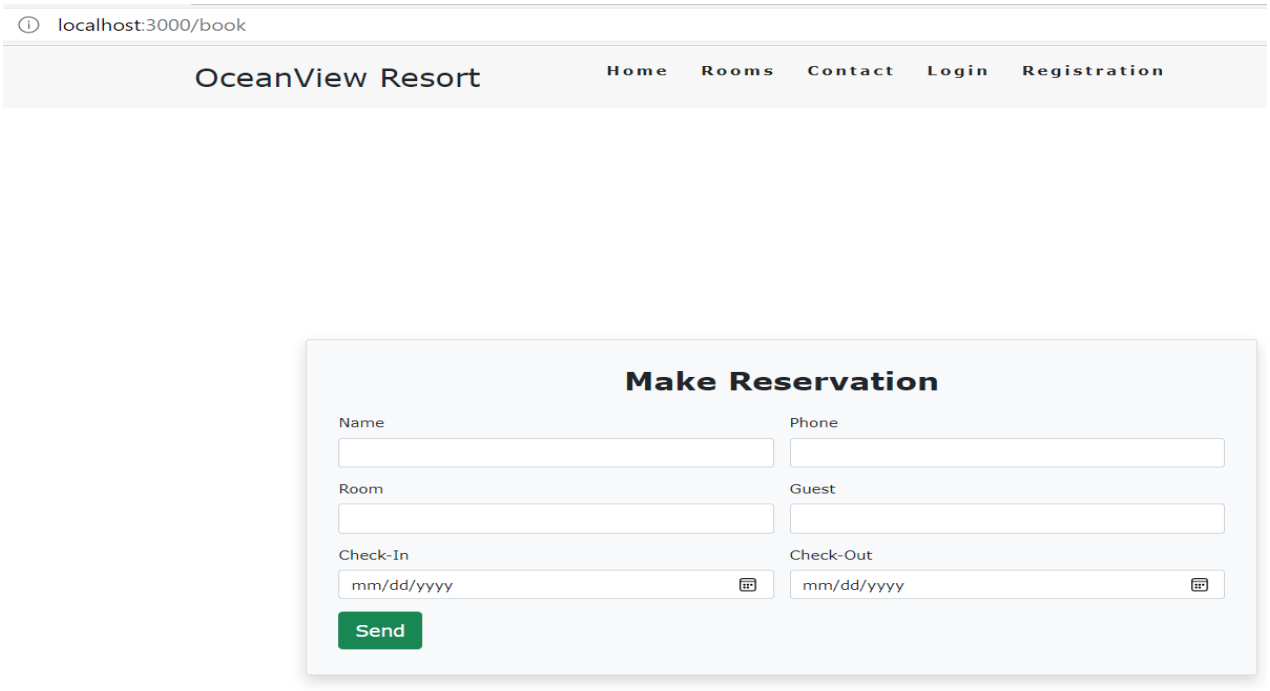


Fig : 6.1.3 Reservation Page

Login and Registers : The hotel management aslo comes with the customer registration details page, where the customer can enter his details and register.

