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Activity 01

Requirements Analysis Activity

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Problem identification and business requirements

The middle-sized hotel requires an IT system to solve issues with managing rooms and reservations, restaurant, guests for rooms, customers in restaurant, staff, hotel inventory, payments, gathering feedback for service improvements and collecting reports about business. Currently, the room reservations and food orders are done manually via phone calls or walk in orders and all the internal tasks are also assigned by verbally. The inner circle interacts poorly with the outer circle of the business process and also within the inner circle of the business that leads to delays and inefficiencies.

The main causes that affect to the business problem are:

- Human errors with manual bookings frequently result in inaccuracies in record keeping, scheduling, and payment processing.
- As the hotel grows, it becomes increasingly difficult to manage the enormous number of guests, restaurant customers and operations, as well as the staff and inventory, which are all managed manually.
- Both the customer and the hotel confront numerous challenges as time-consuming processes take place in every aspect of the operation.
- Lack of real-time data such as room availability, staff availability, and inventory tracking are not centralized for easy access, resulting in complicity when giving new information.
- Not having multiple payment processes, causes the business as a minus point too.
- Delays in communication, both internally and with guests, are an obstacle to corporate growth.

So, to be accurate, spend less time on administrative tasks, boosts staff productivity and maintain high customer satisfaction, the hotel needs to implement an automated online reservation system that includes well-organized rooms and reservation management, restaurant management, user management, staff management, inventory management, payment management, and feedback management, as well as with a centralized database, automated notifications, and report generation.

Users and benefits of the system

User - Guest for room

Benefits -

- 1. The guests can see the available rooms with details and feedbacks when they visit as an unregistered user and get some idea about the hotel.
- 2. The rooms have many amenities like Wi-Fi, air conditioning, private balcony, tea/coffee maker, telephone with IDD facility, hair drier, ironing table, bathrobe and slippers, bathtub/rain shower, complimentary toiletries. So, the guest can search for availability of the rooms by their own and do the reservations for preferred rooms with given amenities.
- 3. Cancel bookings as needed.
- 4. Do the payments through the system with multiple payment options that supports online payments.
- 5. Receive notifications for booking confirmations.
- 6. The guests can provide feedbacks and reviews about the service according to their satisfaction.

User - Customer for restaurant

Benefits -

- 1. Customers can do pre-orders by seeing the digital menu and then come and collect the orders by telling order no.
- 2. Allowing to book tables before come to the restaurant for dining.
- 3. Doing the payments through the system with multiple payment options that supports online payments and receive digital invoices.
- 4. The customers can provide feedbacks and reviews about the service according to their satisfaction.

User – Hotel manager (Admin)

Benefits -

- 1. The manager can get the real-time insights about the hotel operations easily.
- 2. Reduce the workload and helps to optimizes resources.
- 3. By collecting the generated reports, can monitor the staff efficiency, guest satisfaction and identifies what are the service areas that should be improved.
- 4. Easy to track the stock levels and restore them to prevent shortage.
- 5. Reduce delays and confusions in the process by help of instant communication with the staff.
- 6. Automated salary calculations make the payroll system more convenient.
- 7. Task assignments are done through the system and it improves the work efficiency.

User – Accountant

Benefits -

- 1. Tracking all transactions in one place.
- 2. Helps to reduce manual errors in financial records with the help of automated billing and invoicing.
- 3. Easy to find the incomes and loss of the business with each and every detail.

User – Receptionist

Benefits -

- 1. Reducing waiting time by faster check-in and check-out.
- 2. Easily checks the availability of the rooms and assign guests to those within seconds through the system if someone come to the hotel and do the reservations.
- 3. Automated guest records help to catch customer details easily.
- 4. Speed up the payments by instant automated billing and invoice generation.
- 5. Enables the direct communication with the management.

User – Staff member

Benefits –

- 1. Automated task assignment and shift scheduling helps to know the workload allocated to staff member at the beginning of the day easily.
- 2. Instant notifications about any task, request or order.
- 3. Easily apply for the leaves or half-days through the system.
- 4. Enables the direct communication with the management.

