

# **Project Title: Hotel Management System for Hotel Staff**

**Team members:**

**Navyaprabha Rajappa**

**Pradeep Kumar**

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# Project Report

## Introduction



Our Hotel Management system is a software that will be used by hotels and other hospitality businesses to manage their operations. This will include managing reservation, Room management and modification, Keeping records of all the guests, Payment and billing, and Staff management and viewing the hotel statistics and how well the hotel is doing, utilizing OLAP( Online Analytical Processing).

The use of hotel management systems has become increasingly popular in recent years due to the benefits they offer, such as increased efficiency, improved guest experience, and better data management

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## Motivation

The motivation behind developing a hotel management system for hotel staff is to provide an efficient and streamlined process for managing hotel operations. The system is designed to help staff in managing various hotel operations such as room booking, guest check-in and check-out, staff management, complaint management, and overall hotel performance analysis in a centralized location.

The system also provides real-time information on room availability, occupancy rates, and earnings, which can help hotel management make informed decisions. By implementing this system, hotels can improve their overall efficiency, reduce the risk of errors, and provide a better guest experience.

## Goals

To streamline hotel operations and improve efficiency by automating the booking process and room management.

1. The system aims to simplify the hotel management process, increase staff productivity, and improve the customer experience by providing a streamlined and user-friendly interface for managing hotel operations.

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2. To provide staff with a tool that can help them manage their workload and improve productivity. The goal is to create a system that is easy to use, reduces manual effort, and provides real-time data and insights to help make informed decisions to improve the hotel's overall performance.
3. Improving financial management by providing real-time data on room occupancy, earnings, and expenses.
4. To reduce errors and inaccuracies in the booking and billing process by automating these functions.

## Scope

The scope of this Hotel Management System is to provide a user-friendly interface for the staff of a hotel to manage and monitor the hotel's operations. It includes features such as user authentication, reservation management, guest management, room management, staff management, complaint management, statistics, search bar, and logout.

## Related work

1. **Hotel Management System** a Case Study of a Hotel in Nigeria by Emmanuel E. Essien and Mfon E. Bassey (2019) This study focuses on the design and implementation of a hotel management system for a hotel in Nigeria. The system includes features such as room booking, customer

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management, staff management, and inventory management. The study found that the system improved the hotel's efficiency and customer satisfaction.

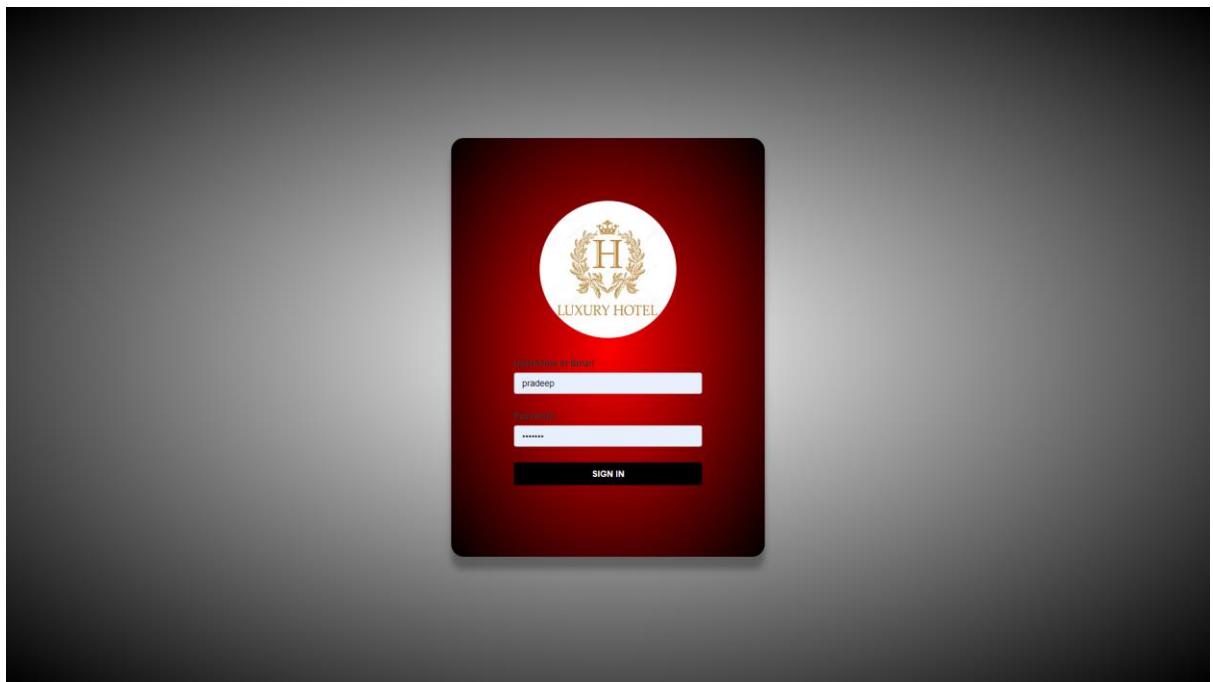
**2. Development of a Hotel Management System** by A. O. Akinola, A. O. Akinwale, and S. A. Adekanye (2018) This study presents the development of a hotel management system with features such as room booking, customer management, staff management, and inventory management. The system was tested and found to be effective in managing the hotel's operations.

**3. A Proposed Hotel Management System** with Online Reservation System for the Immaculate Conception International College of Arts and Technology by Carl Vincent V. Gatdula, Michael C. Ramirez, and Rodulfo Jr. M. Lornia (2019) This study proposes a hotel management system with an online reservation system for a college in the Philippines. The system includes features such as room booking, customer management, staff management, and inventory management. The study found that the proposed system could improve the college's hotel operations and increase customer satisfaction.

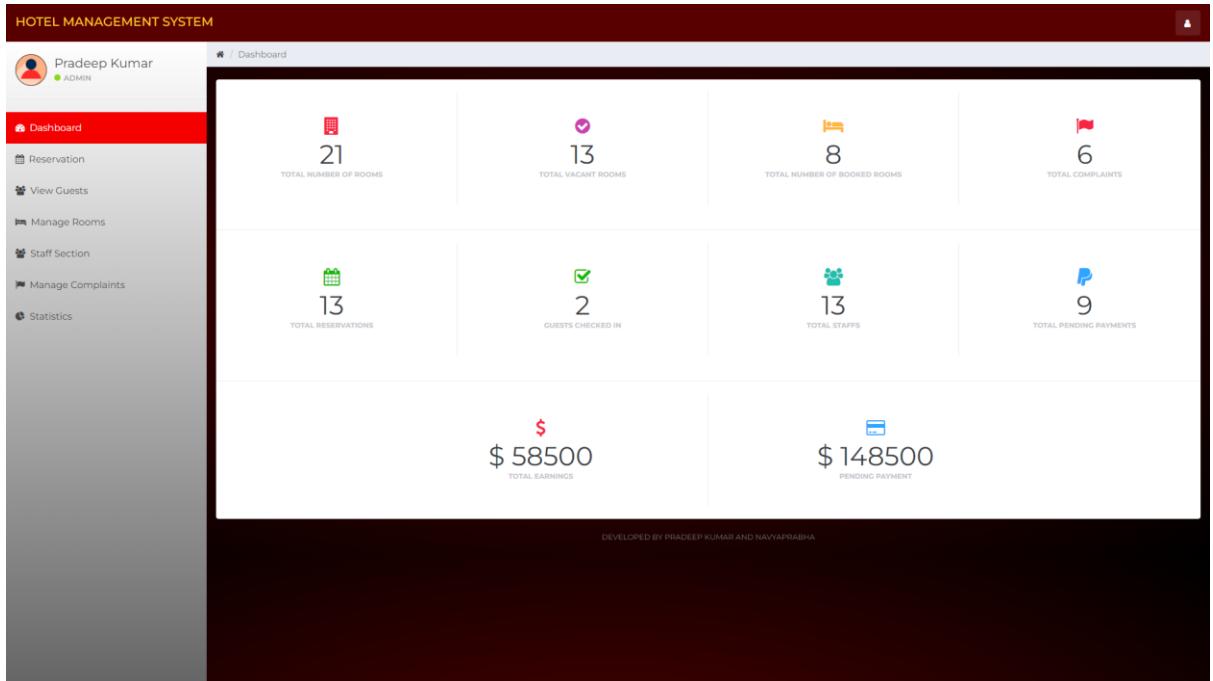
## Application system functionalities

We have following features implemented:

1. **User Authentication:** The system should allow only authorized users to log in by verifying their username/Email and password.



2. **Dashboard:** After logging in, staff members should be directed to a dashboard that provides an overview of the hotel's operations, including the total number of rooms, total number vacant rooms, total number of booked rooms, total reservations, guests checked in, total staff, total number of customers to pay pending payments, total earnings, total pending payment amount to be received and total complaints.



**3. Reservation Management:** Staff members should be able to manage room reservations by adding, editing, and deleting reservations. This includes entering customer details such as First name, Last name, contact information, email address, ID (state id, SSN, passport, driving license) one of the ID mentioned here is sufficient, and Residential address, as well as room type, room number, check-in and check-out dates. Once all the data is entered the system will show the total number of days, price of room for each day, total amount to be paid by customer during checkout. The Replan booking button works the same as the reset button, where staff can enter data again.

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**Room Information:**

- Room Type: Select Room Type
- Room No.: Room No.
- Check In Date: mm/dd/yyyy
- Check Out Date: mm/dd/yyyy

**Total Days : 0 Days**  
**Price: \$ 0**  
**Total Amount : \$ 0**

**Customer Detail:**

- First Name: First Name
- Last Name: Last Name
- Contact Number: Contact No.
- Email Address: Email Address
- ID Card Type: Select ID Card Type
- Selected ID Card Number: ID Card Number
- Residential Address: Full Address

**4. Guest Management:** Staff members should be able to view and manage guest information, including customer ID, customer name, email ID, contact number, room number, room type, room price, check-in, check-out, period of stay, and total bill.

**All Guest List**

Customer Id	Customer Name	Customer Email	Contact No.	Room No.	Room Type	Room Price	Check In Date	Check Out Date	Period of Stay	Total Bill
1	Boony S. Burke	boonyb9@gmail.com	7543451240	B-101	1	1000	13-11-2022	15-11-2022	2	2000
2	Johny Mitchell	johndrm@gmail.com	2870214970	A-102	2	1500	13-11-2022	16-11-2022	3	4500
3	Bealiz M. Matews	mhews@gmail.com	1247778460	A-102	2	1500	11-11-2022	14-11-2022	3	4500
4	Keonin Johnson	kjohn@gmail.com	1471246500	B-103	3	2000	11-11-2017	15-11-2017	4	8000
5	Dayne Scott	dayney@gmail.com	2453249780	D-101	4	3000	17-11-2017	20-11-2017	3	9000
6	Buno Denn	denbu@gmail.com	1987654780	C-101	1	1000	08-04-2021	10-04-2021	2	2000
7	Rick Austin	austinric@gmail.com	2450006974	K-699	5	5500	08-04-2023	10-04-2023	2	11000
8	Andrew Tate	tateandrew@gmail.com	2451238450	M-869	10	6900	09-04-2021	13-04-2021	4	27600
10	Keanu Reaves	reaves@gmail.com	3622265653	K-799	5	5500	01-05-2023	03-05-2023	2	11000
11	Pradeep Kumar	pradeep@gmail.com	4567894567	K-799	5	5500	03-05-2023	11-05-2023	8	44000

Showing 1 to 10 of 13 entries

Previous 1 2 Next

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**5. Room Management:** Staff members should be able to manage rooms by viewing availability, adding new rooms, and updating the status of occupied rooms. This includes editing and deleting room details, such as room type and room number. Also, staff will be able to view which room is occupied by which a customer and their complete details like Customer Name, Contact Number, Email, ID Card Type, ID Card number, Address, Remaining Amount (\$) to be paid.

