OOM - Lab 1

Hotel Management System

~~Functional requirements:~~

~~Problem statement:~~

~~→ Accomodation of~~

Problem Statement:

In todays competitive industry, hotels face numerous operational challenges that affect guest satisfaction and overall profitability. Many hotels still rely on outdated systems or manual process to manage reservations, guest check ins, room availability, billing and maintenance. This can lead to:

1) Poor guest experience
   guest can face late check in, check-outs.
2) Inefficient Resource management.
   Hotel room service products like soaps, shampoo, towels and daily amenities.

Scope:

1) Accomodation of customers and managing reservations
   guest check ins / check outs, billing and staff scheduling.
   It will integrate external booking platforms, support multiple payment methods and efficient resource management.

Functional Requirement:

1) Check in / check out Management for customers
2) Billing Management
3) staff "
4) Payment gateways
5) Feedback System

Non-functional requirement :

1) Scalability → System must support hotel expansion, accomodating additional rooms, users without degradation.
2) performance → should be able to handle large amounts of users.
3) security - secure login for staff / customers.
4) Reliability
5) Usability
6) Maintainability
7) Availability

SRS document for credit card processing system:-

1. Introduction.

1.1. Purpose of the ~~requirements~~ documents to specify the software:

↳ A credit card processing system facilitates electronic transactions between the cardholder, merchant, issuing bank and acquiring bank. They capture and transmit payment details. System also handles fraud detection.

Scope of document:
↳ It defines overall working and objectives of the credit card processing system, highlighting its value to customers, including ease of use and security. It also provides an estimate of development cost and time requirement for completion.

1.3 Overview
The system allows secure electronic transactions between cardholders, merchants and financial institutions. It ensures efficient payment handling, fraud detection

2. General description
System enables cardholder to make electronic payments while providing merchants with a secure means of accepting these payments.
key features: friendliness, fast processing and secure data transmission.

3. Functional Requirements.
System performs tasks such as validating card details authorizing transactions, and processing payments. It includes data encryption, fraud detection and bank communication.

→ Runs functions based on priority for smooth operation.

4. Interface requirements:
- Details interactions b/w payment systems, merchants and banks.
- Describes the use of APIs, data streams and encrypted communications.

Performance requirements:
- Specifies fast processing times and low error rates
- Ensures performance under peak load conditions.

Design constraints:
- Adheres to regulatory and security standards.
- Ensures compatability with various hardware and software platforms.

Non-functional attributes.
- Focuses on security, scalability, reliability and portability.
- Ensures data integrity and reusability of components.
- Implements features like multi-factor authorization.
- Usability

Preliminary schedule and Budget:
→ outlines key milestones like development, testing and deployment.
→ Provides a preliminary budget estimate for development and maintenance.
→ Development time: 8 months.
→ Budget: $ 45,000

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Library management system.

Purpose.

→ defines requirements for the dev of lib management system. outlines functionality, design and interfaces.

Scope: It describes overall objectives of LMS, highlighting the value it provides to both users and library administrators. It includes an estimate development costs and timelines.

Overview:

system is designed to streamline the library operations, allowing library staff to manage book inventories, track member activities.

General description:

The LMS aims to digitalize traditional library processes, providing benifits such as efficient resource management, quick access to book inventories, and ease of record maintenance. key user types include library staff, members, and visitors. The system will offer a user friendly interface for all.

Functional Requirements:

→ User management - for new registeration, updating of user profiles and deactivation of inactive accounts.

→ Book management - Administrators will be held to add, remove, or update book records, including details such as title, author and availability status.

- Lending and return system. system will manage borrowing and returning of books, track due dates and send notifications for overdue books.
- search functionality - Users can search the catalog using keyboards.

Interface Requirements:

1. User Interface - system will feature an intuitive web-based interface for both administrators and members. This includes dashboard for managing books, viewing borrowing history and performing administrative tasks.

2. Database Interface
System will connect to a backend database for storing and retrieving information related to books, users, and transactions.

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Performance Requirements:

1. Response Time
- system should respond to user queries within 2 seconds.
~~- The system~~

2. Throughput - System must support up to 500 simultaneous users with any significant performance degradation.

3. Error Rate - The error rate for processing requests should be less than 1%.

Design constraints:

1. Platform - system will be developed as a web-based solution, supporting modern browsers such as Chrome.

2. Data Constraints - system will be designed to scale with library's growing collection and user base.

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non functional attributes :

1. security - user credentials and sensitive data will be encrypted.
2. ~~security~~ scalability - system will be designed to scale with the library's growing collection and user base.
3. Reliability + system will achieve 99.9% uptime to ensure availability
4. usability :

preliminary schedule and Budget

development time : Estimated 6 months.

Budget : estimated budget for project $50,000. including design, development, testing and deployment

stock maintenance system (SMS)

Purpose of document.

this document speries the requirements and specifications for development of the stock maintenance system. It aims to provide a comprehensive guideline for developers and stakeholders.

scope of Document.

SMS will automate stock management process focusing on inventory tracking, order management and reporting functionalities.

Overview

stock maintenance system provides tools for real time inventory tracking, alerts for low stock, and reporting features to enhance decision making. It aims to reduce stockouts and excess inventory.

general Description.

the system will support various inventory management functions, including receiving shipments, tracking sales and ~~pla~~ cancellations physical counts. It will serve multiple user roles, such as warehouse staff, sales personnel.

Functional requirements:

1. Inventory tracking - Monitor stock levels in real time
2. Reorder Alerts - Notify users when stocks turnover, sales ~~tre~~ trends, and inventory valuation.
3. Reporting - generate reports on ~~stocks~~ stock turnover, sales trends

and inventory valuation.

4. User roles - different access levels for warehouse staff, sales and management.

5. Integration - connect with sales and procurement systems.

Interface Requirements:

1. User interface
2. API integration.

Performance Requirements:

1. Response time
2. Concurrency
3. Data Accuracy.

Design constraints.

1. Technology stack - must use specified language
2. compliance
2. scalability

Non Functional requirements.

1. Usability.
2. Reliability
3. security

Preliminary schedule.

Phase 1: Requirements gathering: 2 weeks.

Phase 2: Design - 2 weeks.

Phase 3: Development - 6 weeks.

Phase 4: Testing - 2 weeks.

Phase 5: Deployment - 2 weeks.

Total Duration - approx 16 weeks.

Preliminary Budget.

Development Cost: $50,000
Licensing Fees - $5,000
Infrastructure Costs: $10,000
Training & Support: $5,000
Total Estimated Budget: $70,000

Passport automation system

purpose:

streamline and automate passport application and issuance processes.

scope:

- online applications for new and renewed passports.
- payment verification and appointment scheduling
- integration with national identity database
- Real-time status update for applicants.

Overview

- a web-based portal for users to apply, track and manage passport requests alongside a secure backend for processing staff.

general description.

features include online forms, document uploads, appointment management and secure payment processing.

Functional requirements.

1. online application submission.
2. secure document uploads.
2. Appointment scheduling
4. Real time status tracking.
5. notifications for updates.

interface Requirements.

1. ~~web~~ user-friendly application portal
2. admin processing dashboard
3. API for integration with database and payment systems.

Performance requirements

1. page load within 3 seconds.
2. support 500 users.

Design constraints.

1. use specified technologies.
2. scalability for peak loads

Non functional requirements

1. user friendly design
2. 99.5% uptime.

preliminary schedule.

1. total duration: 22 weeks.

preliminary Budget

total estimated Budget : $113,000