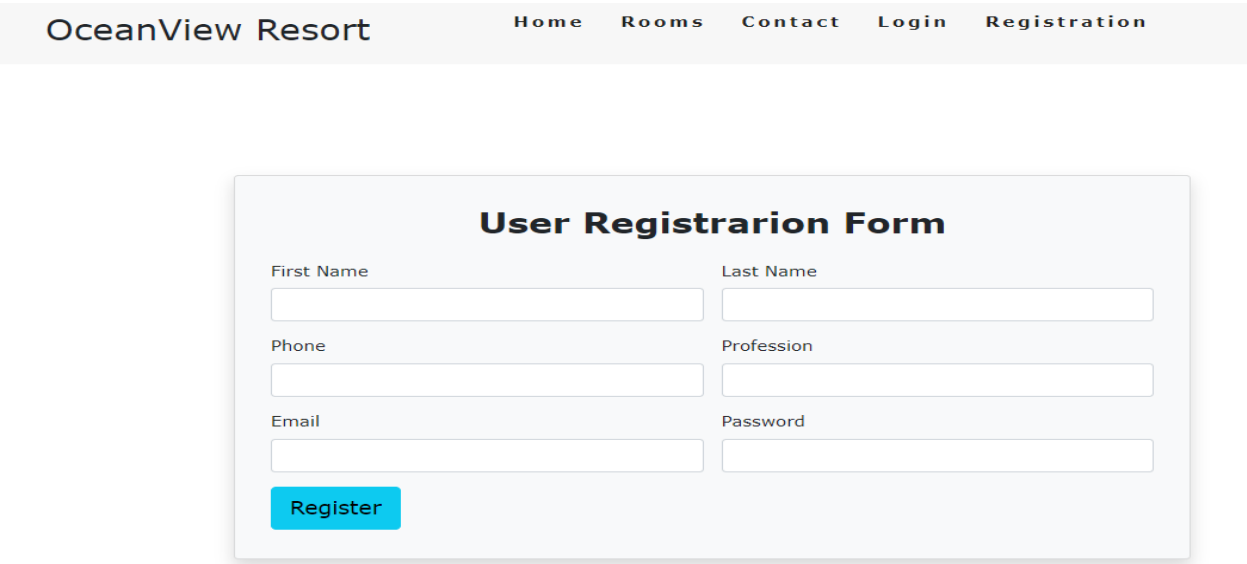


Fig:6.1.4 User Registration Form

Customer /End user activities : The above use case diagram depicts all the function or over that a customer can perform on application .They can be discussed in detail as follows .

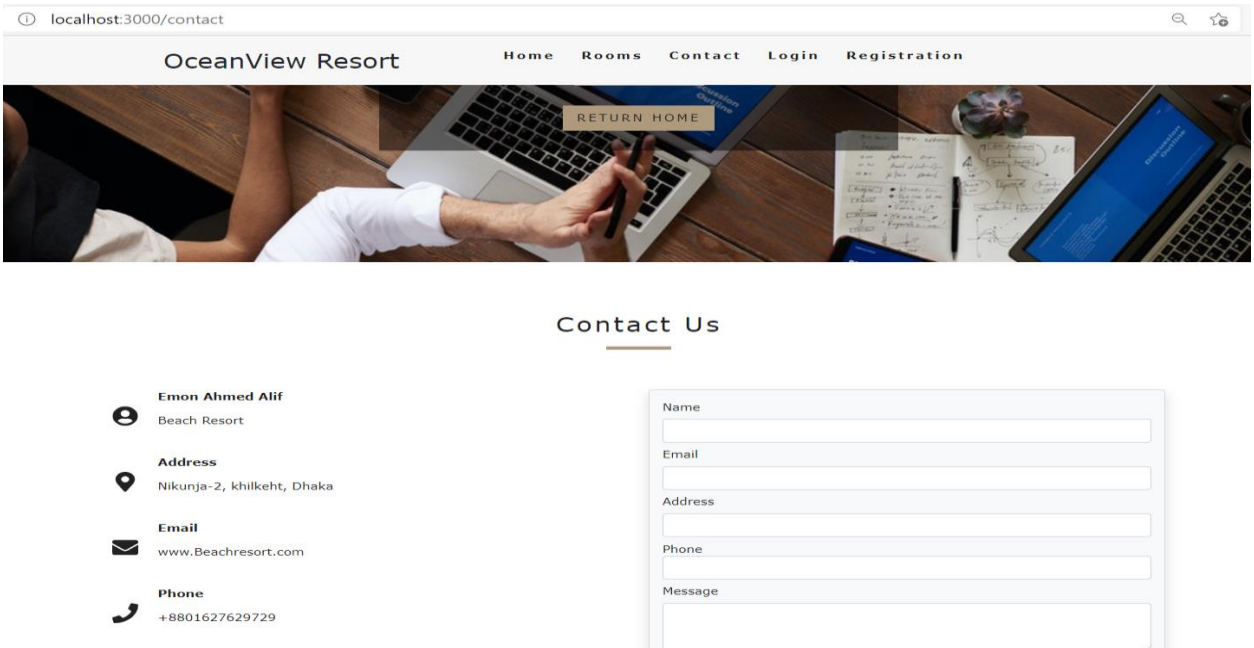


Fig : 6.1.5 Customer Contact page

Booking Rooms : The customer can also search for the rooms available and reserve his place for the room by booking it .

