Rajiv Gandhi University of Knowledge Technologies

(Catering the Educational Needs of Gifted Rural Youth of A.P)

R.K Valley , Y.S.R Kadapa(Dist)-516330

Project Report

On

Hotel Management System

Submitted by

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E4 CSE

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CERTIFICATE

This is to certify that the project titled "**HOTEL MANAGEMENT SYSTEM**" is a bonafied project submitted by **SAMA THARUN (R170663), SUGAMANCHI HARITHA (R170276)**, **YANDAPALLI ISWARYA (R170285)** in the department of **COMPUTER SCIENCE AND ENGINEERING** in partial fulfillment of requirement for the award of degree **BACHELOR OF TECHONOLOGY** for the year **2022-2023** carried out the work under the supervision.

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(Project Guide)

N. SATYANANDARAM
(HOD CSE)

ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of the people who made it possible and whose constant guidance and encouragement crown all the efforts success.

I am extremely grateful to our respected Director, **Prof. K SANDHYA RANI** for keeping excellent academic climate in our institute.

I also express my sincere gratitude to our respected HOD **Mr. N SATYANANDARAM** for his encouragement, overall guidance in viewing this project as a good asset and efforts in bringing out this project.

I would like to convey my special thanks to our guide **Mr. B LINGAMURTHY** for guidance, encouragement, co-operation and kindness during the entire duration of course and academics.

Finally, my thanks to all the members who helped me directly and indirectly in the completion of project work. I express my profound gratitude to all my friends and family members for their encouragement.

ABSTRACT

"**HOTEL MANAGEMENT SYSTEM**" is a web application which can be used by Admin and Customers. The admin to advise/publish the availability of rooms in different hotels and customers are checking the availability of room in required hotel. Customers should be able to know the availability of the rooms on a particular date to reserve in hotel. They should be able to reserve the available rooms according to their need in advance to make their stay comfortable. The Admin hands the booking information of customers. The users can register and log into the system. The administrator will know the details of reservation and daily income. The hotel department maintain the seat availability and booking details in certain database. This project provides high security to Admin and user information.

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1. INTRODUCTION

1.1 Purpose

The software requirement specification mainly describes both functional and non-functional requirements for the ORMS.This is mainly designed for ordering food and reserving a table in online .The document also povides a detailed information of the external interfaces, peformance considerations and design constraints. The document should act as a foundation for efficient and well managed project completion.

1.2 Intended audience and reading suggestions

The intended audience of this document would be manager and employees in the restaurant and the project team with the objective to refer and analyze the information. The SRS document can be used in any case regarding the requirements of the project and the solutions that have been taken. Here is the brief overview of the document.

1. Overall desciption
2. System features
3. Design
4. External interface requirements
5. Non-functional requirements

1.3 Project Scope

The main objective of this software is to book rooms in a specified hotel in advance. The system will be able to handle many services to the users. In current the database manages all the rooms, hotels in every city that is colleberated with BookYourStay plotform for booking. In this system, easy to manage all rooms, hotels. The database management involves creation and deletion of the rooms, hotels and updating the rooms, hotels. Safety and easyness of using and most importantly efficiency of retrieving information are the major benefits of the poject . The system should be user appropriate, easy to use, provide easy recovery and overall end user high subjective satisfaction.

2. OVERALL DESCRIPTION

The following section presents overall desciption about the system. The product has been put into a detailed assessment of the system, user, hardware, software and communication interfaces, memory consideration and adoptive requirements.

2.1 Product perspective

The hospitality management system is new self-contained system in order to overcome the problems that have occured in current system. The newly introduced system provides an easy access to the system and it will contain user friendly functions with attactive interfaces. System will give better options for handling large physical file system, for the errors occuring in calculation. The system will give final outcome which will incease the efficiency of all tasks.

2.2 Product Features

1. Make booking
2. Select rooms
3. Issue confirmations
4. Cancel booking
5. Update the rooms and hotels
6. Make changes in website
7. Manage inventory
8. Set rates
9. Retrieve reports

2.3 User classes and Characteristics

There are mainly 1 users:

1. Manager/ Admin

Manager/ Admin:

Manager/Admin has the privilage of monitoring and authorization of all tasks handled by the system. Taking backups and restoring details all done by manager and can access all functionalities which are perfomed by system. Manager manages all these things and recieves the daily booking details and info about the daily income. Manager/Admin has permission to update the rooms, hotels or prices timely in the website.

2.4 Operating requirements

Hardware requirements:

1. Operating system supports all known operating systems.
2. Monitor with 512gb ROM+6gb RAM, minimum resolution of 1028x720, keyboard and mouse.
3. Hard drive should be with 10 gb of free space.

Software requirements:

1. Software is designed to open on any bowsers or any plateform.
2. MongoDB Atlas database management is used.
3. MongoDB, Express, React, Node technologies are used.

2.5 Design and implementation constraints

Development team can provide their best effort for developing. In order to maintain reliability and durability of the system some constraints are applied. Due to time constraint portability of system is not possible and need to have atleast 1GB of memory. In design interface we had the capability of work with new tools. Considering the budget decided to create interfaces in a simple manner with affordable technology.

2.6 Assumptions and Dependies

Some software use high cost for implementing the system and the client also agreed for that. Its assumed that client won't change the decison on the next phases. Although the client using a software we have to make the project according to them, if client need changes we need to change the SRS document.

3. EXTERNAL INTERFACE REQUIREMENTS

3.1 User Interfaces:

Admin interface

Manager have the pemission to access all interfaces, also change or update the booking inteface and can change the infomation of software. Manager accepts the booking and change the prices. The booking details all are stored in inventoy database from that manager can access daily infomation about the booking. Also have the pemission to backup all the customer details and booking details.

Customer interface

The home pages contains all the details about number of hotels available in every city and contains the information about the most rated hotels across the collaborated cities. And Login page , Registration pages are there. After searching with the city name, it displays all the hotels that are in that city. A hotel can have different types of rooms based on luxury.

3.2 Software Interfaces

The system shall communicate with configurate to identify all the available services. The system should communicate with system manager to get the specification and should use above windows 7 operating system. There are details of interface and rooms, hotels and database intefaces are there in the system.

3.3 Hardware Interfaces

A specified computer must match with the above mention requirements in order to gain the maximum benifites from the system in a useful manner. Resevation alerts should be send to the employees of the hotel so need of broadband internet connection. Also need network for updating the infomation. Shall be logical address of the system in Ipv6 format.

3.4 Communication Interfaces

Communication function required the internet protocol version 6 and it will follow HTTPS. It will use FTP for whole system with local server. And email communication to device to device of the system for giving the ordered details and infomation to the management and Employees.

4. FUNCTIONAL REQUIREMENTS

Booking Room

Customer can book their favorite rooms amounf their favorite hotels in preferred locations of across collebaration of BookYourStay plotform. After login into thier accont only customer can book thier rooms.

Admin Taking booking details

All the details of customers and rooms they booked are aken by admin for future purpose.

Veiwing order statistics

The manager can access all the booking details everyday and the data is stored in the inventory. The amount information also stored in inventory.

Updating rooms and hotels

The manager have the permission to update the data. Manager will add or remove the rooms, hotels and also can change the prices.

5. NON-FUNCTIONAL REQUIREMENTS

5.1 Performance

Performance requirements define acceptable response times for system functionality. Although the system is developed suiting for the least system performances, the performance of the system will highly depend on the performance of the hardware and software components of the installing computer. When consider about the timing relationships of the system the load time for user interface screens shall take no longer than two seconds. It makes fast access to system functions. The log in information shall be verified within five seconds causes' efficiency of the system. Returning query results within five seconds makes search function more accurate.

5.2 Safety requirements

Customer Service Representatives and Managers and owner will be able to log in to the Hotel Management System. Customer Service Representatives will have access to the Reservation/Booking and subsystems. Managers will have access to the Management subsystem as well as the Reservation/Booking subsystems. Owner has the maximum privilege to all subsystems. Access to the various subsystems will be protected by a user log in screen that requires a user name and password.

