PROJECT ON HOTEL MANAGEMENT SYSTEM

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ABSTRACT

The Project **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. This application gives him the power and flexibility to manage the entire system from a single online system. Hotel Management project 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 disapproving 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 portably manage the hotel activities.

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Chapter -1

INTRODUCTION

1.1 Introduction

Hotel Management System is a system that provides us to reserving rooms, checking whether the rooms are vacant are or not etc by using online browsing. This system is very useful to all especially for business people. For Business people they don't have sufficient time for these then they can use these type of online Hotel Management Systems. This Project is based on Javascript . If any one wants to book the room for few day's then they can specify the specific number by seeing the types of rooms we have. The bill of this online booking is based on the type of room they can select is displayed. **HOTEL MANAGEMENT SYSTEM** is a hotel reservation site script where site users will be able to search rooms availability with an online booking reservations system. Site users can also browse hotels, view room inventory, check availability, and book reservations in real-time. Site users enter check in date and check out date then search for availability and rates. After choosing the right room in the wanted hotel – all booking and reservation process is done on the site and an SMS is sent to confirm the booking.

1.1 Objective

The purpose of hotel booking system is to automate the existing manual system by the help of computerized equipments and full fledged computer software, fulfilling their requirement, so that their valuable or information can be stored for a longer period with easy accesing and manipulating of the same . The required software and hardware are easily available and easy to work with. This proposes that efficiency of hotel organizations could be improved by integrating service-oriented operations service-oriented operations with project management principles. Such integration would instill innovation, proactive attitudes and regulated risk-taking needed to pursue ongoing improvement and proactive response to change. By managing each change as a project, embedded in smoothly running operations, hotels would extend their life span by continuously reinventing themselves.

CHAPTER 2

LITERATURE REVIEW

2.1 Background of the Studies

Managing hotel service is very complex, hence it involves job of dealing with customers directly, purchases made by customers and room reservation. The manual hotel management is subdivided into section with each section having specific tasks. These tasks will however from time to time interact operationally to achieve organizational objectives.The mode of interaction consists of all characteristics of atypical manual system i.e. communication through verb a lmeans, documents etc. This now leads to computerization of hotel management . The proposed intelligent hotel management (IHM) system is free from a significant number of hotel staffs that provides those facilities and fewer formalities. In mal-populated countries dearth of manpower is increasing gradually. Therefore, they have to import manpower from other countries. In this condition the IHM can be a permanent solution. Moreover, it possesses adequate security . This system provides hi-tech room facilities including auto controlled door, automatic light controlling, voice active devices etc. Apart from these, it prevents the waste of electric power as well as excessive water that are the main ideas used in this paper. A short version of this approach is inAdditionally, we have integrated a new image processing approach which accurately ensures the presence and darkness of the room to be occupied. The co-ordination of these activities is quite cumbersome. For instance, the receptionist has a lot of enquiries to make, and as such, a lot of paper works to do. Some facts may exist in several documents in many forms, so

that information retrieved is dependent on the document referred to, some details of the receptionists transactions with customers have to be forwarded to other directions, for example, details of the number of days of reservation booked by a customer has to be forwarded to account section for billing. The dinning section also keeps the record of customers expenditures and communicate them to the account section, for billing also for example during the lodging of the customer, all his expenses are recorded so that at the same time of exit, the document will be forwarded to the account section for processing. The dinning section also interacts with purchasing section by notifying them of their stock needs etc. The purchase section is responsible for the general stock control activities. They purchase all the goods needed by the hotel and they rely mostly on the information from other sections to determine facts. With all these, there is need for hotel management needs to be computerized .

Chapter -3

SYSTEM ANALYSIS

Requirement analysis for web applications encompasses three major tasks: formulation, requirements gathering and analysis modeling. During formulation, the basic motivation and goals for the web application are identified, and the categories of users are defined. In the requirements gathering phase, the content and functional requirements are listed and interaction scenarios written from end-user's point-of-view are developed. This intent is to establish a basic understanding of why the web application is built, who will use it, and what problems it will solve for its users.

3.1 Software requirement Specification

A set of programs associated with the operation of a computer is called software. Software is the part of the computer system, which enables the user to interact with several physical hardware devices. The minimum software requirement specifications for developing this project are as follows:

Operating System	Windows 7/ XP/8/10/11.
Front end	Html, CSS, Java script
Server side script	Node.js
Database	MongoDb

3.2 Hardware Requirement Specification

The collection of internal electronic circuits and external physical devices used in building a computer is called the Hardware. The minimum hardware requirement specifications for developing this project are as follows:

Processor	Standard processor with a speed of 1.6 GHz
RAM	256 MB RAM or more
Hard Disk	20 GB or more
Monitor	Standard color monitor

3.3 Functional requirements

The basic objective of HOTEL MANAGEMENT SYSTEM is to generalize and simplify the monthly or day to day activities of Hotel like Room activities, Check in of New Customer, Check out of customer, Assigning a room according to customer requirement, and finally compute the bill etc. which has to be performed repeatedly on regular basis. To provide efficient, fast, reliable and user-friendly system is the basic motto behind this exercise. Let us now discuss how different functions handle the structure and data files:

E-mail address

In this module, this website is for multiple users. If a User enters a E=mail address and the software checks its validity. If the address is valid then option is given to option booking room.