There are options like booking status, check-in, check-out. So, then the customer books room the booking status will turn to room booked and check-in status will be just check-in, But once the customer checks-in it will be changed to checked-in. During check-out there will be payment options to pay the bill.

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The screenshot shows the Hotel Management System interface. On the left, there's a sidebar with a user profile for 'Pradeep Kumar' (ADMIN) and a navigation menu with options: Dashboard, Reservation, View Guests, Manage Rooms (which is highlighted in red), Staff Section, Manage Complaints, and Statistics.

The main content area is titled 'Manage Rooms' and displays a table of room bookings. The table has columns: Room No, Room Type, Booking Status, Check In, Check Out, and Action. The data in the table is as follows:

Room No	Room Type	Booking Status	Check In	Check Out	Action
A-102	Double	Book Room	-	-	
A-103	Triple	Book Room	-	-	
A-104	Family	Booked	Check In	-	
B-101	Single	Booked	Check In	-	
B-103	Triple	Booked	Check In	-	
C-101	Single	Booked	Check In	-	
C-102	Double	Booked	Checked In	Check Out	
C-104	Family	Book Room	-	-	
K-699	King Sized	Booked	Checked In	Check Out	
K-799	King Sized	Booked	Check In	-	

At the bottom of the table, it says 'Showing 1 to 10 of 21 entries'. On the right side of the table, there are buttons for 'Previous', 'Next', and page numbers (1, 2, 3). The footer of the page says 'DEVELOPED BY PRADEEP KUMAR AND NAVYAPRABHA'.

**6. Staff Management:** The system should allow hotel management to manage the details of employees, including their name, position, shift, joining date, and salary. This includes adding new employees, editing employee details, and deleting employee records. It allows managers to change employee shifts. Also, the view option shows complete details about the employee (employee history) where one can see employee name, salary, shift hours they worked on day etc.

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Sr. No	Employee Name	Staff	Shift	Joining Date	Salary (\$)	Change Shift	Action
1	Scarlett Whitney	Manager	Evening - 4:00 PM - 10:00 PM	Nov 13, 2020	21000	<button>Change Shift</button>	
2	Leonardo Andrade	Front Desk Receptionist	Evening - 4:00 PM - 10:00 PM	Apr 7, 2021	12500	<button>Change Shift</button>	
3	Shepard Marks	Housekeeping Manager	Evening - 4:00 PM - 10:00 PM	Nov 13, 2019	25000	<button>Change Shift</button>	
4	Kaden Harrington	Housekeeping Manager	Evening - 4:00 PM - 10:00 PM	Nov 13, 2017	31000	<button>Change Shift</button>	
5	Camden Schroeder	Chef	Morning - 5:00 AM - 10:00 AM	Nov 13, 2018	28000	<button>Change Shift</button>	
6	Bennett Yang	Front Desk Receptionist	Evening - 4:00 PM - 10:00 PM	Nov 13, 2017	40000	<button>Change Shift</button>	
7	Tristen Giles	Housekeeping Manager	Day - 10:00 AM - 4:00PM	Nov 13, 2017	40000	<button>Change Shift</button>	
8	Pearl Cordova	Manager	Morning - 5:00 AM - 10:00 AM	Nov 13, 2020	15000	<button>Change Shift</button>	
9	Valeria Crosby	Front Desk Receptionist	Day - 10:00 AM - 4:00PM	Nov 13, 2020	20000	<button>Change Shift</button>	
10	Salvador Gallegos	Walter	Day - 10:00 AM - 4:00PM	Nov 13, 2019	24000	<button>Change Shift</button>	

**7. Complaint Management:** The system should allow staff members to manage guest complaints by recording complaint details, including the name of the complainant, complaint type, description, created date, resolved type, and budget. Also, can view details about all the complaints when they open this tab.

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The screenshot shows a web-based hotel management system. On the left, there's a sidebar with a user profile for 'Pradeep Kumar' (ADMIN) and links for Dashboard, Reservation, View Guests, Manage Rooms, Staff Section, Manage Complaints (which is highlighted in red), and Statistics. The main content area has a header 'Complaint' and a 'Make Complaint' form with fields for Complainant Name and Complaint Type. Below this is a 'Please Describe Your Complaints' text area with a placeholder 'Complaint' and a note 'Please fill out this field.' A 'Submit' button is green, while 'Reset' is red. To the right is a 'Complaint Management' table listing six complaints. The table columns are #, Complainant Name, Complaint Type, Complaint, Created Date, Resolve, and Budget (\$). The data is as follows:

#	Complainant Name	Complaint Type	Complaint	Created Date	Resolve	Budget (\$)
1	Yanice Alexander	Television	Does not operate properly	Jul 16, 2020	Jul 17, 2020	3600
2	Rupert Peter	Air Conditioner	Having a lot of Problems	Oct 1, 2020	Oct 3, 2020	7950
3	Jason Morroa	Foul Smells	Really bad odour around room	Apr 1, 2018	Apr 1, 2018	500
4	Will Smith	Bath Tub	Bath Tub overflowing when filled completely; some voltage problems too - M-135	Apr 9, 2021	Apr 9, 2021	2500
5	Pradeep Kumar	Heater not working	heater not working	Apr 29, 2023	Apr 29, 2023	340
6	theo adler	heater not working	heater not working	May 2, 2023	May 2, 2023	345

At the bottom, it says 'DEVELOPED BY PRADEEP KUMAR AND NAVYAPRABHA' and includes navigation buttons for 'Previous' and 'Next'.

## 8. Statistics and OLAP:

An analytical dashboard using OLAP (Online Analytical Processing) is a powerful tool for business intelligence that allows users to quickly and easily analyze large volumes of data from multiple perspectives. OLAP is used to create multidimensional models of data that can be queried using a variety of analytical techniques, including drill-down, roll-up, slice-and-dice, and pivot tables.

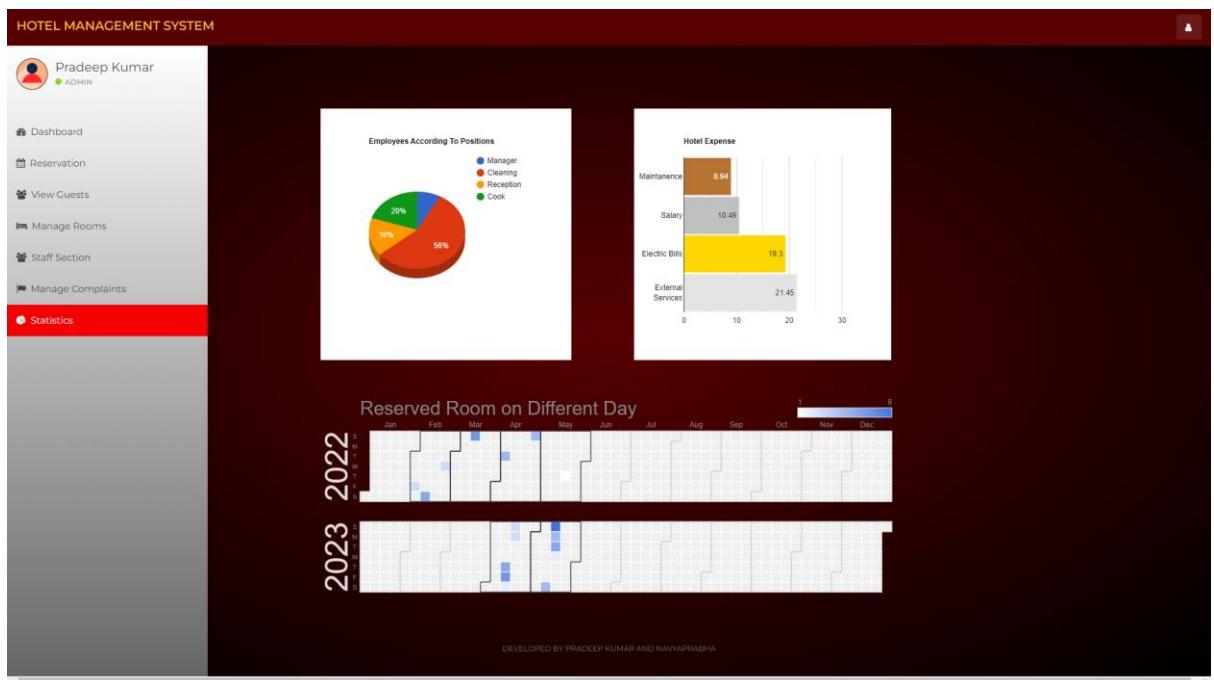
Here are some implementations that we did using analytical queries to build an OLAP-based dashboard.

The system should provide overall statistics about reserved rooms on different days throughout the year, hotel expenses on maintenance, electrical bills, salary and external services, and the

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number of employees in each department like cleaning, cooking, managing, reception, it manages the complex data such as people their stay at the hotel the their expenses and hotel earnings over multiple years and display the information in a carefully planned structure using pie chart horizontal bar diagrams and calendar data points for easy visualization of the hotel standing and income and expense. This utilizes a lot of analytical queries and report generations.

As shown below



**9. Search Bar:** The system should have a search bar on all pages that allows staff members to quickly search for specific room numbers, guest information, employee details, complaint records in their respective tabs.

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The screenshot shows the Hotel Management System interface. On the left, a sidebar menu lists options: Dashboard, Reservation, View Guests, Manage Rooms (which is highlighted in red), Staff Section, Manage Complaints, and Statistics. The main content area is titled "Manage Rooms" and displays a table of room entries. The table columns are Room No, Room Type, Booking Status, Check In, Check Out, and Action. One entry is visible: Room No A-103, Room Type Triple, Booking Status Book Room, and Action buttons. A search bar at the top right contains the text "Search: A-103". At the bottom right of the main area, it says "DEVELOPED BY PRADEEP KUMAR AND NAVYAPRABHA".

