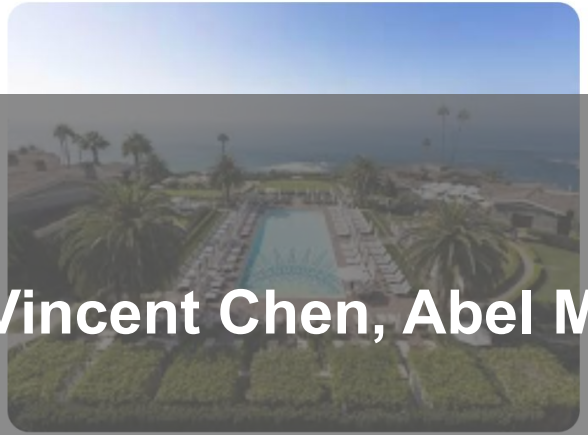
Last Resort Hotel

Dashboard Reservations Rooms Guests Events Billing Queries

Employee Profile

Employee Sign In | Customer Sign In



A Global Celebration

Find your soul place.

Sign Up for NewsLetter

GROUP E

Chenyang Kong, Lei Chen, Vincent Chen, Abel Ma

Find a Hotel Near You

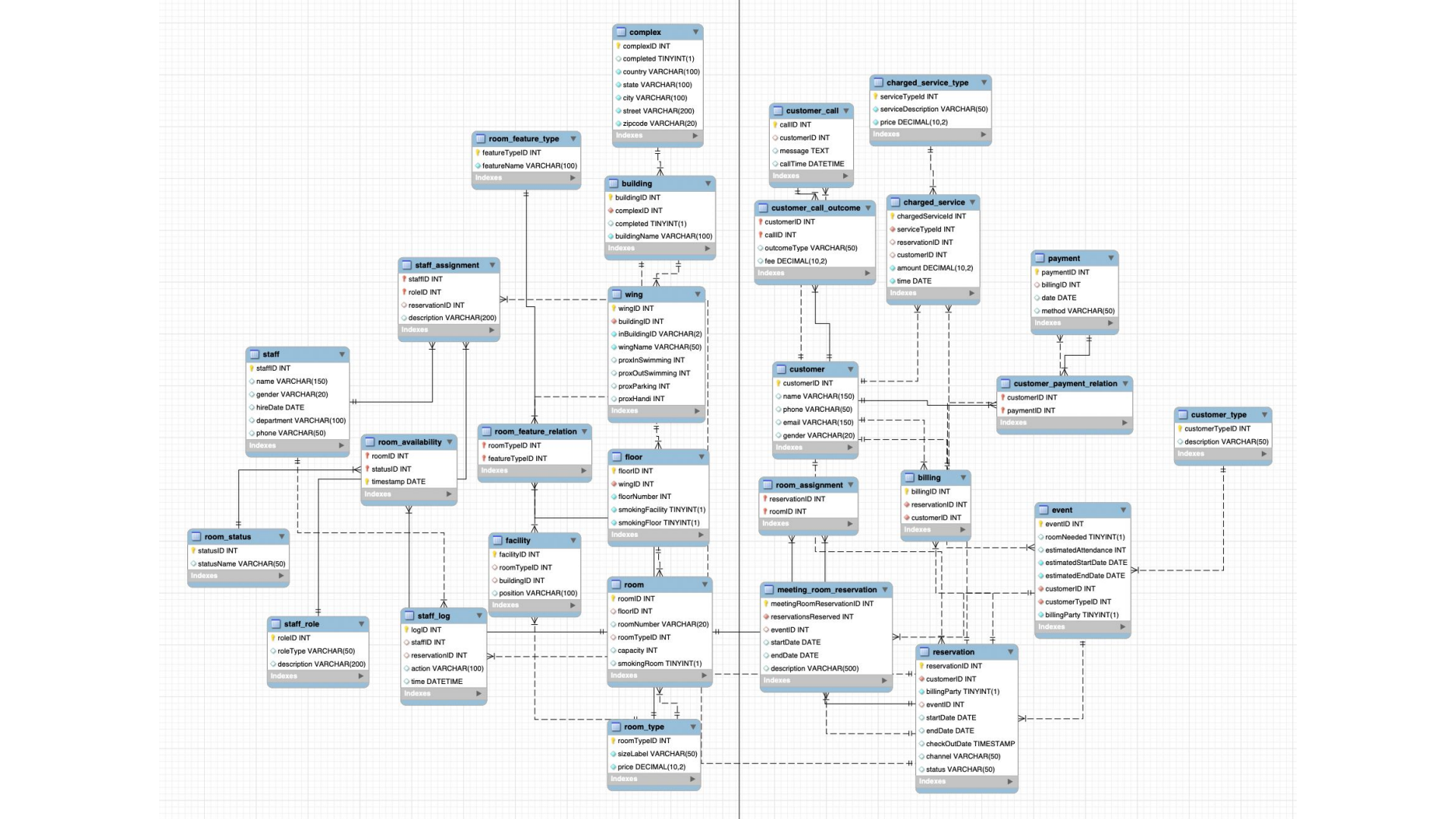
The Location
1234 Garden Boulevard
City, ZZ 98765

