HOTEL MANAGEMENT SYSTEM

Objectives: -

Hotel Management System Web Application is widely used by ADMIN to store, retrieve and modified their hotel room availability information. This project is the implementing of a backend web application where we can create, Read, update, and delete Hotel information. This application will be built using Spring boot and MySQL (for managing RDBMS).

Project Architecture: -

The project Architecture can be divided into 4 stages as follows:

1.Design the front-end of the web app using JSP, CSS, html, java Script, jQuery.

2.implement controller to manage requests and response for all the CURD operations using java Spring Boot.

3.implement hibernate JPA Queries to fetch& post Data.

4.intregrate the web application with the MYSQL database to fetch data from the backend.

Functional Specification:

Requirement:

Hotel Management different actors:

Admin User:

Room Listing Page:

- Display a list of all available rooms using a jQuery Database.
- Include columns for Room Type, Price, and Action (Edit/Delete)

Add/Update Room:

- Provide a pop page to give add/update room details.
- Provide each field as below,

- Room Type (Dynamic Drop-Down bring data from DB table)

- Price

- Room Amenities

- AC/Non-AC (Radio Button)

- Smoking/Non-Smoking Room (Radio Button)

- WI-FI/TV/Geyser (Check Box)

Delete Room:

- Verify if the room has any outgoing or future bookings. If so, display an error message. Otherwise, delete the room.

Customer: Enquiry about room availability.

NOTE: -

1.Navigation menu: -Manage Room, manage booking

2. Manage Room: -

        1.remove from & todate filter

        2.remove from & todate from Data table

        3.remove from & todate from Add/Update View

Add/Update View:-

    1.need to add additional field "totalRoomsAvaliable"

3.Update DB Schema accordingly

manage booking: -----

1.use current view for listing but also add two more columns,"totalroomavaliable" & "totalRoomBooked"

2.update action menu

if totalroomavaliable = = totalRoomBooked

then disable book room option.

else

then enable book room option.

also, onclick of bookroom show alert message like "it will be implementing in phase 2"

Technical Specification:

Spring Boot: this Framework used for creating backend application, handling dependency, remove boiler plate code and providing essential features.

JSP: generating dynamic HTML content and integrating java code with web page.

JavaScript: for Client-Side interactivity and enhancing the user experience.

jQuery: help to easily interact with HTML elements.

MySQL: Database Management system to Store and Retrieve the Data.

Development Environment:

IDE: Spring Boot Suite

Version Control: GitHub

Build System: Maven

Class Diagram: -

Entity classes

Rooms
- roomId : int
- price : int
- roomTypeId : int
- totalRoomAvaliable : int
- totalRoomBooked : int
- isACAvailable: String
- isSmokingAvailable :String
- amenties: text

RoomType
- roomTypeId : int
- roomType : String

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Controller

HomePageController

+ editRenderUrl1()

+ bookRoomUrl()

+ homeCall()

+ ManageRoomUrl()

+ ManageBookingUrl()

RoomController

+ addRoomData()

+ addRoomDataForUpdate()

+ fetchBookingDetails()

+ fetchBookingFilterDetails()

+ deleteRoomData()

+ ErrorPage()

RoomsTypeController

+ fetchRoomType()

+ getRoomTypeAllData()

Repository

RoomRepository

+ save (room : Room)

+ findById (roomId: room)

RoomTypeRepository

+ save (roomType : RoomType)

+ findById(roomId: RoomType)

+findByroomType(roomType: RoomType)

Service

RoomsService

+ fetchAllRoomData();

+addRoomDetails(amenitiesjsonData
:JSON, formData : JSON)

