Lab-1

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Page:

1) Software Requirements Specification (SRS) for Hotel - Management System :-

1. Introduction :-

1.1 Purpose

This document Specifies the requirements for the Hotel Management System (HMS), which automates the booking, check-in/check-out, billing, and management processes of a hotel. It is intended for developers, testers, and stakeholders to understand the system functionalities and constraints.

1.2 Scope

HMS will manage reservations, customer profiles, room assignments, billing and generate reports to improve operational efficiency in hotel environment. The System supports both online and on-site booking.

1.3 Document Conventions

→ Shall : Indicates requirement that is mandatory

→ Should : Indicates requirement that is recommended but not mandatory.

→ May/Can : Indicates optional features/behaviour

→ Requirement ID's (eg., FR1, NFR1) are used to reference Specific requirements

1.4 Intended Audience
→ Developers: To implement specified functionality
→ Testers / QA: To validate system features against requirements.
→ Roject Managess: To manage timelines, scope and deliverables
→ Hotel staff & Admins: For operational understanding.
→ Clients / Stakeholders: For approval & clarity on system behaviour.

1.4 References.
→ IEEE standard for Software requirements Specifications, IEEE Std 830-1998
→ PCI DSS standards for payment security
→ GDPR Compliance guidelines.

2. Overall Description

2.1 Product Perspective
HMS is a standalone system with a database backend and user interface accessible via web and desktop applications.

2.2 Product functions
→ Room availability search
→ Booking and cancellation
→ Customer management
→ Check-in / check-out processing
→ Billing and invoice generation.
→ Staff and payroll management

2.3 User characteristics
→ Customers: Basic Computer / mobile knowledge
→ Hotel staff: Moderate IT skills
→ Admin / Managers: High-level access and management responsibility.

2.4 Constraints
HMS must support both web and mobile platforms. Database must be secure and reliable and it should be available 24/7. Data privacy and accounting rules should be maintained.

2.5 Assumptions and Dependencies.
Users have stable internet connections. Payment gateways are available and reliable. Hotel should provide accurate input data.

3. Specific Requirements.
3.1 Functional Requirements.
FR1: System shall allow customers to search and book available rooms.
FR2: System shall generate unique booking IDs for reservations.
FR3: It should allow staff to check-in and check-out customers
FR4: It should generate invoices with tax calculations
FR5: It should maintain records of Staff schedules and payroll by providing daily, weekly, monthly reports.
FR7: System shall allow administrators to manage rooms, prices and discounts.

3.2 Non functional Requirements.

Performance : System shall handle atleast 500 concurrent users

Reliability : System should provide 99.5% uptime

Security : Data can be encrypted using AES-256

Usability : It should be simple and intuitive

Scalability : It shall support future hotel chain integration.

3.3 External Interface Requirements.

User-Interface : web (HTML, CSS, React/Angular) and mobile (Flutter / React Native)

Hardware Interfaces : Standard desktop, laptops, mobile devices.

Software Interfaces : Integration with payment gateway API's.

Communication Interface : HTTPS, REST APIs

4. Appendices

4.1 Glossary :

A Booking ID is a unique number for each reservation, while check-in/check-out record guest arrivals & departures. An invoice summarizes charges and taxes, & a payment Gateway handles secure online payments as key System users.

4.2 Future Enhancements

System can be upgraded with AI for dynamic pricing & chatbot-based customer support. It also include IOT smart room controls, loyalty programs & hotel chain integration.