**10. Logout:** The system should allow Staff to log out safely after completing their tasks.

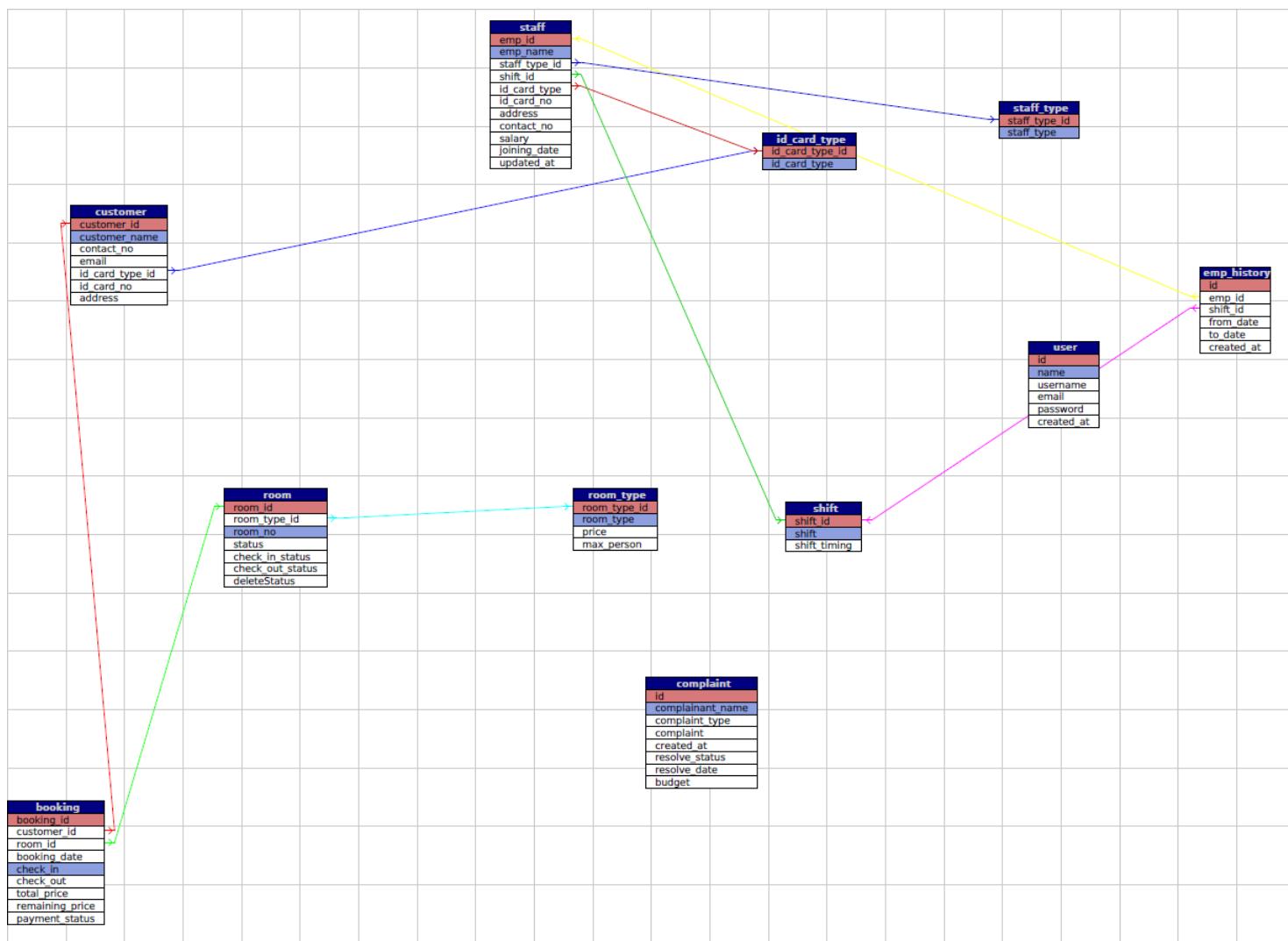
The screenshot shows the Hotel Management System dashboard. The sidebar menu is identical to the previous screen, with "Manage Rooms" highlighted. The main dashboard area has four cards: "TOTAL NUMBER OF ROOMS" (21), "TOTAL VACANT ROOMS" (17), "TOTAL NUMBER OF BOOKED ROOMS" (4), and "TOTAL COMPLAINTS" (5). A "Logout" button is located in the top right corner of the dashboard area.

## Conceptual Database Schema

Shown below are the comprehensive conceptual database schema that has been utilized to develop the system

### Class Diagram

Given below is the class diagram for the Hotel Management System

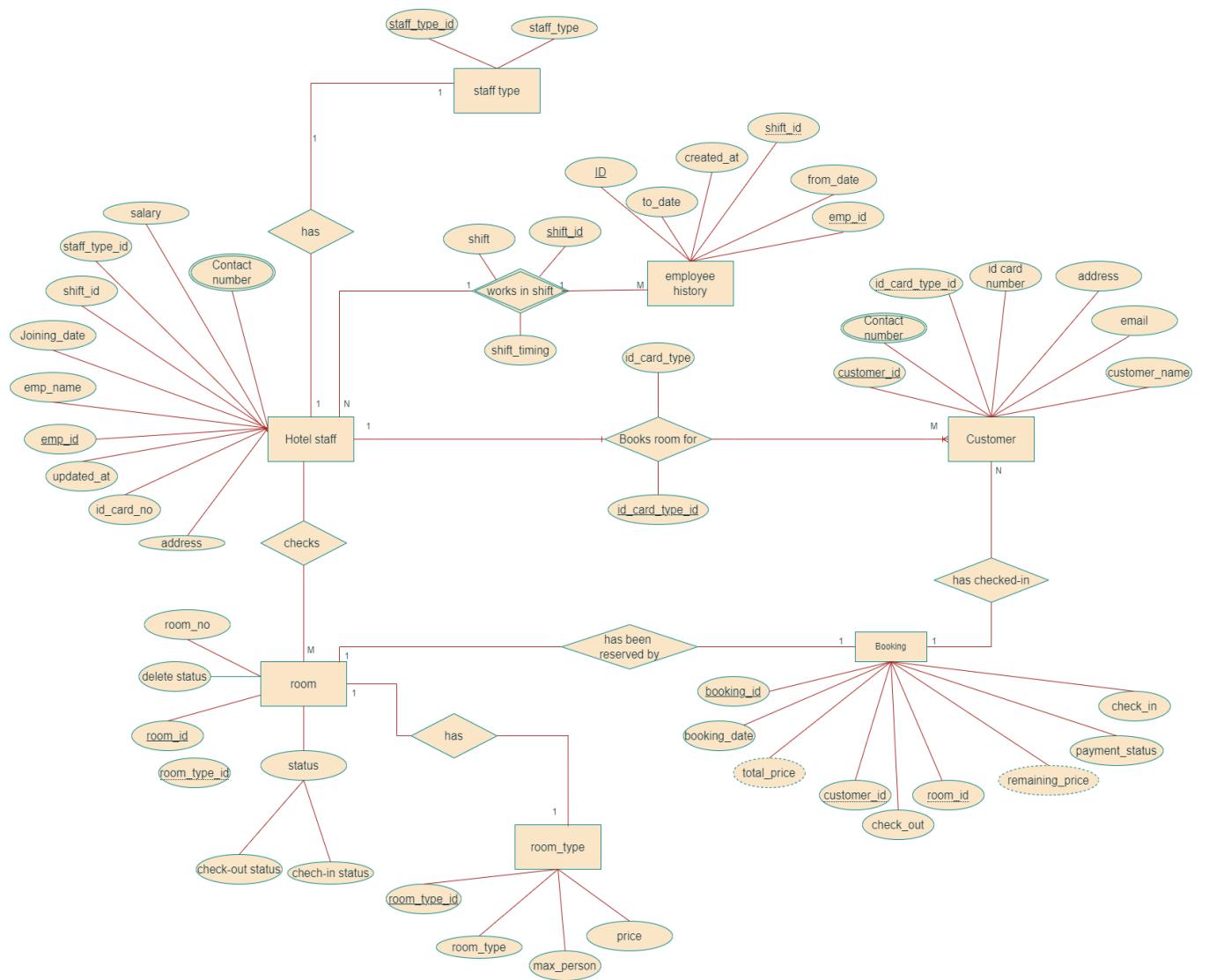


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## ERD Diagram:

ERD diagrams provide a clear and concise way to visualize the structure and relationships of a database

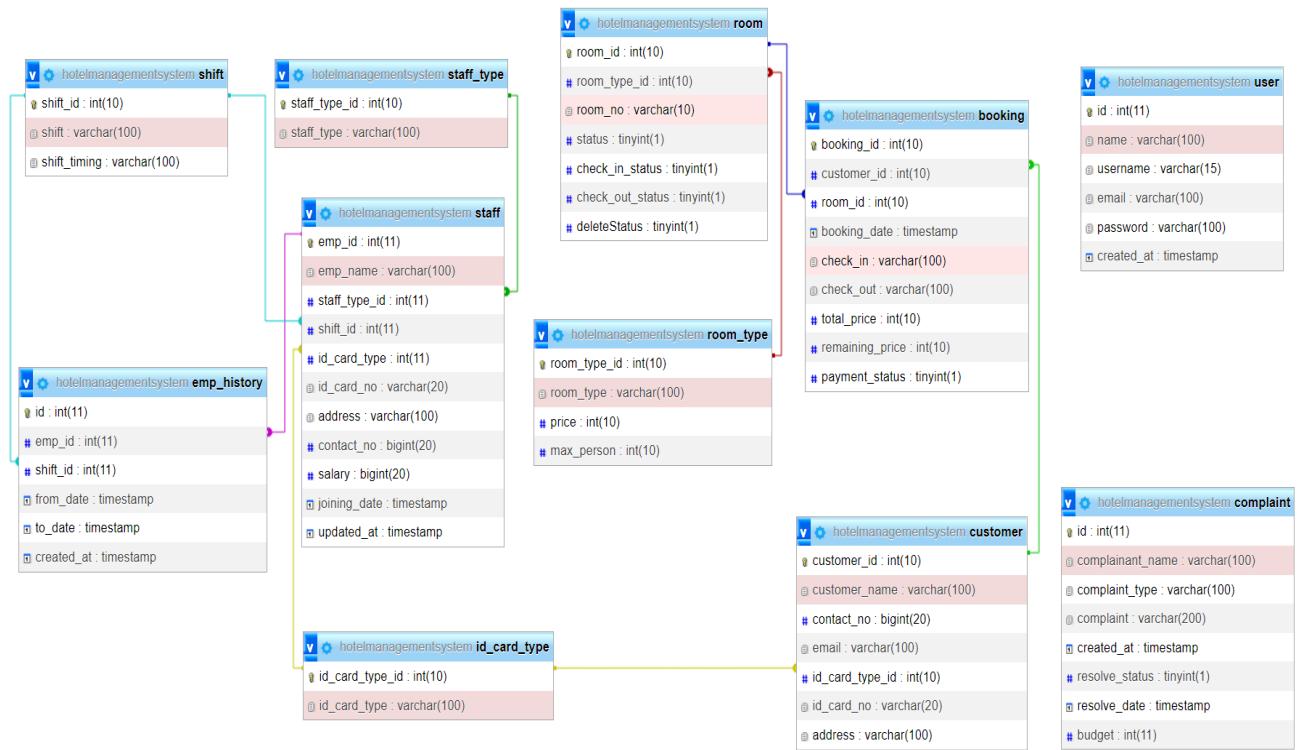
Here is the ER diagram for hotel management system for Hotel Staff



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## Logical Database Schema

Shown below is the comprehensive **Relational schema** that has been utilized to develop the system



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## Physical Database Schema

Shown below is the comprehensive **Physical Database Schema** that has been utilized to develop the system with choice of data types and index with all the key definitions- primary and foreign keys.