+deleteRoomDetails(roomid : int);
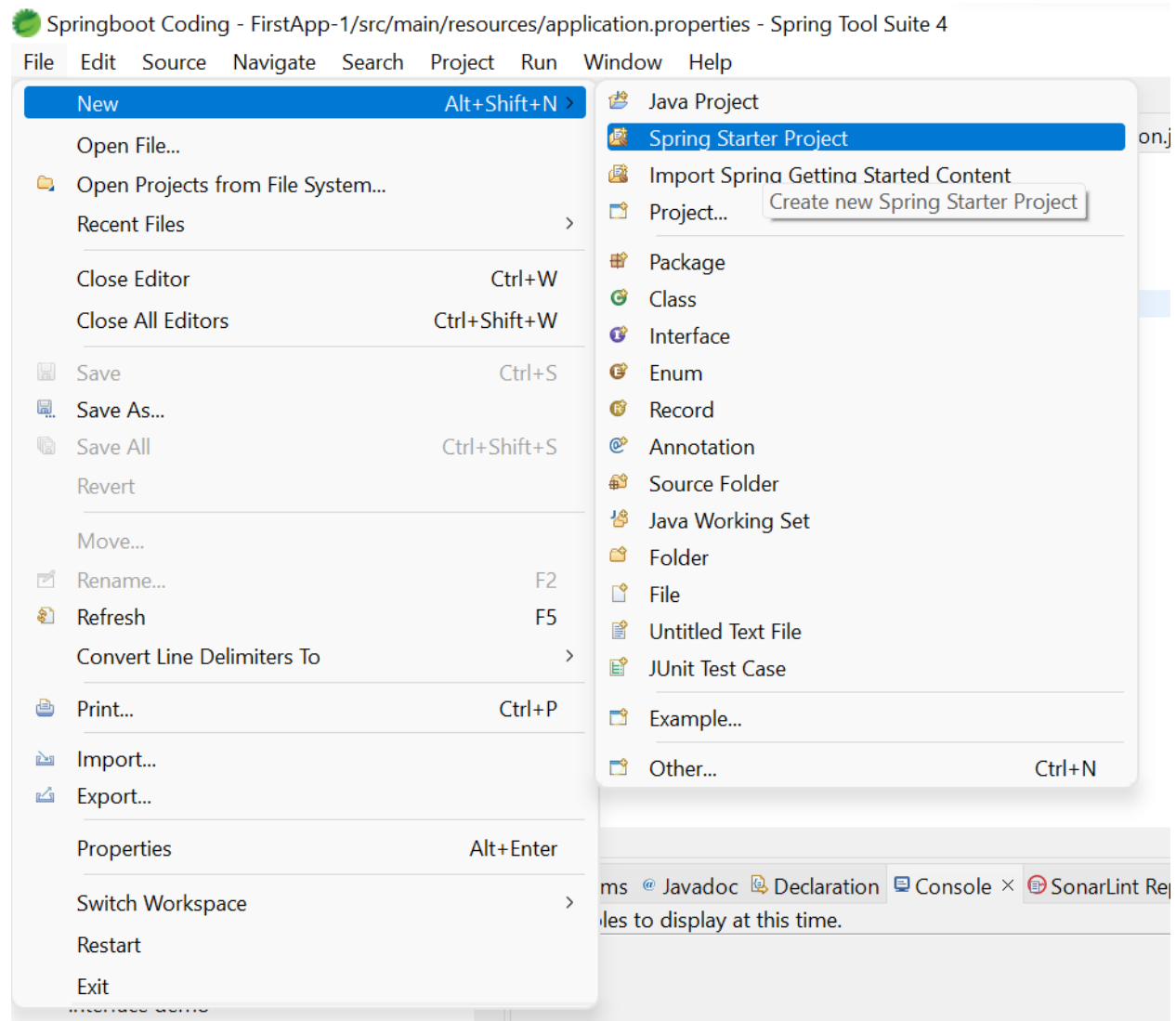
