LAB 1: SRS Document for Hotel Management System.

1. Introduction

1.1 Purpose

The Hotel Management System is designed to automate the daily operations of a hotel, including room booking, check-in/check-out, billing and inventory management. The system aims to improve operational efficiency, enhance guest experience and provide easy access to hotel data for management

1.2 Document Conventions

1.2.1 Bold text indicates important terms or section headers

1.2.2 Italic text is used for emphasis or definitions

1.2.3 Monospace font indicates system commands, code, or database fields.

1.2.4 shall denotes a mandatory requirement

1.2.5 should denotes a recommended or desirable feature but not mandatory

1.2.6 Lists and tables are used to present information clearly and concisely.

1.3 Intended Audience and Reading Suggestions

1.3.1 Project Managers: for overall project planning, scope understanding and progress tracking

1.3.2 Developers and Engineers: for detailed understanding of system functionalities and technical requirements

1.3.3 Testers and QA: To design test cases based on functional and non-functional requirements

1.3.4 Stakeholders and clients: To review system scope, purpose and expected deliverables

1.3.5 Maintanence Team: for understanding system constraints and interface requirements.

1.4 Project Scope:

The Hotel Management System will manage all core hotel operations including room reservations, guest check in/checkout, billing and reporting. It will also support housekeeping and maintanence tracking, inventory management and loyalty programs. The system will integrate with online travel agencies, payment gateways and notification services. Multi-user roles with secure access and multi-property management will be supported. Additionally, mobile-friendly interfaces for guests and staff will enhance usability and operational efficiency.

1.5 References

1.5.1 IEEE Software Engineering standards

1.5.2 Hotel operational guidelines

2 Overall Description

2.1 Product Perspective

The Hotel Management System is a standalone, web-based application ~~to~~ designed to streamline hotel operations. It integrates with third party services like payment gateways and online travel agencies for seamless booking and payment processing. The system support multi-user access with role-based permissions and can scale to manage multiple hotel properties from a centralised platform.

2.2 Product function

2.2.1 User Authentication (Admin, Receptionist, Manager)

2.2.2 Room Management (add, update, delete Rooms info)

2.2.3 Guest Management (guest profiles, booking history)

2.2.4 Booking management (new bookings, modify, cancel)

2.2.5 checkin and check out processing

2.2.6 Billing and invoicing

2.2.7 Reporting (daily occupancy, revenue, etc)

2.2.8 Notifications (booking confirmation, maintanence)

2.3 User classes and characteristics

2.3.1 Admin:

Has full system control, including user and configuration management. Oversees overall system administration and security.

2.3.2 Manager

* Monitors operations, access reports, and approves special requests. Focuses on decision-making and staff oversight

2.3.3 Receptionist:

Manages bookings, guest check-ins/check outs and billing. Ensures ~~both~~ smooth front desk customer service

2.3.4 Housekeeping staff

Updates room cleanliness and availability status. Receives and completes housekeeping tasks.

2.3.5 Maintenance staff

Handles maintenance requests and schedules repairs. Keeps track of work order status

2.4 Operation environment

The Hotel Management system will be deployed as a web-based application accessible on major browsers across desktops, tablets and smartphones. It will operate on Windows or Linux servers, supporting both cloud-based and on-premises deployments. Stable internet connectivity is essential for real-time booking synchronisation and integration with external services like payment gateways and online travel agencies. Optional hardware like POS devices and RFID locks may be integrated to enhance hotel operations.

2.5 Design and implementation constraints

The system must adhere to data privacy regulations such as GDPR and comply with PCI DSS standards for secure payment processing. It will implement role-based access control, secure authentication methods, and audit logging to ensure system security and integrity. The architecture should support scalability to handle increasing users and transactions, provide regular data backups, and maintain high availability and fault tolerance. Integration with third-party APIs must comply with their protocols and security requirements.

2.6 User Documentation

The user documentation guides hotel staff and administrators on using the Hotel Management System for bookings, check ins/ check outs, billing and reporting. It provides role-based instructions and troubleshooting tips to ensure smooth operations.

2.7 Assumptions and Dependencies

2.7.1 Users will have basic computer literacy and internet access

2.7.2 The system will be accessed via modern web browsers (chrome, firefox)

2.7.3 A stable internet connection is required for real-time operations and third party integrations

2.7.4 External services (payment gateways, OTA platforms) will remain available and functional

3) Specific Requirements

3

3.1 Functional Requirement

3.1.1 Systems shall allow users to create, edit and delete rooms

3.1.2 System shall allow guests to be registered and their details stored

3.1.3 System shall allow creating new bookings with room availability check

3.1.4 System shall allow cancellation and modification of bookings.

3.1.5 System shall process guest check-in by confirming booking and assigning room key

3.1.6 System shall process guest check-out and generate invoice with charges.

3.2 Non functional Requirements

3.2.1 The system shall be available 99.9% of the time

3.2.2 The system shall respond to user actions within 2 seconds

3.2.3 Data backups shall occur daily.

3.2.4 The system shall ensure data security and privacy

3.2.5 The user interface shall be intuitive and user-friendly.

3.3 External Interface Requirements.

3.3.1 User Interfaces:
web based GUI with dashboards, forms, and reports

3.3.2 Hardware Interfaces:
Integration with POS Devices, Barcode Scanner or RFID for room keys

3.3.3 Software Interfaces
Integration with payment gateways, email and SMS gateway for notifications.

3.3.4 Communication Interfaces:

3.3.4 Use HTTPS for secure communication.

4 Appendices

4.1 Acronyms and Abbreviations

OTA (online Travel Agency), GUI (Graphical User Interface), API (Application Programming Interface), POS (Point of Sale)

4.2 Tools and Technologies

frontend technologies such as HTML, CSS, JavaScript; backend options like Node.js, PHP, Python, or Java; databases like MySQL or MongoDB; hosting platforms such as AWS, Azure; integrations with payment gateways (PayPal), SMS services and email.

4.3 References

IEEE SRS standards, hotel operational procedures, API documentation of third-party services and compliance guidelines for GDPR and PCI DSS