

SOFTWARE REQUIREMENT SPECIFICATION for HOTEL MANAGEMENT SYSTEM:-

1. Introduction

1.1 Purpose of this document

The purpose of this document is to define the requirements for the development of a hotel management system. The system will streamline hotel operations such as room booking, check-in/check-out, billing, staff management, and reporting. This document provides clear and detailed descriptions for developers, testers, and stakeholders.

1.2 Scope of this document

The hotel management system will automate day-to-day hotel activities, replacing manual processes with a centralized digital platform. The system will allow customers to book rooms online, manage reservations, and generate invoices. For hotel staff, it will simplify tasks like room allocation, housekeeping management, and payment tracking.

- Value to customer: Faster service, easy booking, improved customer satisfaction
- Value to management: Reduced errors, efficient operations, better reporting
- Estimated development time: 5-6 months
- Estimated development cost: Depends on scope

1.3 Overview:-

The HMS will include models for room management, customer management, booking, and reservation, billing and payments, staff management, and report generation. The system will be user-friendly, scalable, and secure.

2. General description

The hotel management system will :

- Provide a platform for customers to view available rooms, pricing and amenities
 - Allow customers to make, update, or cancel reservations
 - Enable hotel staff to manage check-in/check-out
 - Maintain records of customers, billing, and payments
 - Help administrators monitor hotel performance via reports
- User characteristics :-
- Guests : Access booking portal, check availability, make payments.
 - Receptionists : Manage reservations, check-in/check-out customer details
 - Managers / Admin : Monitor staff, generate reports, handle billing, update room details.

3. Functional Requirements :-

The functional requirements include :-

- i) Room management - Add, update, or remove rooms, mark rooms as available/occupied
- ii) Reservation system - Online/offline booking with cancellation features
- iii) Customer management - Store guest details, ID proofs and history
- iv) Billing & Payment - Generate invoices, support multiple payment methods
- v) Staff management - Manage employee details, work shifts
- vi) Reporting - Generate daily, monthly, and annual reports.

4. Interface Requirements

- user interface : web portal and/or mobile app with a dashboard for guests, staff and admin.
- system interfaces : database integration for customer and reservations records
- communication interfaces : Email / SMS for booking confirmations and notifications
- external interfaces : Integration with payment gateway

5. Performance Requirements

- The system should process room bookings within 2 sec
- Must support at least 100 concurrent users without performance degradation
- Database queries should execute in less than 1 second
- System uptime must be ** 99.5

6. Design constraints

- Platform : web application
- Database : MySQL or PostgreSQL
- Programming language : PHP / Node.js / Java
- Limitations : requires stable internet for online bookings
- Security : Must comply with data protection policies

7. Non-Functional Attributes

- Security : Data encryption, secure login, role-based access
- Portability : Accessible from browsers and mobile devices
- Reliability : Backup and recovery mechanism in case of system failure

8. Preliminary schedule and budget

- Phase 1 : requirement analysis & system design
- Phase 2 : development of core modules
- Phase 3 : integration of billing payment gateway, and reporting
- Phase 4 : testing and debugging

+ Phase 5: Deployment and Staff Training

Estimated duration: 6 months

Estimated budget: 5-10 lakhs

Costs

2 CREDIT CARD MANAGEMENT SYSTEM

1. Introduction

1.1 Purpose of this document

Defines requirements for credit card management system to automate issuance, transactions, billing, & fraud detection.

1.2 Scope of this document

The system ensures secure, fast, and efficient credit card management for banks and customers.

1.3 Overview

Includes card application, transaction processing, fraud monitoring, billing, and reporting.

2. General description

Objective: Automate credit card lifecycle

Users: customers, bank staff, admins

Features: Transactions, billing, fraud detection

Benefits: Improved security, customer trust, efficiency

3. Functional requirements

- user registration & login
- credit card application and approval
- transaction authorization & OTP support
- billing & statement generation
- Fraud detection & alerts
- card blocking & replacement

4. Interface Requirements

- Bank system integration
- Mobile & web app interface
- Payment network API

5. Performance Requirements

- Process transaction < 3sec
- ✓ 10,000 + concurrent users

6. Design constraints

- Must follow PCI-DSS standards
- Multi-layer security

7. Non-functional attributes

- security: end-to-end encryption
- availability: 24/7

8. Preliminary schedule & Budget

- development time: 10-12 months
- Estimated cost: High

3. Library Management system

1. Introduction

1.1 purpose

Defines requirements for library management system to automate book lending and cataloging