User – Restaurant cashier

Benefits –

- 1. Minimizes the errors with billing by the automated billing and invoice generation.
- 2. Able to give faster customer service.
- 3. Accepts multiple payment methods that supports online payments and also allow customers to divide bills among multiple payers as well.

Business process diagram

Guest ask to do reservations		Guests visit the websit,
for rooms and also do the restaurant orders via calls or	-	register to the system and do the reservations and orders.
walk in.		Guests can see the reviews about the service before do bookings.
Receptionist checks the rooms availability with physical records.		Real-time availability check with the automated system.
The menu is checking physically in the restaurant.		The digital menu is available for order.
Do the reservation with		
manual booking entry.	-	Do online booking for the hotel.
Orders are done manually.		Do online pre-orders for pick-ups and table
Do the payment via cash or		Multiple online payment
card that processed manually.		options are available.
Staff and the inventory management is done manually.	-	Automated stock tracking and staff scheduling.
7		
Report generation is done at the end of the month manually.		Real-time report and analytics are available.

Main features of the product that is planning to develop

Room & Reservation Management

- Real-time room availability With this system, guests can check the availability of rooms easily on anytime and anywhere.
- Online bookings and cancellations The users can do the bookings and cancellations through the system.
- Maintenance updates After set the room availability as unavailable, that rooms are not visible in the room reservations page.
- Automated check-in and check-outs Receptionist can process the guest quickly.
- Digital invoices and notifications Automated payment invoices and booking conformation notifications are available.

Restaurant Management

- Digit menu and pre-ordering option Customers can browse the restaurant menu and place orders easily.
- Table reservations option Customers can reserve tables for dining before come the restaurant.
- Real-time order tracking Both customer and the staff can track the order preparation status.
- Automated billing and invoices Increase the customer service speed and reduce the human errors.

User Management

- Role-based access Allowing the person can access the system based on their roles such as guests or customers, staff, receptionist, accountant and admin.
- Secure login and authentication Ensure the security of user data.

 User profile management – Guest or customers can update their personal details and change password as they want.

Staff management

- Automated tasks assignment Daily tasks assigning for the staff members can do efficiently.
- Shift schedules and leave requests Staff members can view shift schedules allocated to the day and request leaves online too.
- Direct communication between staff and the management Good interaction between them and easy to manage.
- Real-time notifications Instant updates with notifications about new tasks, request or order.
- Staff efficiency monitoring with report generation It helps to improve the employee productivity.

Inventory Management

- Stock tracking for amenities and supplies Management of the hotel can get an updated report about inventory stock.
- Restocking efficiently Allowing to check the quantities of inventories and fill the low stocks timely.
- Low stock alerts to replenishments Automated notifications to prevent shortage and improve the business process efficiency.

Payment Management

- Multiple online payment options The guest of the hotel and customers of the restaurant can pay with credit/debit cards, digital wallets.
- Automated billing and invoice generation Ensure the accuracy of the transactions.

- Report generation of all payments It helps the accountant to track and manage all financial records very easily.
- Split billing option The customers of the restaurant can pay bills with multiple payers too.

Feedback Management

- Updated method of feedback collection With this system, Guests and restaurant customers can give their valuable feedbacks directly and easily.
- Feedbacks report –The hotel management can directly grab the feedbacks from the guests and customers with their satisfaction levels and that will help to improve the service quality.

User requirements

Guest (room booking) requirements-

- Register to the system and login securely with their own credentials.
- View feedbacks about the hotel rooms and search available rooms with amenities they need to have.
- Do reservations and cancel reservations as needed.
- Receive automated booking confirmation notifications and automated invoices.
- Provide review about hotel service.

Customer (restaurant) requirements –

- View the digital menu and do the pre-orders.
- Reserve tables for dining before come the place.
- Track real-time order status.

- Make online payments securely.
- Receiving automated invoices with the payment summary.
- Provide feedbacks about the restaurant service.

Hotel Manager (Admin) requirements -

- Track all the rooms, foods, restaurant orders, reservations, stock, staff, employee leaves, payments and feedbacks real-time data quickly.
- Assign and manage staff operations efficiently.
- View and analyze the reports to improve business process.
- Manage stock levels of the hotel easily.
- Automated salary calculations to make the payroll system more convenient.
- Communicate directly with the hotel management at any time.