+fetchAllRoomDataFilterData(roomtype
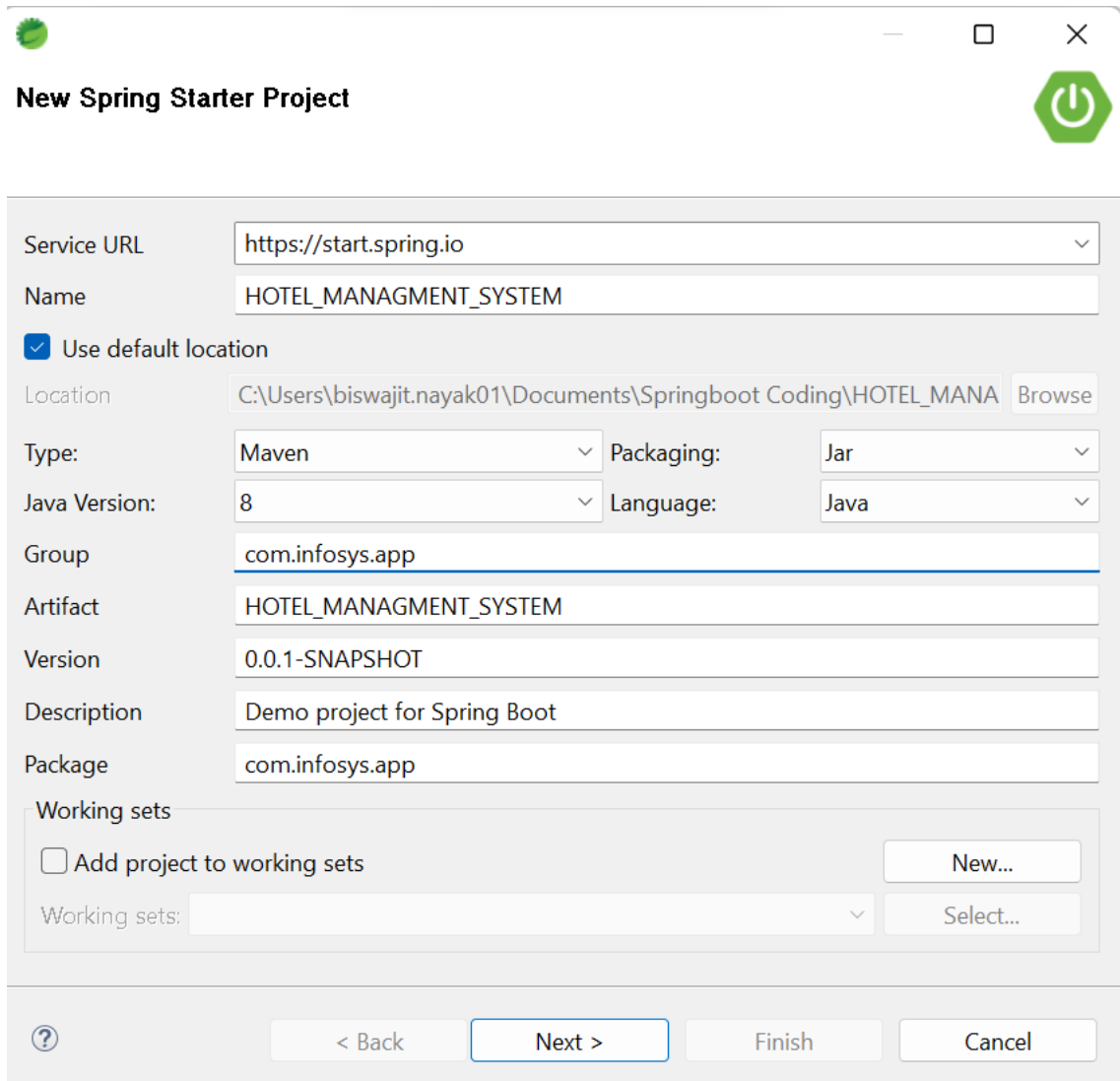:String);

