Page No.
Date: 21/8/25

Q1) Hotel Management System

Problem Statement:

Design and Implement Hotel Management System while referring the following
In the hospitality industry, effiient and accurate management of hotel operations for ensuring customer satisfaction, optimal resource utilization ~~and~~ traditional methods of hotel operations such as logging are inadequate ~~to~~ in meeting expectations of modern customers.

Currently, many hotels struggle with managing reservations, room assignments, billing, staff coordination and reports due to fragmented or outdated systems. These inefficiencies lead to problems such as double booking, poor customer service, billing errors, and lack of visibility into occupancy and revenue metrics.

There is a need for an integrated, centralized Hotel Management System (HMS) that can automate and streamline core hotel operations including room booking, guest management, billing and reporting. The system should support multiple user roles such as administrator, front-desk staff, housekeeping, and guests, each with role appropriate access & functionality.

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

Page No.:
Date:

SRS DOCUMENT

1. Introduction

1.1 Purpose of Document

The purpose of this Software Requirement Specification (SRS) document is to define the functional and non-functional requirements for Hotel Management Systems (HMS). This document aims to provide a clear, detailed, and unambiguous description of the system's functionalities, constraints, and interfaces to be developed. It serves as reference for stakeholders.

1.2 Scope of Document

The Hotel Management System is designed to automate and streamline key operations of a hotel such as room reservation, check-in / check-out, guest management, billing, and reporting. The system will support multiple user roles, including administrator, front-desk staff, housekeeping staff, and guests. It will provide a centralized platform to manage bookings, room availability, report generation, billing and reporting.

1.3 Overview

The hotel Management System is a comprehensive intuitive system designed to streamline key operations while enhancing user experience. The system is designed to improve efficiency in all key features and reduce human error while also accomodating scalability.
The remaining section of this document describes overall description which includes functions, non functional requirements, external interface requirements etc.

2. General Description

The HMS is designed as a modular web-based application to replace manual or fragmented hotel operation management. It shall improve data consistency, operational efficiency, resource handling and thereby improving customer satisfaction by offering:

Guest registration and online bookings
Room availability and reservation management
Automated check-in/check-out process
Integrated billing and invoicing
Housekeeping task assignments
Role-based user access
Reporting and analytics

Users will access systems through an intuitive UI tailored to their roles. The system will run on cloud infrastructure for scalability and reliability.

3. Functional Requirements

FR1: Allow guests to register, login, and manage profiles.
FR2: Enable guests to search for available rooms by date and room type.
FR3: Allow guests to book, cancel, or modify reservations online.
FR4: Allow front desk staff to create, update, or cancel bookings manually.
FR5: Process payments via third party gateways.
FR6: Automate check-in and check-out procedures with override options for staff.
FR7: Notify housekeeping staff automatically for rooms needing cleaning.
FR8: Generate reports on occupancy, revenue and guest history.

Page No.:
Date:

4. Interface Requirements

4.1 User Interface

- guest-facing booking portal with registration and payment option
- Staff dashboard for managing bookings, check-ins, housekeeping, and reports
- Admin panel for user and system management

4.2 Hardware Interface

optional barcode/RFID scanners for room access or check-in
printers for invoice or receipt.

4.3 Software Interface

- Integration with payment gateway APIs (eg. Stripe or PayPal)
- SMS and email notification services for booking confirmation
- Database backend for data persistance.

4.4. Communication Interface

- Secure HTTPS protocol for web communication
- RESTful APIs for internal module communication and external integration

5. Performance Requirements

support at least 100 concurrent users without degradation
average response time shall be under 2 seconds
Ensure system uptime of 99.9% with failover and recovery in 5 min.
daily automated backups with integrity checks.

6. Design Constraints

- Compliance with data privacy regulations.
- Secure storage and transmission of sensitive data
- Modular architecture to facilitate maintenance and scalability.
- Compatibility with modern web browsers and mobile platforms
- Dependence on third-party APIs for payment and notifications

7. Non-Functional Requirements

- Reliability : 99.9% uptime, data recovery mechanisms in place
- Usability : Intuitive UI with minimal training required for staff.
- Security : Role based access control, encrypted passwords.
- Maintainability : Modular codebase with documented APIs
- Scalability : Ability to support multi-property hotel chains in future

8. Preliminary Schedule and Budget

Phase	Duration	Description	Cost
Requirement Analysis	2 weeks	Finalizing requirements & SRS	$5000
System Design	3 weeks	Architectural, UI/UX design	$8000
Implementation	8 weeks	Coding & integration	$25000
Testing	3 weeks	Unit integration, system testing	$7000
Deployment	1 week	Production release & training	$3000
Maintenance (1 year)	Ongoing	Bug fixes, Minor updates	$6000

Total Estimated Budget: $54000
Total Estimated Duration: 17 weeks