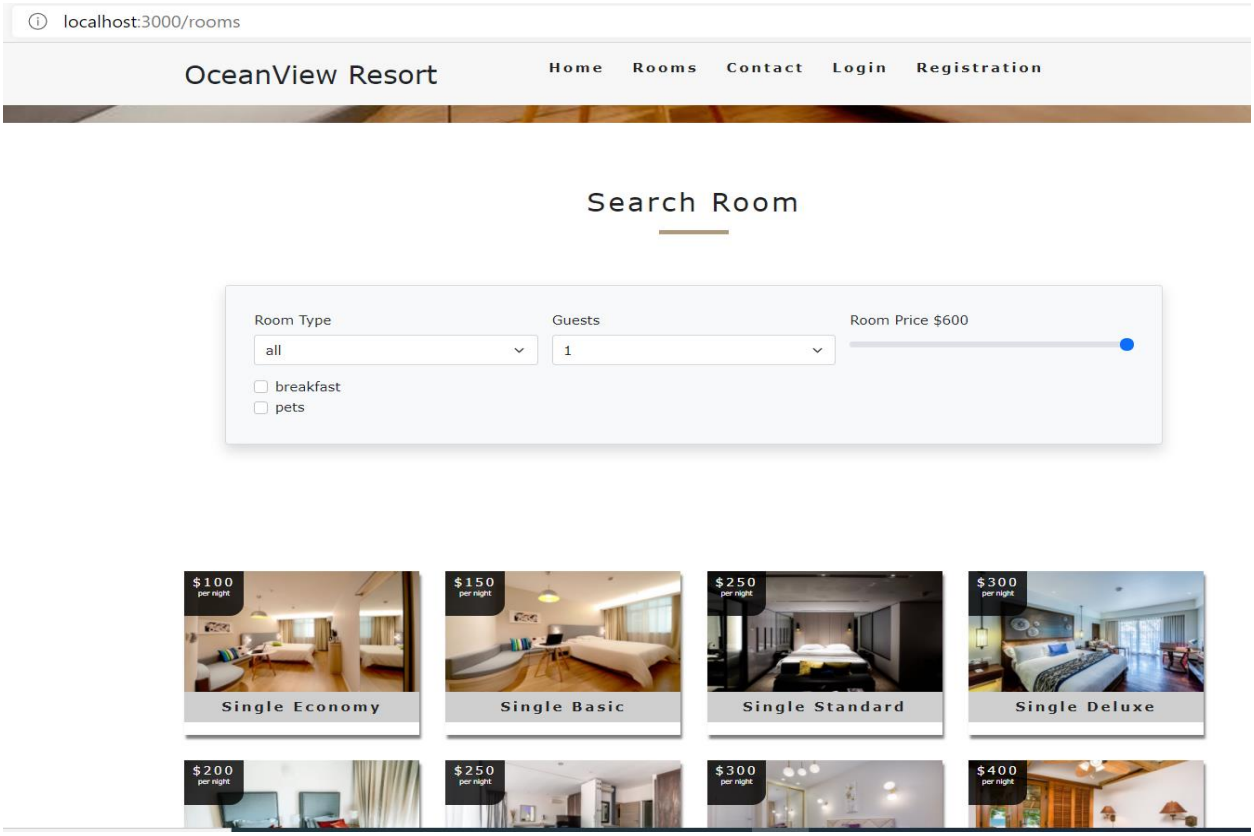


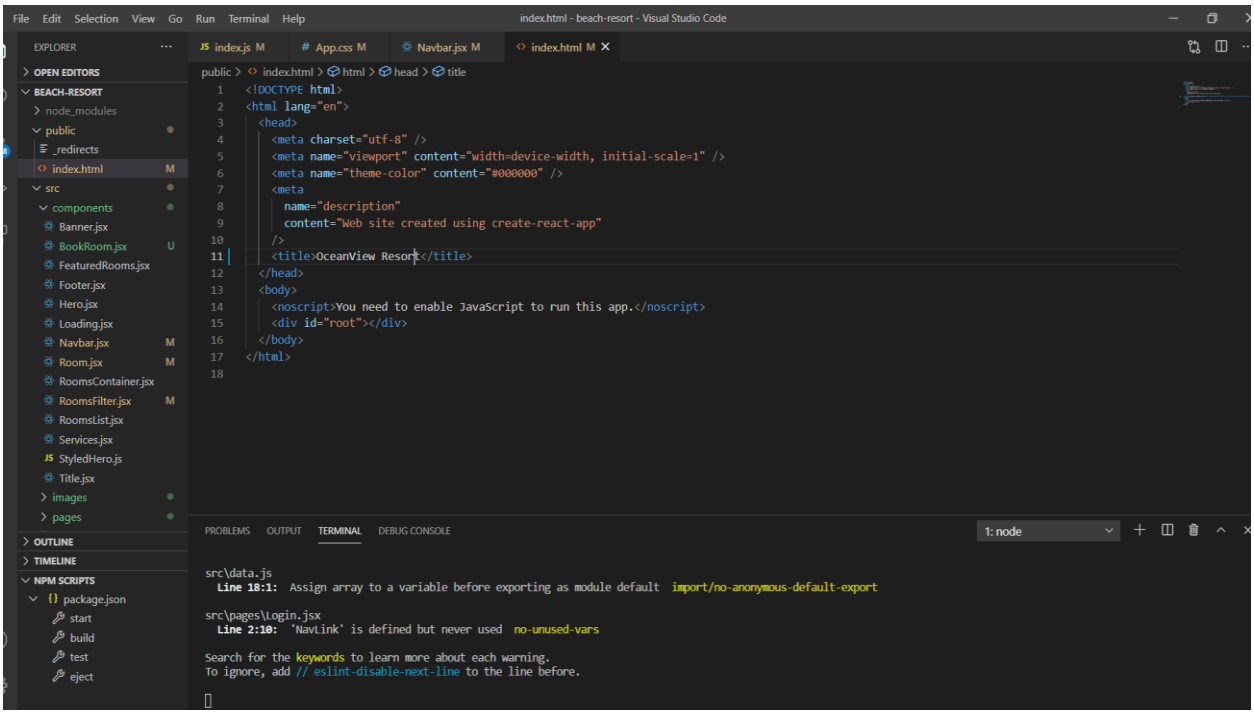
Fig : 6.1.6 Booking Page

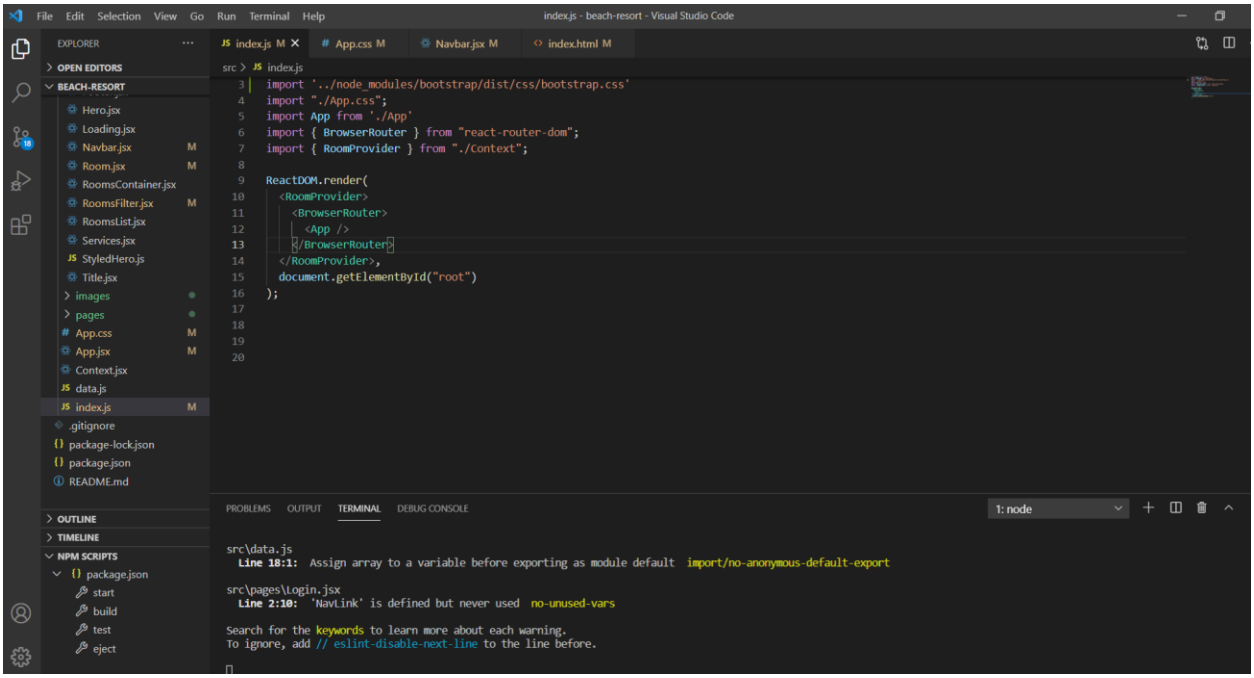
Add/modify : The Administrator also has the sole rights to add delete modify the hotel information,Sometimes any room information has to be modified or if any new flight s need to be added to the database ,these option performed by the administrator