RoomTypeService

+ getRoomDeatils();

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Backend Development process:

1.Create a new Spring Starter project using Spring tool Suite.

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New Spring Starter Project

Service URL	https://start.spring.io
Name	HOTEL_MANAGMENT_SYSTEM

☑ Use default location

Location: C:\Users\biswajit.nayak01\Documents\Springboot Coding\HOTEL_MANA Browse

Type:	Maven	Packaging:	Jar
Java Version:	8	Language:	Java

Group: com.infosys.app

Artifact: HOTEL_MANAGMENT_SYSTEM

Version: 0.0.1-SNAPSHOT

Description: Demo project for Spring Boot

Package: com.infosys.app

Working sets

☐ Add project to working sets   New...

Working sets: Select...

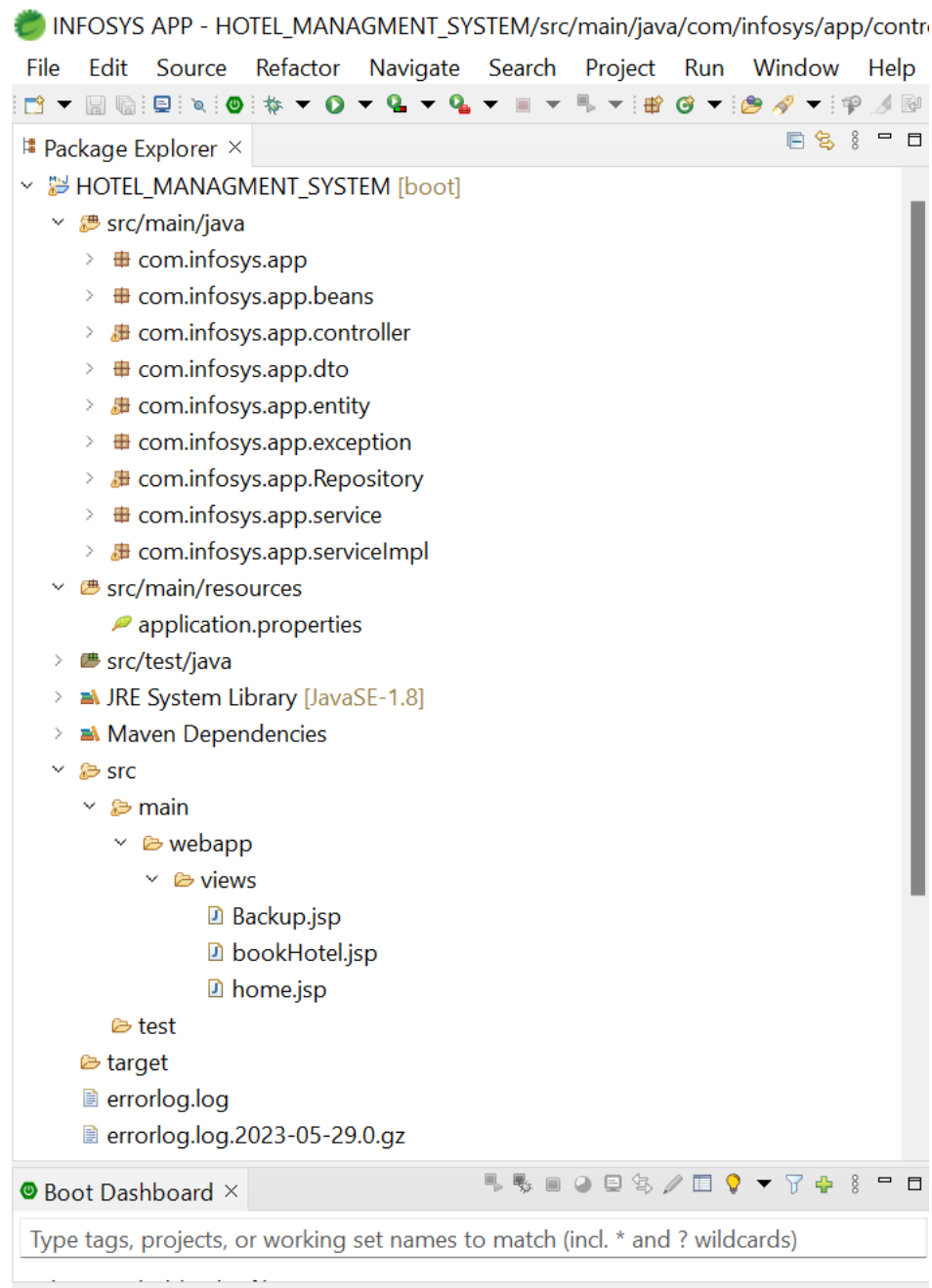< Back   Next >   Finish   Cancel

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Project Structure: -

2.add below Dependency in pom.xml file.

```xml
<dependencies>
        <dependency>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-starter</artifactId>
```

```xml
        </dependency>
                <dependency>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-starter-web</artifactId>
        </dependency>
        <dependency>
    <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-data-jpa</artifactId>
    </dependency>
    <!-- https://mvnrepository.com/artifact/mysql/mysql-connector-java -->
<dependency>
    <groupId>mysql</groupId>
    <artifactId>mysql-connector-java</artifactId>
    <version>8.0.33</version>
</dependency>
<!-- https://mvnrepository.com/artifact/com.fasterxml.jackson.core/jackson-
databind -->
<dependency>
    <groupId>com.fasterxml.jackson.core</groupId>
    <artifactId>jackson-databind</artifactId>
</dependency>

<dependency>
    <groupId>org.apache.tomcat.embed</groupId>
    <artifactId>tomcat-embed-jasper</artifactId>
    <version>10.1.8</version>
</dependency>


                <dependency>
                    <groupId>org.springframework.boot</groupId>
                    <artifactId>spring-boot-starter-test</artifactId>
                    <scope>test</scope>
                </dependency>
        </dependencies>
```

3.add below properties in application. Properties file.