Call to action →

Assumptions

Focusing on the employee usage of the data system, we assume some of the information are manually inserted and some information are directed in through specific venus, such as payment system and third-party reservation systems.

Given the functionalities and details of this system, this data system is mainly used for employees who directly interact with customers.


complex
complexID INT
completed TINYINT(1)
country VARCHAR(100)
state VARCHAR(100)
city VARCHAR(100)
street VARCHAR(200)
zipcode VARCHAR(20)
Indexes
room_feature_type
featureTypeID INT
featureName VARCHAR(100)
Indexes
building
buildingID INT
complexID INT
completed TINYINT(1)
buildingName VARCHAR(100)
Indexes
staff_assignment
staffID INT
roleID INT
reservationID INT
description VARCHAR(200)
Indexes
wing
wingID INT
buildingID INT
inBuildingID VARCHAR(2)
wingName VARCHAR(50)
proxInSwimming INT
proxOutSwimming INT
proxParking INT
proxHandi INT
Indexes
staff
staffID INT
name VARCHAR(150)
gender VARCHAR(20)
hireDate DATE
department VARCHAR(100)
phone VARCHAR(50)
Indexes
room_availability
roomID INT
statusID INT
timestamp DATE
Indexes
room_feature_relation
roomTypeID INT
featureTypeID INT
Indexes
floor
floorID INT
wingID INT
floorNumber INT
smokingFacility TINYINT(1)
smokingFloor TINYINT(1)
Indexes
room_status
statusID INT
statusName VARCHAR(50)
Indexes
facility
facilityID INT
roomTypeID INT
buildingID INT
position VARCHAR(100)
Indexes
room
roomID INT
floorID INT
roomNumber VARCHAR(20)
roomTypeID INT
capacity INT
smokingRoom TINYINT(1)
Indexes
staff_role
roleID INT
roleType VARCHAR(50)
description VARCHAR(200)
Indexes
staff_log
logID INT
staffID INT
reservationID INT
action VARCHAR(100)
time DATETIME
Indexes
room_type
roomTypeID INT
sizeLabel VARCHAR(50)
price DECIMAL(10,2)
Indexes
customer_call
callID INT
customerID INT
message TEXT
callTime DATETIME
Indexes
charged_service_type
serviceTypeId INT
serviceDescription VARCHAR(50)
price DECIMAL(10,2)
Indexes
customer_call_outcome
customerID INT
callID INT
outcomeType VARCHAR(50)
fee DECIMAL(10,2)
Indexes
charged_service
chargedServiceId INT
serviceTypeId INT
reservationID INT
customerID INT
amount DECIMAL(10,2)
time DATE
Indexes
payment
paymentID INT
billingID INT
date DATE
method VARCHAR(50)
Indexes
customer
customerID INT
name VARCHAR(150)
phone VARCHAR(50)
email VARCHAR(150)
gender VARCHAR(20)
Indexes
customer_payment_relation
customerID INT
paymentID INT
Indexes
customer_type
customerTypeID INT
description VARCHAR(50)
Indexes
room_assignment
reservationID INT
roomID INT
Indexes
billing
billingID INT
reservationID INT
customerID INT
Indexes
event
eventID INT
roomNeeded TINYINT(1)
estimatedAttendance INT
estimatedStartDate DATE
estimatedEndDate DATE
customerID INT
customerTypeID INT
billingParty TINYINT(1)
Indexes
meeting_room_reservation
meetingRoomReservationID INT
reservationsReserved INT
eventID INT
startDate DATE
endDate DATE
description VARCHAR(500)
Indexes
reservation
reservationID INT
customerID INT
billingParty TINYINT(1)
eventID INT
startDate DATE
endDate DATE
checkOutDate TIMESTAMP
channel VARCHAR(50)
status VARCHAR(50)
Indexes