5.3 Software quality

There are several user levels in hotel management system, Access to the various subsystems will be protected by a user log in screen that requires a user name and password. This gives different views and accessible functions of user levels through the system. Maintaining backups ensure the system database security. System can be restoring in any case of emergency.

5.4 Software Quality Attributes

- Availability: - The system shall be available during normal hotel operating hours
- Correctness: - extent to which program satisfies specifications, fulfills user's mission objectives
- Efficiency: - How much less number of resources and time are required to achieve a particular task through the system.
- Flexibility: - Ability to add new features to the system and handle them conveniently.
- Integrity: - How the system would insecure the information in the system and how it avoids the data losses. Referential integrity in database tables and interfaces
- Maintainability: - How easy is to keep the system as it is and correct defects with making changes.
- Portability: - The Hotel Management System shall run in any Microsoft Windows environment
- Reliability: - Specify the factors required to establish the required reliability of the software system at time of delivery. Mean time between failures and mean time to recovery
- Reusability: - What is the ability to use the available components of the system in other systems as well.
- Testability: - Effort needed to test to ensure performs as intended
- Usability: - How easily a person can be taken the benefits of the system and the user friendliness.
- Robustness: – Strength of the system to handle system functions accurately and maintain the database without facing to unexpected failures
- Maintainability: – What design, coding standards must be adhered to exclusions created

Design Introduction:

Design is the first step in the development phase for any techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization. Once the software requirements have been analyzed and specified the software design involves three technical activities - design, coding, implementation and testing that are required to build and verify the software.

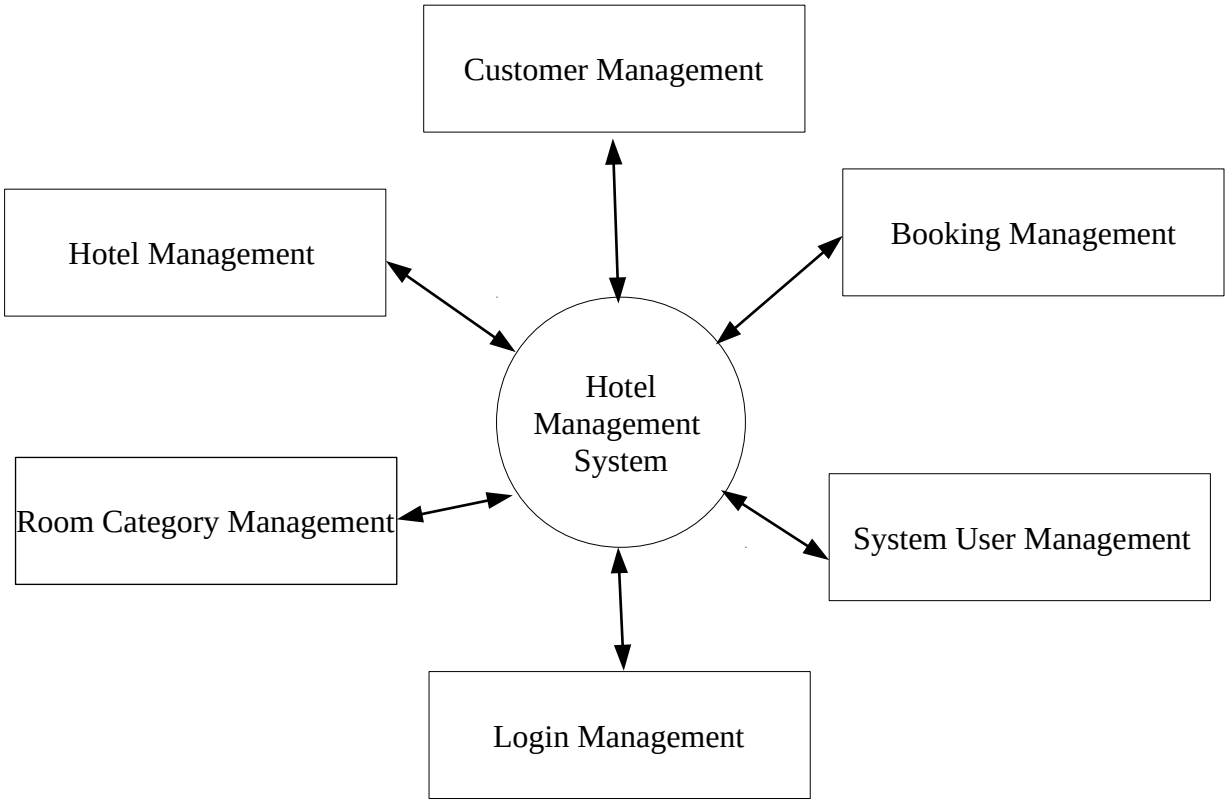
The design activities are of main importance in this phase, because in this activity, decisions ultimately affecting the success of the software implementation and its ease of maintenance are made. These decisions have the final bearing upon reliability and maintainability of the system. Design is the only way to accurately translate the customer's requirements into finished softwareor a system.

Design is the place where quality is fostered in development. Software design is a process through which requirements are translated into a representation of software. Software design is conducted in two steps. Preliminary design is concerned with the transformation of requirements into data.

6. UML DIAGRAMS

UML stands for Unified Modeling Language. UML is a language for specifying, visualizing and documenting the system. This is the step while developing any product after analysis. The goal from this is to produce a model of the entities involved in the project which later need to be built. The representation of the entities that are to be used in the product being developed need to be designed.

6.1 DATA FLOW DIAGRAM



6.2 ER Diagram

The Entity-Relationship (ER) model was originally proposed by Peter in 1976 [Chen76] as a way to unify the network and relational database views. Simply stated the ER model is a conceptual data model that views the real world as entities and relationships. A basic component of the model is the Entity-Relationship diagram which is used to visually represent data objects. Since Chen wrote his paper the model has been extended and today it is commonly used for database design for the database designer, the utility of the ER model is:

- It maps well to the relational model. The constructs used in the ER model can easily be transformed into relational tables.
- It is simple and easy to understand with a minimum of training. Therefore, the model can be used by the database designer to communicate the design to the end user.
- In addition, the model can be used as a design plan by the database developer to implement a data model in specific database management software.

ER Notation:

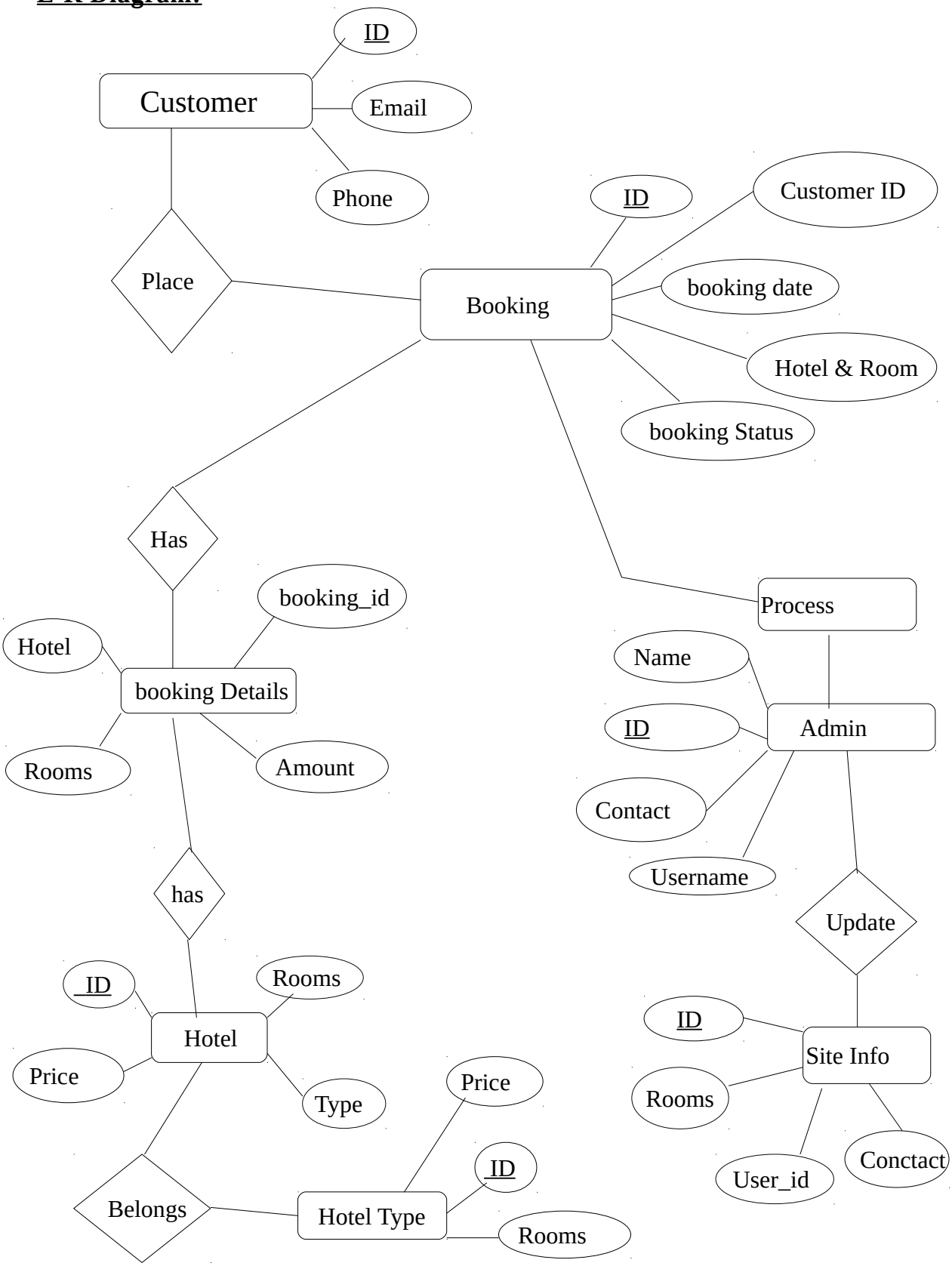
There is no standard for representing data objects in ER diagrams. Each modeling methodology uses its own notation. The original notation used by Chen is widely used in academics texts and journals but rarely seen in either CASE tools or publications by non-academics. Today, there are a number of notations used; among the more common are Bachman, crow's foot, and IDEFIX.

All notational styles represent entities as rectangular boxes and relationships as lines connecting boxes. Each style uses a special set of symbols to represent the cardinality of a connection. The notation used in this document is from Martin. The symbols used for the basic ER constructs are:

- **Entities** are represented by labeled rectangles. The label is the name of the entity. Entity names should be singular nouns.
- **Relationships** are represented by a solid line connecting two entities. The name of the relationship is written above the line. Relationship names should be verbs.
- **Attributes**, when included, are listed inside the entity rectangle. Attributes which are identifiers are underlined. Attribute names should be singular nouns.
- **Cardinality** of many is represented by a line ending in a crow's foot. If the crow's foot is omitted, the cardinality is one.

Existence is represented by placing a circle or a perpendicular bar on the line.

E-R Diagram:


ID
Customer
Email
Phone
Place
ID
Customer ID
Booking
booking date
Hotel & Room
booking Status
Has
booking_id
Hotel
booking Details
Rooms
Amount
Process
Name
ID
Admin
Contact
Username
has
Update
ID
Rooms
Hotel
Price
Type
ID
Site Info
Rooms
User_id
Conctact
Price
ID
Belongs
Hotel Type
Rooms

6.3 USECASE DIAGRAMS

Use case diagrams model behavior within a system and helps the developers understand of what the user require. The stick man represents what's called an actor.

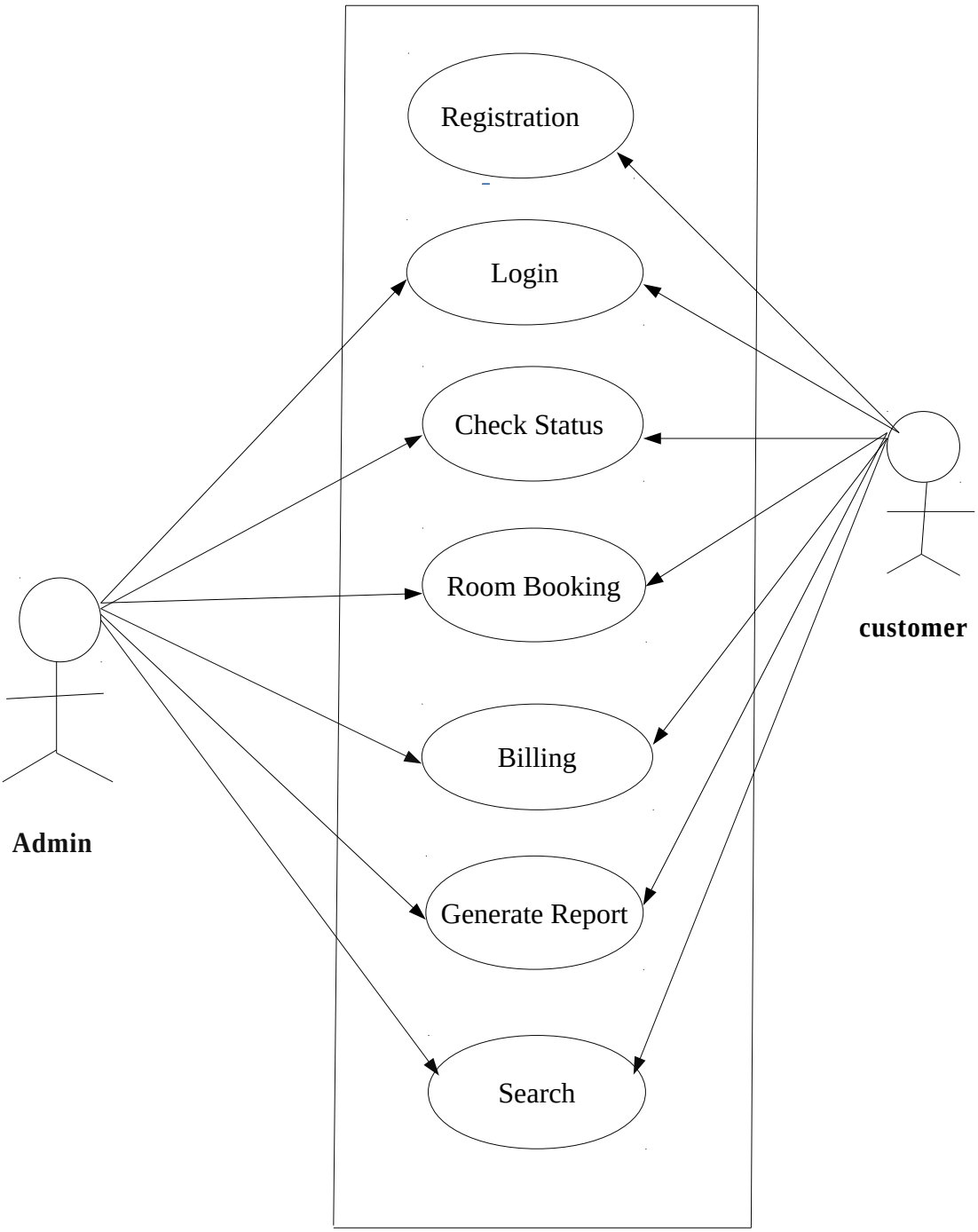
Use case diagram can be useful for getting an overall view of the system and clarifying that can do and more importantly what they can't do.

Use case diagram consists of use cases and actors and shows the interaction between the use case and actors.

- The purpose is to show the interactions between the use case and actor.
- To represent the system requirements from user's perspective.
- An actor could be the end-user of the system or an external system.

USECASE DIAGRAM: A Use case is a description of set of sequence of actions. Graphically it is rendered as an ellipse with solid line including only its name. Use case diagram is a behavioral diagram that shows a set of use cases and actors and their relationship. It is an association between the use cases and actors. An actor represents a real-world object. Primary Actor – Sender, Secondary Actor Receiver.