application. Properties

```properties
spring.mvc.view.prefix=/views/
spring.mvc.view.suffix=.jsp
server.servlet.context-path=/infy
logging.level.root=info
logging.file.name=errorlog.log
#logging.file.path=errorlog.log
logging.file.path=logs
server.port=8084
spring.datasource.driverClassName=com.mysql.cj.jdbc.Driver
spring.datasource.url=jdbc:mysql://localhost:3306/hotelmanagment
spring.datasource.username=root
spring.datasource.password=root
spring.jpa.hibernate.ddl-auto=update
spring.jpa.show-sql=true
```

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3.. Design the Database Tables for hotel management project Using MYSQL DB. Shown on below: -

DB Details:

Schema Name	hotelmanagement
Tables	Room Type, Rooms, BookingDetails

Tables Structure:

RoomType	
Field Name	Data Type
roomTypeId (Primary Key)	int, pk
Room Type	VARCHAR (255)

Rooms	
Field Name	Data Type
roomId (Primary Key)	int, pk
isACAvailable	VARCHAR (255)
roomTypeId	int, fk
isSmokingAvailable	VARCHAR (255)
amenties	VARCHAR (255)

BookingDetails	
Field Name	Data Type
bookingDetailsId (Primary Key)	INT,pk
roomId	Int,fk
bookingDates	Date
customerName	VARCHAR (255)
customerEmail	VARCHAR (255)
customerMobile	VARCHAR (255)
desc	VARCHAR (255)

3.once the Database table design is ready, write the controller, service, Dao layers to execute CURD operations.

4. build the front end of the web app using **JSP** to accept input and render the data correspondingly.

5.integrate the controller with the database to successfully build the hotel management system web application.

UI Model:

Different actors:

ADMIN	Can add/update/book /delete Rooms
CUSTOMER	Enquiry / views Rooms

jQuery Data table Field list: -

jQuery Table Field	Visible for Admin	Visible for Customer
Room Type	true	true
price	true	true
AC/Non-AC	true	true
Smoking/Non-Smoking Room	true	true
WI-FI/TV/Geyser	true	true
Action (Edit/delete bottom)	true	false

URL: http://localhost:8084/infy/homepage

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Manage Room   Manage Booking

Manage Room: -This Page hold Information of rooms availability, Admin can view, add, edit, delete Room Details.

Manage Booking: - Costumer can view all rooms and they can Book rooms based on their requirement.

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1. Manage Room: -

URL: http://localhost:8084/infy/ManageRoom

Show 5 ⌄ entries   Search: _____

Room Type ⇕	Price ⇕	AC / NON-AC ⇕	Smoking / Non-Smoking ⇕	WIFI/ TV / Geyser ⇕	Action ⇕
Luxury	20001	AC	Smoking	WIFI,TV,Geyser	Select:: ⌄
Superior	14001	NONAC	NonSmoking	WIFI,TV	Select:: ⌄
Deluxe	23232	AC	Smoking	WIFI,TV,Geyser	Select:: ⌄
Superior	12333	NONAC	NonSmoking	WIFI,TV,Geyser	Select:: ⌄
Superior	12121	AC	Smoking	WIFI,Geyser	Select:: ⌄

Showing 1 to 5 of 5 entries   Previous 1 Next

Add Room

HOTEL MANAGMENT SYSTEM

Show 5 ⌄ entries   Search: _____

Room Type ⇕	Price ⇕	AC / NON-AC ⇕	Smoking / Non-Smoking ⇕	WIFI/ TV / Geyser ⇕	Action ⇕
Luxury	20001	AC	Smoking	WIFI,TV,Geyser	Select:: ⌄
Superior	14001	NONAC	NonSmoking	WIFI,TV	Select:: / Edit / Delete
Deluxe	23232	AC	Smoking	WIFI,TV,Geyser	Select:: ⌄
Superior	12333	NONAC	NonSmoking	WIFI,TV,Geyser	Select:: ⌄
Superior	12121	AC	Smoking	WIFI,Geyser	Select:: ⌄

Showing 1 to 5 of 5 entries   Previous 1 Next

Manage Room: -

Manage room hold above fields in jQuery table refer above SS.

Admin can render Edit, Delete page using Action Dropdown.

Admin can also render Add page using Add Room button.

Admin can Show entries based on their preferences [5,10,15,20], default entry showing as "5".

