

Hotel Management System

Problem Statement: This Hotel management system works to automate bookings, reservation, room management, customer management, payment processing and staff management. The system aims to provide a safe, secure and scalable platform with real time application of these features.

IEEE Standard

Introduction

Purpose: Provides managers and staff with a centralized platform to manage bookings, room reservations, customers, payments and billing. The system simplifies day-to-day hotel operations.

Scope: The hotel management system will automate core day-to-day hotel operations, like bookings, payments, check in / check out, room allocation with a user friendly platform. System will integrate with payment gateways and third party booking services.

Overview: The system is a centralized platform that manages room reservations, room allocation, billing and other day-to-day operations.

General Description

The HMS Hotel management system automates day-to-day hotel management operations like booking, room allocation, payment, customer management. It is accessible via through mobile and web and it is integrated with payment gateways and third-party platforms.

Functional Requirements

- The system shall provide real time room availability and allocation.
- The system shall support check in / check out with automated billing.
- The system shall manage customer profiles and booking history.
- The system shall generate occupancy, revenue and performance reports.

Interface Requirements

- Web and mobile UIs with dashboards and booking forms.
- Integration with payment gateways and third party booking forms.
- User supports standard devices like mobile devices, PCs etc.

Design Constraints

- Perform
- Bookin
 - Subp
 - Maint
- Design
- UX
 - Must
 - Mac
- Non
- \$En
 - acc
- Sc
- Sea
- In
- In
- Pre
- Sct
 - dev
 - def
 - Bu

Performance Requirements:

- Booking response time under 2 seconds
- Supports > 500 concurrent users
- Maintains ≥ 99.5% system uptime

Design Constraints:

- UX: Secure login/authentication protocols
- Must be compatible with Linux, windows, Mac OS, android & iOS and iOS system

Non Functional Requirements:

- Encrypted transactions and role-based access for security
- Scalable to hotel chains
- Intuitive UI requiring minimal training

Preliminary Schedule and Budget:

- Schedule: 1 month design, 3.5 months development, 1 month testing, 1.5 week deployment
- Budget ~ 50-60 Lakhs

(N)

and compliant system to process credit card transactions in real time

Credit Card Processing

Problem statement: A system is needed to securely and efficiently handle credit card transactions.

Introduction

Purpose: The goal's purpose of this document is to specify the requirements of a Credit Card processing System that securely handles authorization, transaction routing and settlement between merchants, card networks, and banks.

Scope: System will process real time credit card transactions, prevent fraud and support high availability, scalability and integration with multiple payment gateways.

Overview: The system will authorize, clear, and settle credit card payments, maintain audit logs, and ensure secure data exchange. The system will offer APIs for merchants integration and dashboards for monitoring and reporting.

General Description

The Credit Card Processing system is a multi-tier software solution consisting of a front end API layer for merchants to submit transactions, a processing core, settlement module and administrative dashboard.

Functional Requirements

- The system shall validate cardholder details and available funds
- The system shall log all authorization requests

secure, efficient
and transactions

secure and eff.

document

of a Credit
securely handles
ing and settlement
nd banks.

me credit
nt, support
integrator

ize, clear,
i, maintain
data exchange.
merchants
monitoring

a multi-
a front
submit transaction
and

e tails and
requests

and responses

- The system shall generate settlement reports and transaction logs for auditing.

Interface Requirements.

- The system shall provide RESTful using JSON over HTTP for merchant integration
- The System Shall communicate securely with card networks using ISO 8583 or equivalent protocols

Design Constraints

- System shall comply with PCI DSS and ISO 27001 standards

Non Functional Attributes

- The system shall encrypt all sensitive data in transit at rest using TLS/SSL
- The system shall process at least 1000 transactions per second with latency below 2 seconds

Preliminary Schedule and Budget

- Schedule: Req 1 month design, 3 months development, Testing 1 month, training and deployment 1 month
- Budget ~ 50 lakhs

Problem statement: There is a need for a reliable and secure library management system that can handle real time transactions efficiently while data integrity is ensured

Library Management System

Introduction.

