

I

Hotel Management 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 a Hotel Management System. 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 the Hotel Management System. It includes a description of the development cost and time required for the project.

1.3 Overview: The Hotel Management is a software solution designed to streamline hotel operations, including reservation management, check-in-check out, room assignment, billing and reporting.

2. General Description

The Hotel Management System will cater to the needs of hotel staff and management, providing features such as room booking, guest profiles, inventory management, and financial reporting. It will be accessible to users with varying levels of technical expertise.

3. Functional Requirements

3.1 Reservation Management:

- allow users to make room reservations online or through front desk.
- generate reservation confirmations and send notifications.

3.2 Room Management:

- design rooms for guests based on availability and preference.
- track room status in real time.

3.3 Guest Management:

- Maintain guest profiles with personal information, preferences and booking history.

3.4 Billing and Invoicing

- generate accurate bills for the room charge, additional charges, services etc.

4. Interface Requirements

4.1 User Interface

- Intuitive and user-friendly for hotel staff and guests.
- accessible via web browsers, mobile devices etc.

4.2 Integration Interface

- Integration with payment gateways for secure transactions.
- Integration with third-party booking platforms.

5 Performance Requirements

5.1 The Response time

The system should be responsive to users within 2 seconds of action.

5.2 Scalability:

Handle a minimum of 1000 concurrent users during peak time.

5.3 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.

6.2 Software Dependencies.

- Utilize a relational database management system. Use programming languages to XML modelize.

7 Non-Functional attributes

7.1 Security

- Implement robust authentication and authorizations.

7.2 Reliability

- Ensure high availability and fault tolerance.

7.3 ~~7.3~~ Portability

- Support multiple platforms and devices.

7.4 Scalability

- Design the system to accommodate future growth.

7.5 Usability

- The system shall have a user-friendly interface.

7.6 Reusability

- The system shall use modular code design to facilitate future enhancements.

8 Preliminary Schedule and Budget:

The development of the hotel management system is estimated to take 6 months with a budget of \$100,000.

II Credit Card Processing System:

1 Introduction

1.1 Purpose of this document

The purpose is to outline the requirements and specifications for the development of a Credit Card processing system.

1.2 Scope of this Document

The system will manage secure transactions between customers, merchants and banks. It will include payment authorization, transaction, settlement, fraud detection, and reporting features.

1.3 Overall Overview

The credit card processing system ensures both smooth and secure credit card transactions, supporting multiple currencies.

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General Description

The system will serve the customers, merchants, and financial institutions by processing payments efficiently and securely.

3 Functional Requirements

3.1 Transaction Authorization

Validate card details with issuing bank.

Support real-time approval/rejection.

3.2 Settlement and Clearing

Transfer funds between merchant and bank.

Generate settlement reports.

3.3 Fraud Detection

Monitor suspicious transactions using AI/ML.

Alert users and block high-risk activities.

3.4 Reporting

Provide daily, weekly, monthly transaction reports.
Allow merchants to download transaction history.

4 Interface Requirements

4.1 User Interface

Intuitive dashboards for merchants and customers.

Accessible via web and mobile platforms.

4.2 Integration interfaces

- Integration with multiple payment gateways.
- API's for banks and third-party for financial institution.

5. Performance Requirements

- Response time < 3 seconds per transaction.
- Handle atleast 5000 transactions per seconds.
- Ensure 99.99% uptime.

6. Design Constraints

- Must comply with PCI-DSS standards.
- Use strong encryption.
- Database : PostgreSQL or MySQL

7. Non-Functional Attributes

- Security : End-to-end encryption
- Reliability : Redundant system for zero down time.
- Scalability : Support global merchant operations.
- Portability : Compatible with iOS, Android.

Preliminary Schedule and Budget

Estimated 9 months with a budget of \$250,000, including development, testing, security and audit, etc.

III Library Management System

1 Introduction

1.1 Purpose of This Document

To define the requirement for a library Management System that can automate book cataloging, borrowing etc.

1.2 Slope of This Document

The system will manage library operations for students, staff and administration, providing efficient search, borrowing etc.

1.3 Overview

The Library Management System will handle book inventory, user records, issue/return operations, overdue tracking, and digital catalog management.

2 General Description

It will serve librarians, students and faculty.

3. Functional Requirements

3.1 Catalog Management

Add, Update and remove book

Maintain digital and physical book records.

3.2

Borrowing & Returning

Issue issued/returned book.

Calculate fines for overdue return.

3.3

User Management

Maintain student and faculty profiles.

Allow login using unique credentials.

3.4

Reporting

Generate daily reports ~~on~~ on transaction.

Provide book availability status.

4.3

Interface Requirements

- User-friendly dashboards for librarians.
- Mobile and web access.

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Performance Requirements

• Response time < 2 seconds

• Support at least 1000 concurrent users.

6

Design Constraints

• Database: MySQL

• Integration with barcode scanners.

7 Non-Functional Attribute

Security : Role-based access

Reliability : Daily backups of book data.

Scalability : Expandable to large libraries.

8. Preliminary Schedule and Budget.

Estimated 5 months with a budget of \$75000.

IV Stock Management System

1. Introduction

1.1 Purpose of this Document

To define requirements for a Stock Management System that manages inventory tracking, stock updates, supplier information.

1.2 Slope of this Document

The system will automate stock entry, re-order management, sales tracking, and reporting for warehouses and retail businesses.

1.3 Overview

It will monitor product availability, alert for low stock, and generate sales/inventory reports.

2 General Description

The system serves store managers, employees, and suppliers by maintaining real-time inventory records and order history.

3 Functional Requirements

3.1 Inventory Tracking

- Add/update stock details. ^{and track inflow history}
- Auto-generate purchase orders ^{when stock is low.}

3.2 Supplier Management

- Maintain supplier record.
- Auto-generate purchase orders when stock is low

3.3 Reporting

- Generate daily/weekly sales report.
- Provide store consumption patterns.

4 ~~5~~ Interface Requirements

- Simple dashboard for stock managers.
- ~~Integration with PO's systems.~~

5. Performance Requirement

- Real-time stock updates.
- Support at least 10,000 stock items.

6. Design Constraints

- Use relational database for stock tracking.
- Integration with barcode / RFID scanners.

7. Non-Functional Requirements

- Usability
- Reliability
- Scalability

8. Preliminary Schedule and Budget

Estimated 6 months with a budget of \$100,000.

P^T Passport Automation System.

1 Introduction

1.1 Purpose of this Document

To outline the requirements for a Passport Automation System that simplifies passport application, verification and issuance.

1.2 Scope of this Document

The system will handle online application submission, document verification, biometric scheduling and status tracking.

1.3 Overview

It will connect applicants, government staff, and verification authorities in a secure, digital environment.

2 General Description

Applicants can apply online, upload documents, pay fees and book appointments.

3 Functional Requirements

3.1 Application Submission

- Online passport application form
- Upload required documents securely.

3.2 Verification Process

- Document and police verification workflow
- Automated status update to applicants.

3.3 Payment and Scheduling

- Online fee payment
- Appointment booking for biometrics.

3.4 Reporting

- Generating reports on applications processed.
- Track pending verifications.

4. Interface Requirement

- User-friendly portal for application
- Secure backend for officials

5. Performance Requirement

- Response time < 2 seconds
- Support at least 50,000 user concurrently

6. Design Constraints

- Must comply with government IT/security policies
- Database: Secure RDBMS.

7 Non-Functional Attributes

- Security
- Reliability
- Portability

8 Preliminary Schedule and Budget

Estimated 12 months, with a budget of \$500,000.

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