

Hotel Management System

Introduction

Purpose

The purpose of the document is to define the requirements of a Hotel Management System.

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Prob State: automated hotel management system

Introduction

Purpose

The purpose of this document is to define the requirements of a Hotel Management System.

Scope

The HMS will provide functionalities such as room reservation, billing, inventory management & reporting.

Overview

This document provides the various functional & non-functional requirements, system interfaces, performance expectations, design constraints, schedule & budget.

2. General Description:

The Hotel management system is intended to automate hotel operations & provide an integrated platform for managing reservations, customer information, billing & room availability.

3. Functional Requirements:

- 3.1 User Reg & Login: Users can reg & login.
- 3.2 Room Management: Add, update & delete room details.
- 3.3 Booking Management: customers can search for rooms, make reservations, modify or cancel bookings.
- 3.4 Check-in/Check-out: Manage customer checkins & outs.
- 3.5 Billing & Payments
- 3.6 Notification system.

4. Interface Requirements:

- 4.1 User Interface
- 4.2 Hardware Interface
- 4.3 Software Interface
- 4.4 Communication Interface

5. Performance Requirements

The system should handle @ least 500 concurrent users without performance degradation. System uptime should be @ least 99.5% annually.

6. Design Constraints

- Must be implemented as web based application.
- Usage of a RDBMS is a great choice.
- System should be scalable.

7. Non-Functional Attributes

- 7.1 Security
- 7.2 Usability
- 7.3 Reliability
- 7.4 Maintainability
- 7.5 Portability

8. Preliminary Schedule & Budget

PHASE	DURATION	EST. COST (\$)
Requirement Analysis	2 weeks	\$2000
Design	3 weeks	\$3000
Development	8 weeks	\$12000
Testing	4 weeks	\$4000
Deployment &	2 weeks	\$2000
Training	1 week	\$1000
TOTAL	19 weeks	\$28000

② CREDIT CARD PROCESSING

PROBLEM STATEMENT:

With the rapid growth of online payments & digital transactions, secure & fast credit card processing has become crucial.

1. Introduction:

1.1 Purpose

The purpose of this document is to define the requirements for a credit card system. It explains why the system is needed & its objectives.

1.2 Scope:

The system ensures authorization, authentication, & settlement of secure credit card payments for the customer & merchants. The system should support online & point of sale transactions.

1.3 Overview:

The system provides secure platforms for processing payments. It interacts with banks' payment gateways & merchant applications to approve or decline transactions based on card details & account status.

2. General Description

2.1 Objectives:

• Authorise card holder details,
process payments quickly & readily
reduce fraud & maintain accurate
transaction records.

3. Functional Requirements

3.1 User authentication:

validate customer credentials & card details

3.2 Transaction authorization:

approve or reject transactions in real time

3.3 Payment Settlement:

Transfer funds b/w customer & merchant accounts

3.4 Transaction history:

Maintain detailed log of all payments

4. Interface Requirements

4.1 User Interface

4.2 Bank Interface

4.3 Secure & strong real time backend systems.

4.4 Communication Interface.

5. Performance Requirements

The system must be able to handle multiple transactions @ least 1000 concurrent users & process secure transactions without any latency & loss (or getting hacked).

6. Design Constraints

- Must be implemented as both web-based & mobile based application.
- Use of RDBMS is recommended.
- It should be able to handle UPI payments.
- It must be scalable.

7. Non Functional Requirements

- 7.1 Security
- 7.2 Reliability
- 7.3 Usability
- 7.4 Portability.

8. Preliminary Schedule

PHASE	DURATION	EST. COST
Req. Analysis	2 weeks	\$ 2000
System Design	3 weeks	\$ 28000
Development	6 weeks	\$ 100000
Testing	3 weeks	\$ 8000
Deployment	2 weeks	\$ 2000
Total	16 weeks	\$ 200000

③ Library Management Systems

→ PROBLEM STATEMENT →
Traditional library operations include book tracing, member recognition, borrowing & returns, which are very time consuming & error prone. This when automated using web technologies we can make this process smooth & efficient.

1. Introduction

1.1 Purpose

The purpose of the document is to define the requirements for developing the library management system.

1.2 Scope

The system automates various library actions including borrowing, returns, the calculation & report generation. It helps the library to maintain accurate records, track inventory in real time & enhance the experience.

SEARCH

SEARCH

PRINT

BOOK

BOOK

EMPLOYEE

BOOK

BOOK

EMPLOYEE

1.3 Overview

The system provides a centralized platform to manage library operations effectively. It enables people to search books rapidly, borrow & return them.

2. General Description:

Automate manual library operations, maintain accurate book & member records, improve efficiency in borrowing & returning the books & to reduce human error.

3. Functional Requirements

3.1 User Management.

3.2 Book Management

3.3 Search & Filter

3.4 Borrow & Return module.

3.5 Fine calculation

3.6 Reservation system

3.7 Reports & logs

4. Interface Requirements

- Web based interface: Accessible to librarians & members.

