Teacher's Sign / Remarks

classmate
Date 22/08/25
Page

1) Hotel Management System

Template for SRS: (IEEE)

1. Introduction
   - 1.1 Purpose of the document
   - 1.2 Scope of the document
   - 1.3 Overview
2. General description
3. Function requirement
4. Interface requirement
5. Performance requirement
6. Design constraints
7. Non-functional requirements
8. Preliminary schedule and budget.

1. INTRODUCTION

1.1 Purpose of this document

The purpose of this document is to define the requirements for the Hotel Management Systems (HMS). It describes the functionalities, constraints and objectives of the system to ensure smooth hotel operations, including reservations, check-in/check-out, room allocation, billing and staff management.

1.2 Scope of this document

The Hotel Management system will automate major hotel operations such as:

* Room booking (online and offline)
* Customer check-in and check-out

* Room service and housekeeping management.
* Staff scheduling and payroll support.
* Billing and paying processing.
* Generating reports for management (occupancy, revenue, customer details)

The system will reduce manual work, minimize errors, and improve customer experience.

1.3 Overview

The HMS is intended for use by hotel staff, administrators and customers. Staff can manage day-to-day operations, while administrators can monitor performance through dashboards. Customers can book rooms and avail services seamlessly.

2. General Desig

The system will be a web-based or desktop application with a user-friendly interface. It will consist of different modules such as Reservation, Front Desk, Housekeping, Billing and Administration. The system should be accessible to staff from different departments, ensuring integration of all services.

3. Functional Requirements

* Customers can search and book rooms
* Staff can manage check-in and check-out.
* System should allow room assignment based on availability.
* Automatic bill generation with tax and discount options.
* Report generation for daily, weekly and monthly occupancy and revenue.
* Manage staff records (roles, schedules, salary)
* Handle cancellation and refund process.

classmate
Date
Page

4. Interface Requirements

* User Interface : Simple forms for booking, billing and check-in. Dashboards for admins.
* Hardware Interface : Works on hotel PCs, POS machines, and servers.
* Software Interface : Integrates with payment gateways, mail and SMS services.
* Communication Interface : Secure internet connection for online bookings and payment.

5. Performance Requirements

* The system should handle at least 200 concurrent users.
* Booking confirmation should occur within 3 seconds.
* Reports must be generated within 5 secs.
* High availability : 99.5% uptime.

6. Design Constraints

* Must comply with local tax and billing laws.
* Database should follow ACID properties for consistency.
* Security standards like SSL/TLS for online transactions.
* Role-based access control for staff and admin.

7. Non-functional Requirements

- Security : Encrypt sensitive data (payment info, passwords).
- Reliability : Automatic backup every 24 hours.
- Usability : Intuitive UI for non-technical hotel staff.
- Scalability : Should support expansion to multiple branches.
- Maintainability : Easy to update system modules without downtime.

8. Preliminary Schedule and Budget

- Phase 1 (2 months :) : Requirement getting gathering and system design.
- Phase 2 (3 months) : Development of booking, billing and check-in modules.
- Phase 3 (2 months) : Integration with payment gateway and reporting.
- Phase 4 (1 month) : Testing and deployment.

Estimated Budget : ₹ 12 - 15 lakhs (including development, testing, hardware and deployment).

classmate
Date 22/08/25
Page

2) Credit And Processing System

1. Introduction

1.1 Purpose of this document

The purpose of this document is to define the requirements for the Credit Card Processing system (CCPS). It describes the functionalities, constraints and objectives of the system to ensure secure and efficient handling of credit card transactions, including authorization, authentication, billing, fraud detection and reporting.

1.2 Scope of this document

The Credit Card Processing System will automate financial transactions involving credit cards by:

- Authorizing and authenticating transactions.
- Validating cardholder information.
- Processing payments between merchants and banks.
- Generating billing statements.
- Managing refunds, chargebacks and cancellations.
- Detecting and preventing fraudulent transactions.
- Providing reports and analytics to administrators.

The system will minimize errors, reduce transactions delays, ensure security and enhance customer trust.

1.3 Overview

The CCPS will be used by merchants, banks and customers. Merchants can process payments, banks

can manage settlements and customers can view transaction billing and payment details. Administrators can monitor performance and detect anomalies.

2. General Description

The system will be highly secure, web-based platform integrated with payment gateways, banking systems, and merchant applications. It consist of modules such as Transaction Processing, ~~Authentication~~ Authorization, Fraud Detection, Billing and Reporting.