Password

In this module, this website is for multiple users. If a User enters a password and the software checks its validity. If the password is valid then option is given to option booking room.

3.4 Problem definition

GROUP-F Hotel offers accommodation, meals, additional facilities and other services. Accommodation services are offered as follows:

CATEGORY	Price
Standard Single Room	$119
Couple Power Room	$ 149
Family Capacity Room	$199

Although the hotel is of an international class and quality, it's not realizing its maximum potential due to delay of activities by the current redundant manual system. Due to huge losses suffered by the hotel from the frequent errors in the current system, the hotel management opted for a computerized system, which would:

- Be friendlier to customers and the staff.
- Improve customer care and service at the hotel.
- Increase the hotel performance.
- Reduce the operational costs of the hotel.

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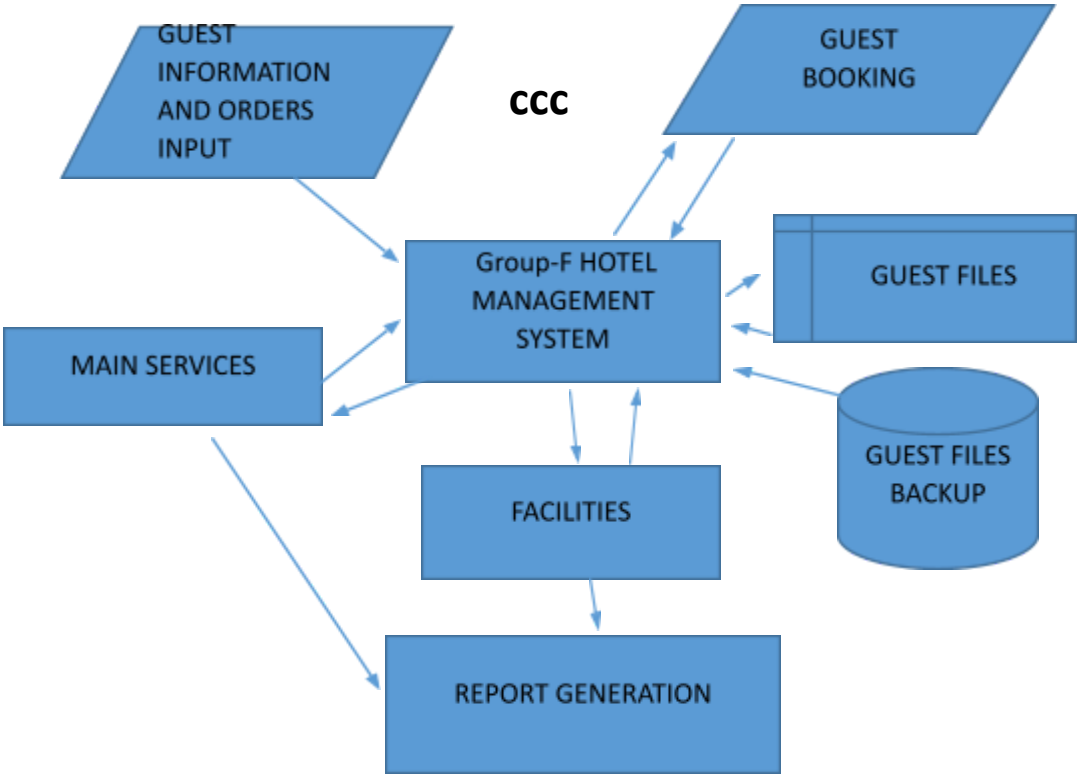
SYSTEM DESIGN

The system was designed in Microsoft Access package. The system design phase describes the functional capabilities of the proposed system. This is divided into the following design phases: System flowchart, System dataflow diagram, Input design, processing design and output design.

