Hotel Management System

Problem statement

The current manual system for managing hotels is inefficient and prone to errors. There is a lack of centralized management, leading to difficulties in tracking reservation, room availability and guest information. The absence of a comprehensive system hinder the ability to make data-driven decisions for improving hotel operations and customers experience.

SRS document

1. Introduction -

The hotel management system is a tool for booking rooms by the customs and provides the appropriate management tools and ease of access to customs information.

Purpose of the document: The main objective of the hotel management SRS is to provide a base for the project. It gives a comprehensive views of how the system is supposed to work and what is to be expected by end user. Clients expectation and requirements are analyzed to produce specific unambiguous functional and Non-functional requirements.

Scope: The world is changing, so is the hotel management. Today hotel management has gone deep into tourism, catering, airlines, clubs etc. making it very promising carreer option.

Overview: This project is intended for Booking of rooms through an online platform. Our System has Receptionist, Manager and customer end users. Receptionist can update or modify booking details. Manager will be able to view financial reports and room information. Customer can check availability.

General description: The system will cater to the need of hotel staff and management, providing feature such as room booking, guest profiles, inventory management, and financial reporting.

Functional requirements:

Reservation management:
- Allow users to make room reservations online or through the front desk.
- Generate reservation confirmations and send notifications to guests.

Room management:
- Assign rooms to guests based on availability and preferences
- Track room status

Guest management:
- Maintain Guest profiles with personal informatio and booking history.

Billing and misc:
- Generate accurate bills for room charges additional services, and taxes.

Interface Requirements.

User interface
- Intuitive and user friendly interface for hotel staff and guests.
- Accesible via web browser, mobile devices & desktop

Integration interface
- Integration with payment gateways
- Integration with 3-party booking platforms

Performance requirement

Response time:
The system should respond to user actions within 2 seconds

Scalability.
- Handle a minimum of 1000 concurrent users during peak hours.

data Integrity
- Ensure data consistency and accuracy across all modules.

6 Design constraints

6.1 Hardware Limitations
- The system should be compatible with standard hotel hardware.

Software dependency:
- Utilize a relational database management system for data storage.

Non-functional attributes:

Security:
Implement robust authentication to protect data

Reliability: Ensure high availability and fault tolerance.

Scalability: Accomadate future growth

Compatibility: compatible with common web browsers.

Reusability: The system shall use modular code

Usability: The system shall have user friendly interface.

Data Integrity : The system shall ensure accurate and consistent data storage and retrival.

Preliminary Schedule and Budget : The development of hotel management system is estimated to take 4 months with a budget of 70,000 Rs. This includes project planning, development, testing, and deployment phases.

Credit card processing management.

Problem statement:

Credit card processing through offline involves the merchant collecting order information storing in database, and entering it using their on site processing system. This takes time and is not very secure. To improve efficiency and prevent fraud we require credit card processing system.

Introduction:

The software requirement specification is designed to document and describe the agreement between customer and developer regarding specifications of software product requested. This provides a clear idea of customer requirements and can be used as reference in further development of software system.

Purpose of this document:

The purpose of this document is to outline requirements and specification for developing a credit card processing system. It defines the goals and intended audience of the project and ensure all stakeholders have understanding of the project.

Fraud detection:
- Implement real-time fraud scoring based on transaction velocity, geolocation and historical data
- Allow merchants to set custom rules

Intuface requirements:

User interface: An intuitive web-based dashboard for merchants, view transactions and generate reports

Integration interface:
A restful API for seamless integration with e-commerce websites.

- Integration with major payment gateway.
- Integration with banking system for fund settlement

Performance requirement:

Response time: The system must process and authorize request within 1.5 seconds.

Scalability: The system must be capable of handling minimum 5000 concurrent transactions

Data Integrity: All transactions must adhere to ACID principles.

Design constraints

Hardware limitations : The system must be deployed on secure, redundant servers potentially utilizing Hardware security modules for key management.

Software dependencies :
- Must comply with payment card industry data security standard.
- Utilize relational databases
- Use industry - standard encryption libraries.

Non functional attributes :

Security : Implement end-to-end encryption, tokenization for stored card data, and multi factor authentication

Reliability : The system shall have an uptime of 99.99-1. to ensure continous transaction

Usability : The API documentation must be clear and comprehensive for easy integration.

Preliminary schedule and Budget : The development of credit card processing system is estimated to take 18 month with a budget of Rs20,00,000 This includes system design, development, rigorous security auditing and deployment.

Library Management System.

Introduction

Purpose of this document: The purpose of this document is to specify the requirements for a library management system. It aims to provide a detailed description of the systems features and functionalities for library staff.

Scope of this document: This document covers the automation of all major library operations, including book cataloging, member management, circulation and fine calculation.

Overview: The library management system is a software application designed to replace a manual or outdated library process. It will manage the library's collection and its members, simplifying the borrowing and returning of items.

General description.
The LMS will be used by librarians for administrative tasks and by library members for browsing and searching the catalog. It will be a web-based application, ensuring easy access for all users without the need for special software. It will have 2 distinct interfaces, one for librarians (administrative) and one for members (public catalog).

Functional Requirements.

3.1 Catalog Management:

- Allow librarians to add, modify, and remove books and other media from database.

- Each item shall have details like Title, Author, ISBN, genre and location.

Member management:

- Allow librarians to register new members, update their information, and manage membership.

- Maintain a record of each members borrowing history.

Circulation management:

- Facilitate the check out and check in of books using a barcode scanner.

