
DOCUMENTATION

By

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ACKNOWLEDGMENT

We are really grateful because we managed to complete our project within the time given by our teacher [Abid Ali]. This assignment cannot be completed without the effort and co-operation from our group members, Group members **[Kashish Devi and Reesha Khemani]**.

We also sincerely thank our teacher [Abid Ali] for the guidance and encouragement in finishing this project and also for teaching us in this course.

Last but not the least, we would like to express our gratitude to our friends and respondents for the support and willingness directly or indirectly to spend some times with us to fill in the questionnaires.

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Introduction

The **Hotel Management System** is a database-driven web project designed to streamline and automate the day-to-day operations of a hotel. This system helps manage different modules such as customer information, room bookings, staff details, payments, services, and feedback. The system is developed using **HTML, CSS, JavaScript** for the frontend and uses **Neon PostgreSQL** as the backend database. API integration is done using command-line tools and GitHub for version control. This project demonstrates how modern web technologies can be used in real-life business scenarios to build powerful, user-friendly, and efficient systems.

Objectives of the project

The objective of this project is to build a fully functional hotel management system that handles key hotel operations such as customer records, room bookings, employee data, payments, services, feedback, and inventory. It uses a PostgreSQL database hosted on Neon.tech, with RESTful API endpoints allowing users to view, insert, update, and delete data.

The project demonstrates backend integration using Node.js and Express focusing on secure and efficient communication between the frontend and the database. HTML, CSS, and JavaScript are used to create an interactive interface that communicates with the backend using APIs.

It also involves using GitHub for version control and the command prompt for server and database tasks. Additionally, the project includes HTML reports with visual charts to represent data, simulating realworld hotel operations and enhancing full-stack development skills.









Topic of Our Project

The title of our project is "**Hotel Management System using Database and API Integration.**" This project focuses on creating a fully functional hotel management system that automates and streamlines the daily operations of a hotel. It is developed using a PostgreSQL database for storing and managing data, and Node.js with Express.js for building the backend APIs that handle all the business logic and communication between the frontend and the database. The system allows hotel staff to efficiently manage essential functions such as customer check-in and check-out, room reservations, employee records, service tracking, inventory management, billing, payments, and feedback collection. All data is securely stored in a cloud-hosted PostgreSQL database (such as on Neon.tech), ensuring real-time access and updates through API integration. This digital solution replaces traditional manual processes, reducing errors and improving service quality. Furthermore, the system includes data reporting and visualization features, which provide a better understanding of hotel performance through charts and graphical representations. The aim of the project is to deliver a userfriendly, scalable, and efficient platform for managing hotel operations using modern web technologies and best practices in database integration.