Usecase Diagram:



7. IMPLEMENTATION AND SYSTEM TESTING:

After all phase have been perfectly done, the system will be implemented to the server and the system can be used.

System Testing

The goal of the system testing process was to determine all faults in our project .The program was subjected to a set of test inputs and many explanations were made and based on these explanations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing.

1. Unit testing
2 .Integration testing

Unit Testing

Unit testing is commenced when a unit has been created and effectively reviewed. In order to test a single module we need to provide a complete environment i.e. besides the section we would require. The procedures belonging to other units that the unit under test calls Non local data structures that module accesses.

Integration Testing

In the Integration testing we test various combination of the project module by providing the input. The primary objective is to test the module interfaces in order to confirm that no errors are occurring when one module invokes the other module.

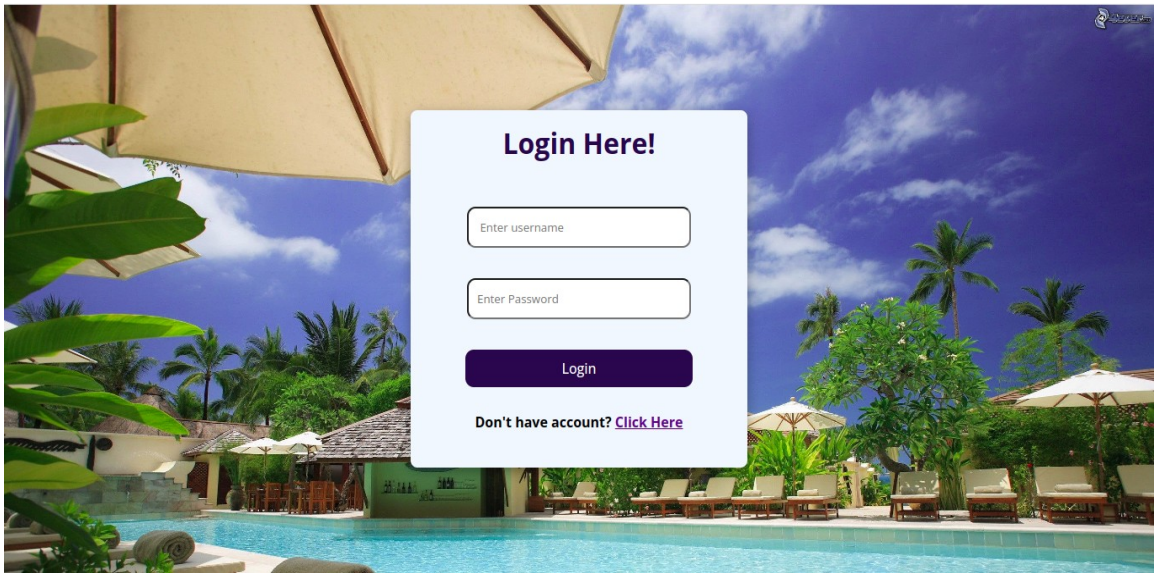
Regression testing

Regression testing is a software testing practice that ensures an application still functions as expected after any code changes, updates, or improvements. Regression testing is responsible for the overall stability and functionality of the existing features.

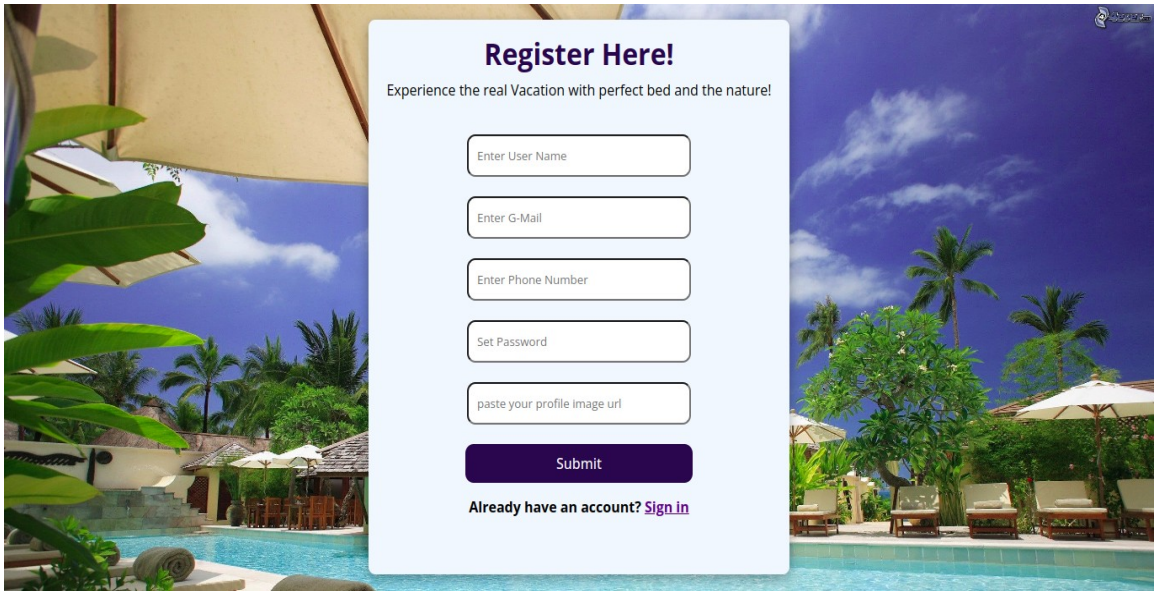
8. PROJECT OUTPUT:

USER INTERFACE (CLIENT)

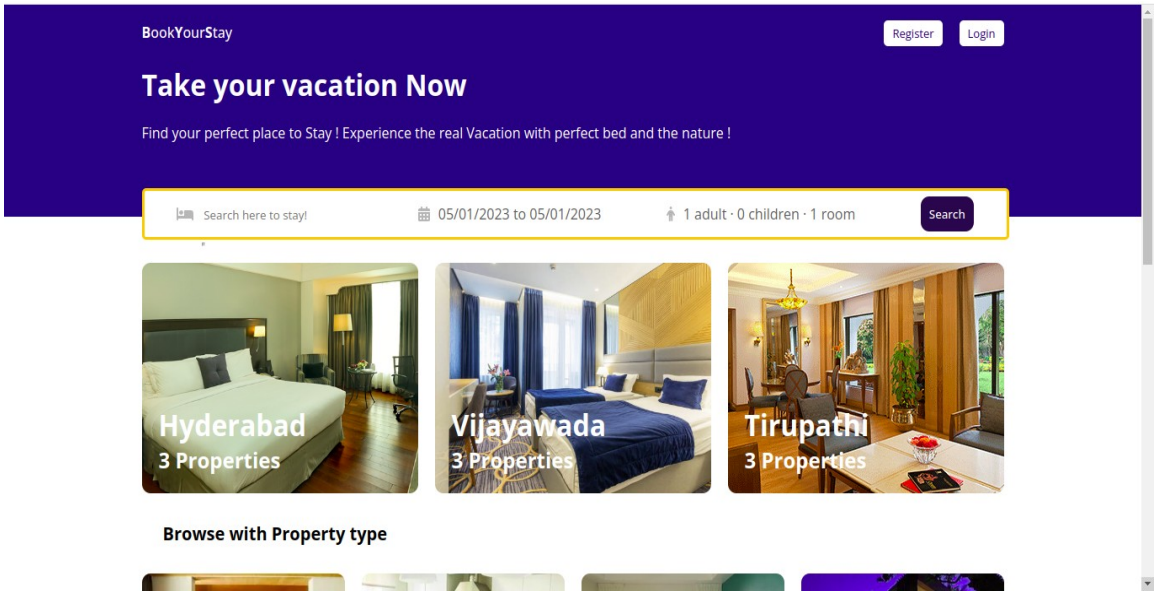
LOGIN PAGE:



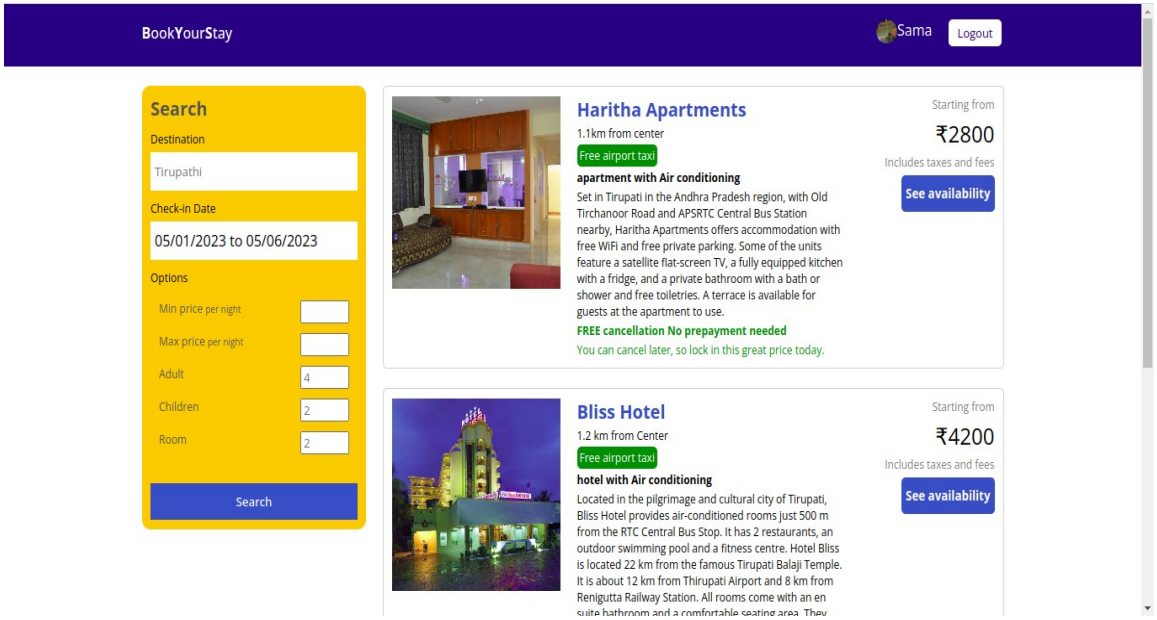
REGISTER PAGE:



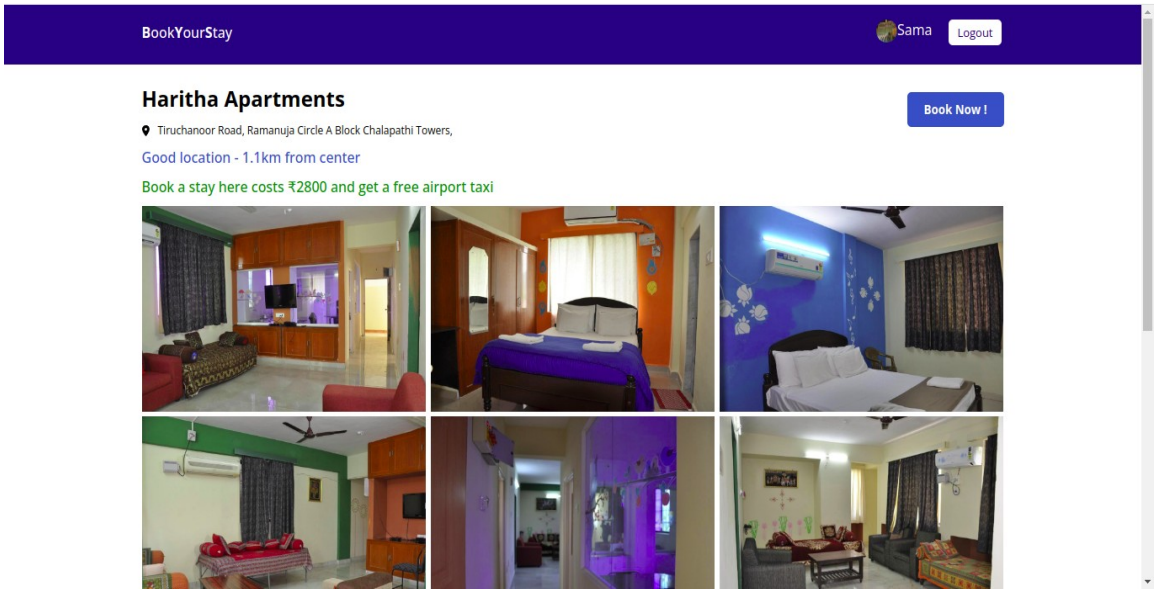
HOME PAGE:



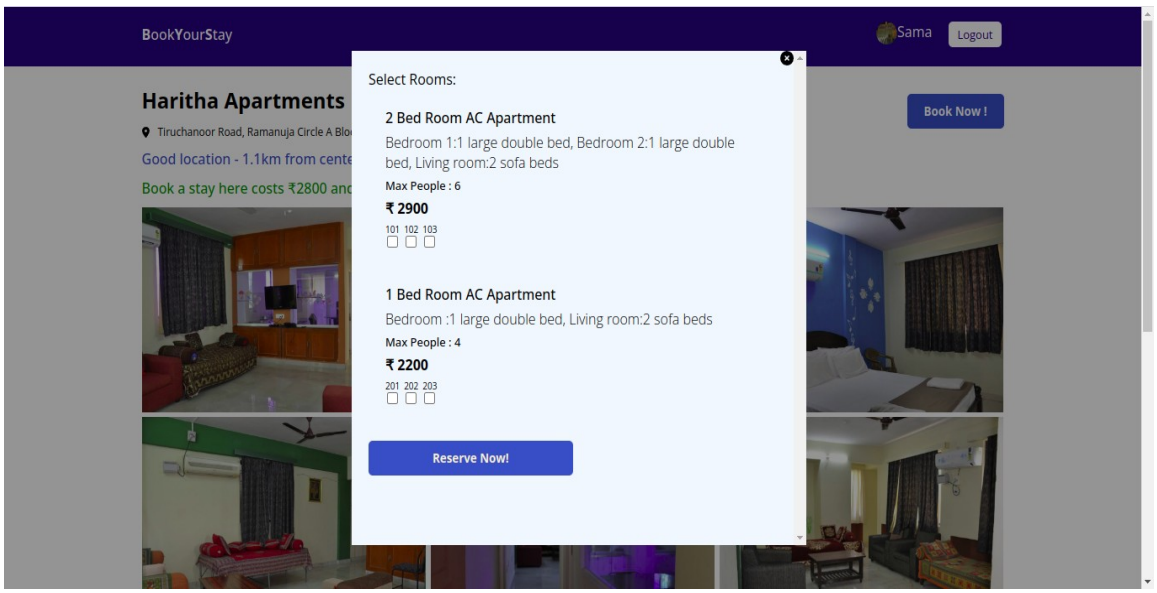
HOTELS IN SELECTED CITY PAGE:



SELECTED HOTEL PAGE:

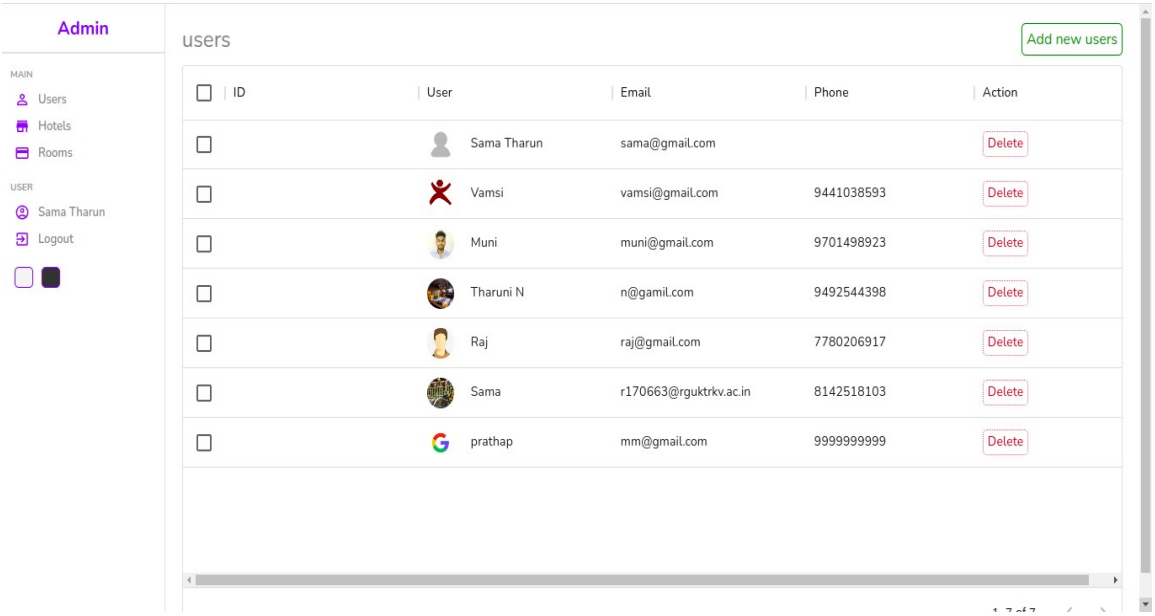


ROOMS IN SELECTED HOTEL PAGE:

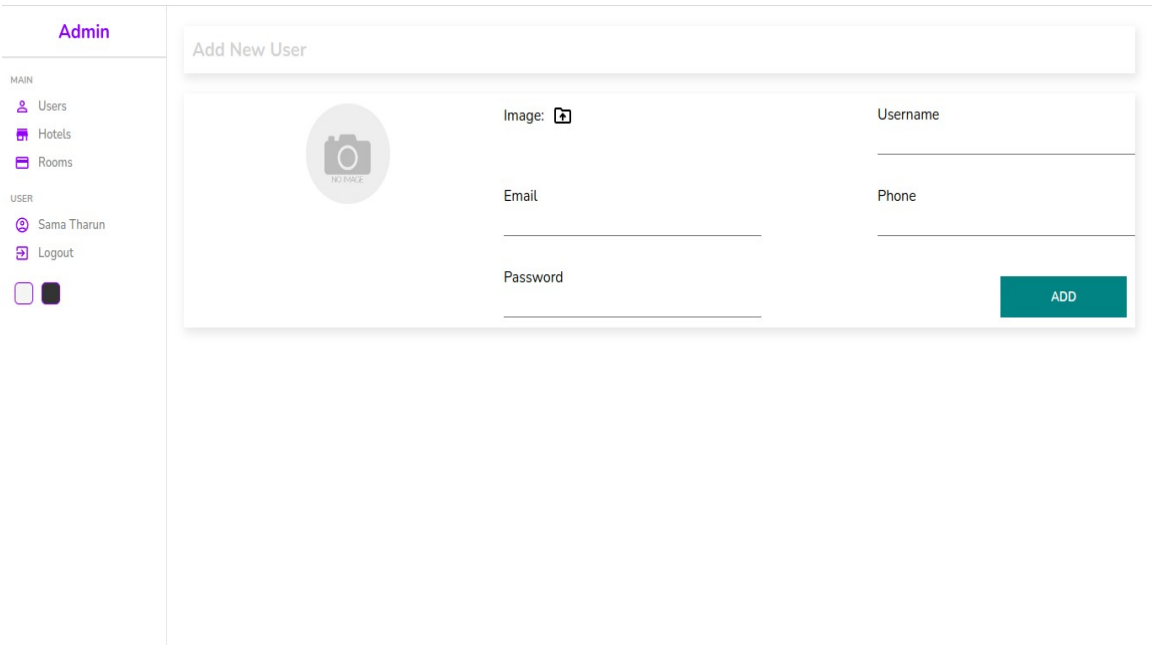


ADMIN INTERFACE:

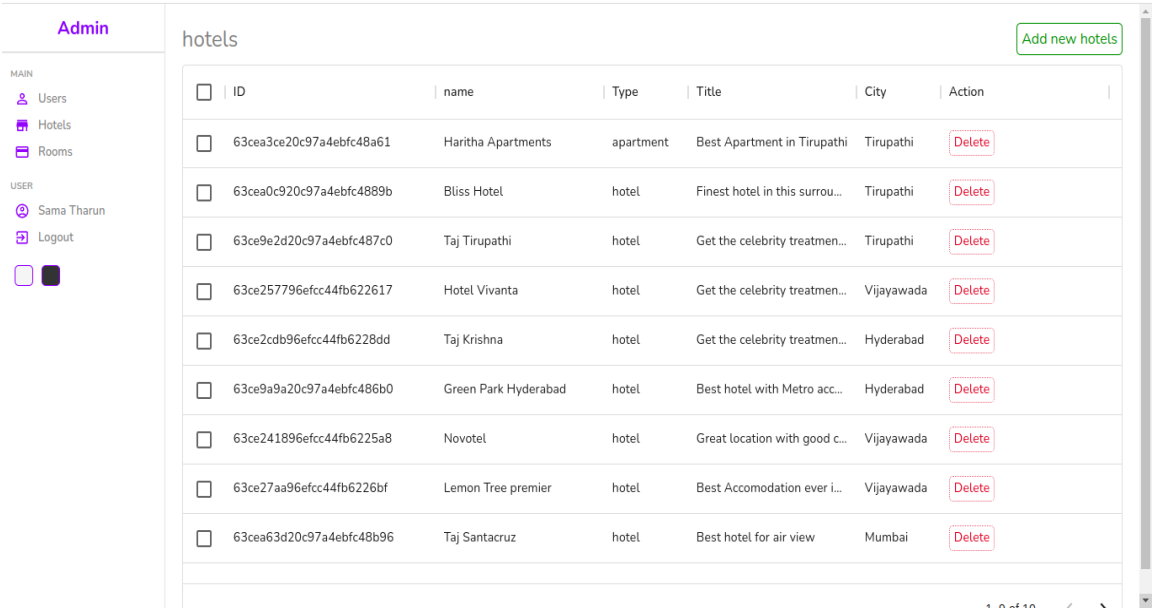
USERS PAGE:



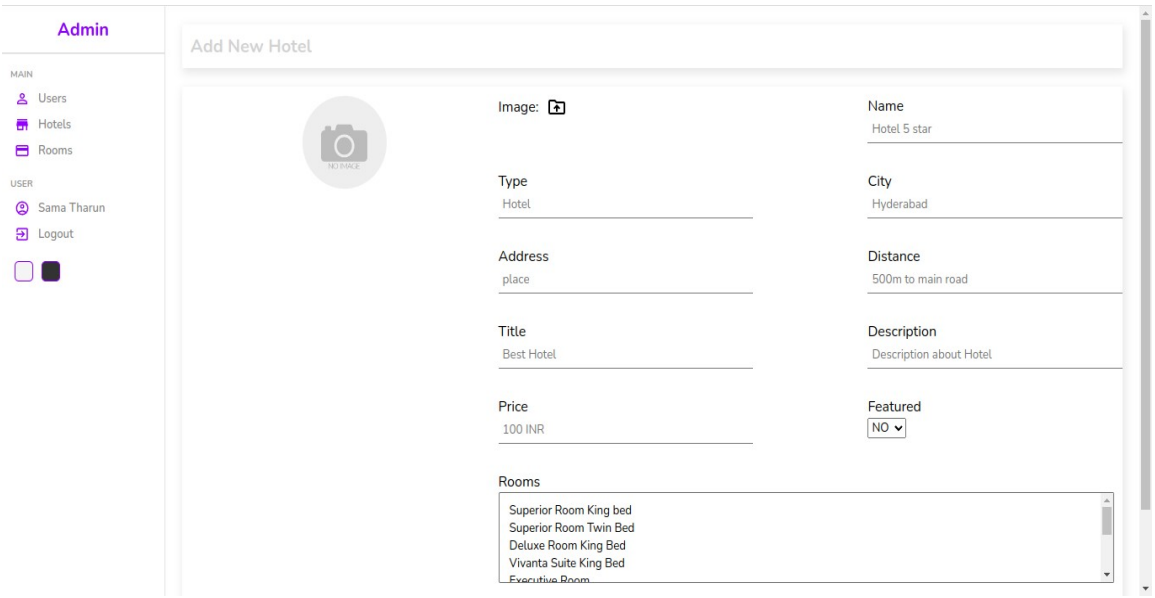
USER CREATION PAGE:



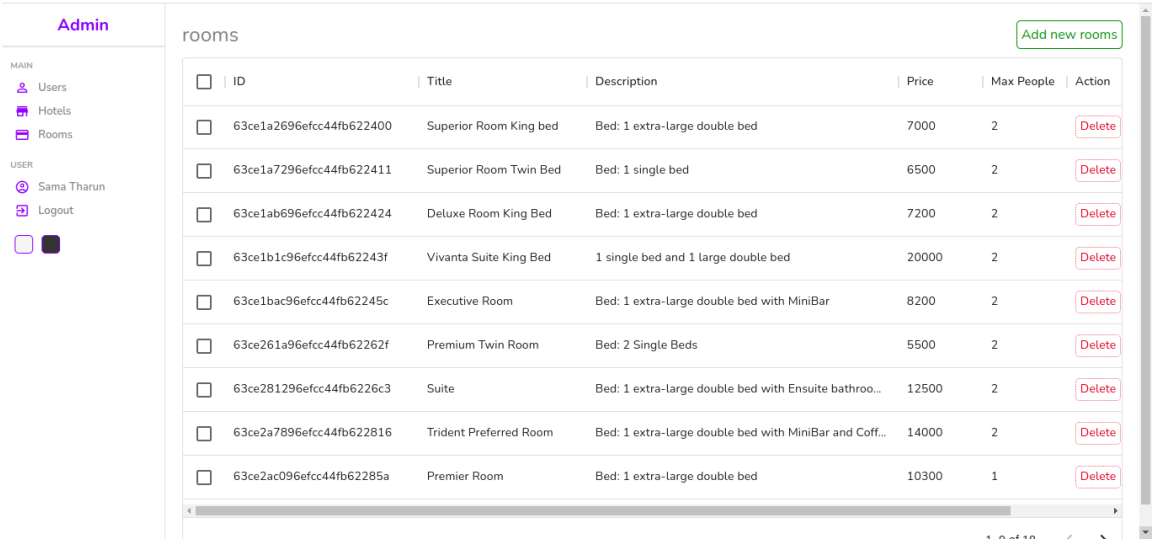
HOTELS PAGE:



HOTELS CREATION PAGE:



ROOMS PAGE:



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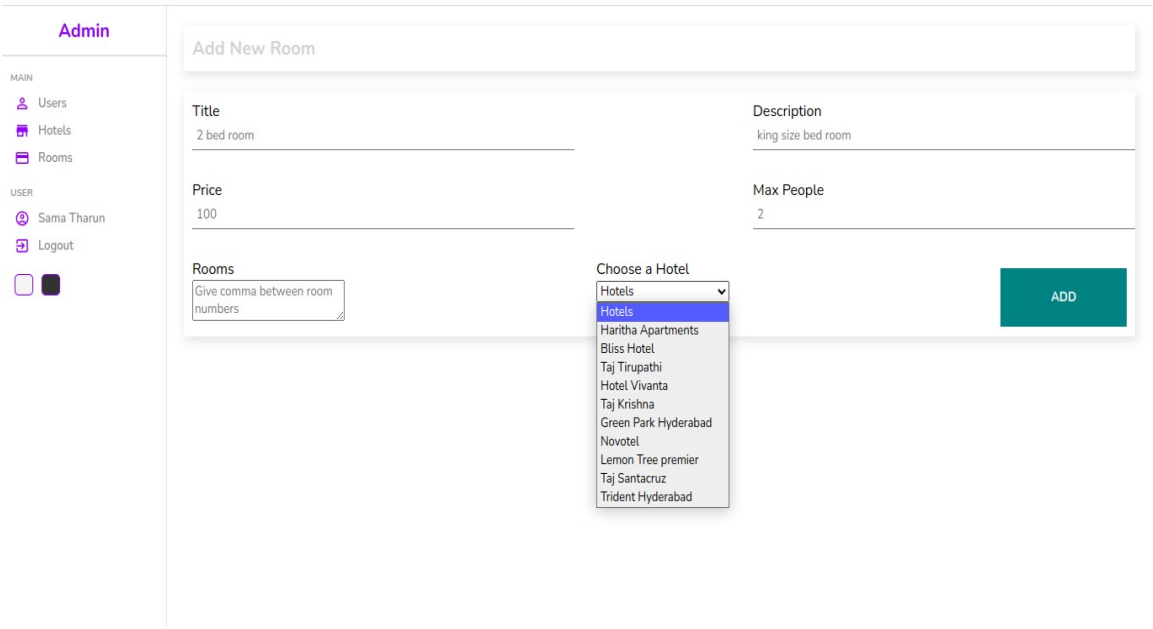
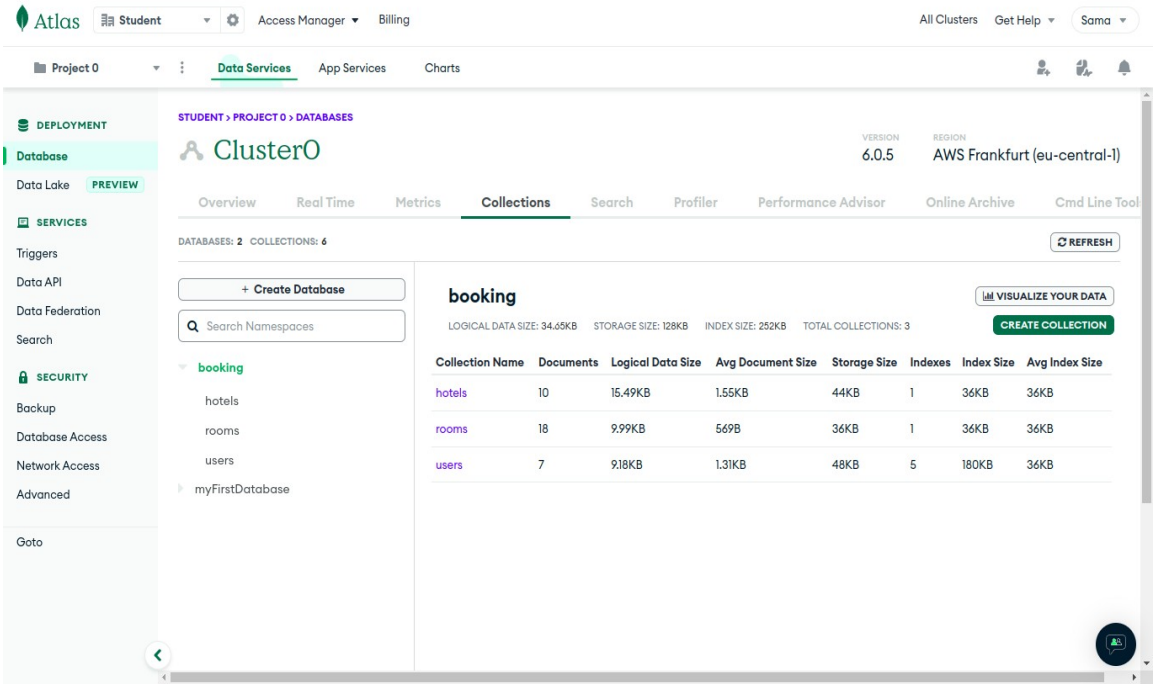
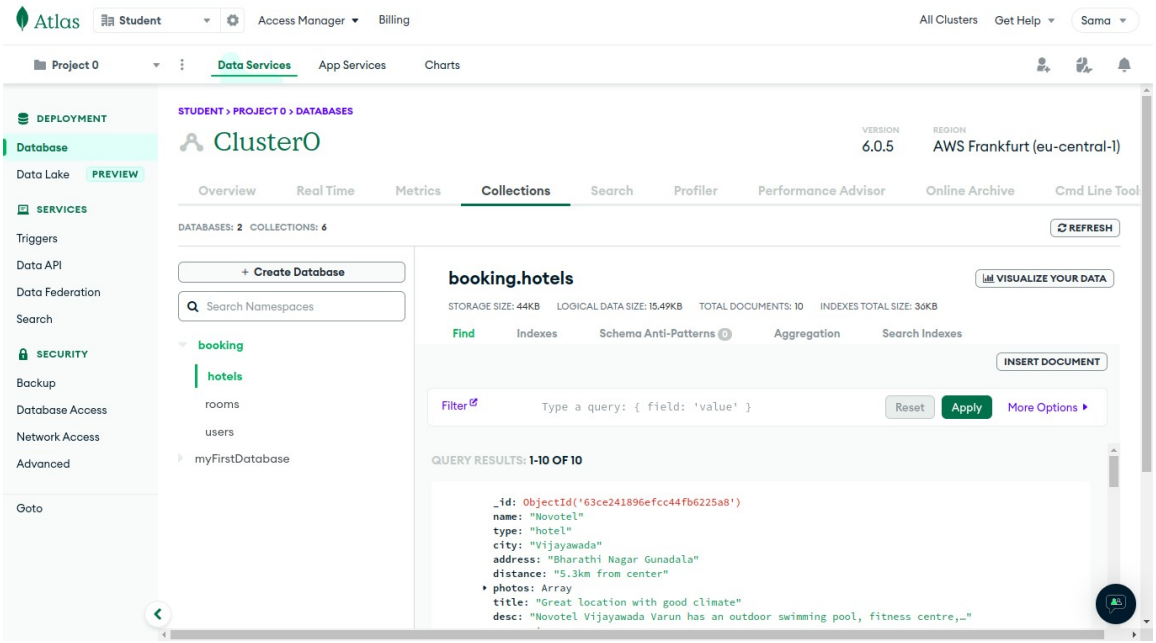