#	Query Name	Purpose & Business Value	Database Tables Involved
1	**Monthly Revenue Trend**	Track revenue performance over time to identify trends and seasonal patterns for strategic planning	`reservation, room_assignment, room, room_type, charged_service`
2	**Service Type Analysis**	Understand which hotel services are most popular and profitable to optimize service offerings	`charged_service_type, charged_service, reservation, customer`
3	**Top Revenue Customers**	Identify VIP customers for targeted marketing and loyalty programs to maximize customer lifetime value	`customer, reservation, room_assignment, room, room_type, charged_service`
4	**Booking Channel Analysis**	Evaluate effectiveness of different booking channels for marketing optimization and budget allocation	`reservation, room_assignment, room, room_type`
5	**Room Type Popularity**	Analyze demand for different room types to optimize pricing and inventory management	`room_type, room, room_assignment, reservation, customer`
6	**Customer Booking Frequency**	Measure customer loyalty and identify repeat customers for retention strategies	`customer, reservation`
7	**Average Stay Duration**	Understand guest behavior patterns to improve room allocation and pricing strategies	`room_type, room, room_assignment, reservation`
8	**Monthly Revenue Comparison**	Comprehensive monthly performance analysis with service diversity metrics for business intelligence	`reservation, room_assignment, room, room_type, charged_service`

8 Management Queries Implementation

Hotel Management System - Data Analysis & Reporting

Implementation Strategy & Technical Details

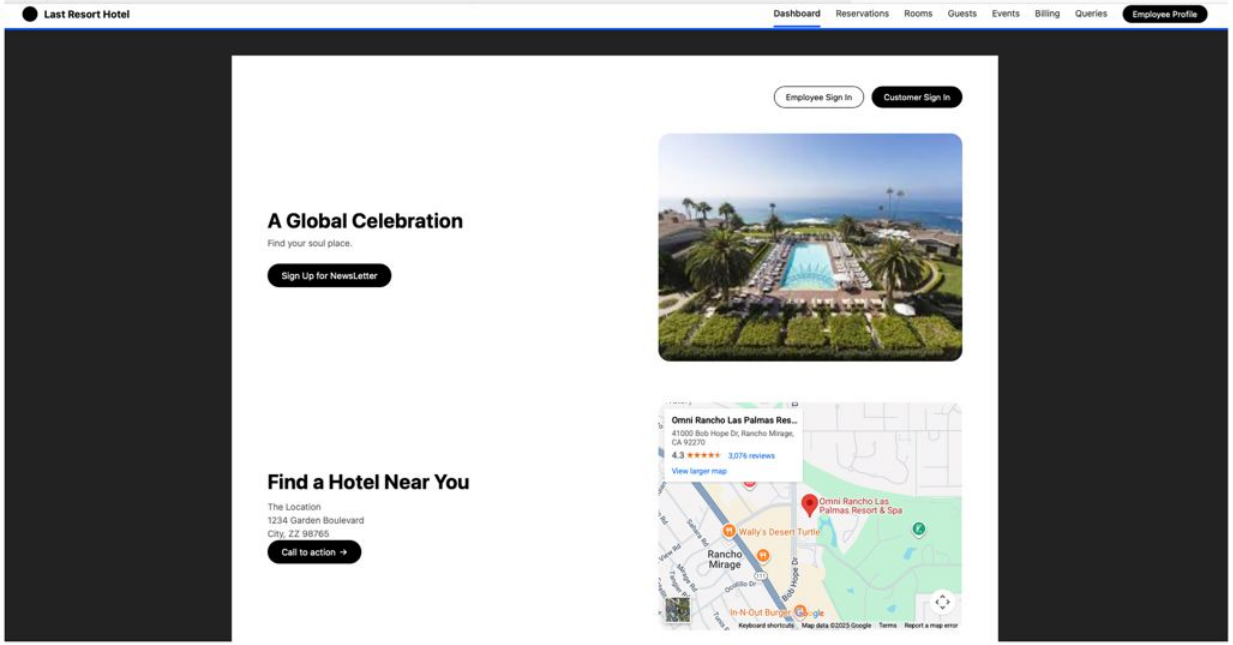
1. SQL Clauses & Operators

- **GROUP BY:** Group data by categories (month, customer, room type, channel)
- **LEFT JOIN:** Preserve all records from primary table, include NULLs for missing matches
- **INNER JOIN:** Return only matching records (Query 7)
- **HAVING:** Filter groups after aggregation (e.g., total_revenue > 0)
- **WHERE:** Filter rows before aggregation
- **ORDER BY:** Sort results (DESC for highest first)

2. Aggregate Functions

- **COUNT:** Count records (with DISTINCT for unique values)
- **SUM:** Calculate total revenue, amounts
- **AVG:** Calculate average stay duration, amounts
- **MIN/MAX:** Find earliest/latest dates, min/max stay days

Live Demo



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