Receptionist requirements -

- Check the room availabilities with check-in and check-out processes and do the walk-in room reservations.
- Generate automated invoices for guests.
- Directly communicate with the hotel management.

Accountant requirements -

- Manage transactions easily.
- Generate financial reports quickly.
- Ensure the accuracy in billing and invoicing.
- Track all the payments accurately.

Staff member requirements -

- View assigned tasks for the day and work schedules.
- Received real-time notifications about new tasks, requests and orders.
- Applying for the leaves.
- Communicate directly with the hotel management.

Restaurant cashier requirements -

- Do the restaurant orders and payments accurately.
- Generate automated invoices for customers.
- Accept multiple online payment methods including split billing with multiple payers.

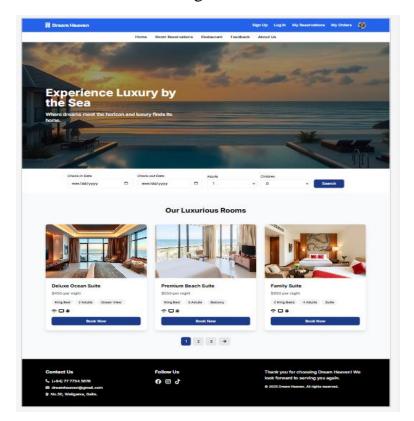
These are the functional user requirements and there are some other non-functional user requirements too. They are best performance, security, usability, scalability, reliability and maintainability.

Project name:

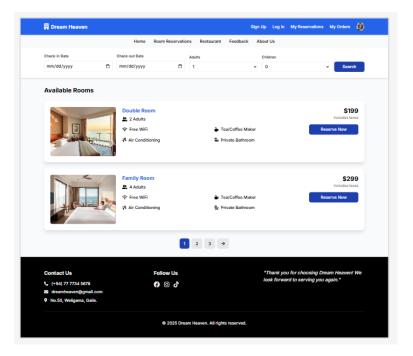
Dream Heaven.

GUIs

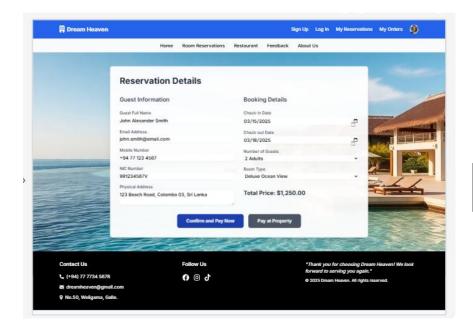
Room reservation management GUIs



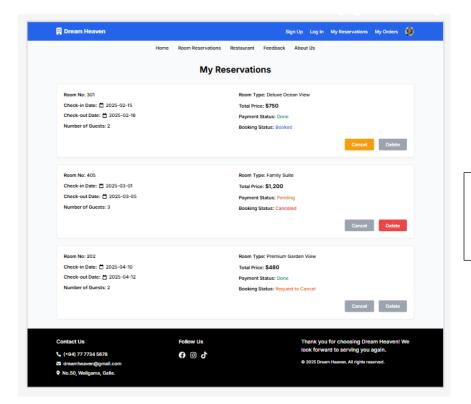
'Rooms page' for guests.



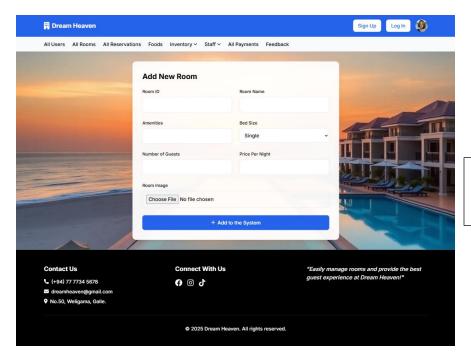
'Available rooms page' for guests for their searched check-in and check-out dates.



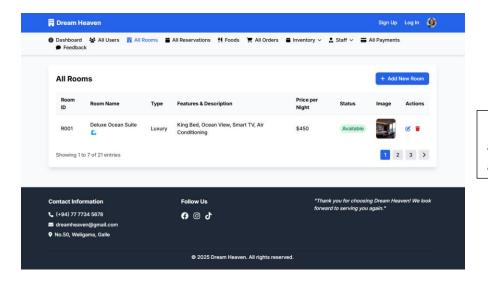
Reservation details page.