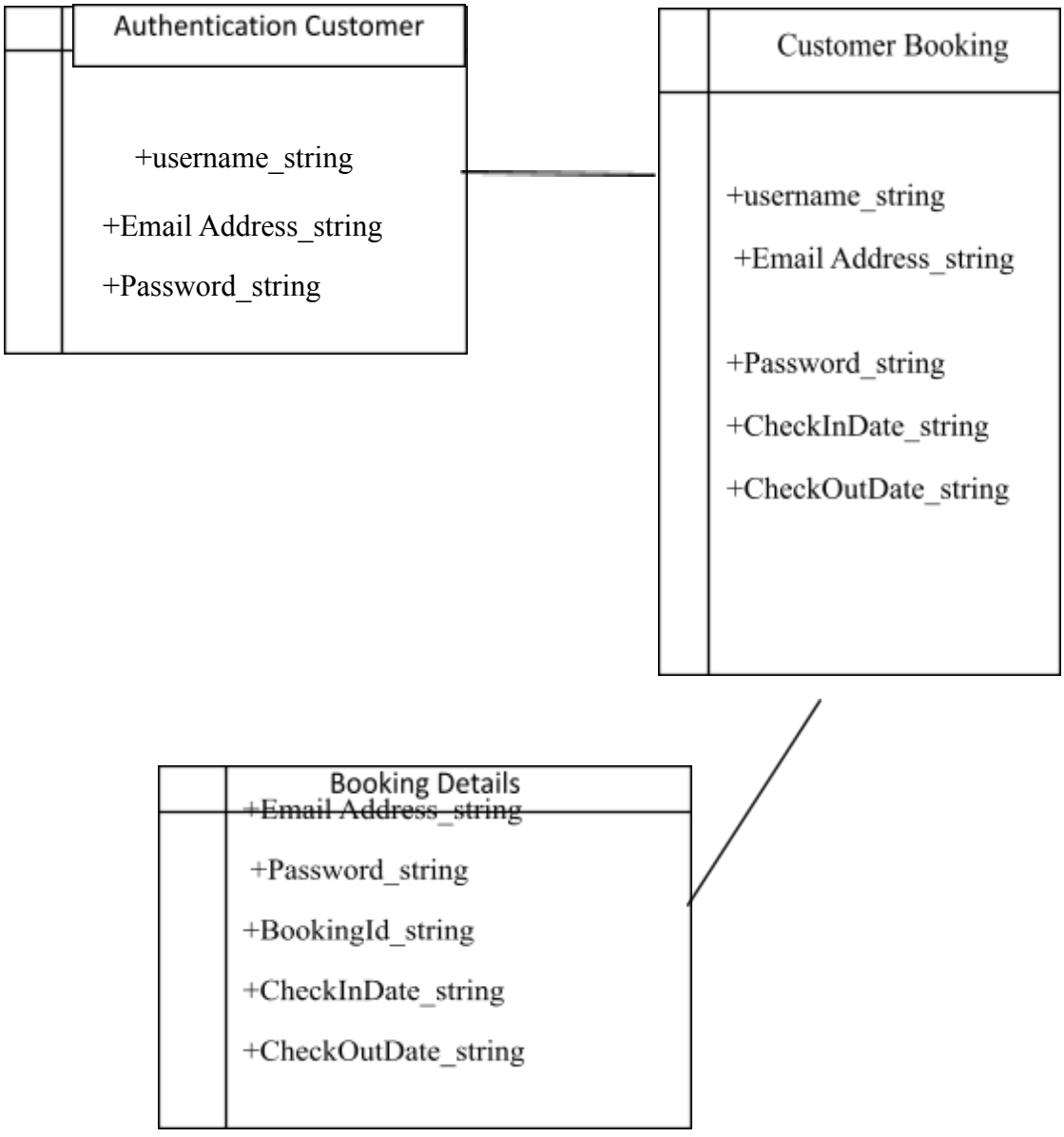
4.1 System dataflow diagram



4.1.1 Data flow diagram

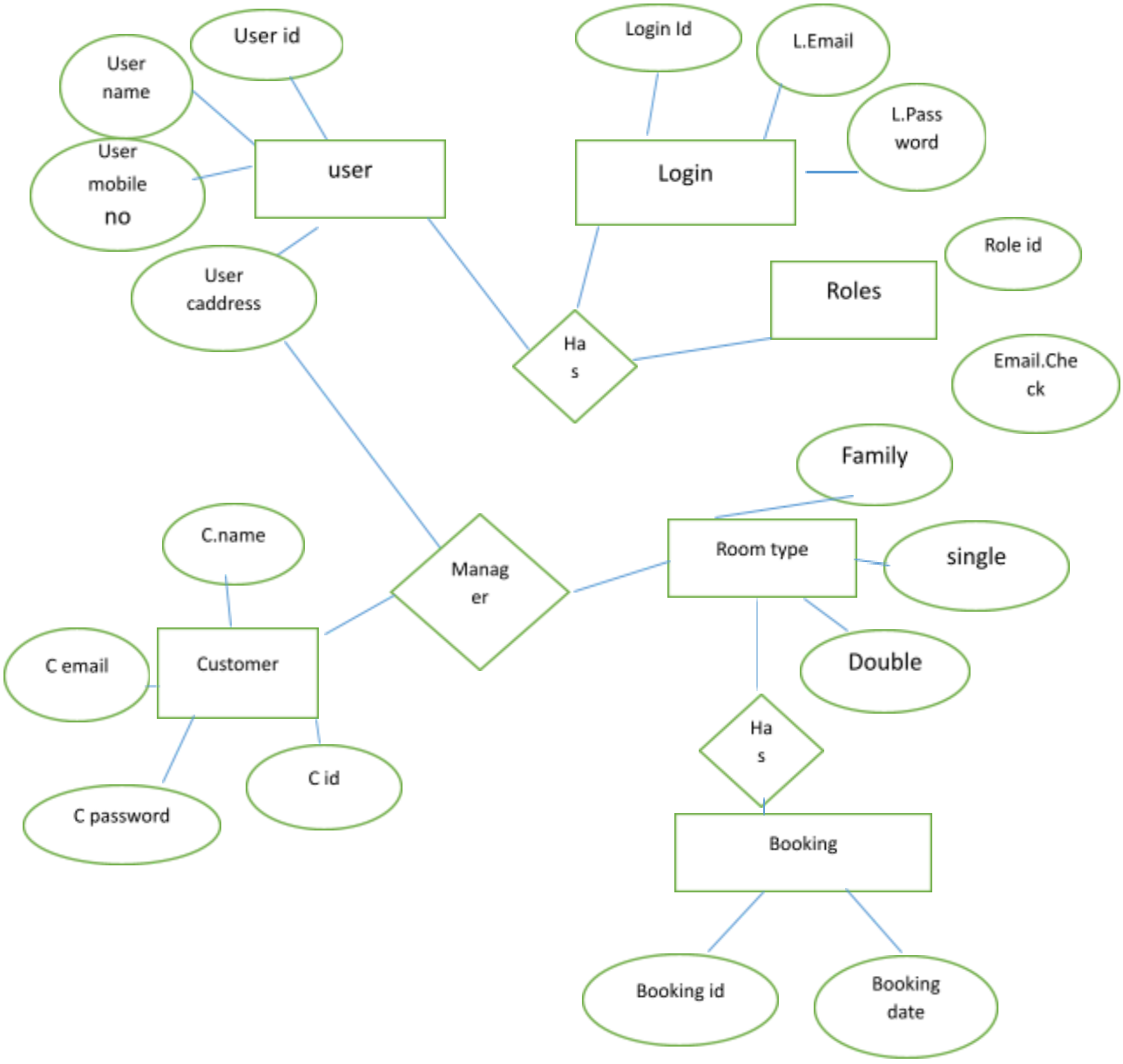
4.2 Class Diagram

A class is a category or collection of things that share characteristics and behaviors. The icon for the class is a rectangle with three sections inside. The name is located in the top area, the attributes are in the middle, and the operations are displayed in the bottom area. Developers can represent their work using class diagrams.



4.2.1 Class Diagram

4.3 ER diagram



4.3.1 ER diagram

Chapter -5

SOFTWARE TOOLS USED

The whole Project is divided in two parts the front end and the back end.

5.1 Front end

The front end is designed using of Html , CSS, Java script .

- **HTML- HTML or Hyper Text Markup Language** is the main markup language for creating web pages and other information that can be displayed in a web browser.HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and </h1> , although some tags represent empty elements and so are unpaired, for example <img>. The first tag in a pair is the start tag, and the second tag is the end tag (they are also called opening tags and closing tags). In between these tags web designers can add text, further tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

- **CSS- Cascading Style Sheets(CSS)** is a style sheet language used fordescribing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification. of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design).CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when 14 read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed