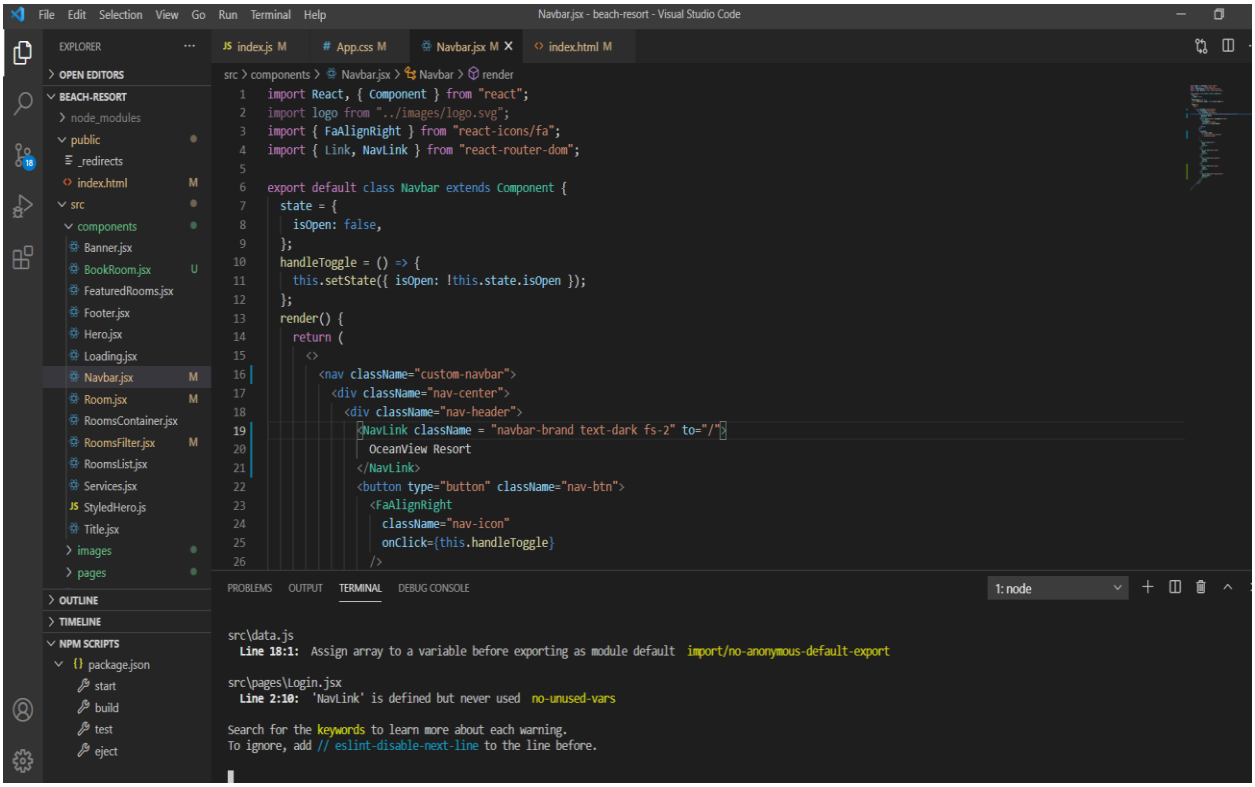
6.2.1 Related Questionnaire

1. Orders are placed on a timely basis how would you rate the overall Quality of this process?
2. Who will be using the system?
3. How Accurate are Your Booking Record Records?
4. How Hotel management system contributes to the company operational activities?
5. What method or technique does company used in determining material needs of its customers?
6. Who receives the invoices for purchased Booking