3. Functional Requirements

- Accept and validate customer credit card details.
- Authenticate cardholder using OTP, PIN or biometrics.
- Authorize and process payments in real-time.
- Handle refunds, reversals and chargebacks.
- Generate monthly statements and transaction history.

4. Interface Requirements

- User Interface: Secure forms for payment, billing statements and admin dashboards.
- Hardware Interface: Supports POS machines.

Software Interface: Integrates with banking software, merchant applications and payment gateways.

5. Performance Requirements

- Must handle at least 1000 concurrent transactions
- Each transactions should be proced within 2-3 seconds.
- Fraud detection alerts must be generated in real-time.
- 99.9% uptime availability.

6. Design Constraints

- Must comply with PCI-DSS and banking security standards.
- Database must support ACID properties for financial integrity.
- Encrypted data transmission and secure store.
- Role-based access control for merchants, banks and admins.

7. Non-functional Requirements

- Security : End-to-end encryption, fraud detection mechanisms.
- Reliability : Transactions logs and backup every hour.
- Usability : Simple UI for merchants and customers.
- Scalability : Must support global transactions across multiple banks.
- Maintainability : Easy to update compliance and security features.

8. Preliminary Schedule and Budget

- Phase 1 (2 months): Requirement gathering and system design.
- Phase 2 (4 months): Development of transactions, authorization and billing modules.
- Phase 3 (3 months): Integration with banks and fraud detection system.
- Phase 4 (2 months): Testing, compliance certification and deployment.

Estimated Budget: ₹20-25 lakhs

classmate
Date 22/08/25
Page

3) # Library Management System

1. Introduction

1.1 Purpose of this document

The purpose of this document is to define the requirements for the Library Management System (LMS). It describes the functionalities, constraints and objectives of the system to ensure efficient management of library operations.

1.2 Scope

The LMS will automate all major library operations such as:

* Maintaining a catalog of books and resources.
* Members registration and profile management.
* Book issue, return, renewal process.
* Fine calculation for overdue books.
* Generating reports of issued books, available stock, and members activity.

1.3 Overview

The LMS will be used by library staff, administrators and members. Staff will manage books and transactions, administrators will oversee reports and system usage while members can search, reserve & borrow books.

2. General Description

The system will be a web-based / desktop application with different modules such as Catalog Management, Member, Circulation, Fine and Reports Management. It will provide a user friendly interface for both staff and members.

3) Functional Requirements

- Add, update and delete book records.
- Register new members and manage existing profiles.
- Search for books by title, author, or subject.
- Issue, return and renew books.
- Automatically calculate fines for overdue books.
- Reserve books that are currently issued.
- Generate reports on book circulation, availability and member activity.

4) Interface Requirements

- User-Interface: Simple forms for book entry, issue/return and admin dashboards.
- Hardware Interface: Works on library PCs, barcode scanners and printers.
- Software Interface: Integration with databases, sms/email for due notifications.
- Communication Interface: Internet connectivity for online access (optional).

5. Performance Requirements

* System should handle atleast 500 concurrent users.
* Search results should be displayed within 2 seconds.
* Issue / return transaction should be processed within 3 seconds.
* High system availability (99.5% uptime).

6. Design Constraints

- Must comply with institutional policies.
- Database should follow ACID properties.
- Role-based access (admin, staff, member).
- Secure login and authentication.

7. Non-functional Requirements

- Security : Encrypt member credentials and ensure secure access.
- Reliability : Daily automatic database backup.
- Usability : Simple and intuitive UI for non-tech staff.
- Scalability : Should support multiple branches of the library.
- Maintainability : Easy update to book catalog and member modules.

8. Preliminary Schedule and Budget

* Phase 1 (1.5 modules): Requirement gathering and design.
* Phase 2 (2.5 modules): Development of catalog, members, and circulation modules.
* Phase 3 (1.5 months): Integration of fine management and reports.
* Phase 4 (1 month): Testing and deployment.

Estimated Budget: ₹8-10 Lakhs (including development and testing, hardware, deployment).

Date 26/08/24
Page

4)

Stock Maintainance Systems

1. Introduction

1.1 Purpose of this document

The purpose of this document is to ~~of~~ define the requirements for the Stock Market Maintainance System (SMS). It describes the functionalities, constraints and objectives of the system to ensure efficient tracking, monitoring and management of stock items, including purchase, sales, stock updates and reporting.

1.2 ~~Scope of this document~~

~~The purpose of this document is to define the requirements for~~

Scope of this document

The Stock Maintainance System will automate inventory management by:

- Adding, updating and deleting stock items.
- Tracking stock levels in real time.
- Recording purchase and sales transactions.
- Generating alerts for low stock.
- Producing reports for stock usage, wastage and availability.
- Managing supplies and vendor details.