- JAVA SCRIPT- JavaScript(JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow clientside scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications. JavaScript is a prototype-based scripting language with dynamic typing and has first-class functions. Its syntax was influenced by C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics. The key design principles within JavaScript are taken from the Self and Scheme programming languages. It is a multiparadigm language, supporting object-oriented, imperative, and functional programming styles. The application of JavaScript to use outside of web pages—for example, in PDF

documents, site-specific browsers, and desktop widgets—is also significant. Newer and faster JavaScript VMs and platforms built upon them (notably Node.js) have also increased the popularity of JavaScript for server-side web applications. On the client side, JavaScript was traditionally implemented as an interpreted language but just-in-time compilation is now performed by recent (post-2012) browsers.

5.2 Back end

The back end using of Node.js

- **Node.js** is an open-source, cross-platform, back-end JavaScript runtime environment that runs on a JavaScript Engine (i.e. V8 engine) and executes JavaScript code outside a web browser, which was designed to build scalable network applications. Node.js lets developers use JavaScript to write command line tools and for server-side scripting—running scripts server-side to produce dynamic web page content before the page is sent to the user's web browser. Consequently, Node.js represents a "JavaScript everywhere" paradigm, unifying web-application development around a single programming language, rather than different languages for server-side and client-side scripts.