6.3.1 Source code of the software:



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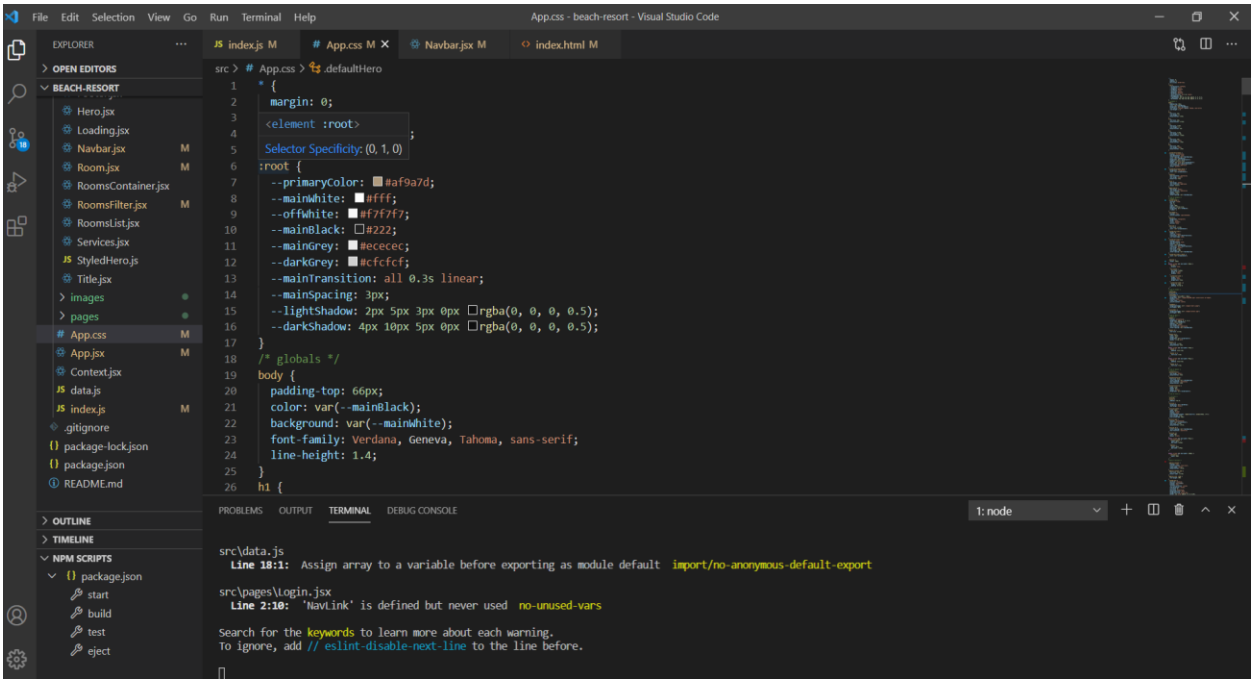
EXPLORER
OPEN EDITORS
BEACH-RESORT
node_modules
public
_redirects
index.html
src
components
Banner.jsx
BookRoom.jsx
FeaturedRooms.jsx
Footer.jsx
Hero.jsx
Loading.jsx
Navbar.jsx
Room.jsx
RoomsContainer.jsx
RoomsFilter.jsx
RoomsList.jsx
Services.jsx
StyledHero.js
Title.jsx
images
pages
OUTLINE
TIMELINE
NPM SCRIPTS
package.json
start
build
test
eject
index.js M
App.css M
Navbar.jsx M
index.html M
src > components > Navbar.jsx > Navbar > render
import React, { Component } from "react";
import logo from "../images/logo.svg";
import { FaAlignRight } from "react-icons/fa";
import { Link, NavLink } from "react-router-dom";
export default class Navbar extends Component {
state = {
isOpen: false,
};
handleToggle = () => {
this.setState({ isOpen: !this.state.isOpen });
};
render() {
return (
<>
<nav className="custom-navbar">

<NavLink className = "navbar-brand text-dark fs-2" to="/">
OceanView Resort
</NavLink>
<button type="button" className="nav-btn">
<FaAlignRight
className="nav-icon"
onClick={this.handleToggle}
/>
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
1: node
src\data.js
Line 18:1: Assign array to a variable before exporting as module default import/no-anonymous-default-export
src\pages\Login.jsx
Line 2:10: 'NavLink' is defined but never used no-unused-vars
Search for the keywords to learn more about each warning.
To ignore, add // eslint-disable-next-line to the line before.


File Edit Selection View Go Run Terminal Help
App.css - beach-resort - Visual Studio Code
EXPLORER
OPEN EDITORS
BEACH-RESORT
Hero.jsx
Loading.jsx
Navbar.jsx
Room.jsx
RoomsContainer.jsx
RoomsFilter.jsx
RoomsList.jsx
Services.jsx
StyledHero.js
Title.jsx
images
pages
App.css
App.jsx
Context.jsx
data.js
index.js
.gitignore
package-lock.json
package.json
README.md
OUTLINE
TIMELINE
NPM SCRIPTS
package.json
start
build
test
eject
index.js M
App.css M
Navbar.jsx M
index.html M
src > App.css > .defaultHero
* {
margin: 0;
<element :root>
Selector Specificity: (0, 1, 0)
:root {
--primaryColor: #af9a7d;
--mainWhite: #fff;
--offWhite: #f7f7f7;
--mainBlack: #222;
--mainGrey: #ececec;
--darkGrey: #cfcfcf;
--mainTransition: all 0.3s linear;
--mainSpacing: 3px;
--lightShadow: 2px 5px 3px 0px rgba(0, 0, 0, 0.5);
--darkShadow: 4px 10px 5px 0px rgba(0, 0, 0, 0.5);
}
/* globals */
body {
padding-top: 66px;
color: var(--mainBlack);
background: var(--mainWhite);
font-family: Verdana, Geneva, Tahoma, sans-serif;
line-height: 1.4;
}
h1 {
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
1: node
src\data.js
Line 18:1: Assign array to a variable before exporting as module default import/no-anonymous-default-export
src\pages\Login.jsx
Line 2:10: 'NavLink' is defined but never used no-unused-vars
Search for the keywords to learn more about each warning.
To ignore, add // eslint-disable-next-line to the line before.

