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SRS Document

Application - 01 : Hotel Management System

Problem Statement

Managing hotel manually or with out-dated methods with often lead to inefficiency, booking error, and poor customer service. A automated Hotel Management System with help to automate room booking, check-in check out billing, stay management and Employee attendance

1 Introduction :

1.1 purpose :

The purpose of this Document is to specify the software Requirement of Hotel Management System. It is intended to provide a detailed description of functional and non-functional specification of the system for developers, tester and Stake holders.

~~1.2 Scope:~~

~~The HMS will automate hotel operations including room booking, customer check in / check out billing,~~

1.2 Document Convention :

This document follows standard SRS conventions. Functional requirement are labeled as "FR" and non-Functional requirements as "NFR". The document also uses UML diagrams and flowcharts for illustration

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Intended Audience & Reading Suggestion

This document is intended for hotel managers, developers, project stake holders, and tester's. It's recommended to begin with the "Overall Description" to understand the system's context before reviewing specific requirements

Project Scope

The HMS is designed to manage hotel operations including room booking, guest check-ins/outs, room assignments, invoicing and integrating payment methods. It will also have reporting capabilites to help the hotel staff manage booking and optimize room availability.

References

- Hotel Management standards
- ISO/IEC 9126 for software quality
- PCI-DSS standards for payment integration.

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2 Overall Description:

2.1 product Perspective:

The HMS is a standard standalone system but but may integrate with third party payment getways and email/sms APIs for notifications.

It includes modules for:

-> Customer Registration & Booking
-> Room Allocation & Availability
-> Billing & payment
-> staff and services Management
-> Reporting

2.2 Product Functions

-> Book rooms online/offline
-> Register / check-in / check-out guests
-> Manage rooms inventory
-> Generate invoices and accepts payment
-> Assign and manages staff tasks
-> Generate reports on occupancy, revenue etc

2.3 User classes and characterstic

User Role	Description
Administrator	Full acces, system configuratio
Receptionist	Manage booking, check-ins/outs
Customer	View/book rooms, make payment
Staff	Acces assigned tasks

2.4 Operating Environment

-> Web server (Apache/Nginx)
-> ~~application~~ Database (MySQL)
-> Browser - based acces (Chrome, Firefox etc)

2.5 Design & Implement Constraints
→ The system must comply with local data protection regulation
→ use of secure communication (HTTPS)
→ Use of responsive UI design

2.6 User Documentation
→ User manual (PDF/ online help)
→ Admin guide
→ Installation & deployment guide

2.7 Assumptions and Dependencies
→ Reliable internet connection is assumed for online access
→ External API are available and functional

3 Specific Requirement

3.1 Functional Requirement

FR 1: User Registration and login
→ The system shall allow users to register using email / phone number
→ The system shall authenticate the user

FR 2: Room Booking
→ System shall displkey available room based on entered date range
→ System shall allow user for booking room.
→ System shall ~~attos~~ update room availability

FR 3: check-in / check-out process
→ The system shall allow receptionists to perform check-ins and check-outs
→ The system shall update the room status accordingly

FR 4: Billing and Payments
→ The system shall generate bills for each stay and allow task assignment to staff members

FR 5: Staff Management
The System shall allow the admin to add/edit/ delete staff and task assignment to staff member

FR 6: Reports
The system shall generate daily, weekly, and monthly reports on occupancy and revenue

3 Specific Requirements
3.1 Functional Requirement
FR 1: User Registration and login
FR 2: Room Booking

3.2 External Interface Requirement
3.2.1 User Interfaces
→ Responsive
3.2.2 Hardware Interface
3.2.3 Software Interface
3.2.4 Communication Interface

3.3 Performance Requirement
The system shall support up to 100 concurrent users and response time shall be less than 3 sec.

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~~Non functional~~
3.4 ~~Security Requirement~~

->

3.4 Extended Interface requirements

-> System must integrate with third-party travel agencies

-> integration with external payment gateway

->

4 Appendices

-> UML diagram for system Architecture & use case

-> flow chart for the guest check in / check out process

SRS for Application 2

Credit Card Processing System

1 Introduction

1.1 purpose

This document specifies the requirements for a Credit Card processing System (CCPS) to securely handle online and in-person payment, ensuring compliance with Security standard and Efficient transaction processing.

1.2 Documentation Convention

Functional Requirement are denoted as "FR' non-functional requirement as "NFR" and Extended interface requirement as "EIR'

1.3 Intended Audience and Reading Suggestions

This SRS is intended for developers, system architects, project managers and stakeholders involved in the CCPS implementation. It's recommended to the start with "Overall description"

1.4 Project Scope

The CCPS will manage the process of authorizing, validating and completing Credit card transactions It will ensure that all transactions are secure, compliant with PCI-DSS

References
PCI- DSS
ISO 27001

2 Overall Description

Product Perspective
The system will interact with payment gateway, banks, merchants and user to facilitate credit card transactions. It will have a focus on security and compliance, ensuring sensitive data is encrypted

Product Functions:
→ Transaction Authorization
→ Transaction Settlement
→ Fraud Detection
→ Payment Confirmation

User Characteristics
Merchants: Business integrating the sys into their website (physical store)
Bank: Financial institutions verifying & processing card transaction
Cardholders: payments using their credit card.
Admin: full access.