  Node.js has an event-driven architecture capable of asynchronous I/O. These design choices aim to optimize throughput and scalability in web applications with many input/output operations, as well as for real-time Web applications (e.g., real-time communication programs and browser games).

- **MongoDB** is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License (SSPL) which is deemed non-free by several distributions.

Chapter -6

SYSTEM IMPLEMENTATION

The project's implementation phase is when the conceptual design is transformed into a functional system. As a result, it can be said to be the stage that will determine whether a new system is a success and whether its users have faith in its ability to function effectively.

The implementation stage entails careful planning, research into the current system and its implementation limitations, design of transitional methods, and evaluation of transitional methods.

6.1 Sample code:

index.html

```
<!DOCTYPE html>
<html>
<head>
<Card className={classes.root}>
    <CardHeader
      avatar={
        <Avatar aria-label="recipe" className={classes.avatar}>
          {room.avatar}
        </Avatar>
      }
      title={room.title}
    />
```

```
      <CardMedia
        className={classes.media}
        image={room.imgUrl}
        title="Paella dish"
      />
      <img src={`/images/${room.bedType}.png`} alt=""/>
      <CardContent>
        <Typography variant="body2" color="textSecondary" component="p">
          {room.description}
        </Typography>
      </CardContent>
      <CardActions disableSpacing>
        <IconButton aria-label="add to favorites">
          <LocalHotelIcon />: {room.bed}
        </IconButton>
        <IconButton aria-label="share">
          <WcIcon />: {room.capacity}
        </IconButton>
        <IconButton aria-label="price">
          <AttachMoneyIcon />: {room.price}
        </IconButton>
        <Button onClick={() => handleBook(room.bedType)} variant="contained"
color="primary">
          Book
        </Button>
      </CardActions>
```

```
    </Card>


</body>
</html>
```

main.Node.js

```
const express=require('express');

const bodyParser=require('body-parser');

const admin=require('firebase-admin');

const cors=require('cors')

require('dotenv').config()


var serviceAccount = require("./burj-al-arab-de3cf-firebase-adminsdk-w4i4t-9233205a47.json");


admin.initializeApp({

  credential: admin.credential.cert(serviceAccount)

});

const uri=`mongodb+srv://${process.env.DB_USER}:${process.env.DB_PASS}@cluster0.ldgrh3m.mongodb.net/Burj-Al-Arab-server2?retryWrites=true&w=majority`;
```

```
const app=express();

app.use(cors());

app.use(bodyParser.json())

const { MongoClient } = require('mongodb');


const client = new MongoClient(uri, { useNewUrlParser: true, useUnifiedTopology: true });

app.get('/',(req,res)=>{

   res.send('Working the project')

})


client.connect(err => {

                        const collection =
client.db("BookingsDetail").collection("Burj-Al-Arab-server2");

  app.post('/addBooking',(req,res)=>{

     const newBooking=req.body;

     collection.insertOne(newBooking)

     .then(result=>{

        res.send(result.insertedCount>0)

     })

     console.log(newBooking)
```

```
})

app.get('/bookings', (req, res) => {
  const bearer = req.headers.authorization;
  if (bearer && bearer.startsWith('Bearer ')) {
      const idToken = bearer.split(' ')[1];
      admin.auth().verifyIdToken(idToken)
          .then(function (decodedToken) {
              const tokenEmail = decodedToken.email;
              const queryEmail = req.query.email;
              if (tokenEmail == queryEmail) {
                  bookings.find({ email: queryEmail})
                      .toArray((err, documents) => {
                          res.status(200).send(documents);
                      })
              }
              else{
                  res.status(401).send('un-authorized access')
              }
          }).catch(function (error) {
```

```
            res.status(401).send('un-authorized access')
        });
    }
    else{
        res.status(401).send('un-authorized access')
    }
})
```

