

Date:- 21/08/25

Software Requirements Specification (SRS):-

(I) Hotel Management System

1) Introduction

1.1 Purpose of the document :- To define the requirements and functionalities for a Hotel Management System that automates booking, check-in/check-out, billing and hotel operations.

1.2 Slope of the document :- The system will handle guest reservations, room allocations, staff management, billing and reporting. It will improve efficiency, reduce manual errors and enhance customer experience.

1.3 Overview :- This system will be a web-based application accessible to hotel staff and guests (for booking). It will integrate modules like reservations, housekeeping and billing.

2) General Description :- The system will allow guests to make reservations online, hotel staff to manage rooms and services, and administrators to monitor operations. It will be designed to support multiple room types, seasonal pricing and special offers.

- 3) Functional Requirements
- (i) User login and authentication (Admin, Staff, Guest).
 - (ii) Room booking and cancellation.
 - (iii) Check-in and check-out management.
 - (iv) Billing and payment gateway integration.
 - (v) Housekeeping management.
 - (vi) Reports generation (occupancy, revenue, guest history).

4) Interface Requirements:-

- (i) User Interface :- Responsive web interface, simple dashboard for staff and admin.
- (ii) Hardware Interface :- Server hosting, internet-connected devices (PCs, tablets).
- (iii) Software Interface :- Integration with payment gateways, email/SMS notification services.

5) Performance Requirements:-

- (i) The system should handle atleast 500 simultaneous users.
- (ii) Booking confirmation within 3 seconds.
- (iii) 99.9% uptime availability.

6) Design Constraints:-

- (i) Must comply with data privacy laws (eg. GDPR).
- (ii) Compatible with major browsers.
- (iii) Secure handling of financial transactions.

7) Non-functional Requirements

- (i) Security :- Encrypted user data and secure payment.

- (ii) Usability :- Intuitive, Intuitive UI for staff and guests.
- (iii) Reliability :- Regular backups and disaster recovery.
- (iv) Scalability :- Should support multi-branch hotels.

8) Preliminary Schedule and Budget

(i) Development : 3-4 months

(ii) Testing : 1 month

(iii) Estimated Budget : \$15000 - \$20000 depending on features.

(II) Credit Card Processing

1. Introduction

1.1 Purpose of the document :- To define the requirements for a Credit Card Processing system that securely manages credit card transactions between merchants, customers and banks.

1.2 Slope of the document :- The system will handle ~~authorization~~, authentication, settlement, refunds and transaction history. It aims to provide a secure and efficient way for process payments.

1.3 Overview :- This system will be an online payment processing platform with fraud detection, encryption and multi-bank integration.

2) General Description :- The system will enable merchants to accept credit card payments, verify them in real-time and process settlements to their bank accounts. It will include fraud prevention measures and transaction history for users.

3) Functional Requirements :-

- (i) User and merchant authentication.
- (ii) Credit card validation (number, expiry, CVV).
- (iii) Transaction authorization and settlement.
- (iv) Refund and chargeback processing.
- (v) Transaction history and reporting.
- (vi) Fraud detection and alerts.

4) Performance Requirements :-

- (i) Process transactions within 2-3 seconds.
- (ii) Support at least 10,000 transactions per minute.
- (iii) 99.9% uptime.

5) Interface Requirements :-

- (i) User Interface :- Secure web portal for merchants and admin panel for system operators.
- (ii) Hardware Interface :- Servers with secure network connections (PCI DSS Compliance).
- (iii) Software Interface :- Integration with banking APIs, payment gateways, and encryption libraries.

6) Design Constraints

- (i) Must comply with PCI DSS, GDPR and other financial regulations.
- (ii) Data encryption using SSL/TLS.
- (iii) Multi-factor authentication for administrators.

7) Non-functional Requirements:-

- (i) Security :- Strong encryption, tokenization, and fraud detection algorithms.
- (ii) Reliability :- 24/7 availability with failover mechanisms.
- (iii) Scalability :- Should handle peak load during sales and festive seasons.
- (iv) Auditability :- Complete transaction logs and compliance reports.

8) Preliminary Schedule and Budget :-

- (i) Development :- 5-6 months
- (ii) Testing & Certification :- 2 months
- (iii) Estimated Budget : \$ 50,000 - \$ 80,000
depending on compliance requirements.

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(III) Library Management System

1. Introduction

1.1 Purpose of the document :- To define the requirements of a Library Management System that automates the process of book management, member registration, borrowing, returning and fines.

1.2 Sope of the document :- The system will handle Catalog management, user accounts, book reservations, overdue tracking and report generation.

1.3 Overview :- A web-based or desktop-based system accessible by librarians, staff and members to streamline library operations.

2) General Description

The system will allow librarians to add/update/delete books, manage members, process borrow/return transactions, and generate reports. Members can browse catalogs, reserve books, and track their borrowing history.

3) Functional Requirements :

- (i) User authentication (Admin, Librarian, Member).
- (ii) Add, update, delete and search books.
- (iii) Issue and return books.
- (iv) Fine calculation for overdue books.
- (v) Reservation system for unavailable books.
- (vi) Generate reports (Issued books, overdue, popular books).