1.2 scope

Improve efficiency by digitizing library processes

1.3 overview

System manages books, users, borrowing fines & reports

2. General description

- objective : Digitalize library operations

- users: students, librarians, Admins

- Features : search, borrow, return, fines, reports

- Benefits : time saving, better service

3. Functional requirements

- register library members

- maintain digital catalog

- borrow & return tracking

4. Interface Requirements

- barcode scanner support

- online catalog access

5. Performance Requirements

- catalog search < 2 sec

6. Design constraints

- Multi Branch library system

7. Non-functional attributes

- security : user authentication

- reliability : data backup support

8. Preliminary schedule & budget

- Development : 4-6 months

- cost : low to medium

1) stock management system

1. Introduction

1.1 Purpose

defines requirements for stock management system

1.2 Scope

automates inventory tracking, supplier management, & reporting

1.3 Overview

Tracks products, sales, suppliers, & generates reports

2. General description

- objective: manage stock effectively

- user: store staff, admins

- Features: stock tracking, supplier management, alerts

- Benefits: prevents stockouts / overstocking

3. Functional requirements

- product database

- stock-in & stock-out

- low stock alerts

- supplier database API's

4. Interface requirements

- pos system integration

- supplier database API's

5. Performance requirements

- Handle 100k+ product records

6. Design constraints

- works across multiple warehouses

7. Non-functional attributes

- security: role-based access

- reliability: real-time sync

8. Preliminary schedule & budget

- development: 6 months

- cost: Medium

5) Passport Automation system

1. Introduction

1.1 Purpose

Defines requirements for passport automation system

1.2 Scope

Digitalizes passport applications, verification & issuance

1.3 Overview

Enables online application, document submission, verification, and passport delivery

2. General description

- Objective: Automate passport processing

- Users: Citizens, Govt staff

- Features: Online applications, status tracking, verification

- Benefits: Faster, transparent, efficient

3. Functional requirements

- Online application & registration

- Document upload & verification

- Appointment scheduling

4. Interface requirements

- User interface → web-based front-end

- Admin interface → Dashboard for passport officials with secure login

- External interface → Payment gateway, police database integration, email notification API

5. Performance requirements

- System should handle atleast 5000 concurrent users

- Average response time must be less than 3 seconds

- System availability: 99.9%

- Error rate should be less than 1%

- Processing of application form should be completed within 5 minutes after submission

6. Design constraints

- must comply with government security standards
- Must support only secure communication
- limited to integration with authorized police and government databases
- system should work on all major browsers
- non-functional attributes
 - security: data encryption, secure login, and user access
 - Portability: accessible on desktop and mobile devices
 - Reliability: automatic backup and recovery features
 - Application compatibility: compatible with government IT infrastructure

8. Preliminary schedule and budget

- development: 4 months
- cost estimation: expensive (50 lakhs)



2. General description

• for customers

- apply for new credit card
- check eligibility and approval status
- check cibil scores
- pay bills online
- set spending limits and alerts

• for administrators

- approve/reject credit card applications
- monitor customer transactions
- generate financial reports
- detect suspicious or fraudulent activities

3. Functional requirements

- user registration and secure login
- online credit card application form
- document upload and verification
- online payment system
- fraud detection & alerts
- notification via sms & email

4. Interface requirements

- user interface - responsive web and mobile app for customers
- admin interface - secure dashboard for bank staff to manage cards & users
- external interfaces - payment gateway integration, sms/email notification API, third party verification systems

5. Performance requirements

- Must support at least 10,000 concurrent users
- Transaction processing time < 5 seconds
- Error tolerance < 0.5%
- Real-time fraud detection within 2 secs of transaction

6. Design constraints

- compliance with banking and financial regulations
- must operate only on secure channels
- limited integration with unauthorized banking systems
- must work across all modern browsers and mobile platforms

7. Non-functional attributes

- security: strong encryption, two-factor authentication, fraud prevention
- portability: web & mobile compatibility
- reliability: backup & disaster recovery system
- data integrity: no unauthorized access or manipulation

8. Preliminary schedule & budget

development: 8 months

cost: expensive (90 lakhs)

Continuation of ③ Library management system

DATE:

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1. Introduction:-

1.1 purpose

Defines requirements for library management system to automate book lending and cataloging.

1.2 scope

Improve efficiency by digitizing library processes.

1.3 overview

System manages books, users, borrowing fines & reports.

2 General description

for users

- Registration & login
- Search books by title, author, ISBN
- Borrow & return books
- Pay fines
- For administrators
- Manage user accounts
- Add, update, or delete books from the catalog
- Generate usage reports

3. Functional requirements

- User registration & login
- Book issue & return tracking
- Book reservation
- Admin book catalog

4. Interface requirements

- ✓ User interface: well interface
- Admin interface: secure dashboard for librarians to manage users & books
- External interface: payment gateway for fines, email/sns service for notifications

5. performance requirements

- must handle at least 2000 concurrent users
- search results should be displayed in less than 2 seconds
- system uptime 99.5%
- Error tolerance < 1%

6. design constraints

- system should comply with institutional IT policies
- must use secure login
- works on all modern browsers and mobile platforms

7. Non-functional attributes

- security: secure login, restricted access for admins
- reliability: regular backups & recovery options
- data integrity: prevents duplicate entries & unauthorized changes
- application compatibility: works with IT infrastructure

8. preliminary schedule & budget

- development: 3 months

- cost: medium: 15 lakhs

Q1/2/3