Hardware/ Software **Requirements**

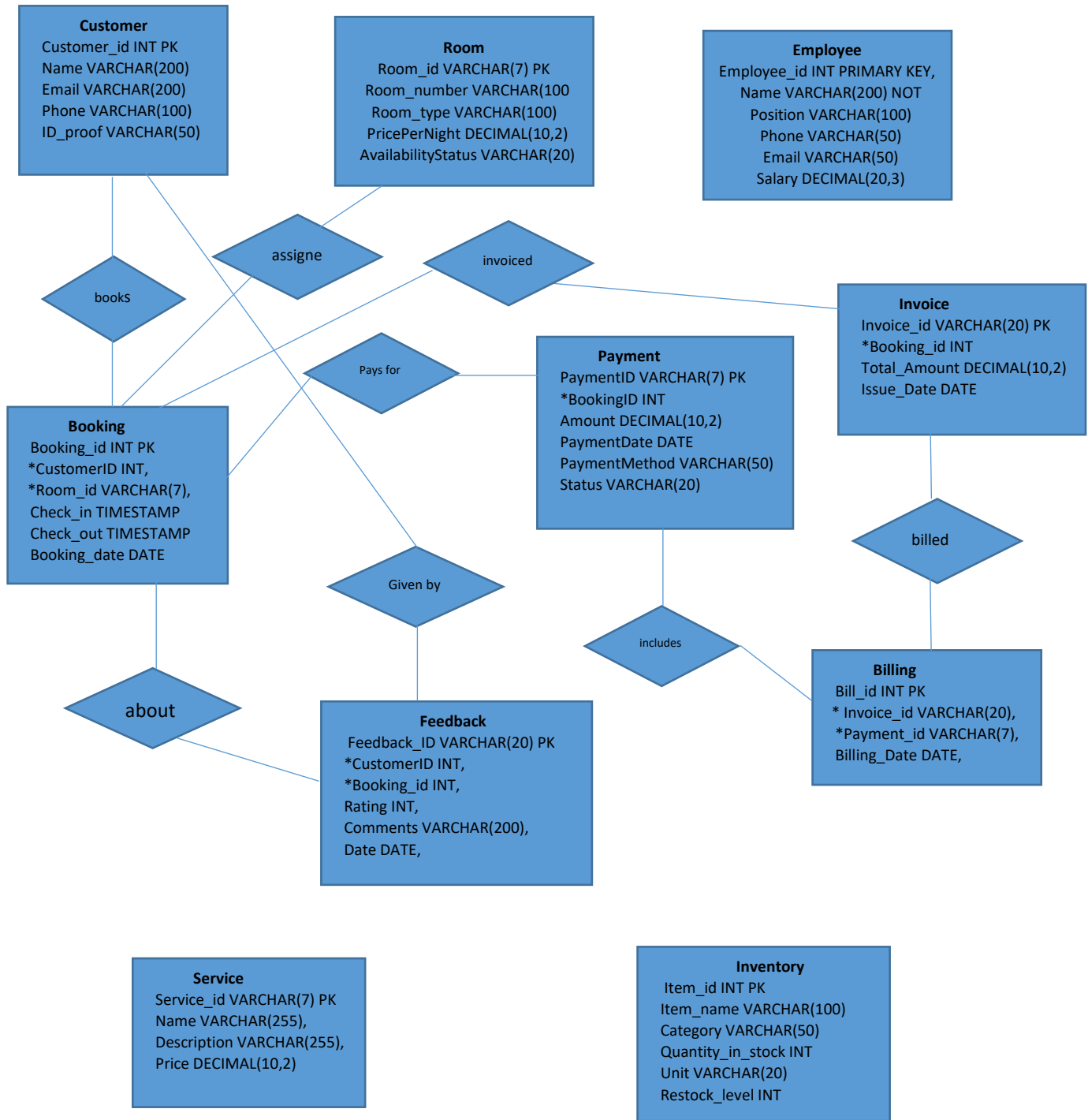
The project requires a computer or laptop with internet access, a minimum of 4 GB RAM (8 GB recommended), and an Intel i3 processor or higher. It is compatible with Windows 10, Linux, or macOS. For software, we used Neon.tech for cloud-based PostgreSQL as the database, and developed the frontend using HTML5, CSS3, and JavaScript. The backend is built with Node.js and Express.js. Visual Studio Code was used as the code editor, with Postman or browserbased endpoints for API testing. Git and GitHub were used for version control, and the command line interface was accessed via Command Prompt or Terminal.

WORK ANALYSIS

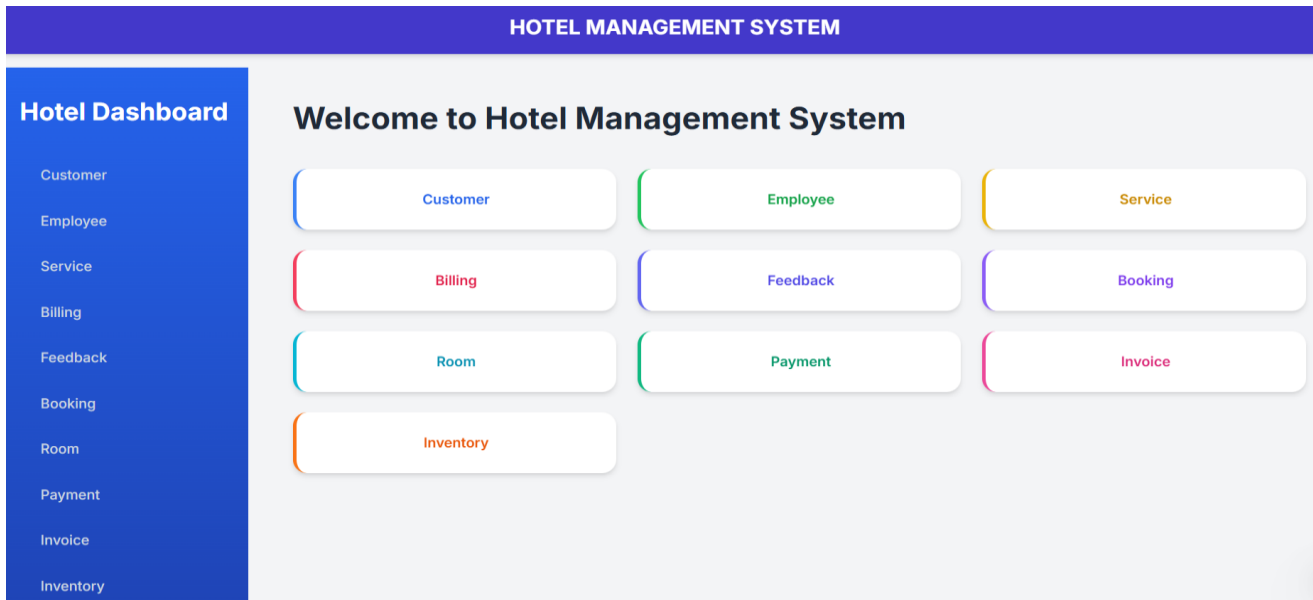
Task	Kashish	Reesha
Analysis		
Design		
Coding		
Testing		
Documentation		