- 4) Interface Requirements:-
- (i) User Interface :- Intuitive dashboard for librarians, simple catalog view for members.
 - (ii) Hardware Interface :- Computers or tablets in the library, internet connectivity (if online).
 - (iii) Software Interface :- Integration with barcode scanners, email / SMS notification services.
- 5) Performance Requirements
- (i) Should support 200-500 simultaneous users.
 - (ii) Book search results within 2 seconds.
 - (iii) Data backup atleast once per day.
- 6) Design Constraints:-
- (i) Must comply with institutional privacy policies.
 - (ii) Should work on Windows, Linux or Web platform.
 - (iii) Data storage should use relational database (e.g. MySQL / PostgreSQL).
- 7) Non functional Requirements
- (i) Security :- Password - protected user roles, encrypted member data.
 - (ii) Usability :- Easy to use for staff with minimal training.
 - (iii) Reliability :- Daily backups and recovery system.
 - (iv) Scalability :- Should support large book collections (50,000 + books).

8) Preliminary Schedule and Budget

- (i) Development : 2-3 months
- (ii) Testing : 1 month
- (iii) Estimated Budget : \$8000 - \$15000.

(IV) Stock Maintenance System :-

1. Introduction

1.1 Purpose of the document :- To define the requirements for a Stock Maintenance System that automates inventory tracking, stock updates, supplier management and reorder notifications.

1.2 Sope of the document :- The system will manage stock levels, incoming and outgoing inventory, purchase orders, and supplier information. It will help businesses maintain optimal stock levels and avoid shortages or overstocking.

1.3 Overview :- A centralized web or desktop-based application for store managers, warehouse staff, and admins to efficiently manage inventory operations.

2) General Description :- The system will allow users to add, update or delete stock items, records sales/purchases, generate alerts for low stock, and track supplier details. It will include search and reporting features for real-time inventory analysis.

3) Functional Requirements

- (i) User authentication (Admin, Staff).
- (ii) Add/update / delete stock items.

- (iii) Track stock in / out movements.
- (iv) Low-stock alerts and reorder suggestions.
- (v) Supplier and purchase order management.
- (vi) Generate inventory reports (daily/weekly/monthly).

4) Interface Requirements

- (i) User Interface :- Dashboard with inventory overview, search filters and reports section.
- (ii) Hardware Interface :- Computers, barcode scanners, or RFID devices for quick stock entry.
- (iii) Software Interface :- Integration with accounting software, email / SMS alert systems.

5) Performance Requirements

- (i) Should handle atleast 1,000 - 5,000 stock items.
- (ii) Update stock entries in under 2 seconds.
- (iii) Ensure 99.9% data accuracy and integrity.

6) Design Constraints :-

- (i) Must comply with business audit and compliance policies.
- (ii) Should support multi-location warehouses.
- (iii) Use secure relational databases (e.g. MySQL / PostgreSQL).

7) Non-functional Requirements :-

- (i) ~~Security~~ :- Role-based access, data encryption for financial records.
- (ii) ~~Reliability~~ :- Automated daily backups and restore options.
- (iii) Usability :- Minimal training required for staff.

(iv) Scalability:- should support increasing stock items and multiple branches.

8) Preliminary Schedule and Budget:

(i) Development :- 3-4 months

(ii) Testing :- 1 month

(iii) Estimated Budget :- \$ 10,000 - \$ 18,000.

(V) Passport Automation System

1) Introduction

1.1 Purpose of the document :- To define the requirements for Passport Automation.

System that streamlines passport application, renewal, verification and delivery.

1.2 Slope of the document :- The system will handle user registration, application submission, document verification, payment processing, appointment scheduling and status tracking.

1.3 Overview :- A secure web-based platform accessible by applicants, passport officials, and administrators to reduce manual workflow and processing time.

2) General Description :- The system will enable applicants to apply online, upload necessary documents, make payments and book appointments. Officials will verify documents, process applications and issue passports digitally.

3) Functional Requirements

- (i) User registration and authentication.
- (ii) Online passport application and renewal.
- (iii) Document upload and verification.
- (iv) Appointment scheduling and management.
- (v) Payment gateway integration.
- (vi) Application tracking and notifications.
- (vii) Reporting for officials (pending, approved, rejected cases).

4) Interface Requirements :-

- (i) User interface :- Secure portal for applicants, dashboard for officials.
- (ii) Hardware interface :- Servers, biometric devices for verification, scanners.
- (iii) Software Interface :- Integration with national ID databases, email (SMS notifications), payment systems.

5) Performance Requirements :-

- (i) Should process atleast 5,000 concurrent applications.
- (ii) Status update within 2 seconds after verification.
- (iii) ~~99.9% uptime for 24/7 availability.~~

6) Design Constraints :-

- (i) Must comply with government data privacy and security policies.

- (ii) Integration with police verification systems.
- (iii) Encrypted data storage and SSL-secured communications.

7) Non-functional Requirements:

- (i) Security:- Biometric authentication, two-factor verification for officials.
- (ii) Reliability:- Redundant servers and disaster recovery plan.
- (iii) Scalability:- Should support nationwide operations.
- (iv) Auditability:- Logs for all actions (submission, approval, rejection).

8) Preliminary Schedule and Budget:

- (i) Development:- 6-8 months
- (ii) Testing & Government Compliance:- 2-3 months
- (iii) Estimated Budget:- \$200,000 - \$300,000
(depending on scale)