

Hotel Management System

Introduction:

Purpose

Provide a base for the foundation of the project. The objective of the Hotel Management System is to maintain a dataset of booking of rooms, providing services such as food, dinners etc.

Clients' requirements are analysed to build a desired system.

Scope

Hotel management is not only confined to hotels but has gone deep into tourism, catering, airlines etc. It encompasses various aspects of hotel operations to ensure efficient management and a positive guest experience. It includes automating tasks, managing reservations, optimizing staff schedules and analyzing data. Essentially it streamlines all hotel operations from front desk management to back office functions.

Overview

Hotel management system serves as a centralized platform for managing reservations, guest information, room inventory, billing and more. The system lets the user know which rooms are available at any point of time. This helps

in making booking considerably faster. The system allows the manager to post available rooms in the system. The system is hence useful for both customers and managers to manage hotel activities.

General Description

Enables a hotel or group of hotels to manage front office capabilities, such as booking, reservations, guest check-in and check-out, managing room rates and billing.

Functional Requirements

- Customers are able to register their details online.
- System will record the following details
 - Name
 - Address
 - Phone number
 - Email
- System enables customer to check availability of rooms and display its rates.
- System allows the customer to confirm or cancel booking.

Interface Requirements

Software Interface

- Any windows operating system
- Database to store details in text

Hardware Interface

- Monitor
- Keypad and mouse

Performance Requirements

- Data in the database should be updated as soon as users register themselves
- Query of customer solved quickly
- Load time of UI will not take more than 3 seconds

Design Constraints

- Integrating with existing systems
- Reporting Capabilities
- User roles and permission

Non Functional Attributes

- Response time
- Resource usage
- Data protection
- Access control

Preliminary Schedule and Budget

A hotel budget is a financial plan that outlines project income and expenditures. It serves as a financial blueprint, detailing various revenue systems.

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Credit Card Processing

Introduction:

Purpose:

A credit card allows the customer to buy his requirements without carrying cash in hand. Credit card processing dials out and obtains a credit card payment. Within few minutes, customer receives an e-mail receipt.

Scope

- Accepting credit card is an integral part of business today. It helps to grow their business to its greatest potential.
- Automatically connects to your financial network for credit card authorizations and settlements.
- Helps in reduction of frauds, saves time and provides powerful features and performance including detailed transaction records and reports.

Overview

A credit card enables users to buy goods or withdraw cash on credit. Transactions pass through a gateway processor for approval, logged and settled later. It offers merchants faster payments, wider customer reach and convenience. Online business benefit with funds transferred to account quickly, improving cash flow.

General Description

A credit card processing system is a technology infrastructure and a set of services that enable business to accept credit card payments from customers by securely and efficiently authorising, clearing and settling electronic transactions between the customer's bank, the merchant and the card network.

Functional requirements

- Authenticate users and validate card details.
- Process transactions with authorisation.
- Support cash advances, refunds and chargebacks.
- Provide fraud detection and security checks.
- Maintain transaction logs and generate reports.
- Offer merchant integration API's.

Interface Requirements :

Hardware Interface

Processor - Point of Sale (POS) devices for card swipes/ taps.

• Server is directly connected to the client systems which have access to the database on the server.

• Processor - Intel Pentium IV 1.83

• Memory - 256 MB RAM

• Hard disk drive - 40 GB

Software Interface

- Operating System : Microsoft Windows
- Front end client
- Database

Performance Requirements

The sniffer should work effectively during the transaction for good maintenance of the system.

Design Constraints

- Trusted if using a well known third party processor.
- Cheaper transaction rates
- Must provide fraud prevention measures.

Non functional Attributes

- Performance - Response time < 2 seconds
- Security - Two factor authentication
- Reliability and availability
- Maintainability and scalability

Preliminary Schedule and Budget

Library Management System

Introduction:

Purpose

The system will automate the process of managing books, users, borrowing and returning of books, providing efficient services for students, faculty and library staff.

Scope

Designed for both users and library admin. It will be a helpful product in a very effective way as it will reduce the workload from both users and admin.

Overview

A library management system is a stand alone system but can be extended to integrate with institutional portals. It maintains a database of books, members and transactions.

General Description

Designed to automate and streamline a library's operations, replacing manual processes with digital systems for managing resources and member interactions. By centralizing tasks and automating data, it enhances efficiency.

Functional Requirements

- User login and authentication
- Register and manage books and members
- Borrow and return books
- Calculate fines for overdue books
- Search catalog by title, author, ~~use~~, ISBN

Interface Requirements

Hardware Interface

- Standard Desktop or laptop
- Optional barcode scanner for ISBN's

Software Interface

- Database - MySQL
- Windows / Linux operating System

Performance Requirements

Check Login / Registration will not take more than 3 seconds.

Any financial transaction will not take more than 5 seconds.

Design Constraints

- System database used should be an open source technology
- Downtime of the system should be less than 10 minutes

Non - Functional Attributes

- Performance
- Safety and security
- Software quality
- Reliability and availability
- Usability

Preliminary Schedule and Budget

LMS will be developed in phases including requirement analysis, system design, coding, testing, deployment and maintenance. The budget covers hardware, software, testing ensuring smooth execution.

Stock Maintenance System

Introduction

Purpose

Keep a track and manage stock items. It prevents stock shortages and provides centralised platform for recording, monitoring and managing stock details. It aims to reduce manual efforts, improve accuracy and enhance stock management efficiency.

Scope

The system will handle stock records including product details, quantities, suppliers and transactions. It will generate reports, provide alert for low stock and maintain transaction history.

General Description Overview

The system will be standalone or web based and connected to a database for storing stock related information. It can integrate with billing systems in the future.

General Description

This system is for customers who access the information about the stock and retrieves information.

Functional Requirements

- Add new stock items with details
- Update existing stock quantities
- Track supplier and customer information
- Generate invoices for sales
- Alert when stock falls below minimum quantity

Interface Requirements

Hardware:

Processor = Intel Core i3

RAM - 4 GB

Hard disk - 250 GB

Software

• Windows operating system

• Database server - MySQL

• Web Server

Performance Requirements

System must support multiple users simultaneously, process stock transactions instantly, update inventory in real time, generate reports within seconds, handle large efficiently.

Design Constraints

- System must provide role-based access to ensure security.
- The database schema should follow normalization rules to avoid redundancy.
- User interface must be simple, intuitive and responsive.

Non Functional attributes

- Performance
- Security
- Usability
- Reliability and scalability

Preliminary Schedule and Budget

System will be developed in phases including coding, design, analysis. Budget covers development, database setup and hardware/software requirements.

Passport Automation System

Introduction

Purpose

Aims to streamline the process of passport application, renewal and issue by providing an online platform for applicants, reducing manual work.

Scope

System allows applicants to register online, submit application forms, upload documents and track application status.

Overview

Reduces manual work, saves time and improves efficiency. System enhances transparency and minimizes errors.

General Description

System is a centralised, web-based application connected to a secure database.

Functional Requirement

- User registration and login
- Online application form submission
- Document upload and storage
- Tracking status

Interface Requirements

Hardware:

Server - Quad core processor

Client - Any modern PC / phone

Software:

Windows operating system

Database

Performance Requirements

- System shall support atleast 5000 concurrent users.
- Response time should not exceed 3 seconds
- System is available with 99% uptime

Design Constraints

- Must comply with government IT policies
- Data privacy and confidentiality must be ensured
- Compatibility across major browsers

Non Functional Attributes

Reliability, scalability, usability, performance

Preliminary Schedule and Budget

Expected to complete within 6 months. Estimated budget covering deployment, testing and maintenance.