CHAPTER7

ENGINEERING PROBLEM ANALYSIS

7.1.1 Sustainability of the Project: Sustainability of the product refers to itsability to be maintained and

updated. In the modern world, every application being released needs to be maintained and continuously

updated for its user base.

7.1.2 Community Sustainability: It means how much and how actively the users will support the project.

Support comes in many forms such as downloading and installing the application, using the application,

subscribing to paid services, giving rating and feedback, referring to other people, etc.

7.1.3 Financial Sustainability: This refers to how the application's running cost will be maintained after it

has been released and whether it will generate enough revenue as acceptable profit. An application's

running cost includes - server cost, database storage cost, third party Api cost, etc.

When "Smart hotel" will get a full-fledged release into the application market,

7.1.4 Organizational Sustainability: It relates to how the organization will continue to operate after the

release of the application. After the release of an application, usually the organization maintains the

application via its current team, an extended team or by a fresh new team.

7.2.0 Social and Environmental Effects and Analysis

The most important effect of the Hotel Management System on a social level is its timesaving quality. Time is priceless and the extent to which the usage of Hotel Management System saves time and hassle is extraordinary. On an individual level, the effect has a great positive outcome. Collaboratively, it is sensational. As more people use the Hotel Management System, it would mean that a larger portion of the population would be using a digitalized system of getting Hotel. The main customer for smart hotel project are e-commerce business or constructional service organization clients. Large scale use of a digitalized system can be considered a development in

the general social status to some extent. The System has some effect on the environment as well. Overcrowded places are a common scenario in our country.

7.3 Ethics and Ethical issues:

In the world of smartphones with so much data collection, hacking, cybercrime, etc, there are rules and ethics that need to be followed when working on creating and releasing an application. Some of them are:

7.1.1 Collecting only relevant User data: The Smart hotel App does collect user data, but those are strictly stored & maintained and used only relevant for this application. The only data that is being collected are the user's steps and distance covered for a certain period and their unique device identified code; other than these no other data is neither collected nor stored.

7.2.2 Not Sharing or Selling any User data: Even though the data collected may not be of any privacy concern for most users, the game does not let any service, any application or any third party have access to the data collected.

7.2.3 Data Storage Security: Only the lead developer and the owner of "Smart hotel" have access

to the server and the database Since.

7.2.4 Proper use of third-party Services and API: "hotel" does not violate any rules of the third-party services or the APIs that have been used in its development.

CHAPTER 8

Lesson Learned

8.1: problem faced during this Period :

Project Risk:

Process risk involves risks regarding product quality. If the product developed does not meet the customer's standards or the development team, it fails.

Development Risk:

If the client fails to provide all the necessary equipment for the Software's development and execution, this will cause the Software to become a failure. It has to give time and resources to the software development team; if all the requested resources are not provided to the software development team, the software development's odds to fail rises much.

Customer Risk:

This is the risk where the concern is the client's motivation or willingness to help the software development team. If the client fails to attend meetings regularly and fails to describe the business's real need, the produces Software will not be one that helps the business.

Technology Risk:

Technology risk involves using technology that is already obsolete in the development of the Software. Such Software will only be functional for a short period. Since technology changes rapidly these days, it is essential to pay importance to this risk. If a customer requests the use of Software that soon to be obsolete, the software development team must argue the call and pursue the customer to keep up with current technology.

Target Market

Our target market is the hotel industry, which is the service industry section that deals with guest accommodation or lodgings. We, therefore, are targeting the travel and tourism market also.

8.2: Solution of those Problem :

Proposed Solution

Product Objectives:

- Guest Reservations can be made online, which will get stored in the Software's database. On arrival, guests login into the system, scanning a QR code given to them.
- It makes hotel management simpler and staff more efficient.
- Indications of all rooms with the most efficient way.
- Lets the guest have easy control of the room appliances.
- Wireless connectivity.

- Intelligent Environment and Entertainment control.
- Make quick and easy bookings with just a click.
- Guests can easily include their feedback, which can automatically be included in advertising agency websites.
- The unique function can be added upon user request.