### >Table Structure, Data type and attributes, constraints and indexes

#### 1 booking

Creation: May 01, 2023 at 02:57 AM  
Last update: May 02, 2023 at 06:35 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
booking_id	int(10)		No		auto_increment			
customer_id	int(10)		No			-> customer.customer_id ON UPDATE RESTRICT ON DELETE RESTRICT		
room_id	int(10)		No			-> room.room_id ON UPDATE RESTRICT ON DELETE RESTRICT		
booking_date	timestamp		No	current_timestamp()				
check_in	varchar(100)		Yes	NULL				
check_out	varchar(100)		No					
total_price	int(10)		No					
remaining_price	int(10)		No					
payment_status	tinyint(1)		No					

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	booking_id	13	A	No
customer_id	BTREE	No	No	customer_id	13	A	No
room_id	BTREE	No	No	room_id	13	A	No

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### 2 complaint

Creation: May 01, 2023 at 02:57 AM  
 Last update: May 02, 2023 at 06:22 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	int(11)		No		auto_increment			
complainant_name	varchar(100 )		No					
complaint_type	varchar(100 )		No					
complaint	varchar(200 )		No					
created_at	timestamp		No	current_timestamp()				
resolve_status	tinyint(1)		No					
resolve_date	timestamp		Yes	current_timestamp()	on update current_timestamp()			
budget	int(11)		Yes	NULL				

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	id	6	A	No

### 3 customer

Creation: May 01, 2023 at 02:57 AM  
 Last update: May 02, 2023 at 06:19 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
customer_id	int(10)		No		auto_increment			
customer_name	varchar(100 )		No					
contact_no	bigint(20)		No					
email	varchar(100 )		No					
id_card_type_id	int(10)		No		>> id_card_type.id_card_type_id ON UPDATE RESTRICT ON DELETE RESTRICT			
id_card_no	varchar(20)		No					
address	varchar(100 )		No					

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	customer_id	14	A	No
customer_id_type	BTREE	No	No	id_card_type_id	14	A	No

## <hotel management system for hotel staff>

### 4 emp\_history

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
<code>id</code>	int(11)		No		<code>auto_increment</code>			
<code>emp_id</code>	int(11)		No			-> staff.emp_id ON UPDATE RESTRICT ON DELETE RESTRICT		
<code>shift_id</code>	int(11)		No			-> shift.shift_id ON UPDATE RESTRICT ON DELETE RESTRICT		
<code>from_date</code>	timestamp		No	<code>current_time</code> <code>estamp()</code>				
<code>to_date</code>	timestamp		Yes	<code>NULL</code>				
<code>created_at</code>	timestamp		No	<code>current_time</code> <code>estamp()</code>				

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	<code>id</code>	21	A	No
<code>emp_id</code>	BTREE	No	No	<code>emp_id</code>	21	A	No
<code>shift_id</code>	BTREE	No	No	<code>shift_id</code>	10	A	No

### 5 id\_card\_type

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
<code>id_card_type_id</code>	int(10)		No		<code>auto_increment</code>			
<code>id_card_type</code>	varchar(100)		No					

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	<code>id_card_type_id</code>	4	A	No

### 6 room

Creation: May 01, 2023 at 02:57 AM  
Last update: May 02, 2023 at 06:35 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
<code>room_id</code>	int(10)		No		<code>auto_increment</code>			
<code>room_type_id</code>	int(10)		No			-> room_type.room_type_id ON UPDATE RESTRICT ON DELETE RESTRICT		
<code>room_no</code>	varchar(10)		No					
<code>status</code>	tinyint(1)		Yes	<code>NULL</code>				
<code>check_in_status</code>	tinyint(1)		No					
<code>check_out_status</code>	tinyint(1)		No					
<code>deleteStatus</code>	tinyint(1)		Yes	0				

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### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	room_id	26	A	No
room_type_id	BTREE	No	No	room_type_id	26	A	No

## 7 room\_type

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
room_type_id	int(10)		No		auto_increment			
room_type	varchar(100)		No					
price	int(10)		No					
max_person	int(10)		No					

### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	room_type_id	10	A	No

## 8 shift

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
shift_id	int(10)		No		auto_increment			
shift	varchar(100)		No					
shift_timing	varchar(100)		No					

### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	shift_id	4	A	No

## <hotel management system for hotel staff>

### 9 staff

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
emp_id	int(11)		No		auto_increment			
emp_name	varchar(100)		No					
staff_type_id	int(11)		No			-> staff_type.staff_type_id ON UPDATE RESTRICT ON DELETE RESTRICT		
shift_id	int(11)		No			-> shift.shift_id ON UPDATE RESTRICT ON DELETE RESTRICT		
id_card_type	int(11)		No			-> id_card_type.id_card_type_id ON UPDATE RESTRICT ON DELETE RESTRICT		
id_card_no	varchar(20)		No					
address	varchar(100)		No					
contact_no	bigint(20)		No					
salary	bigint(20)		No					
joining_date	timestamp		No	current_timestamp()				
updated_at	timestamp		No	current_timestamp()	on update current_timestamp()			

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	emp_id	13	A	No
id_card_type	BTREE	No	No	id_card_type	4	A	No
shift_id	BTREE	No	No	shift_id	6	A	No
staff_type_id	BTREE	No	No	staff_type_id	13	A	No

### 10 staff\_type

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
staff_type_id	int(10)		No		auto_increment			
staff_type	varchar(100)		No					

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	staff_type_id	9	A	No

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**11 user**

Creation: May 01, 2023 at 02:57 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	int(11)		No		auto_increment			
name	varchar(100 )		No					
username	varchar(15)		No					
email	varchar(100 )		No					
password	varchar(100 )		No					
created_at	timestamp		No	current_timestamp()				

**Indexes**

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null
PRIMARY	BTREE	Yes	No	id	2	A	No

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## Database technology

We chose relational database management system (RDBMS) i.e. MySQL was used to store and manage the hotel's data.

The management of the tables and hotel management system was done using **phpmyadmin** which has MySQL server :

The screenshot shows the phpMyAdmin interface for the 'hotelmanagementsystem' database. The left sidebar lists the database structure with various tables: booking, complaint, customer, emp\_history, id\_card\_type, room, room\_type, shift, staff, staff\_type, and user. The main area displays a table of 11 tables with the following details:

Table	Action	Rows	Type	Collation	Size	Overhead
booking	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	13	InnoDB	latin1_swedish_ci	48.0 KiB	-
complaint	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
customer	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	14	InnoDB	latin1_swedish_ci	32.0 KiB	-
emp_history	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	21	InnoDB	latin1_swedish_ci	48.0 KiB	-
id_card_type	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
room	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	26	InnoDB	latin1_swedish_ci	32.0 KiB	-
room_type	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	10	InnoDB	latin1_swedish_ci	16.0 KiB	-
shift	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
staff	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	13	InnoDB	latin1_swedish_ci	64.0 KiB	-
staff_type	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	9	InnoDB	latin1_swedish_ci	16.0 KiB	-
user	<a href="#">Browse</a> <a href="#">Structure</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	2	InnoDB	latin1_swedish_ci	16.0 KiB	-
11 tables	Sum	122	InnoDB	utf8mb4_general_ci	320.0 KiB	0 B

At the bottom, there is a 'Create new table' form with fields for Table name (empty) and Number of columns (4). There are also 'Print' and 'Data dictionary' links.

<hotel management system for hotel staff>

## Prototype for the Hotel Management

### 1. User Authentication:

- Login page with fields for username/email and password.

Given Below are the login details that can only be used to login to the website :

username: pradeep / kumap02@pfw.edu

password: pradeep

Username: navya / rajan02@pfw.edu

Password : navya

- Authentication checks the user credentials against the database of authorized users.

```
include_once 'db.php';
session_start();

if (isset($_POST['login'])) {
    $email = $_POST['email'];
    $password = $_POST['password'];

    if (!$email && !$password) {
        header('Location:login.php?empty');
    } else {
        $password = md5($password);
        $query = "SELECT * FROM user WHERE username = '$email' OR email='$email' AND password='$password'";
        $result = mysqli_query($connection, $query);
        if (mysqli_num_rows($result) == 1) {
            $user = mysqli_fetch_assoc($result);
            $_SESSION['username'] = $user['username'];
            $_SESSION['user_id'] = $user['id'];
            header('Location:index.php?dashboard');
        } else {
            header('Location:login.php?loginE');
        }
    }
}
```

## 2. Dashboard:

- Overview of hotel operations displayed on the dashboard, including:
  - **Total number of rooms**: Displays the total no of rooms in the hotel using the below query

```
counters > room-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM room WHERE deleteStatus = '0'";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8  ?>
```

- **Total number of vacant rooms** : gives the total number of room count using the below query

```
counters > avrooms-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM room WHERE status IS NULL AND deleteStatus = '0'";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8  ?>
```

- **Total number of booked rooms** : Gives the total number of booked rooms using the below query

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```
counters > 📈 bookedroom-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM room WHERE status = '1'";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8  ?>
```

- **Total reservations** : it gives the total number of reserved rooms so that the hotel staff can easily see the total rooms reserved and evaluate the availability status. It uses the below query to keep track of that.

```
counters > 📈 reserve-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM booking";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8  ?>
```

- **Guests checked in** : It helps keep track of the information regarding the count of guests checked in so that the hotel staff can easily identify how many guests are there in the hotel at

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any given day. And it is evaluated using the below sql query from the server

```
counters > checkedin-count.php
1 <?php
2     include './db.php';
3     $sql = "SELECT * FROM room WHERE check_in_status = '1'";
4     $query = $connection->query($sql);
5
6     echo "$query->num_rows";
7
8 ?>
```

- **Total staff :** It keeps track of the count of the total hotel staff present and allows the manager to keep track of whether to employ more staff or not. It is evaluated by the below php code which queries this information from the database server

```
counters > staff-count.php
1 <?php
2     include './db.php';
3     $sql = "SELECT * FROM staff";
4     $query = $connection->query($sql);
5
6     echo "$query->num_rows";
7
8 ?>
```

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- **Total number of customers with pending payments** : To display the total number of customers who are checked in and yet to be checked out. Once they are checked out they will make full payment.

```
counters > pendingpay-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM booking WHERE payment_status = '0'";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8  ?>
```

- **Total earnings** : it is the total earnings that the hotel has made over time and below is the php script which captures this information from the database.

```
counters > income-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT SUM( total_price ) FROM booking WHERE payment_status = '1'";
4      // $query = $connection->query($sql);
5      $amountsum = mysqli_query($connection, $sql) or die(mysqli_error($sql));
6      $row_amountsum = mysqli_fetch_assoc($amountsum);
7      $totalRows_amountsum = mysqli_num_rows($amountsum);
8      echo $row_amountsum['SUM( total_price )'];
9
10
11  ?>
```

- **Total pending payment**: It is the pending amount to be received and is displayed using the below script

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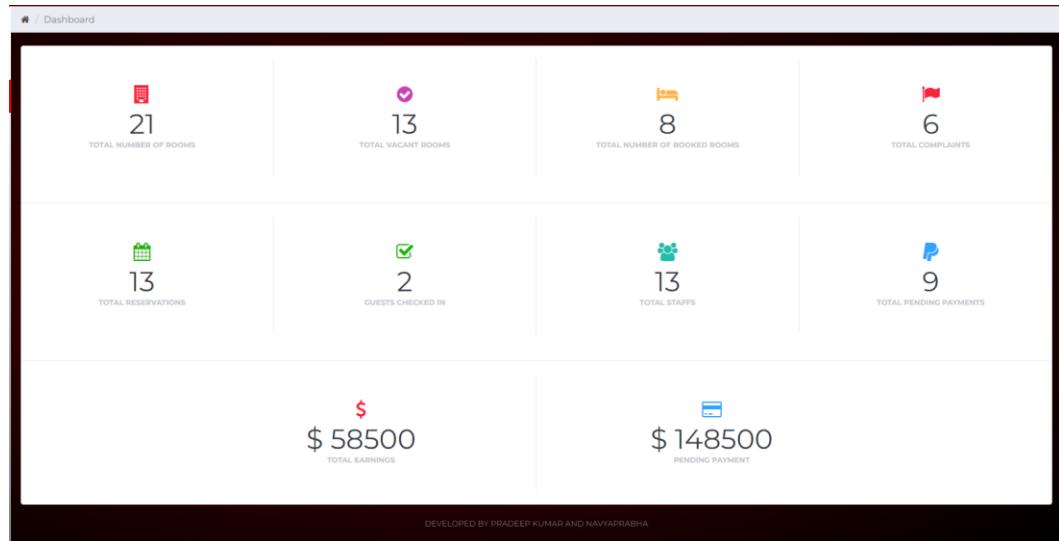
```
counters > 💼 income-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT SUM( total_price ) FROM booking WHERE payment_status = '1'";
4      // $query = $connection->query($sql);
5      $amountsum = mysqli_query($connection, $sql) or die(mysqli_error($sql));
6      $row_amountsum = mysqli_fetch_assoc($amountsum);
7      $totalRows_amountsum = mysqli_num_rows($amountsum);
8      echo $row_amountsum['SUM( total_price )'];
9
10
11 ?>
```

- **Total complaints** : Displays the total number of complaints using the following query.

