

# 1. Hotel Management System

21/8/25

## Problem Statement:

In the hospitality industry, efficient and accurate management of hotel operations is crucial for ensuring customer satisfaction, maximum resource utilization and to compete with other hotels.

currently, many hotels struggle with managing reservations, customer orders, staff allotment, room assignments etc. These inefficiencies lead to many problems that make the customer unhappy.

There is a need for a simple and centralized Hotel Management system that can automate and manage hotel operations like booking, customer information, room allotment, staff allotment etc. The system should support both admin side and customer side.

The proposed HMS must ensure data consistency, reduce human error, enhance customer experience and enable efficient management of hotel resources.

## 2. General Description

The HMS is a standalone web-based application that will replace manual hotel operations. It shall improve data consistency, operational efficiency, resource handling and thereby improving customer satisfaction.

The HMS shall provide the following:

- Guest registration and online bookings
- Room ~~add~~ inventory management
- Check-in and check out processes
- Housekeeping task assignments
- Integrated billing and invoice
- Role-based user access
- Reporting and analytics

## 3. Functional Requirements

FR1: Allow customers to register, log-in and manage profiles.

FR2: Allow guests to search for rooms and make bookings

FR3: Provide a secure payment gateway

FR4: Enable hotel staff to track bookings, ~~re~~ allot rooms, create update or cancel bookings

FR5: Automate check-in and check-out processes

FR6: Generate reports and revenue and guest history.

#### 4. Interface Requirements

- Server to host the application
- Integration with payment terminals
- Email / SMS service providers
- Mobile friendly UI components
- Web pages for booking, login, dashboard, admin panel.

#### 5. Performance Requirements

- The HMS shall ensure fast and responsive UIs with page load time not exceeding
- System should be able to handle multiple users simultaneously
- Provide secure payment gateway
- Enough data storage to store atleast five years records of bookings and customers
- Provide real time updates on room booking and availability.

#### 6. Design Constraints

- All communication must be secure using HTTPS.
- Should work across popular browsers like Chrome, Firefox etc.
- System must be mobile friendly
- Must follow data privacy laws like GDPR to protect guest information

4. Non-functional attributes

- Reliability: 99.9% uptime, data recovery mechanism in place.

- Usability: ~~Heuristic~~ Intuitive UI

- Security: Role based access control, encrypted passwords

- Maintainability: Modular codebase with documented APIs

- Scalability: Ability to support multiple hotel chains in future

5. Preliminary Schedule and Budget.

Week 1-2: Requirement analysis and .

Week 3-4: System Design - Architectural & UI

Week 5-7: Implementation - Coding and Integration

Week 8-9: Testing

Week 10-11: Deployment

Budget

Requirement Analysis - ~~£500,000~~

- £ 8,00,000

System Design

- £ 2,500,000

~~Implementation~~

- £ 7,00,000

Testing

- £ 3,00,000

Deployment

Total

- 25,50,000