'My reservations page' for guests to track all the room reservations done by themselves.

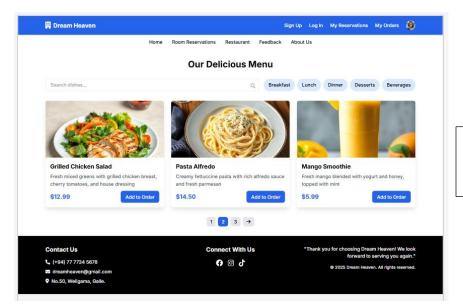


'Add new room page' for admin to add new rooms to the system.

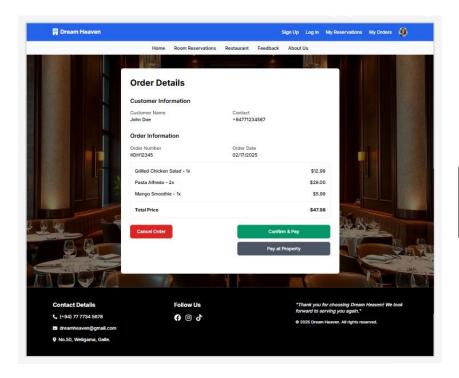


'All rooms page' for admin to view, edit and delete room

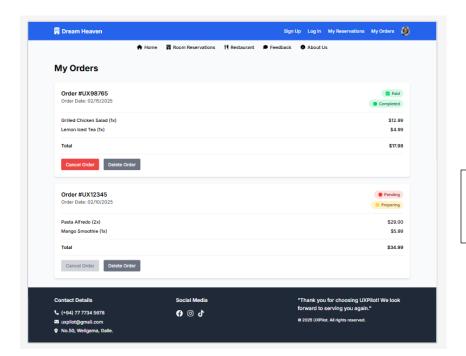
Restaurant management GUIs



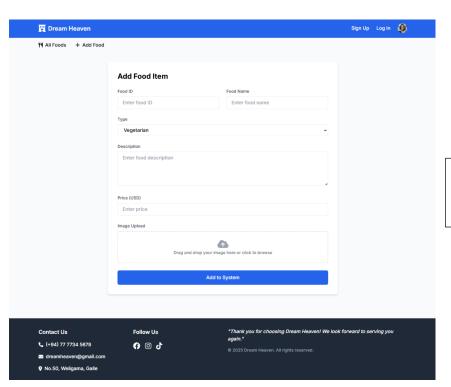
'Restaurant page' with menu for customers to order.



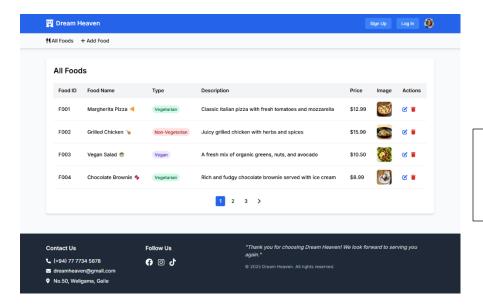
'Order details page' for customers before confirm and do the



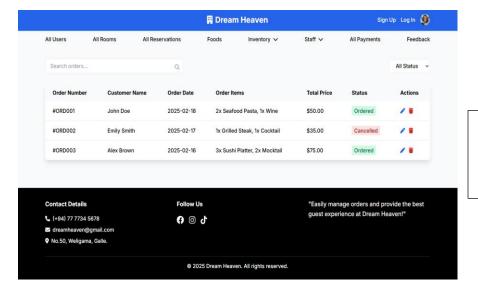
'My orders page' for customers to track the order and view order



'Add room page' for admin to add new rooms to the system.