```
counters > 💼 complaints-count.php
1  <?php
2      include './db.php';
3      $sql = "SELECT * FROM complaint";
4      $query = $connection->query($sql);
5
6      echo "$query->num_rows";
7
8 ?>
```

<hotel management system for hotel staff>

- All the above together form the dashboard with the following information displayed as shown in the below image :

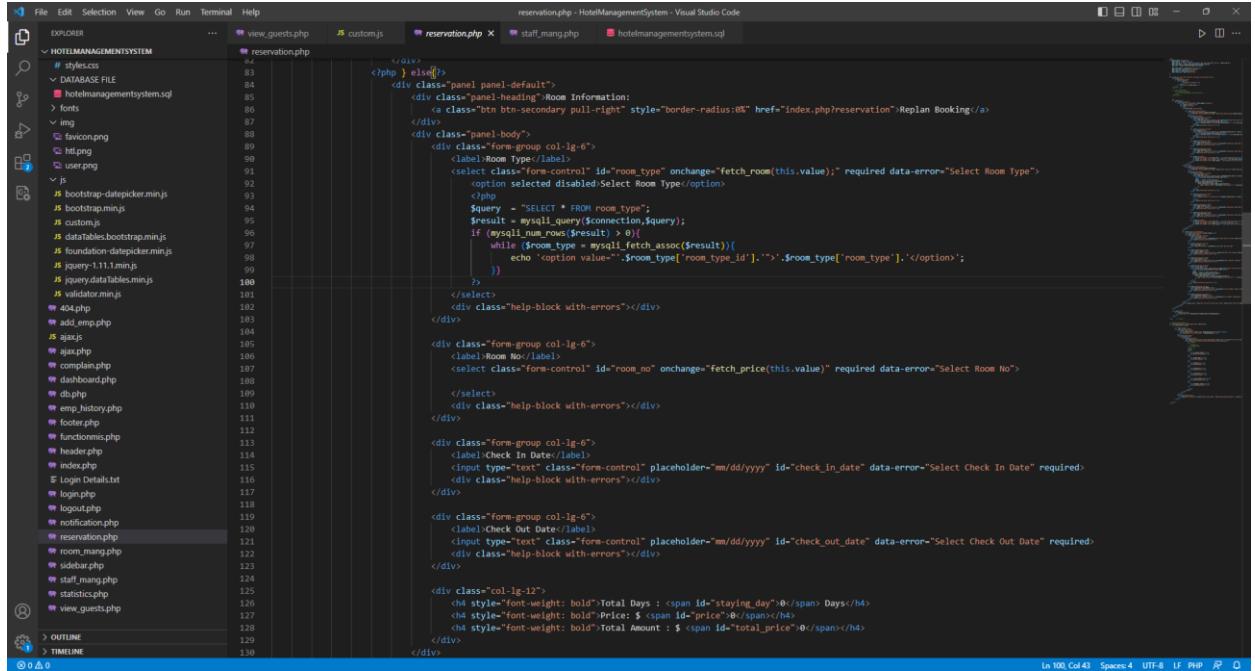


### 3. Reservation Management:

- Page to manage room reservations, with the ability to add, edit, and delete reservations.
- Fields to enter customer details such as First name, Last name, contact information, email address, ID (state id, SSN, passport, driving license), and Residential address.
- Fields to select room type, room number, check-in, and check-out dates.
- Calculations for total number of days, price of room for each day, and total amount to be paid by the customer during checkout.
- A "Replan booking" button to start the process anew.

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- Given below is the snapshot of the backend code that helps manage the reservation.



```
<?php } else{>
    <div class="panel panel-default">
        <div class="panel-heading">Room Information:</div>
        <a class="btn btn-secondary pull-right" style="border-radius:0%" href="index.php?reservation">RePlan Booking</a>
    </div>
    <div class="panel-body">
        <div class="form-group col-lg-6">
            <label>Room Type</label>
            <select class="form-control" id="room_type" onchange="fetch_room(this.value); required data-error="Select Room Type">
                <option selected disabled>Select Room Type</option>
            </select>
            $query = "SELECT * FROM room_type";
            $result = mysqli_query($connection,$query);
            if (mysqli_num_rows($result) > 0){
                while ($room_type = mysqli_fetch_assoc($result)){
                    echo "<option value= '$room_type['room_type_id']'>'$room_type['room_type']</option>";
                }
            }
        </select>
        <div class="help-block with-errors"></div>
    </div>
    <div class="form-group col-lg-6">
        <label>Room No</label>
        <select class="form-control" id="room_no" onchange="fetch_price(this.value)" required data-error="Select Room No">
            <option selected disabled>Select Room No</option>
        </select>
        <div class="help-block with-errors"></div>
    </div>
    <div class="form-group col-lg-6">
        <label>Check In Date</label>
        <input type="text" class="form-control" placeholder="mm/dd/yyyy" id="check_in_date" data-error="Select Check In Date" required>
        <div class="help-block with-errors"></div>
    </div>
    <div class="form-group col-lg-6">
        <label>Check Out Date</label>
        <input type="text" class="form-control" placeholder="mm/dd/yyyy" id="check_out_date" data-error="Select Check Out Date" required>
        <div class="help-block with-errors"></div>
    </div>
    <div class="col-lg-12">
        <h4 style="font-weight: bold">Total Days : <span id="staying_day"></span> Days</h4>
        <h4 style="font-weight: bold">Price: $ <span id="price"></span></h4>
        <h4 style="font-weight: bold">Total Amount : $ <span id="total_price"></span></h4>
    </div>
</div>
```

## 4. Guest Management:

- Page to view and manage guest information.
- Fields to display customer ID, customer name, email ID, contact number, room number, room type, room price, check-in, check-out, period of stay, and total bill.
- Below is the snapshot of the code that is used to help manage the guests

## <hotel management system for hotel staff>

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "HOTELMANAGEMENTSYSTEM". Files include: #styles.css, DATABASE FILE (hotelmanagementsystem.sql), fonts, img (favicon.png, htif.png, user.png), js (bootstrap-datepicker.min.js, bootstrap.min.js, custom.js, dataTables.bootstrap.min.js, foundation-datepicker.min.js, jquery-1.11.1.min.js, jquery.dataTables.min.js, validator.min.js), 404.php, add\_emp.php, ajax.js, ajax.php, complaint.php, dashboard.php, db.php, emp\_history.php, footer.php, functions.php, header.php, index.php, login\_details.html, login.php, logout.php, notification.php, reservation.php, room\_mang.php, sidebar.php, staff\_mang.php, statistics.php, and view\_guests.php.
- Editor:** The "view\_guests.php" file is open. The code handles guest deletion and displays a table of guest information.
- Bottom Status Bar:** Shows line 77, column 27; space 6; UTF-8; LF PHP; and a timestamp of 04-05-2023.

```
File Edit Selection View Go Run Terminal Help view_guests.php x JS custom.js reservation.php staff_mang.php hotelmanagementsystem.sql

#styles.css
DATABASE FILE
hotelmanagementsystem.sql
fonts
img
favicon.png
htif.png
user.png
js
bootstrap-datepicker.min.js
bootstrap.min.js
custom.js
dataTables.bootstrap.min.js
foundation-datepicker.min.js
jquery-1.11.1.min.js
jquery.dataTables.min.js
validator.min.js
404.php
add_emp.php
ajax.js
ajax.php
complaint.php
dashboard.php
db.php
emp_history.php
footer.php
functions.php
header.php
index.php
login_details.html
login.php
logout.php
notification.php
reservation.php
room_mang.php
sidebar.php
staff_mang.php
statistics.php
view_guests.php

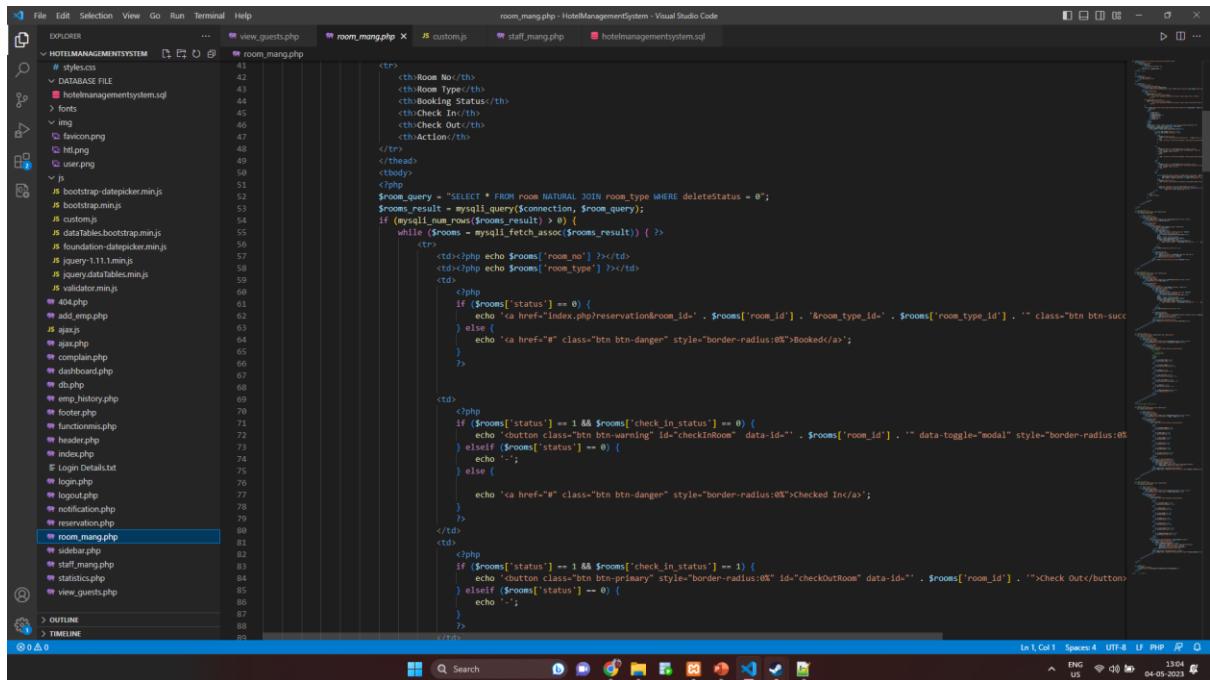
view_guests.php x JS custom.js reservation.php staff_mang.php hotelmanagementsystem.sql

