1) Hotel Management System

Problem Statement

Hotels face challenges in managing room bookings, guest check-ins/ocheck-outs, and staff coordination using manual or out dated methods. This leads to inefficiens, error, and poor costomer servia. generate good software system to handle this all operations.

1 Introduction

1.1) Purpose of the document

It outlines the ~~system~~ functionalities, feature and objectives to provide a clear understanding of what the system will deliver. This document serves as a reference for developers, testers, Project stakeholders, and end-user to ensure All parties have a common understanding of the system goals and expectation.

1.2) Scope of the Document

This document covers the functional and non-functional requirements of the Hotel management System. The system is intended to manage Hotel operations such as room reservation, guest check-in and check-out, billing, staff assignment, and report generation.

1.3) Overview

This document outlines the key aspects of the Hotel management system, including its purpose, scope, and system requirement. It is structured to guide the design, development, and implementation process, covering functional, interface and performance requirements.

2) General Description

The Hotel management system is designed to simplify and automate Hotel operations, including room bookings, guest management, billing, and staff coordination. It provides a centralized platform to manage all Hotel activities efficiently and reduce manual errors,

3) Functional Requirements.

* ~~User~~ Room Reservation: Allow guest to book available rooms and update room status in real-time.

* Guest Check-in/Check-out: manage guest arrivals and departures, assign rooms and update records.

* Billing and payments: Generate bills, process payments, and handle refunds.

* Staff management: Assign tasks and manage staff schedules.

* Report Generation: create reports on bookings, occupancy, revenue, and staff performance.

4) Interface requirements

* User Interface: ~~The system will~~ easy to use interface accessible via desktop and possibly mobile devices for hotel staff and administrators.

* Hardware Interface:
The system should integrate with existing hardware such as printers (for bills, receipts, and report), barcode scanners (for staff ID or guest cards), and payment terminals (Credit/debit card machines).

* Software Interface:
Integration with external application such as online booking ~~platform~~ platforms (eg, Booking.com, Airbnb API), payment gateways and accounting software.

* Communication Interface.

The System should internet based communication (HTTP/ HTTPS) and database connection (SQL/NoSQL).

5) Performance Requirements

* The system must support at least 200 concurrent user (guest + staff)

* Database transaction (room booking, check-in, billing) should complete within 2-3 seconds.

* The system must be scalable to handle 1000 of rooms and multiple branches of a hotel.

* System uptime should be 99.9% to ensure 24/7 availability.

6) Design Constraints.

* must be developed using standard frameworks (e.g. Java Spring Boot/ Python Django / .NET)
* Database should support ACID compliance for reliability (e.g., MySQL, PostgreSQL).
* Should work across window, Linux, and Cloud platforms.

7) Non-Functional Attributes

* Security: Encrypted storage of sensitive guest data (AES-256). Secure login with role-based access (Admin, Receptionist, Guest)
* Reliability: Automatic backup every 12 hrs. Recovery mechanism in case of server crash.
* Usability: Easy to learn UI for staff with minimal training. Multi-Language support
* Maintainability: Code should follow modular architecture for easy updates.

8) Preliminary Schedule and Budget

* phase 1 - Requirement Analysis : 2 weeks
* phase 2 - System Design : 3 weeks
* phase 3 - Development : 8 weeks
* phase 4 - Testing & Integration : 4 weeks
* phase 5 - Deployment & Training : 2 weeks.

Total Durations : ~ 19 weeks (~4-5 months)

Estimated Budget : ~~₹~~ ₹ ~~[illegible]~~ 10 lakhs (depend on scale, manpower and Infrastructure).