ERD DIAGRAM

ERD DIAGRAM



Webpage:



Customer Directory

Add New Customer

Customer ID	Name	Email	Phone	ID Proof
1	Neha Khemani	neha.khemani@gmail.com	03462349875	CNIC
2	Kashish Bangeja	kashish.bangeja@gmail.com	03152679345	Passport
3	Reesha Khemani	reesha.khemani@gmail.com	03049826781	Passport
4	Ritika Talreja	ritika.talreja@gmail.com	03216748956	CNIC
5	Samo Talreja	samo.talreja@gmail.com	03314327894	Passport
6	Saleena Ahuja	saleena.ahuja@gmail.com	03413568972	CNIC
7	Anchal Varsha	anchal.varsha@gmail.com	03145789234	Passport
8	Varsha Panjwani	varsha.panjwani@gmail.com	03067894512	Passport
9	Vandana Rehjra	vandana.rehjra@gmail.com	03492837465	CNIC
10	Adnan Shaikh	adnan.shaikh@gmail.com	03164782953	Passport
11	Noman Siddiqui	noman.siddiqui@gmail.com	03324781695	CNIC
12	Zeeshan Ali	zeeshan.ali@gmail.com	03014827649	Passport
13	Hassan Jafri	hassan.jafri@gmail.com	03445718392	CNIC

[Hotel Management System]

Add New Customer

Name

Email

Phone

ID Proof

Cancel

Save Customer

Name		
Neha Kher		349875
Kashish Ba		679345
Reesha Kh		826781
Ritika Talre		748956
Samo Talre		327894
Saleena Al		568972
Anchal Var		789234
Varsha Pa		894512
Vandana R		837465
Adnan Shaikh	adnan.shaikh@gmail.com	03164782953

Employee:

Employee Directory

Add New Employee

Employee ID	Name	Email	Phone	Department	Salary
200	Ayesha Khan	Manager	ayesha.khan@hotel.com	03111222333	95000.000
100	Ali Raza	Receptionist	ali.raza@hotel.com	03213456789	45000.000
204	Sara Malik	Housekeeping	sara.malik@hotel.com	03331234567	30000.000
210	Zain Ahmed	Chef	zain.ahmed@hotel.com	03442345678	70000.000
245	Fatima Noor	Accountant	fatima.noor@hotel.com	03011234567	60000.000
101	Hamza Sheikh	Bellboy	hamza.sheikh@hotel.com	03551234567	28000.000
301	Noor Jahan	Concierge	noor.jahan@hotel.com	03661234567	40000.000
2301	Bilal Qureshi	IT Support	bilal.qureshi@hotel.com	03771234567	50000.000
320	Komal Rizvi	Waiter	komal.rizvi@hotel.com	03881234567	25000.000
350	Tariq Shah	Security Guard	tariq.shah@hotel.com	03991234567	35000.000
330	Hira Ali	Receptionist	hira.ali@hotel.com	03012349876	46000.000
410	Asim Javed	Chef	asim.javed@hotel.com	03129876543	72000.000
450	Mehwish Tariq	Housekeeping	mehwish.tariq@hotel.com	03237654987	31000.000

Add New Employee

Name

Email

Phone

Department

Cancel

Save Employee

Service:

Service Directory

Add New Service

Service ID	Service Name	Description	Price
SVC001	Room Cleaning	Daily cleaning of the room	25.00
SVC002	Laundry Service	Washing and ironing clothes	15.50
SVC003	Airport Pickup	Pickup from the airport	40.00
SVC004	Breakfast	Continental breakfast service	10.00
SVC005	Spa Session	One-hour relaxing spa session	60.00
SVC006	Gym Access	Full day gym access	20.00
SVC007	Dinner Service	Three-course dinner meal	35.00
SVC008	City Tour	Half-day guided city tour	50.00
SVC009	Late Checkout	Checkout at 4 PM instead of noon	30.00
SVC010	Baby Sitting	In-room babysitting service	45.00

[Hotel Management System]

Add New Service

Service ID	Service Name	Price
SVC001	Room Cleaning	25.00
SVC002	Laundry Service	15.50
SVC003	Airport Transfer	40.00
SVC004	Breakfast Service	10.00
SVC005	Spa Session	60.00
SVC006	Gym Access	20.00
SVC007	Dinner Service	35.00
SVC008	City Tour	50.00
SVC009	Late Check-out	30.00
SVC010	Baby Sitting	45.00

Add New Service

Service Name

Description

Price

Duration

Cancel

Save Service

Billing:

Billing Directory

+ Add New Billing

Billing ID	Booking ID	Total Amount	Billing Date
5000	I001	P1001	2025-06-12T00:00:00.000Z
5001	I002	P1002	2025-06-17T00:00:00.000Z
5002	I003	P1003	2025-06-11T00:00:00.000Z
5003	I004	P1004	2025-06-15T00:00:00.000Z
5004	I005	P1005	2025-06-18T00:00:00.000Z
5005	I006	P1006	2025-06-21T00:00:00.000Z
5006	I007	P1007	2025-06-23T00:00:00.000Z
5007	I008	P1008	2025-06-22T00:00:00.000Z
5008	I009	P1009	2025-06-24T00:00:00.000Z
5009	I010	P1010	2025-06-25T00:00:00.000Z
5010	I011	P1011	2025-06-26T00:00:00.000Z
5011	I012	P1012	2025-06-27T00:00:00.000Z

ing

Booking ID

I001

I002

I003

I004

I005

I006

I007

I008

Add New Billing

Booking ID

Total Amount

Billing Date

mm/dd/yyyy

June 2025

Su

Mo

Tu

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Cancel

Save Billing

FB-013-M

13

1013

2

Room smelled musty upon arrival.

2025-06-17T00:00:00.000Z

Feedback:

Feedback Directory

+ Add Feedback

Feedback ID	Customer ID	Booking ID	Rating	Comments	Date
FB-001-A	1	1011	5	Excellent service and friendly staff.	2025-06-01T00:00:00.000Z
FB-002-B	2	1022	4	Good experience but room was a bit noisy.	2025-06-03T00:00:00.000Z
FB-003-C	3	1033	3	Average stay, food could be better.	2025-06-05T00:00:00.000Z
FB-004-D	4	1044	5	Loved the spa and gym facilities!	2025-06-07T00:00:00.000Z
FB-005-E	5	1055	2	Room was not cleaned properly.	2025-06-09T00:00:00.000Z
FB-006-F	6	1066	4	Helpful staff and quick service.	2025-06-10T00:00:00.000Z
FB-007-G	7	1077	5	Great location and clean rooms.	2025-06-11T00:00:00.000Z
FB-008-H	8	1088	3	Breakfast options were limited.	2025-06-12T00:00:00.000Z
FB-009-I	9	1099	4	Comfortable beds and quiet environment.	2025-06-13T00:00:00.000Z
FB-010-J	10	1010	5	Will definitely come back again!	2025-06-14T00:00:00.000Z
FB-011-K	11	1021	4	Nice ambiance but a bit pricey.	2025-06-15T00:00:00.000Z
FB-012-L	12	1012	5	Exceptional customer service!	2025-06-16T00:00:00.000Z
FB-013-M	13	1013	2	Room smelled musty upon arrival.	2025-06-17T00:00:00.000Z

Customer ID

e.g., 201

Booking ID

e.g., BK1010

Rating (1–5)

Comments

Your feedback...