29 } </div>;
30 }
31 if (isset($_GET['success'])) {
32     echo "<div class='alert alert-success'>
33         <span class='glyphicon glyphicon-info-sign'></span> Successfully Delete !
34     </div>";
35 }
36 ?>
37 <table class="table table-striped table-bordered table-responsive" cellspacing="0" width="100%" id="guests">
38 <thead>
39     <tr>
40         <th>Customer Id</th>
41         <th>Customer Name</th>
42         <th>Customer Email</th>
43         <th>Contact No</th>
44         <th>Room No</th>
45         <th>Room Type</th>
46         <th>Room Price</th>
47         <th>Check In Date</th>
48         <th>Check Out Date</th>
49         <th>Period of Stay</th>
50         <th>Total Bill</th>
51     </tr>
52 </thead>
53 <tbody>
54 </tbody>
55 </table>
56 $guests_query = "SELECT c.customer_id, c.customer_name, c.email, c.contact_no, r.room_no, r.room_type_id, rt.price AS room_price, b.check_in, b.check_out,
57 $guests_result = mysqli_query($connection, $guests_query);
58 if ($mysql_num_rows($guests_result) > 0) {
59     while ($guests = mysqli_fetch_assoc($guests_result)) {
60         <tr>
61             <td><?php echo $guests['customer_id'] ?></td>
62             <td><?php echo $guests['customer_name'] ?></td>
63             <td><?php echo $guests['email'] ?></td>
64             <td><?php echo $guests['contact_no'] ?></td>
65             <td><?php echo $guests['room_no'] ?></td>
66             <td><?php echo $guests['room_type_id'] ?></td>
67             <td><?php echo $guests['room_price'] ?></td>
68             <td><?php echo $guests['check_in'] ?></td>
69             <td><?php echo $guests['check_out'] ?></td>
70             <td><?php echo $guests['period'] ?></td>
71             <td><?php echo $guests['total_bill'] ?></td>
72         </tr>
73     }
74 } else {
75     echo "No guests";
76 }
77 
```

## **5. Room Management:**

- Page to manage rooms, with the ability to view availability, add new rooms, and update the status of occupied rooms.
  - Fields to edit and delete room details, such as room type and room number.
  - Ability to view customer details for occupied rooms, including Customer Name, Contact Number, Email, ID Card Type, ID Card number, Address, and Remaining Amount (\$) to be paid.
  - Options for booking status, check-in, and check-out.
  - Given below is a snapshot for the room management script and query

## <hotel management system for hotel staff>



```
room_mang.php - HotelManagementSystem - Visual Studio Code

File Edit Selection View Go Run Terminal Help
EXPLORER ... room_mang.php custom.js staff_mang.php hotelmanagementsystem.sql
HOTELMANAGEMENTSYSTEM ...
#_styles.css
DATABASE FILE
> files
favicon.png
http.png
user.png
js
bootstrap-datepicker.min.js
bootstrap.min.js
custom.js
dataTables.bootstrap.min.js
foundation-datepicker.min.js
jquery-3.11.1.min.js
jquery.dataTables.min.js
validator.min.js
404.php
add.emp.php
ajax.js
ajax.php
complain.php
dashboard.php
db.php
emp.history.php
footer.php
functionis.php
header.php
index.php
Login Details.txt
login.php
logout.php
notification.php
reservation.php
room_mang.php
sidebar.php
staff_mang.php
statistics.php
view_guests.php
view.php
room_mang.php
custom.js
staff_mang.php
hotelmanagementsystem.sql

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## <hotel management system for hotel staff>

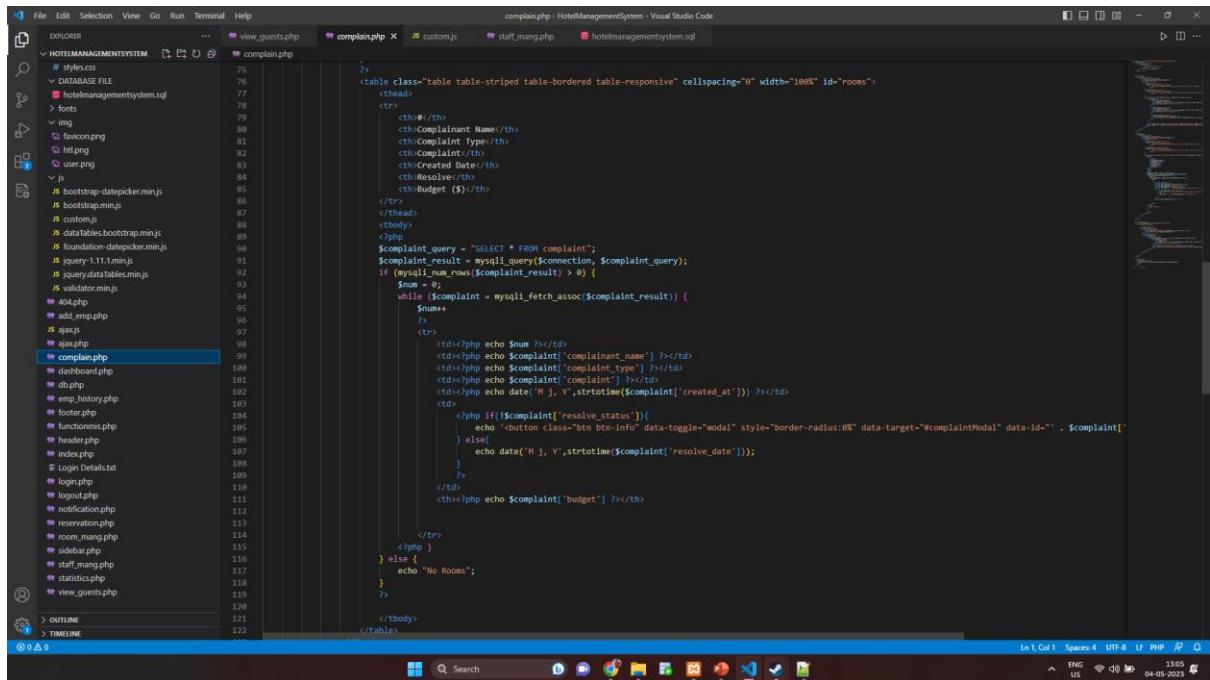
The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "HOTELMANAGEMENTSYSTEM".
- Code Editor:** The active file is `room_mang.php`, which contains PHP code for managing rooms. The code includes database queries to fetch room details and logic for booking status.
- Terminal:** Shows the command `php -S localhost:8000`.
- Status Bar:** Displays the current file as `room_mang.php - HotelManagementSystem - Visual Studio Code`, along with other status indicators like battery level and date.

## 7. Complaint Management:

- Page to manage guest complaints, with the ability to record complaint details, including the name of the complainant, complaint type, description, created date, resolved type, and budget.
- Option to view details about all complaints.
- Given below is the snapshot of the scripts and the queries that are used for managing and fetching the complaints using the queries

## <hotel management system for hotel staff>



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File Edit Selection View Go Run Terminal Help
HOTELMANAGEMENTSYSTEM complain.php - HotelManagementSystem - Visual Studio Code
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    DATABASE FILE
        hotelmanagementsystem.sql
    fonts
    favicon.png
    http.png
    user.png
    js
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        bootstrap.min.js
        custom.js
        dataTables.bootstrap.min.js
        foundation-datepicker.min.js
        jquery-1.11.1.min.js
        jquery.dataTables.min.js
        jquery.validate.min.js
        404.php
        add.emp.php
        ajax.js
        ajax.php
        complain.php
        dashboard.php
        db.php
        emp.history.php
        footer.php
        functionis.php
        header.php
        index.php
        Login Details.txt
        login.php
        logout.php
        notification.php
        reservation.php
        room.mang.php
        sidebar.php
        staff.mang.php
        view.statistics.php
        view.guests.php
    complain.php
    custom.js
    staff_mang.php
    hotelmanagementsystem.sql
    Line 1 Col 1 Spaces: 4 UTF-8 IP PHP
    ENG US 04-05-2023 13:05
```

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> <?php
    > <table class="table table-striped table-bordered table-responsive" cellspacing="0" width="100%" id="rooms">
        > <thead>
            > <tr>
                > <th></th>
                > <th>Complainant Name</th>
                > <th>Complaint Type</th>
                > <th>Created Date</th>
                > <th>Resolve</th>
                > <th>Budget ($)</th>
            > </tr>
        > </thead>
        > <tbody>
            > <?php
                > $complaint_query = "SELECT * FROM complaint";
                > $complaint_result = mysqli_query($connection, $complaint_query);
                > if(mysqli_num_rows($complaint_result) > 0) {
                    >     $num = 0;
                    >     while($complaint = mysqli_fetch_assoc($complaint_result)) {
                        >         $num++;
                        >         <tr>
                            > <td><?php echo $num ?></td>
                            > <td><?php echo $complaint['complainant_name'] ?></td>
                            > <td><?php echo $complaint['complaint_type'] ?></td>
                            > <td><?php echo $complaint['complaint'] ?></td>
                            > <td><?php echo date('M j, Y', strtotime($complaint['created_at'])) ?></td>
                            > <td>
                                > <?php if($complaint['resolve_status']) {
                                    >         echo '<button class="btn btn-info" data-toggle="modal" style="border-radius:0%" data-target="#complaintModal" data-id=' . $complaint['id'] . '>Resolve</button>';
                                >     } else {
                                    >         echo '<button class="btn btn-warning" data-toggle="modal" style="border-radius:0%" data-target="#complaintModal" data-id=' . $complaint['id'] . '>Not Resolved</button>';
                                >     }
                            > </td>
                            > <th><?php echo $complaint['budget'] ?></th>
                        > </tr>
                    > </?php
                > } else {
                    >     echo "No Rooms";
                > }
            > </tbody>
        > </table>
```

## 8. Statistics and OLAP:

- Page to display overall statistics about reserved rooms on different days throughout the year, hotel expenses on maintenance, electrical bills, salary and external services, and the number of employees in each department like cleaning, cooking, managing, reception.
- Utilizes OLAP to analyze the data in the database and perform complex operations to create statistical charts and diagrams to provide the current hotel revenue, statistics such as the staff demography and expenses.
- Given below is the snapshot of the queries and script that allows this information processing

## <hotel management system for hotel staff>

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "HOTELMANAGEMENTSYSTEM". Files include: styles.css, DATABASE FILE, hotelmanagementsystem.sql, fonts, img, favicon.png, httpng, user.php, js (bootstrap-datepicker.min.js, bootstrap.min.js, custom.js, dataTables.bootstrap.min.js, foundation-datepicker.min.js, jquery-1.11.1.min.js, jquery.dataTables.min.js, validator.min.js), and php files (404.php, add.emp.php, ajax.js, ajax.php, complain.php, dashboard.php, db.php, emp.history.php, footer.php, functions.php, header.php, index.php, Login Details.txt, login.php, logout.php, notification.php, reservation.php, room.mang.php, sidebar.php, staff.mang.php, statistics.php, view\_guests.php).
- Code Editor:** The file "statistics.php" is open. The code is a PHP script with embedded JavaScript for Google Charts. It defines a pie chart and a bar chart. The pie chart data is as follows:

Type	Expense	Style
Food	10.00	blue
Holiday	10.00	green
Salary	10.49	silver
Electric Bills	10.30	gold
External Services	21.45	color: #E64E22

- Bottom Status Bar:** Shows line 1, column 1; spaces 2; UTF-8; LF; PHP; and a timestamp: 04-05-2023.