Role in vertical:

Smart Hotel Management System makes hotel management more flexible and convenient for the manager, staff, and everyone else associated with the hotel. The Guests enjoy all the services offered by the hotel with just a click on the mobile application. The interactive GUI makes it easy for all the users to operate the application without any prior training. The system is hence useful for both guests and managers to portable manage the hotel activities. Therefore, it is taking the service industry one step further and having a significant impact on the vertical.

Benefits and Outcome:

These days, hotels need Software like Smart Hotel Management more for their reputation, brand loyalty, and average customers' experience. The basic premise of the product is to provide guests with immediate access to cutting-edge technology within the rooms. Only so that the guests can create a bespoke experience based upon their requirements. The hotel can hire fewer staff as everything is computerized. Also making everything much faster because time is money! The next five-year business development plan is to attract more guests yet with fewer staff to do the work, making fewer people pay and more profit.

In conclusion,

- The Software, therefore, focuses on a smarter way of hotel management. We are making many things more manageable and automated for both the staff and guests, delivering a unique experience.
- It can be installed in windows or any other operating system.
- The staff and guests can use the Software very easily using a mobile application.

4.0- 5 p's

Product

Smart Hotel Management System is a web application that aims to facilitate the management system. It will keep track of hotel reservations, inventory management, rooms to be cleaned, and so much more. Moreover, a mobile application version is added to provide better, more comfortable, and faster communication. The Mobile version will let the user keep the Hotel Management system in its pocket. It is designed to be near to the guests anywhere and anytime.

Price

We will charge 200k taka for our designed smart hotel management system.

Place

Buyers can purchase the Smart Hotel Management System directly from our website. They will also have the opportunity to come to our office and buy the system.

Promotion

Social Media marketing, Traveler incentives, and Promotional marketing with targeted hotels.

Positioning

Normalizing this system in the industry, staying at the core value of all the luxurious hotels.

Chapter 9: Future Work and Conclusion

Challenges Faced

During my internship program, I have faced lots of challenges while working on this Project. The main ones are:

- **Understanding the Requirement:** It was quite difficult to understand what wasreally required; often I would do things that were not asked to be done and miss out on the actual requirement
- **Adapting to New Technologies:** Since this was the first time, I have ever worked on a mobile application I had to learn and adapt to new technologies
- **Keeping up to Speed: A**fter learning new technologies and putting them to use was a slow process for me initially as it was the first time, I have ever used it.
- **Identifying and Fixing Bugs:** Often, there were bugs which were very hard to find, and even after they have been found it became a big problem to fix it.

8.1.1 Conclusion

Working in Techno Valley as an intern has been an amazing experience. I have learned a lot about developing different kinds of applications and also about development styles. Working with cutting-edge technology like Flutter, Vue.Js, Node.js and Express.js is among the major takeaways from the Internship Program. Through this program I have been exposed to a developer's working life. Throughout my internship, I could understand more about the definition of a software engineer and programmer and this helped prepare myself to become amore responsible and innovative developer in future. During my project, I cooperated with my mentors and seniors to solve the challenges faced. Moreover, the project indirectly helped me to learn independently, discipline myself, be patient, take initiative and the ability to solve problems. Besides,

my communication skills have also strengthened as I had to give regular updates and was engaged in many pair programming sessions. As I had to face many problems, solving them developed my programming containing reusable libraries & packages for Flutter, Angular Dart, and general Dart programs, JavaScript since React itself is a JavaScript library for creating user Interface and Node.js and Express.js is also done in JavaScript.. I would like to once again appreciate everyone who has made my life as an intern such a great experience.

8.1.2 Future Work

This project, "Smart Hotel", is still in its development phase and there many more planned features that are to be added in the near future. Some of them are:

- ➔ Create '999' option for calling direct nearest Police Station.
- ➔ Share application links to invite others to join.
- ➔ Sign up and Sign in feature via face detection or barcode.
- ➔ Log in via other services such as Google or Facebook, LinkedIn, Instagram.
- ➔ Get notifications and connection of other social media such as LinkedIn, Instagram, Twitter.
- ➔ Animations, Logos, Icons and Advertisements.
- ➔ Develop for iOS and Android, Linux, Mac, Google Fuchsia, Windows.
- ➔ Show user statistics.
- ➔ Laundry System
- ➔ Car facilities
- ➔ Restaurant System
- ➔ Tourist package and guide system
- ➔ Meeting and conference facility

Chapter 10

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