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Edit Room: -

URL: http://localhost:8084/infy/editroomdetails

Update Hotel Management Form

RoomType:	Luxury
Price :	20001
Please Choose Amenties1:	⦿AC ○ NON-AC
Please Choose Amenties2:	⦿ Smoking ○ Non-Smoking Room
Total Room Availability:	0
Total Room Booked:	6
Select Facility:	☑WI-FI ☑ TV ☑ Geyser

Update Room   **HOME**

when Admin user click on Action dropdown edit button, it renders Edit page refer above SS.

Based on Click, edit room button, same row all Room's records are forwarded to edit page for updating.

Java Script level validation present here if input is missing or incorrect it shows error pop-up when Admin click "Update Room" button. Refer below SS.

Update Hotel Management Form

RoomType:	Luxury
Price :	100
	❗ Value must be greater than or equal to 1000.
Please Choose Amenties1:	
Please Choose Amenties2:	⦿ Smoking ○ Non-Smoking Room

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Edit page contain "HOME" button it renders back to home page.

Add Room: -

URL: http://localhost:8084/infy/addCostumer

Book Hotel Management Form

RoomType: Select roomType... ⬍

Price :   [   ]

Please Choose Amenties1:   ○ AC ○ NON-AC

Please Choose Amenties2:   ○ Smoking ○ Non-Smoking Room

Total Room Availability: [   ]

Total Room Booked: [   ]

Select Facility: ☐WI-FI ☐TV ☐Geyser

         ADD ROOM   **HOME**

when Admin user click on Add button, it renders "Add page form" refer above SS.

Java Script level validation present here if input is missing or incorrect it shows error pop-up when Admin click "ADD ROOM" button. Refer above SS.

Edit page contain "HOME" button it renders back to home page.

Room Type dropdown data by default fetch from DB.

If record Added Successfully, showing below message.

new room record added sucessFully

else

Error occured while adding room record,Please contact admin

Delete Room: -

When Admin click delete room button, same row all Room's record data Deleted from tables, showing below pop-up message.

Room Record Deleted SucessFully

If any Error Occurs,

Error occured while deleting room record,Please contact admin

2. Booking Room: -

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Filter> > > RoomType: Select RoomType... ∨ Search

Show 5 ∨ entries

Room Type	Price ⇕	Room availability ⇕	Room Booked ⇕	AC / NON-AC ⇕	Smoking / Non-Smoking ⇕	WIFI/ TV / Geyser ⇕	Action ⇕
Luxury	20001	0	6	AC	Smoking	WIFI,TV,Geyser	Select.. ∨
Superior	14001	0	3	NONAC	NonSmoking	WIFI,TV	Select.. ∨
Deluxe	23232	1	0	AC	Smoking	WIFI,TV,Geyser	Select.. / Book Room / Delete Room
Superior	12333	1	0	NONAC	NonSmoking	WIFI,TV,Geyser	Select.. ∨
Superior	1234	0	0	AC	NonSmoking	WIFI,TV	Select.. ∨

Booking Room: -

Booking room hold above fields in jQuery table refer above SS.

User can render "Book Room", "Delete Room" page using Action Dropdown.

User can view entries based on their preferences [5,10,15,20], default entry showing as "5".

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if Room Availability equals Room Booked, "Book Room" option Disabled for User.

Search Filter based on "Room type" available for User. refer below SS.

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Filter>>> RoomType: Superior ⌄   Search

Show 5 ⌄ entries

Room Type ⇅	Price ⇅	Room availability ⇅	Room Booked ⇅	AC / NON-AC ⇅	Smoking / Non-Smoking ⇅	WIFI/ TV / Geyser ⇅	Action ⇅
Superior	14001	0	3	NONAC	NonSmoking	WIFI,TV	Select.. ⌄
Superior	12333	1	0	NONAC	NonSmoking	WIFI,TV,Geyser	Select.. ⌄
Superior	1234	0	0	AC	NonSmoking	WIFI,TV	Select.. ⌄

Showing 1 to 3 of 3 entries   Previous   1   Next

If Based on Room Type Data not available Showing below pop-up massage.

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Filter>   filter-data not found in DB please provide different input

Show 5 ⌄ entries

Room Type ⇅	Price ⇅	Room availability ⇅	Room Booked ⇅	AC / NON-AC ⇅	Smoking / Non-Smoking ⇅	WIFI/ TV / Geyser ⇅	Action ⇅
				No data available in table			

Showing 0 to 0 of 0 entries   Previous   Next