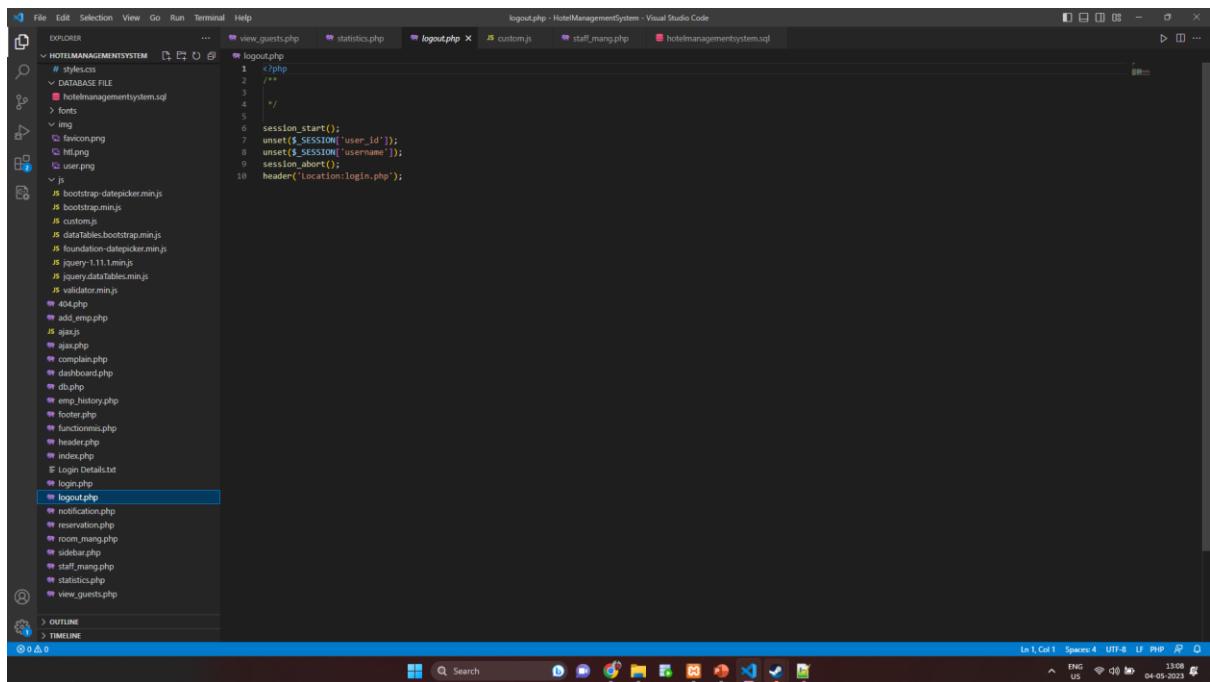
## 9. Search Bar:

- A search bar on all pages to allow staff members to quickly search for specific room numbers, guest information, employee details, and complaint records in their respective tabs.

## 10. Logout:

- Ability for staff to log out safely after completing their tasks.

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The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Tab Bar:** logout.php - HotelManagementSystem - Visual Studio Code
- Explorer:** HOTELMANAGEMENTSYSTEM folder containing:
  - #\_styles.css
  - DATABASE FILE
  - favicon.png
  - http.png
  - user.png
  - js folder containing:
    - bootstrap-datepicker.min.js
    - bootstrap.min.js
    - custom.js
    - dataTables.bootstrap.min.js
    - foundation-datepicker.min.js
    - jquery-1.11.1.min.js
    - jquery.dataTables.min.js
    - validator.min.js
  - 404.php
  - add.emp.php
  - ajax.js
  - ajax.php
  - complain.php
  - dashboard.php
  - db.php
  - emp.history.php
  - footer.php
  - functionnis.php
  - header.php
  - index.php
  - Login Details.txt
  - login.php
  - logout.php
  - notification.php
  - reservation.php
  - room.mang.php
  - sidebar.php
  - staff.mang.php
  - statistics.php
  - view.guests.php
  - view.guests.php
- Search Bar:** Search
- Bottom Status Bar:** Line 1, Col 1 / Spaces: 4 / UTF-8 / LF / PHP / ENG US / 13:08 / 04-05-2023

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## System Architecture

We have implemented a three-tier architecture with a web server. The first tier, also known as the presentation layer, is the user interface that staff members use to interact with the system. This layer is implemented using PHP, HTML, and CSS. The web pages will be served from the Apache web server, and the PHP scripts will connect to the database to retrieve and display data on the web pages.

The second tier, also known as the application layer, will handle the business logic of the system, such as processing user inputs, validating data, and retrieving data from the database. This layer will be implemented using PHP and will communicate with the presentation layer and the data layer.

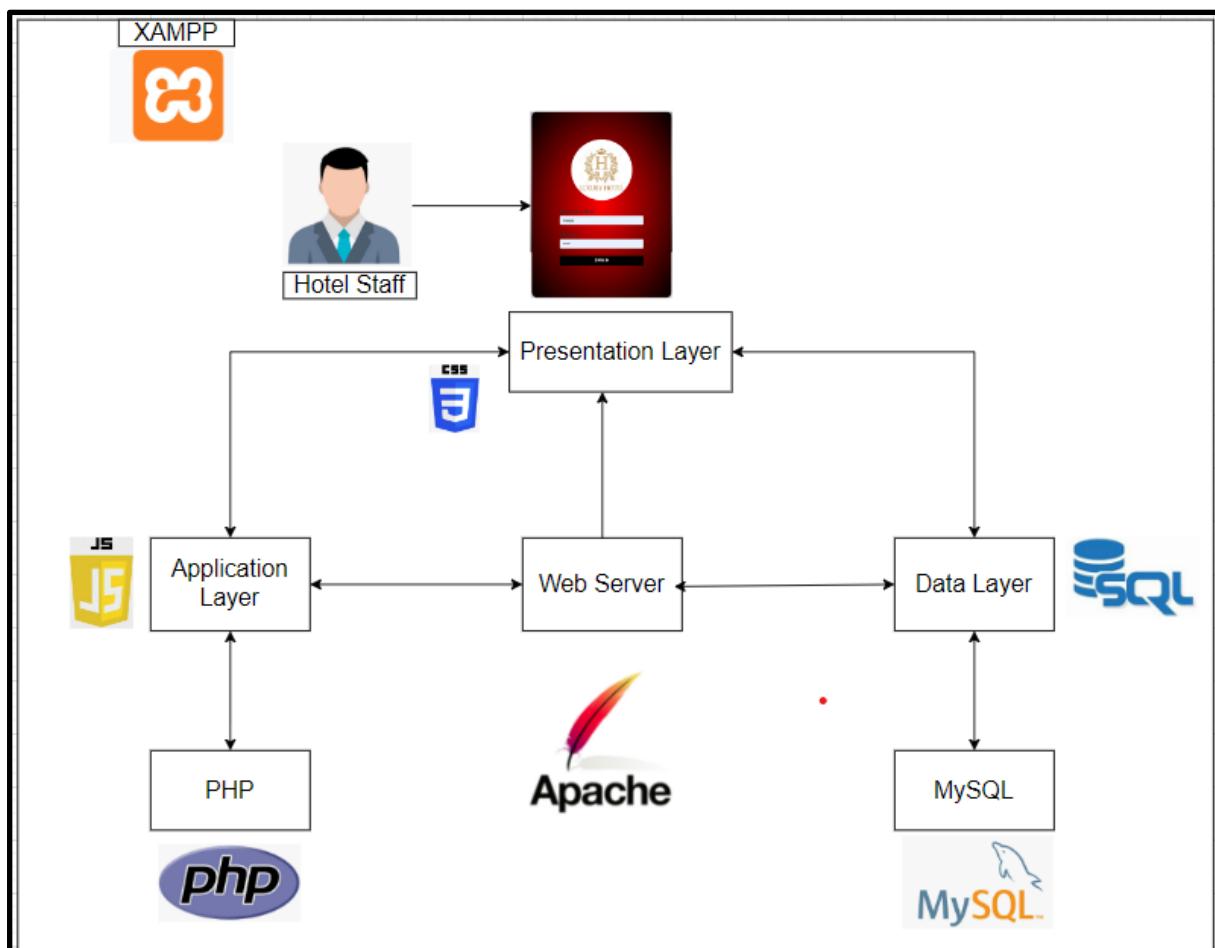
The third tier, also known as the data layer, will handle data storage and retrieval from the database. MySQL database will be used to store all the data related to guests, reservations, rooms, employees, and complaints. The data layer will communicate with the application layer to retrieve and store data in the database.

The web server, which is Apache in this case, acts as the interface between the presentation layer and the application layer. The web server

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serves the PHP files to the user's web browser, and the PHP files use the MySQL database to store and retrieve data.

Below shown is our system architecture



## Development environment

### Backend:

- Programming Language: PHP (version 7.4 or higher)
- Web Server: Apache (version 2.4 or higher)

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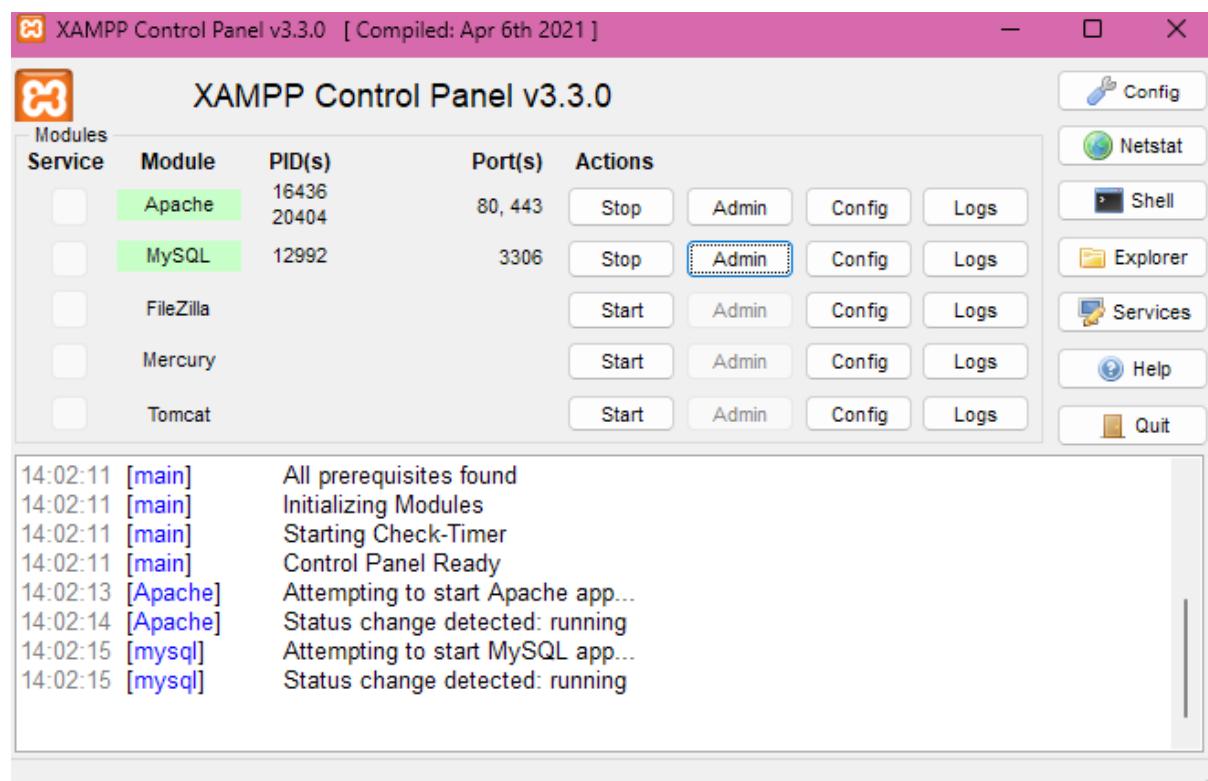
- Database Management System: MySQL, SQL (version 8.0 or higher)
- Database API: PDO (PHP Data Objects)

## Frontend:

- HTML, CSS, JavaScript, Font Awesome library.