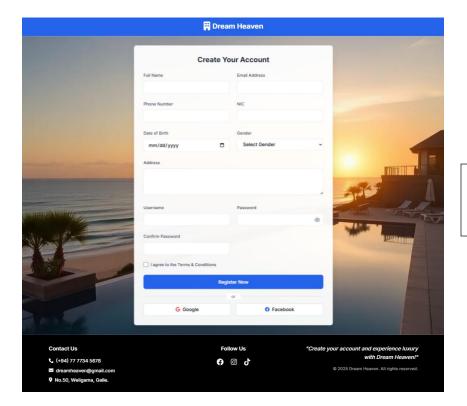


'All foods page' for admin to view, edit and delete food items to the system.

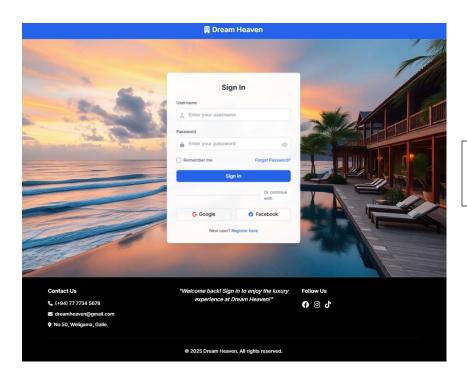


'All orders page' for admin to view, edit, track status of the order and delete orders.

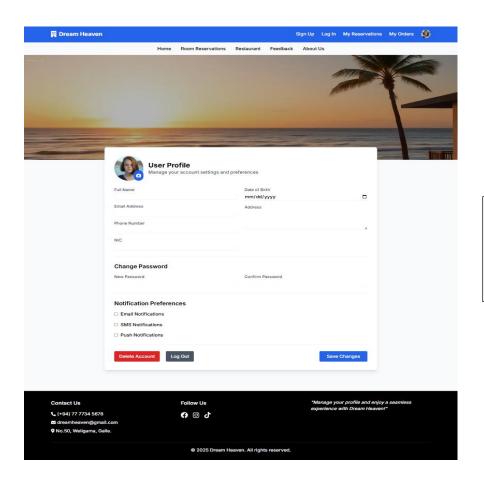
User management GUIs



'Create user account page' for guests and customers to register to

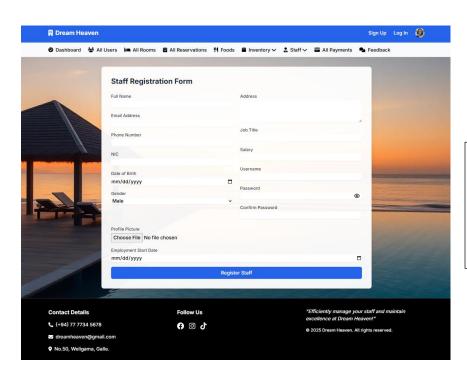


'Sign In page' for all users of the system to login to the system.

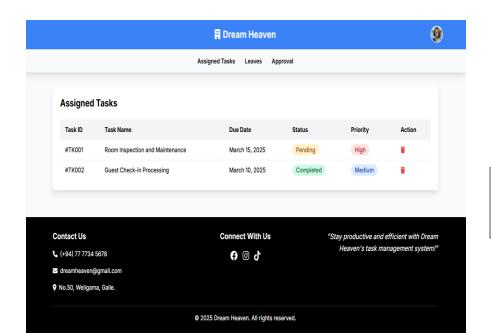


'User profile page' for users to update personal details, log out, change password and delete account.

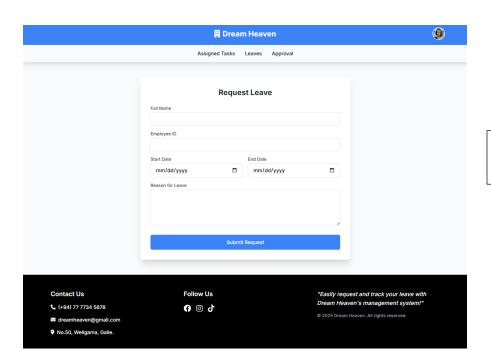
Staff management GUIs



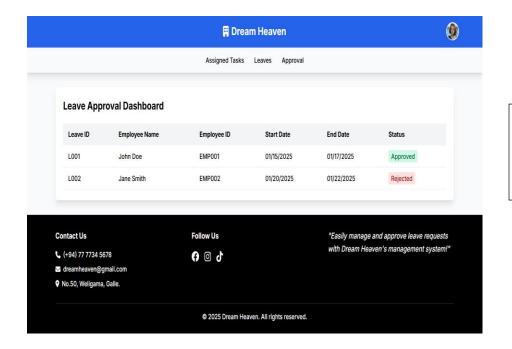
'Staff registration form page' to register staff members, accountant, receptionist, and restaurant cashier to the system.