- Database Interface: Stores information about books, members, transactions & fines.

- Notification System: Emails | SMS, remain reminders for due dates & reserved book availability

5.

Performance Requirements

Handle up to 10000 customers
 users without performance issues
 Search results should load
 within 1 second. Support 10000+
 book loads efficiently. Generate
 reports within 5 seconds.

6. Design constraints

- Must be implemented as a
 web based application.
- Use RDBMS.

7. Non Functional Requirements

- 7.1 Security
- 7.2 Usability.
- 7.3 Reliability
- 7.4 Scalability
- 7.5 Maintainability
- 7.6 Portability
- 7.7 Data Integrity

8. Preliminary Schedule

PHASE	DURATION	EST COST
Req. Analysis	1 week	\$ 3000
System Design	1 week	\$ 3000
Development	2 weeks	\$ 12000
Testing	2 weeks	\$ 2000
Deployment	1 week	\$ 4000
Total	8 weeks	\$ 23000

(9) STOCK MANAGEMENT SYSTEM

1. Introduction

* PROBLEM STATEMENT

In the fast paced & volatile environment of the stock market, investors, brokers & analysts require a reliable & efficient system to manage & monitor stock related activity.

1. Introduction

1.1 Purpose:

The purpose of the stock management system is to automate the process of tracking, managing & controlling inventory across warehouses, shops or business.

1.2 scope

The SMS will handle inventory tracking, stock entry / exit, supplier details, order management, & reporting. Users include Store Managers, Staff, & Administrators.

1.3 Overview

Stocks are added, transactions update the inventory, system tracks availability, alerts are generated for low stock & reports are created.

2. General Description

The system maintains a centralized inventory database to record all stock movements. It supports multi-user access with role-based privileges.

3. Functional Requirements

- 3.1 Product Management
- 3.2 Stock Trading / Tracking
- 3.3 Supplier Management
- 3.4 Alerts & Notifications
- 3.5 Reports.

4. Interface Requirements

- 4.1 User Interface: Dashboard with graphs, search & stock alerts
- 4.2 Hardware Interface
- 4.3 Software Interface
- 4.4 Communication Interface

5. Performance Requirements

Must support at least 1000 concurrent transactions. Stock updates should reflect in real time.

6. Design Requirements

6.1 Modular architecture

6.2 RDBMS

6.3 Role based Admins access

7. Non-Functional Attributes

7.1 Security

7.2 Reliability

7.3 Usability

7.4 Maintainability

7.5 Scalability

8 Preliminary Schedule

PHASE	DURATION	EST COST
Req. Analysis	2 weeks	\$ 8000
System Design	2-5 weeks	\$ 3000
Development	6 weeks	\$ 12000
Testing	2-5 weeks	\$ 4000
Deployment	1 week	\$ 2000
	15 weeks.	\$ 29000.

Benefits of a 20 week schedule
More time for testing and quality assurance

Threats to a 20 week schedule
Rapid & constant real life
environmental changes
priorities changing
constraints
needing new design

⑤ Passport Automation System (PAS)

1. Introduction

1.1 Purpose

The passport Authentication system aims to digitize & simplify the process of applying, renewing & tracking passports.

1.2 Scope

The PAS will manage application submission, document verification, appointment scheduling, police verification.

1.3 Overview

Applicant registers & applies, uploads documents, system verifies it, police clearance & @ last passport approval.

2. General Description

The system acts as a centralized online platform for passport related services.

3. Functional Requirements

- 3.1 User Registration & Login
- 3.2 Application Management
- 3.3 Appointment scheduling
- 3.4 Doc verification
- 3.5 Police verification

3.6 Payment gateway integration.

3.7 Tracking & Notification

3.8 Report generation.

4. Interface Requirements

4.1 User Interface

4.2 Hardware Interface

4.3 Software Interface

4.4 Communication Interface

5. Performance Requirement

System must handle at least 5000 concurrent applicants. Application tracking & updates should respond within 2-3 seconds.

6. Design Requirements

6.1 Modular Design

6.2 Secure role-based access control.

6.3 Strong encryption for sensitive data

7. Non-functional requirements

7.1 Security: Multi-factor authentication.

7.2 Reliability: Automatic back ups

7.3 Maintainability: Easy updates to comply with new govt policies.

PHASE	DURATION	EST COST
Req. Analysis	3 weeks	\$ 2000
System Design	4 weeks	\$ 3000
Development	8 weeks	\$ 10000
Testing	3 weeks	\$ 2000
Deployment	2 weeks	\$ 2000
total	20 weeks	\$ 20000

refer 20 weeks

total cost \$ 20000

6 phases in project

Phase 1: System Analysis & Requirements

Phase 2: System Design

Phase 3: System Development

Phase 4: System Testing

Phase 5: Deployment

Phase 6: Project Closure

Phase 7: Project Review

Phase 8: Project Feedback

Phase 9: Project Documentation