- Automatically calculate and apply fines for overdue books.

Search and discovery.

- Provide a powerful search interface for members to find books by title, author or ISBN.

Software dependencies:

Utilize a relational database like MySQL or PostgreSQL for data storage

Developed using a common web framework (eg, Django, Ruby on rails) for maintainability

Non - Functional Attributes.

Security: Secure login for librarians to prevent unauthorized access to administration functions. Member data must be protected.

Reliability: The system should be highly available during the library's operating hours.

Usability: The interface should be easy to learn and use for staff and members with minimal technical skills.

Compatibility: The system should be compatible with major web browser (chrome, Firefox, Safari, Edge).

Preliminary Schedule and Budget:
The development of the library management system is estimated to take 4 months with a budget of 50000. This covers requirement analysis design, development, testing and deployment.

Stock Maintainance System.

1. Introduction

1.1 Purpose of this document: This document outlines the requirements and specifications for a stock maintenance System, also known as Inventory management system.

Scope of this document: The scope of the system includes product cataloging, real-time tracking of stock levels, managing purchase orders and sales, and generating inventory reports.

Overview: The stock maintainence system is a software solution designed to help business efficiently track and manage their inventory. It aims to prevent overstocking and stock-outs, optimizing storage and provide insights into inventory turnover.

General Description.

The system will be used by warehouse manager, procurement staff and sales personel. It will provide a central database for all products and their quantities, accessible through a web or desktop application. It will automate stock updates based on sales and new deliveries.

3 Functional Requirements.

Product management:
- Create, read, update, and delete product information
- Support for product variation such as size and colour.

Stock control:
- Track inventory levels in real-time across multiple locations or warehouse.
- Automatically decrease stock on a sale and increase stock on purchase order deliveries.
- Allow for manual stock adjustment.

Order management:
- Create and manage purchase orders for suppliers.
- Track sales and their fulfilment status

Reporting:
- Generate reports on current stock levels, low-stock items, and inventory valuation
- Provide alerts for items that fall below a predefined reorder level.

Data Integrity: Stock counts must be accurate and consistent across all parts of system to prevent discrepancies.

Design Constraints.

6.1 Hardware Limitations: The system must run on a standard computer and be compatible with handheld scanners.

Software dependencies.

- A relational Database for storage.
- The application can be built as a web application or a cross-platform desktop application

Non functional attributes

- Security: Role-based access control to ensure that users can only access functions relevant to their job.
- Reliability: High system availability is crucial to avoid disruptions in warehouse or sales.

Usability: The system must be designed for quick data entry and retrival to maximize efficiency.

Interface requirement:

User interface:

- A user-friendly dashboard showing key inventory metrics at a glance.
- Simple forms or data entry and clear tables for viewing data.

Integration Interfaces:

- Integration with barcode scanners for quick product identification and counting.
- API for integration with Point of Sale systems or e-commerce.
- Ability to import/export data using CSV.

Performance requirement

Response Time: User actions, such as searching for a product or updating stock, should be completed within 2 seconds.

Scalability: The system must support a large number of SKU's and handle a high volume of daily transaction

Preliminary schedule and Budget.
The development of the stock maintenance system is estimated to take 5 months with a budget of 75000. This includes planning, development, testing and integration.

Passport Authentication System

Introduction

Purpose of this document: The purpose of this document is to define the functional and non-functional requirements for a national passport automation system. It will serve as the primary guide for the design, development, and implementation of the system.

Scope of this Document: The scope covers the entire passport lifecycle, including online application submission by citizens, appointment scheduling, data verification by officials.

Overview: The passport automation System is a large scale, secure, web-based platform designed to streamline and digitize the passport application and issuance process for a country. It aims to increase efficiency, transparency, and security.

General description:

The system will cater to 2 main user groups: citizens and goverment officials. The public-facing portal will allow citizen to apply for new passports, renew existing ones, and track their application status.

Functional requirements:

Application Module:

- Allow citizen to create a secure account
- Provide an online form for submitting passport application.
- Enable secure uploading of required documents.
- Integrate with a payment gateway for fee collection.

Appointment and scheduling:

- Allow applicants to schedule appointment at the nearest Passport Seva Kendra for biometric data collection.

Officials Module

- Provide a secure login for authorized govt officials
- Enable officials to access and review submitted applications and documents.
- Facilitate interfaces for police verification
- Allow for approve, reject or put application on hold.

Status Tracking:

- Provide real-time application status update to applicants via the portal, SMS, and email.

Interface Requirements

User Interface

- A highly accessible and easy to navigate public portal for citizens of varying technical literacy.
- A secure, efficient and well-defined interface for govt officials.

Integration interface:

- Integration with the National ID database for identity verification.
- Secure interface with law enforcement agencies for criminal background checks.
- Integration with secure printing facility for passport printing with postal services for dispatch.

Performance requirement.

Scalability: The system must be built to handle millions of concurrent users.

Security: Absolute data accuracy and consistency are paramount, as the system deals with official national identity records.

Design constraints

Hardware limitation: Must be hosted on high-security government data center with redundant power and connectivity.

Non functional attribute

Reliability: The system must achieve 99.9% availability, with robust disaster recovery.

Portability: The public portal must be accessible from all web browsers and mobile devices.

Usability: The application form and process must be clear and simple to reduce errors.

Preliminary schedule and budget: The development of this system is estimated to take 24 months with a budget of 900,000. This includes phases for planning, development, testing and rollout.