'Assigned tasks page' for the staff member.

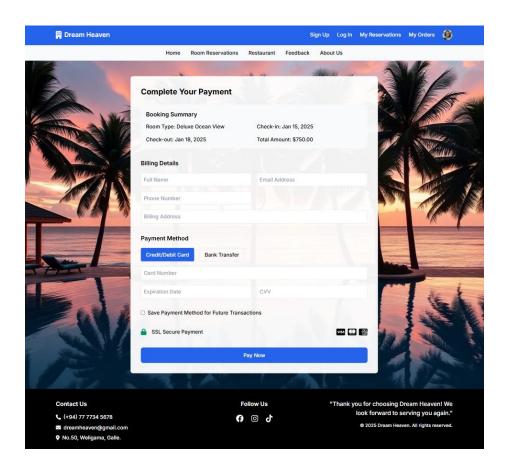


'Request leave page' for staff member.



'Leave approval page' for admin to track all the leaves of the employees.

Payment management GUIs

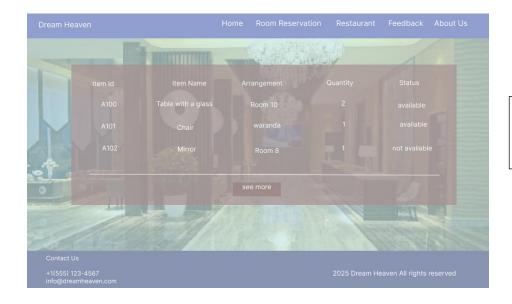


'Payment page' to do the online payment.

Inventory management GUIs

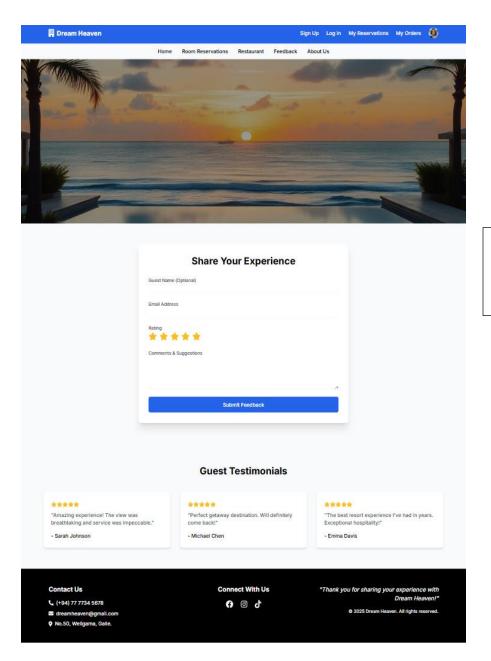


'Inventory categories page' to navigate to the stocks.



'All inventories page' to track the stock quickly.

Feedback management GUIs



'Feedback page' for guests and customers to give the reviews about the service.

Database tables

Rooms

Column Name	Data Type	Description
roomID	INT PRIMARY KEY	Unique ID for each room.
	(AUTO_INCREMENT)	
roomName	VARCHAR(50)	Name of the room.
roomType	VARCHAR(50)	Type of the room.
Amenities	VARCHAR(1000)	Features in the room.
Price	DECIMAL(10,2)	Price per night.
Status	VARCHAR(20)	Status of availability.
ImageURL	VARCHAR(300)	URL for the room's image.

Reservations

Column Name	Data Type	Description	
reservationID	INT PRIMARY KE	Y Unique id for each reservation.	
	(AUTO_INCREMENT)		
userID	INT (FOREIGN KEY)	ID of the guest who make the	
		reservation.	
roomID	INT (FOREIGN KEY)	Room no.	
checkInDate	DATE	Check-in-date of the guest.	
checkOutDate	DATE	Check-out-date of the guest.	
rStatus	VARCHAR(50)	Status of the reservation.	
paymentStatus	VARCHAR(50)	Status of the payment.	
RoomTypes	VARCHAR(50)	Types of the room reserved.	
totalPrice	DECIMAL(10,2)	Total price for the stay.	