The system reduces manual errors, prevents overstocking/understocking.

1.3 Overview

The SMS will be used by store managers, warehouse staff and administrators. Staff can record transactions. Managers can monitor inventory levels and administrators can generate reports and analyze stock movement.

2. General Description.

The system will be a web-based / desktop application that integrates inventory modules such as Stock Entry, Stock Update, Transaction Management, Alerts and Reports. It will provide a dashboard for real-time monitoring of stock.

3. Functional Requirements

- Add, update, delete stock items with details.
- Track stock in real time with automatic updates on purchase / sales.
- Generate alerts when stock goes below threshold.
- Record purchase and sales invoices.
- Maintain supplier / vendor database.
- Generate reports (daily, weekly, monthly) for inventory status.
- Support barcode scanning for quick stock entry

4. Interface Requirements

- User Interface : Simple forms for booking, billing and check in. Dashboards for admins.
- Hardware Interface : Works on hotel PCs, POS machines and servers.
- Software Interface: Integrates with payment gateways, mail and SMS services.
- Communication Interface : ~~Integrate~~ Secure internet connection for online bookings and payment.

5. Performance Requirements

* The system should handle at least 200 concurrent users
* Booking confirmation should occur with 3 seconds.
* Reports must be generated within 5 seconds.
* High availability : 99.5% uptime.

6. Design Constraints

* Must comply with local tax and billing laws.
* Database should follow ACID properties for consistency.
* Role - based access control for staff and admin

7. Non-functional requirements

* Security: Encrypt sensitive data (payment passwords).
* Reliability: Automatic backup every 24 hours.
* Usability: Initiative UI for non-technical hotel staff.
* Scalability: Should support expansion to multiple branches.
* Maintainability: Easy to update system modules without downtime.

8. Preliminary Schedule and Budget

* Phase 1 (2 months): Requirement gathering and system design.
* Phase 2 (3 months): Development of booking, billing and check-in modules.
* Phase 3 (2 months): Integration with payment gateway and reporting.
* Phase 4 (1 month): Testing and deployment.

Estimated Budget: 12-15 lakhs (including development, testing, hardware and deployment)

classmate
Date 22/08/24
Page

5) Passport Automation System

1. Introduction

1.1 Purpose of this document

The purpose of this document is to outline the requirements and specifications for the development of PAS. It will provide a clear understanding of the project objectives, scope and deliverables.

1.2 Scope of this document

This document defines the overall working and main objectives of PAS. It includes a description of the development cost and the time required for the project.

1.3 Overview

The PAS is a software solution designed to streamline the passport application process, including application submission, document verification, appointment scheduling and tracking status.

2. General Description

The PAS will cater to the needs of applicants and passport office staff providing features such as online application forms, document upload and appointment management.

P.T.O →

3. Functional Requirements

3.1 Application Management

* Allow users to submit passport appointment online
* Provide a mechanism for uploading required document.
* Enable staff to review & process applications.

3.2 Appointment Scheduling

* Allow scheduling of appointments & manage appointment slots.

3.3 Status Tracking

* Real-time tracking system for applicants.

3.4 Biometric Data Management

* Storing Biometric data of applicants.
* Ensure data is linked to correct applications applicant profile.

4. Interface Requirements

4.1 User Interface

* Intuitive and user friendly & accessible.

4.2 Integration interfaces

* Integration with national identity databases for verification purposes.
* Integration with payment gateways for processing application fees.

Performance Requirements

* Response time < 2sec
* Scalability > 5000 concurrent users
* Data integrity

Design Constraints

Hardware limitations

The system should be compatible with standard hardware used in government offices.

Software dependencies

* Utilize robust and secure RDBMS for data storage.
* Use programming languages and frameworks suitable for high security, high traffic applications.

Non-Functional Attributes

7.1 Security

* Implement robust authentication and authorization.
* Ensure compliance with data privacy regulations.

Reliability: fault tolerance to minimize system downtime.

Usability: Clear navigation & instructions.

Scalability: Accomodate future growth.

Compatibility: Common browsers.

Data integrity: The system shall ensure accurate and consistent data storage and retrieval.

8) Preliminary Schedule & Budget

The development of the PAS is estimated to take 12-18 months with a budget of ₹ 8,00,000. This includes project planning, development, testing, security audits and deployment phases.

W 2/2/8

classmate
Date 29/08/25
Page

CLASS DIAGRAMS

1) Class Diagram for Hotel Management System

Hotel Management System