Purpose: This document defines the requirements for a library management system to automate book management, user records and circulation processes.

Scope: The system will manage book catalogs, issues and return transactions and user memberships while providing search and reporting features.

Overview: System will track library resources in real time, reduce manual effort, and ensure secure, role based access for librarians and users.

General Descriptions

The system is a centralized web-based application that maintains book inventories, manages borrowing/return operations and provides an interface for both librarians and members.

Functional Requirements

- The system shall allow users to search, borrow, and return books through an online interface.
- The system shall generate automated reports on issued, returned, and overdue books.

Interface Requirements

- System shall provide librarian and admin dashboards with role-based access control.
- The system shall integrate barcode or RFID readers for quick book identification.

Design Constraints

- The system shall comply with institutional IT security and privacy policies.
- The system shall be compatible with standard database systems (MySQL, PostgreSQL)

Non Functional Attributes

- The system shall ensure all user and book data is encrypted in transit and at rest.
- The system shall be scalable to accommodate growing number of books and users.

Preliminary Schedule and Budget

- Schedule : Design 1 month; Development 2 months, testing 1 month
- Budget ~ 20 lakhs

There is a need for a system to efficiently manage, track and update credit levels in real time to ensure accuracy and operational efficiency.

Stock Maintenance System

Introduction

Purpose: This document specifies the requirements of a Stock Maintenance System to monitor, update, and control inventory efficiently.

Scope: The system will track stock levels, automate reorder notifications, and provide reports to ensure smooth business operations.

Overview: The system will centralize stock data, reduce manual data, manual errors, and support real-time updates for administration and staff.

General Description

The system is a web-based application designed to record incoming and outgoing stock, maintain supplier details, and generate inventory reports.

Functional Requirements

- The system shall record stock additions, updates and withdrawals in real-time.
- The system shall automatically generate low stock alerts based on predefined thresholds.
- The system shall produce inventory reports showing current levels, movements, and trends.

Interface Requirements

- The system shall provide a secure web interface accessible to authorized staff.
- The system shall integrate barcode or QR code scanning for quick stock entry.

Design Constraints

- The system shall comply with organized IT and audit policies.
- The system shall run on standard web servers and databases (MySQL, PostgreSQL)

Non Functional Requirements

- The system shall encrypt all sensitive data during storage and transmission.
- The system shall scale horizontally to support future expansion of stock categories.

Preliminary Schedule and Budget

- Schedule: 1 month Design, 2 months Development, Testing and Deployment = 1 month
- Budget ~ 17 lakhs

Passport Automation System

Introduction

Purpose: This document defines the requirements for a Passport Automation System.

Problem Statement

Hotels often face inefficiencies in manual operations such as reservations, billing and checking in/out. The system faces long queues, delays, errors etc. The Passport Automation System helps with this.

Introduction

Purpose: Simplify and digitise passport application, verification and issue.

Scope: The system will support online application, document verification, payment integration, and tracking.

Overview: Includes applicant portals, admin portal, verification system, and integration with government databases.

General Description

E-Governance application integrated with government records.

Functions include application submissions, status tracking, payment verification and passport issuance.

Specific Requirements

Functional Requirements

- Submit applications online
- Upload and verify documents
- Process payments securely

Interface Requirements

- Web portal integration
- Mobile app interface
- Payment gateway integration

Performance

- Must handle 1000+ concurrent users

Design Constraints

- Must meet e-governance security protocols
- Must meet comply with organized IT and audit policy

Non-Functional

- The system shall comply encrypt all sensitive data during storage and transmission
- The system must be secure, reliable, user friendly, and scalable

Schedule: Preliminary schedule and Budget

- Schedule: 1 month design, 3 months development; 1 month testing and deployment
- Budget: 80 Lakhs