## Software Stack:

- Operating System: **Windows**
- Local Development Environment: XAMPP (version 8.0.11 or higher)



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Here is a brief explanation of each component in the development environment:

1. **PHP:** PHP is a widely used server-side scripting language that is used to create dynamic web pages. It is the primary language used in this hotel management system.
2. **Apache:** Apache is a widely used web server that can serve web pages to clients over the internet. It is used to host the hotel management system and serve web pages to users.
3. **MySQL:** MySQL is an open-source relational database management system (RDBMS) that is used to store and manage data. It is used to store all data related to the hotel management system, such as customer information, room reservations, employee details, and more.
4. **PDO:** PDO (PHP Data Objects) is a PHP extension that provides a data-access abstraction layer, allowing developers to write code that can work with a variety of databases, including MySQL. It is used to interact with the MySQL database in the hotel management system.
5. **HTML, CSS, JavaScript:** These are standard web technologies used for creating the frontend of the hotel management system. HTML is used for creating the page structure, CSS is used for styling

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the pages, and JavaScript is used to create interactive features such as dropdown menus and modal dialogs.

**6. Windows or Linux:** The hotel management system can be developed on either the Windows or Linux operating systems. Both operating systems can run the necessary software components.

**7. XAMPP:** XAMPP is a free and open-source software package that includes Apache, MySQL, and PHP, as well as other components such as phpMyAdmin and OpenSSL. It is used as a local development environment for creating and testing the hotel management system before it is deployed to a live web server.

**8. SQL** - SQL (Structured Query Language) is a standard programming language used to manage and manipulate relational databases. It is used for tasks such as creating, updating, and querying databases, as well as managing access control and user permissions.

**9. Font Awesome library** – Font Awesome is a popular open-source icon library that provides scalable vector icons that can be customized using CSS. It includes a wide range of icons, such as social media icons, UI icons, and various other icons for web development.

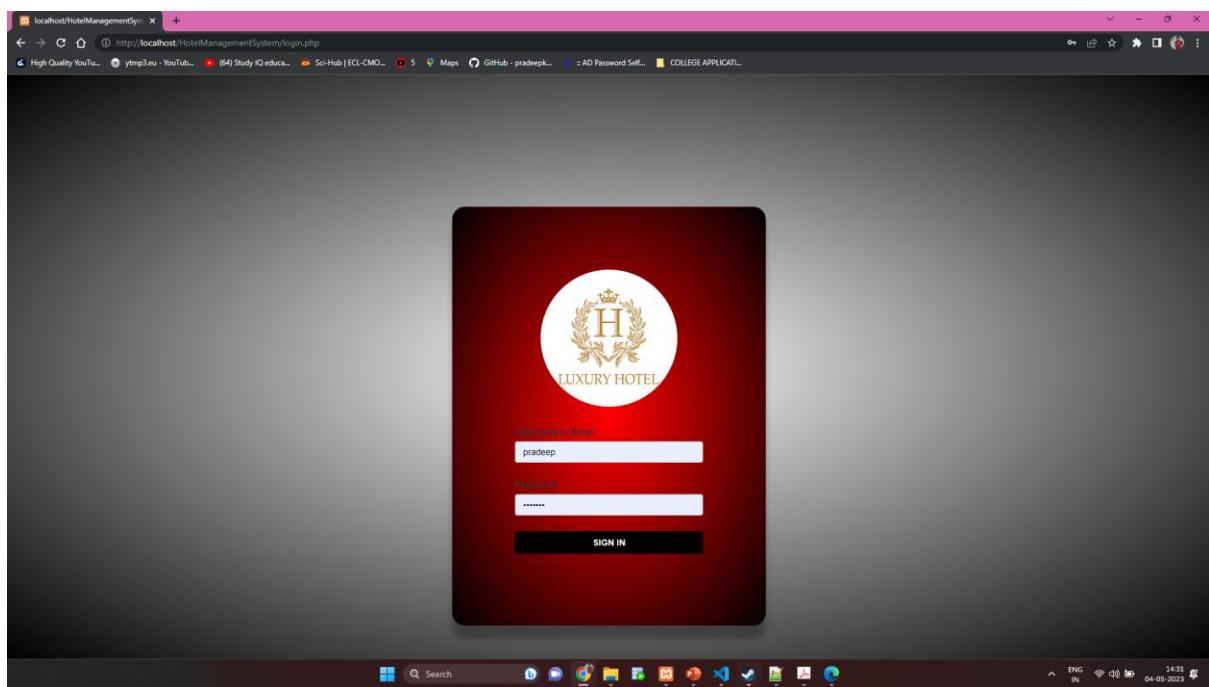
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Overall, this development environment provides a robust and reliable platform for creating a fully functional hotel management system.

## Working Prototype

Shown below are images of the working prototype that were also demonstrated in the class(in-person) presentation:

### Login Page:



### Post Booking view customer details:

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The screenshot shows the Hotel Management System interface. On the left, a sidebar menu includes options like Dashboard, Reservation, View Guests, Manage Rooms (which is selected), Staff Section, Manage Complaints, and Statistics. The main content area has a title 'HOTEL MANAGEMENT SYSTEM'. A modal window titled 'Customer's Detail' is open, displaying information for a customer named Keonin Johnson with contact number 1471246500, email kjohn@gmail.com, ID Card Type Passport, ID Card Number P398789, Address 9226 Rind Avenue, and Remaining Amount \$ 10000. Below the modal is a table titled 'Manage Rooms' showing room details such as Room No, Room Type, Status (Booked or Book Room), Check In/Out buttons, and Action buttons. The table lists rooms from A-102 to K-799. At the bottom, there are navigation buttons for Previous, Next, and a search bar.

## During Check In:

The screenshot shows the Hotel Management System interface. The sidebar menu is identical to the previous screenshot. A modal window titled 'Room - Check In' is open, showing details for a room: Customer Name Kriti Senon, Room Type Family, Room Number A-104, Check In May 25, 2023, Check Out May 27, 2023, and Total Price \$ 9000. An input field for Advance Payment \$ contains the value 5555. A 'Payment & Check In' button is visible. The main content area shows the 'Manage Rooms' table with the same room list as before. The status for room A-104 is now 'Booked' with a green background. Navigation buttons at the bottom are identical to the previous screenshot.

## During Checkout :

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The screenshot shows a Windows desktop environment with a browser window titled "Hotel Management System- Dail". The URL is [http://localhost/HotelManagementSystem/index.php?room\\_manage](http://localhost/HotelManagementSystem/index.php?room_manage). The main interface is titled "HOTEL MANAGEMENT SYSTEM" and shows a "Manage Rooms" section. A modal window titled "Room- Check Out" is open, displaying the following details:

Customer Name	Rick Austin
Room Type	King Sized
Room Number	K-699
Check In	Apr 8, 2023
Check Out	Apr 10, 2023
Total Amount (\$)	16500\$
Remaining Amount (\$)	11500\$

Below this, there is a "Remaining Payment" input field and a "Proceed Checkout" button. The background shows a list of rooms with their status (Booked, Checked In, Checked Out) and actions (Edit, Delete, etc.). The bottom of the screen shows a taskbar with various icons and the date/time as 04-05-2023.

## Staff Management: Change shift feature :

The screenshot shows a Windows desktop environment with a browser window titled "Hotel Management System- Dail". The URL is [http://localhost/HotelManagementSystem/index.php?staff\\_manage](http://localhost/HotelManagementSystem/index.php?staff_manage). The main interface is titled "HOTEL MANAGEMENT SYSTEM" and shows a "Manage Staffs" section. A modal window titled "Change Shift" is open, showing a dropdown menu for "Shift" with the option "5:00 AM - 10:00 AM" selected. Below it is a "Submit" button. The background shows a list of employees with their details (Sr. No., Employee Name, Position, Shift, Date, Salary, etc.) and actions (Edit, Delete, etc.). The bottom of the screen shows a taskbar with various icons and the date/time as 04-05-2023.

## Edit Staff Details :

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The screenshot shows a Windows desktop environment with a taskbar at the bottom. The taskbar includes icons for various applications like File Explorer, Edge, and File Manager. The main window is titled "Hotel Management System- Dail" and displays a "Employee Detail" modal. The modal has fields for First Name (Leonardo), Last Name (Andrade), ID Card Type (State ID), ID Card No (151410099122), Contact Number (1154648156), Address (3456 horse Drive), and Salary (\$). Below the modal is a table listing 13 employees with columns for Sr. No, Employee Name, Shift, From Date, To Date, and Action. The table shows data from 2019 to 2020. At the bottom of the screen, there is a footer bar with the text "DEVELOPED BY PRADEEP KUMAR AND NAVYAPRABHA".

## View Employees Work History:

The screenshot shows a Windows desktop environment with a taskbar at the bottom. The taskbar includes icons for various applications like File Explorer, Edge, and File Manager. The main window is titled "Hotel Management System- Dail" and displays an "Employee History" modal. The modal shows details for employee Salvador Gallegos: Employee Name (Salvador Gallegos) and Employee Salary (24000\$). Below the modal is a table listing 2 entries with columns for Sr. No, Shift, From Date, To Date, and Status. The table shows shifts from Nov 18, 2022, to Nov 17, 2022. At the bottom of the screen, there is a footer bar with the text "DEVELOPED BY PRADEEP KUMAR AND NAVYAPRABHA".

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## Conclusion

In conclusion, the hotel management system we have implemented includes features like user authentication, reservation management, guest management, room management, staff management, complaint management, statistics, search bar, and logout. It allows hotel staff to efficiently manage various operations like room reservations, customer details, room availability, complaints, employee details, and overall hotel expenses. The system also provides useful statistics to aid in decision-making processes. We have used XAMPP to set up a local hosting environment and PHP and javascript as the primary programming language to develop this system.

## Future Works

There are several areas where the hotel management system can be improved and extended in the future. Some of the possible future works are:

- 1. Integration with online Payment Gateway:** The system can be integrated with popular payment gateways to enable online payments and automate billing processes.

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**2. Mobile App:** Developing a mobile app for the hotel management system will enable staff to access the system from anywhere and anytime.

**3. Feedback System:** A feedback system can be added to the system to allow guests to leave feedback on their experience, which can be used to improve the hotel's services.

**5. Social Media Integration:** Integrating the hotel management system with social media platforms can help in marketing the hotel and attracting more customers.

**6. Loyalty Program:** Implementing a loyalty program can help in retaining customers and improving customer satisfaction.

**7. Multiple Language Support:** Adding support for multiple languages can make the system accessible to a wider audience.

Overall, these future works can enhance the functionality of the hotel management system and make it more efficient and user-friendly.

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## Appendix:

<https://draw.io/>

<https://fontawesome.com>

<https://www.apachefriends.org/download.html>

<https://www.w3schools.com/css/>

<https://www.w3schools.com/php/>

<https://www.youtube.com/watch?v=zZ6vybT1HQs>

<https://www.w3schools.com/sql/>

<https://www.geeksforgeeks.org/sql-concepts-and-queries/>

<https://www.geeksforgeeks.org/javascript/>

<https://www.w3schools.com/html/>

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