6.2 Output screens

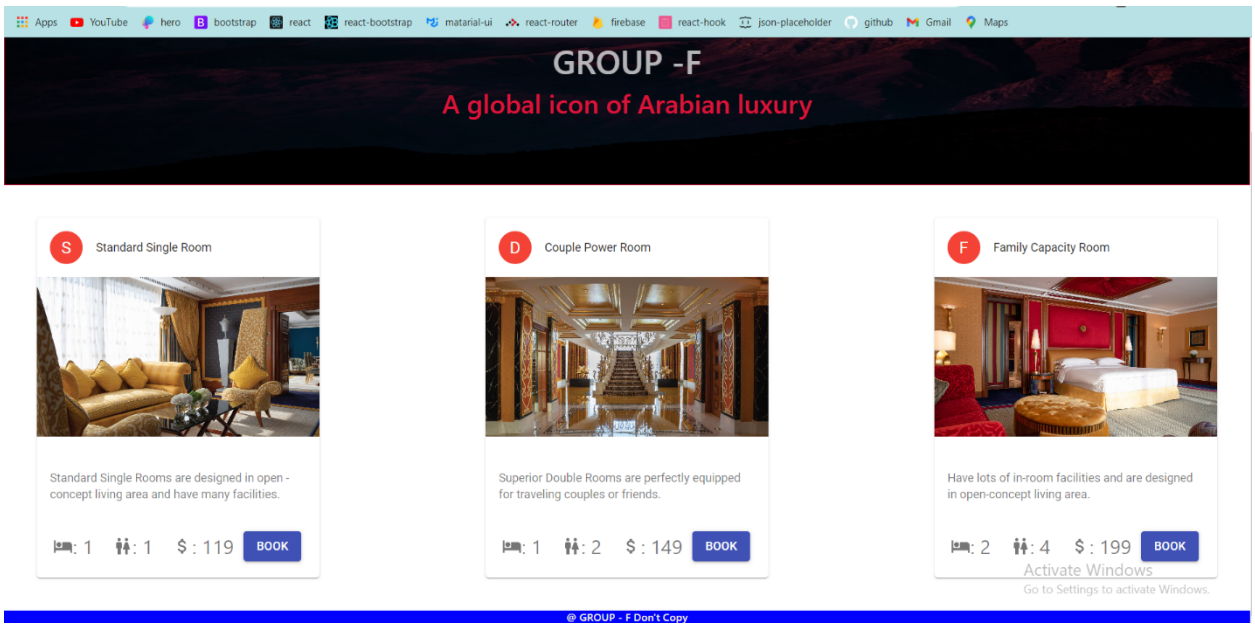


Fig 5.2.1-Home page

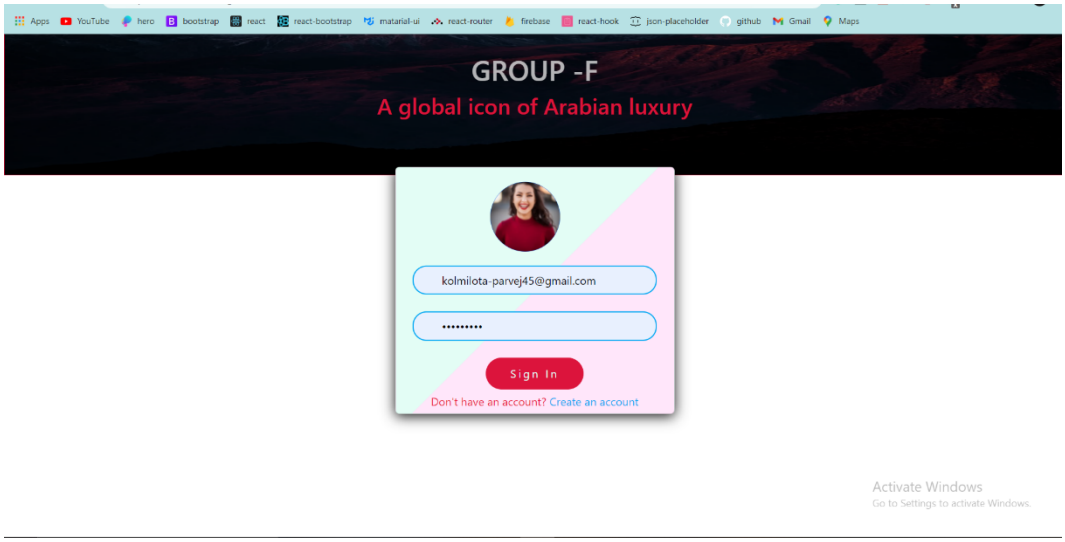


Fig 5.2.3-Login Page

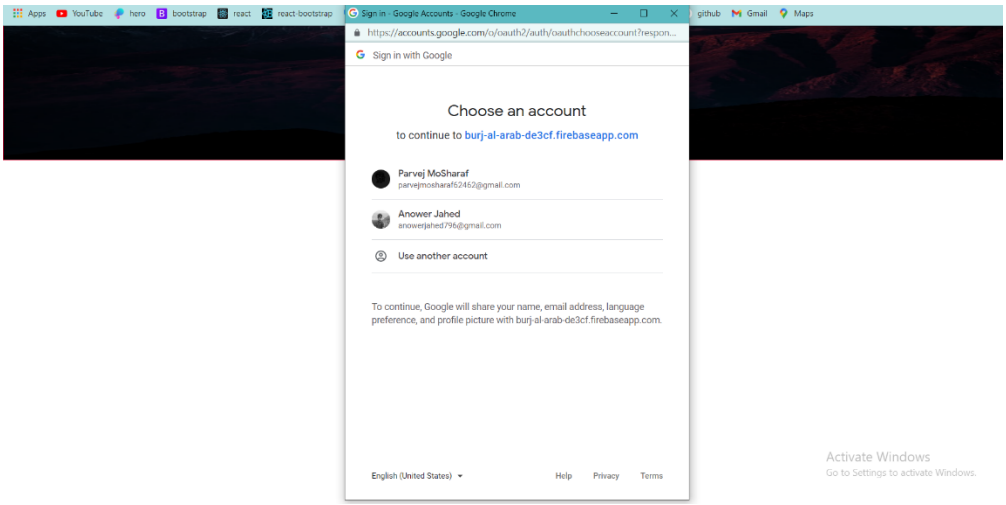


Fig 5.2.4-Authentication page

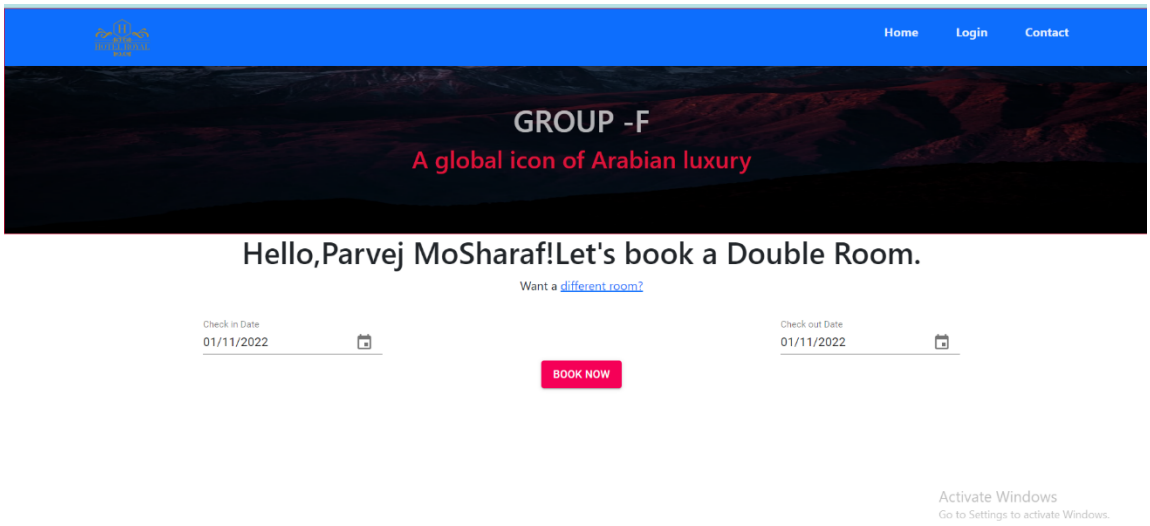


Fig 5.2.5-Booking page

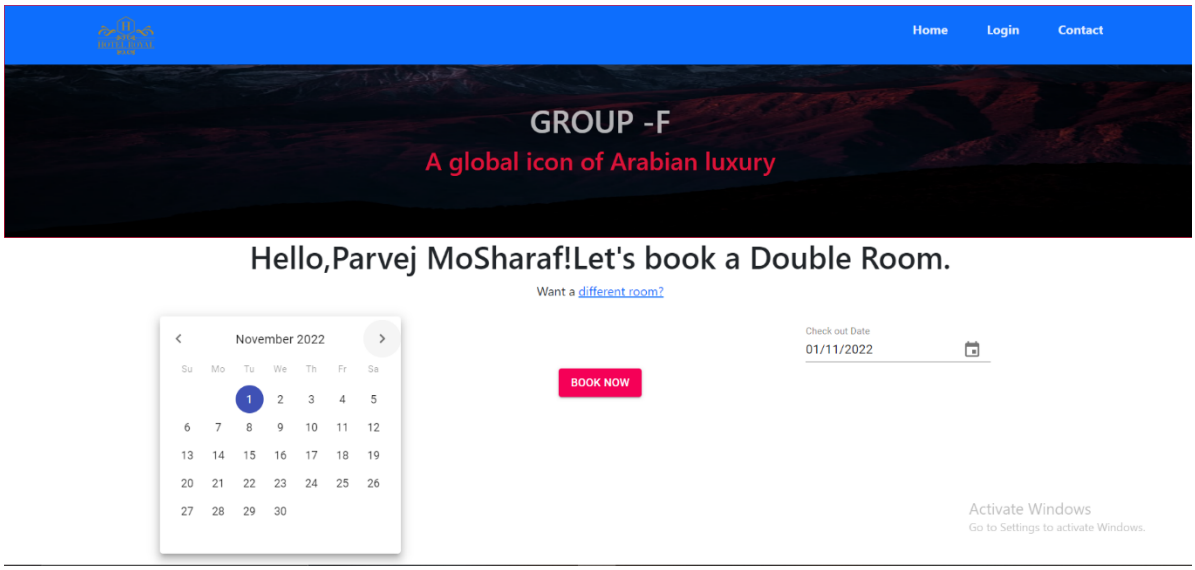


Fig 5.2.6-Select Date

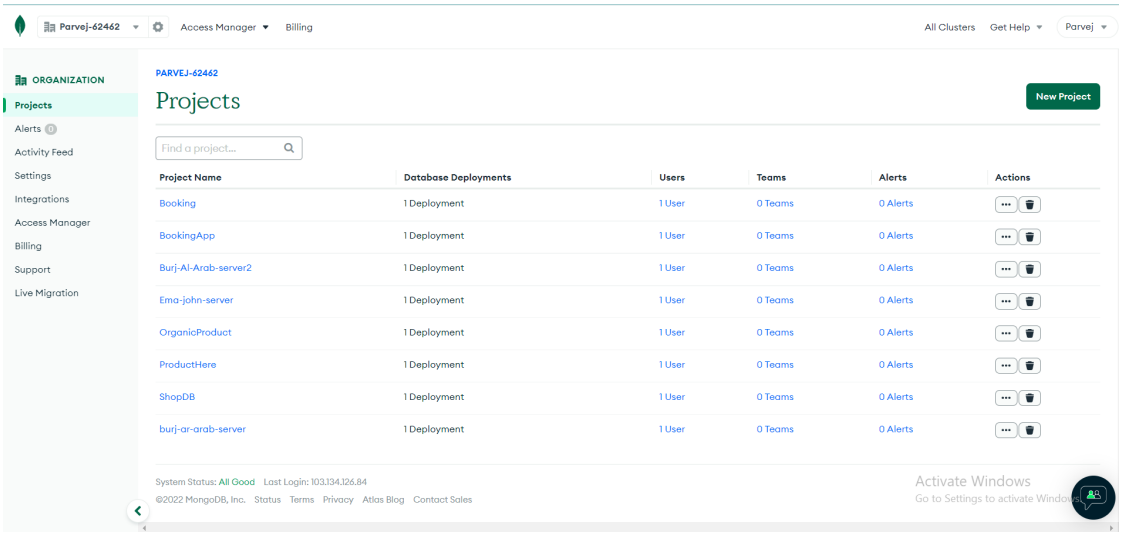


Fig 5.2.7-MongoDB Database

Chapter -7

SYSTEM TESTING

7.1 Integration Testing

Integration testing done ahead, during and after integration of a new module into the main software package. This involves testing of each individual law module. One piece of software can contain several modules which are frequently created by several different programmers. It's pivotal to test each modules effect on the entire program model. After integration testing the design works successfully

7.2 Unit Testing

Each module or chunk of code is subjected to unit testing while being developed. Typically, the programmer who creates the code performs unit testing.

7.3 System Testing

Before being released on the market, the finished software product is subjected to system testing by a qualified testing agent.

7.4 Acceptance Testing

A beta test of the product conducted by the real end user is known as acceptance testing.

7.5 Recovery Testing