Foods

Column Name	Data Type	Description	
foodID	INT PRIMARY KEY	Unique food item ID.	
	(AUTO_INCREMENT)		
foodName	VARCHAR(200)	Food name.	
foodType	VARCHAR(100)	Type of the food (Vegetarian or non-	
		vegetarian/beverage/breakfast/lunch/dinner).	
Description	VARCHAR(1000) Description about the food.		
fPrice	DECIMAL(10,2)	Price of the food.	

Orders

Column Name	Data Type	Description
orderID	INT PRIMARY KEY	Unique ID for the order
	(AUTO_INCREMENT)	
userID	INT (FOREIGN KEY)	ID of the guest who make
		the order.
foodID	INT (FORIGN KEY)	ID of the ordered food item.
orderQuntity	INT	Quantity of the food item.
orderStatus	VARCHAR(50)	Status of the order.
orderDate	DATE	Ordered date.

Users

Column Name	Data Type	Description
userID	INT PRIMARY KEY	Unique ID for the user of the
	(AUTO_INCREMENT)	system.
fullName	VARCHAR(150)	User's full name.
email	VARCHAR(250)	User's e-mail address.
dateOfBirth	DATE	Date of birth of the user.
phoneNumber	VARCHAR(20)	User's contact number.
address	VARCHAR(1000)	User's address.
NIC	VARCHAR(20)	NIC no of the user.

Inventory

Column Name	Data Type	Description
ItemID	INT PRIMARY KEY	Unique ID for inventory
	(AUTO_INCREMENT)	
ItemName	VARCHAR(150)	Inventory item's name
Category	VARCHAR(100)	Category of the inventory item
Quantity	INT	Stock of each items
invStatus	VARCHAR(50)	Status of the item.
Arrangement	VARCHAR(200)	Where is the item.

Feedback

Column Name	Data Type	Description
feedbackID	INT PRIMARY KEY	Unique ID for each feedback.
	(AUTO_INCREMENT)	
guestName	VARCHAR(200)	Guest's name.
Email	VARCHAR(300)	Guest's e-mail.
rating	INT	Guest's rating for the service.
comments	VARCHAR(1000)	Guest's feedback.

Staff

Column	Data Type	Description
staffID	INT PRIMARY KEY	Unique ID for staff member.
	(AUTO_INCREMENT)	
fullName	VARCHAR(200)	Full name of the staff member.
role	VARCHAR(100)	Role of the job.
phoneNumber	VARCHAR(20)	Contact number of the staff
		member.
salary	DECIMAL(10,2)	Monthly salary for the staff
		member.

Leaves

Column Name	Data Type	Description
leaveID	INT PRIMARY KEY	Unique ID for each leave.
	(AUTO_INCREMENT)	
fullName	VARCHAR(100)	Name of the staff member.
staffID	INT (FOREIGN KEY)	ID of the staff member who take
		a leave.
startDate	DATE	Start date of leave.
endDate	DATE	End date of leave.
reason	VARCHAR(1000)	Reason for leave.
leaveStatus	VARCHAR(200)	Status of leave (Approved or
		rejected).

Tasks

Column Name	Data Type	Description
taskID	INT PRIMARY KEY	Unique ID for each task.
	(AUTO_INCREMENT)	
taskName	VARCHAR(500)	Name of the task.
dueDate	DATE	End date of the task.
taskStatus	VARCHAR(100)	Status of the task (Pending or
		completed).

Payment

Column Name	Data Type	Description
paymentID	INT PRIMARY KEY	Unique ID for payment.
	(AUTO_INCREMENT)	
userID	INT (FOREIGN KEY)	ID of the guest who make the
		payment.
amount	DECIMAL(10,2)	Total amount of the payment.
paymentMethod	VARCHAR(50)	Payment method (Credit card
		or Bank transfer).
paymentDate	DATE	Payment date.
pStatus	VARCHAR(50)	Status of the payment (Paid,
		Failed or Pending).