Date

mm/dd/yyyy

Cancel

Submit Feedback

Booking:

Add New Booking					
Booking ID	Customer ID	Room ID	Check-in	Check-out	Booking Date
1011	1	55	2023-10-01T14:00:00.000Z	2023-10-05T12:00:00.000Z	2023-09-30T00:00:00.000Z
1022	2	56	2023-10-02T15:00:00.000Z	2023-10-06T11:00:00.000Z	2023-09-30T00:00:00.000Z
1033	3	58	2023-10-03T16:00:00.000Z	2023-10-07T10:00:00.000Z	2023-09-30T00:00:00.000Z
1044	4	60	2023-10-04T14:00:00.000Z	2023-10-08T12:00:00.000Z	2023-09-30T00:00:00.000Z
1055	5	66	2023-10-05T15:00:00.000Z	2023-10-09T11:00:00.000Z	2023-09-30T00:00:00.000Z
1066	6	77	2023-10-06T16:00:00.000Z	2023-10-10T10:00:00.000Z	2023-09-30T00:00:00.000Z
1077	7	99	2023-10-07T14:00:00.000Z	2023-10-11T12:00:00.000Z	2023-09-30T00:00:00.000Z
1088	8	22	2023-10-08T15:00:00.000Z	2023-10-12T11:00:00.000Z	2023-09-30T00:00:00.000Z
1099	9	44	2023-10-09T16:00:00.000Z	2023-10-13T10:00:00.000Z	2023-09-30T00:00:00.000Z
1010	10	23	2023-10-10T14:00:00.000Z	2023-10-14T12:00:00.000Z	2023-09-30T00:00:00.000Z
1021	11	34	2023-10-11T15:00:00.000Z	2023-10-15T11:00:00.000Z	2023-09-30T00:00:00.000Z
1012	12	56	2023-10-12T16:00:00.000Z	2023-10-16T10:00:00.000Z	2023-09-30T00:00:00.000Z
1013	13	59	2023-10-13T14:00:00.000Z	2023-10-17T12:00:00.000Z	2023-09-30T00:00:00.000Z

Add New Booking

Booking ID	Customer ID	Room ID	Check-In Date	Check-Out Date
011	1	55		2023-09-30T00:00:00
022	2	56		2023-09-30T00:00:00
033	3	58		2023-09-30T00:00:00
044	4	60		2023-09-30T00:00:00
055	5	66		2023-09-30T00:00:00
066	6	77		2023-09-30T00:00:00
077	7	99		2023-09-30T00:00:00
088	8	22		2023-09-30T00:00:00
099	9	44		2023-09-30T00:00:00

Add New Booking

Customer ID

Room ID

Check-In Date

mm/dd/yyyy

June 2025

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Cancel

Save Booking

Room:

Room Directory				
Add New Room				
Room ID	Room Number	Room Type	Price Per Night	Availability Status
55	R101	Standard Single	120.00	Available
56	R102	Deluxe Double	220.00	Booked
58	R201	Executive Suite	480.00	Available
60	R103	Twin Room	135.00	Available
66	R301	Standard Double	110.00	Available
77	R302	Family Room	250.00	Available
88	R401	Presidential Suite	1200.00	Booked
99	R303	Single Room	95.00	Available
22	R501	Superior King	200.00	Available
33	R601	Penthouse Suite	1500.00	Booked
44	R503	Connecting Room	210.00	Available
11	R701	Economy Twin	80.00	Available
23	R702	King Room	190.00	Available

Invoice Directory

+ Add Invoice

Invoice ID	Booking ID	Total Amount	Issue Date
I001	1011	360.00	2025-06-11T00:00:00.000Z
I002	1022	960.00	2025-06-16T00:00:00.000Z
I003	1033	500.00	2025-06-10T00:00:00.000Z
I004	1044	390.00	2025-06-14T00:00:00.000Z
I005	1055	270.00	2025-06-17T00:00:00.000Z
I006	1066	330.00	2025-06-20T00:00:00.000Z
I007	1077	380.00	2025-06-22T00:00:00.000Z
I008	1088	280.00	2025-06-21T00:00:00.000Z
I009	1099	450.00	2025-06-23T00:00:00.000Z
I010	1010	520.00	2025-06-24T00:00:00.000Z
I011	1021	610.00	2025-06-25T00:00:00.000Z
I012	1012	420.00	2025-06-26T00:00:00.000Z
I013	1013	300.00	2025-06-27T00:00:00.000Z

THANK YOU