Recovery testing is carried out to show that a software application is dependable, trustworthy, and capable of recovering from potential crashes.

7.6 Functional Testing

Functional testing, also known as functional integrity testing. Functional testing tries to think about possible missing features. Testers can list additional features that a product could improve during functional testing.

7.7 Hardware/Software Testing

Hardware and software testing is referred to as "HW/SW Testing" by IBM. During system testing, this is the time when the tester focuses on the interactions between the hardware and software.

7.8 Security Testing

Security testing is a subset of software testing that makes sure all systems and applications within a company are free of flaws that could result in significant financial loss. Finding any potential flaws and vulnerabilities that could lead to information loss in the hands of the organization's workers or outsiders is the goal of security testing any system.

7.9 Advantages

Sometimes it happens that the rooms get booked soon when one visits the place therefore user can make advance booking using this system. It saves user time in search of rooms. The system is useful as it calculates an exact cost for requested number of days. It saves organization resources and expenses. This system is effective and saves time and cost of users. Easy registration.

Chapter -8

CONCLUSION

8.1 Conclusion

HOTEL MANAGENMENT SYSTEM is a Web-portal Development Company specializing in providing custom solutions for small businesses. We strive to build solutions to your specific needs to get the job done right the first time. We pay special attention to the ease of use and utilize the latest in technology. This system is developed for the exclusively for the people . It provides facilities to the user with user friendly modules with sub modules. This system is developed in understandable approach which can be easier to the layman of the computers. This system is developed totally GUI based and with smart links. This project is designed to meet the requirements of Online Hotel Management. It has been developed in JSP, Servlets keeping in mind the specifications of the system. For designing the system we have used simple data flow diagrams. Overall the project teaches us the essential skills like: Using system analysis and design techniques like data flow diagram in designing the system. Understanding the database handling and query processing.

8.2 Limitation of the system

The booking process usually requires a customer identity which the system cannot detect. It requires a reliable internet connection. In this system, there is no scope of online payment.

Chapter -9

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