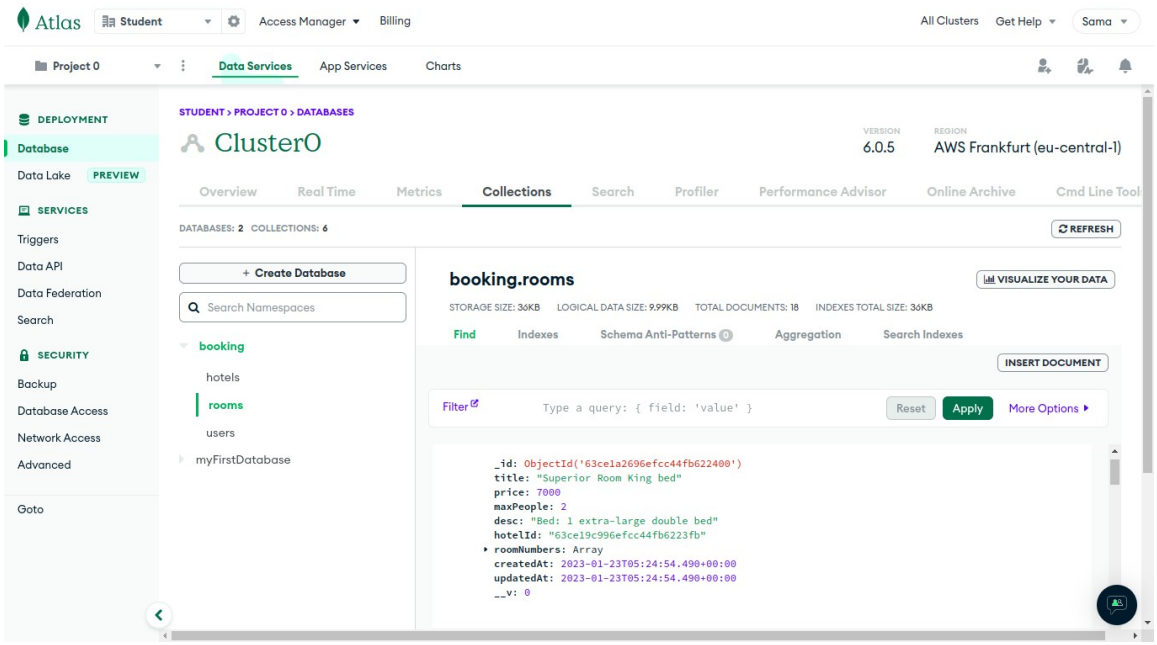
9. MONGODB ATLAS DATABASE



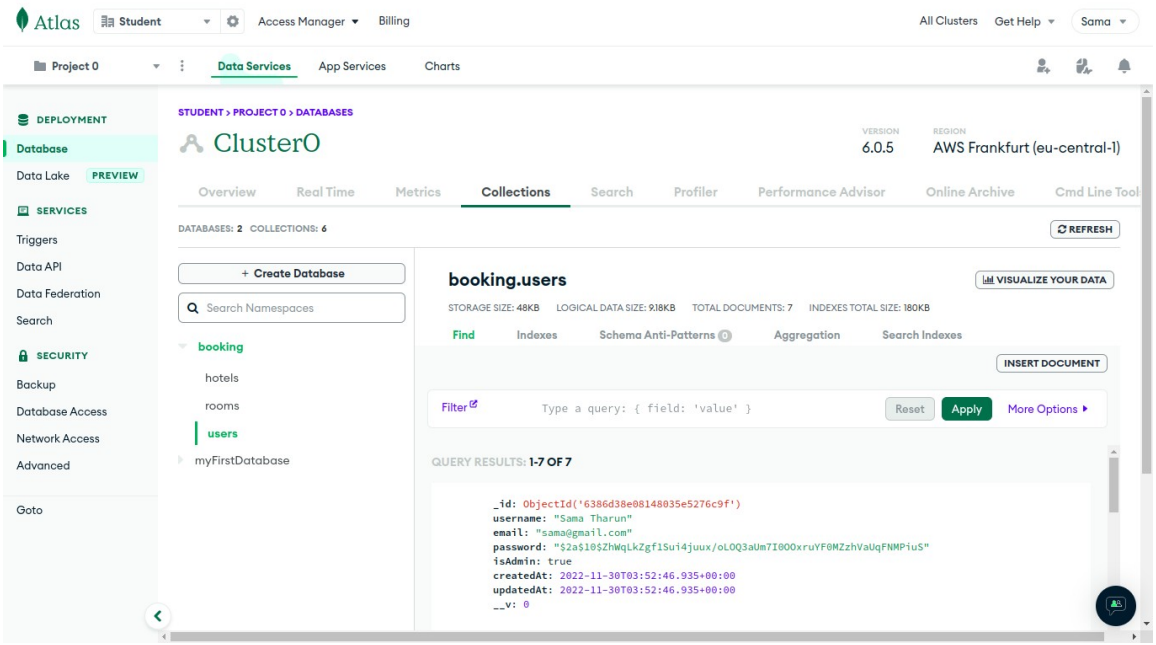
HOTELS DATABASE:



ROOMS DATABASE:



USERS DATABASE:



10. CONCLUSION

The conclusion of this project is Hotel management system is a computerized management system. This system keeps the records of hardware assets besides software of this organization. The proposed system will keep a track of Workers, Recidents, Accounts and generation of report regarding the present status. This project has GUI based software that will help in storing, updating and retrieving the information through various user-friendly menu-driven modules.The project “Hotel Management System” is aimed to develop to maintain the day-to-day state of admission/Vacation of Residents, etc. Main objective of this project is to provide solution for hotel to manage most there work using computerized process. This software application will help admin to handle customers information, room allocation details, payment details, billing information.etc. Detailed explanation about modules and design are provided in project documentation. The existing system is a manually maintained system. All these details are entered and retrieved manually,because of this there are many disadvantages like Time Consuming ,updating process, inaccuracy of data.For avoiding this we introduced or proposed a new system in proposed system the computerized version of the existing system. provides easy and quick access over the data.

11.REFERENCES

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www.w3schools.com
www.stackoverflow.com
www.getbootstrap.com
www.mongodb.com
https://nodejs.org
https://expressjs.org