Constraints:
The system must comply with PCI-DSS standard
It should process transaction with in 2 sec
and It must see high volume transaction

Assumptions and Dependencies
The system assumes the availability of reliable internet, It depends on banks & payment gateway to validate and settle payment

User Interface:
Merchant Interface: A secure web protal for merchant to view transaction
Administrator interface: A dashboard for monitoring transaction
the card holder: Typically handled by via the merchant's website or POS system.

3. Specific Requirements
Functional requirement

1. FR1: The system must allow merchants to process credit card payment by sending authorization request to the cardholder's bank

2. FR2: The system must support multiple payment payment methods

3. FR3: The system must securely store transaction data, encrypted and tokenized, for later retrieval and dispute resolution
4. FR4: The system must automatically flag suspicious transactions using predefined fraud detection rules.

Non-Functional Requirement

1. NFR1: The system must proccn each transaction within 2 sec of receiving the authorization request

2. NFR2: The system must be able to scale and handle upto 10000 transaction per minute during peak usage periods.

3NFR3: The system must comply with PCI-DSS ensuring that sensitive credit card data is securely handled at all times.

Extended Interface Requirements

1. EIR 1: The system must integrate with various payment gateways, ~~such as~~

EIR2: The system must provide an API for third-party developers to integrate with merchant website or physical point-of-sale systems.

EIR 3: The system should offer webhook notifications for merchants on transaction status update

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4. Appendices

A1: UML diagram for sys architecture, including the payment flow

A2: Flow charts illustrating the payment processing cycle, from authorization to settlement

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Application: 03

Library Management System

Problem Satement

Traditional library systems depend on manual book keeping, when leads to inefficiency, misplaced records, and difficulties in tracking borrowed or returned books.

A Library Management system [LMS] is required to automate book Management, borrowing, returns. and user registrations to improve efficiency. and accensibility.

SRS

Introduction:

1.1 purpose

The purpose of this system is to automate library operations including book issues. return, catalog management, and users records

1.2 Document Convention:

This SRS follows IEEE 830-1998 standard. Requirements are classified into functional.

1.3 Intended Audience and Reading Suggestion

The document is meant for developers, Librarians, system administrations, and students.

1.4 Project Scope

The LMS manages book, users, borrowing and return operations. It will help librarians organize book efficiently

1.5 References : IEEE 830-1998 SRS standard.

2 Overall Description

2.1 product perspective

The system will act as a central Database application for storing library records connected to a user-friendly interface for both staff and students.

2.2. product Functions:

The LMS will provide functions such as book search, borrowing, return, catalog update & fine calculation.

2.3 User classes and characteristics.

- Librarians: Manage books
- Students/users: search and borrow books
- Administrators → system monitoring and reports

2.4 Operating Environment:

The system will run on desktops with database support and many extend to web or mobile access

2.5 Design and Implementation Constraints
The system must ~~be~~ use a relational database Authentication and role-band access are required.

2.6 User Documentation
user manuals and quick guide will be provided for staff and students.

2.7 Assumptions & Dependencies
It is assumed that a stable internet or local network connection will be available

3 Specific Requirement:
3.1 Functional Requirements:
→ Add, update, and delete book records
→ Borrow and return books with due dates
→ Calculate and apply fines for late returns
→ Generate library usage reports

3.2 External Interface Requirement
→ User Interfaces → login Screen, book search, form, borrowing / return panel.

→ Hardware Interface → SQL Database Student record sys.

→ Communication Interface : LAN / internet for remote access.

3.3. Non - Functional Req.

→ Reliability → System must not lose record during update

→ Availability → Accessible during library hours (24/7 for online)
→ Security → user authentication and role-based access control.

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Application - 04

Stack Maintenance System :

Problem Statement!

Manual Stock management often leads to errors, misplaced records and difficulties in tracking inventory levels. A stock Maintenance System is needed to automate stock-in, stock out, and reporting process, ensuring accuracy and efficiency in inventory control.

Software Requirements Specification (SRS)

1. Introduction:

1.1) purpose:
The purpose of the system is to automate Stocks records, track items availability and generate reports for efficient inventory control.

1.2 Document Conventions.
This document follows IEEE 830-1998 SRS guideliness

1.3 Intended Audience
For use by Store managers, ware house staff and developers.

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1.4 project Scope
The system manages Stocks-in, stock-out-supplier details, and alerts for low inventory

1.5 References: IEEE 830-1998 standard

2 Overall Description

2.1 product perspective
The stock Maintenance System is a stand alone application with a database to track and Manage inventory.

2.2 product Functions:
The system maintains stock records, generator reports and provides alerts when items are running low.

2.3 user classes
- Store Manager → oversees stock
- staff Members → update stock entries
- Administrator → Manages system settings

2.4 Operating Environment
Runs on desktop / Mobile with support programming language.

2.5 Contraints
Required secure login, a stable database, and compliance with data acuracy.

2.6) User Documentation

user manual & quick - start guide will be provided

2.7 Assumptions & Dependencies

Assumes continous internet connetion and functional hardware.

3 Specific Requirement

3.1 Functional Requirement

→ Add, update, and delete stock items

→ Record stock-in and stock-out transaction

→ generat daily / weekly / monthly

→ Send alerts for low stock levels

3.2 External Interface Req

→ User Interface → Dashboard for stock

→ Hardware → Desktop / mobile device barcode Scanner

→ Software → SQL database integration

→ Communication → LAN / Internet

3.3 Non functional Requirements

→ Reliability → System must ensure data accuracy & consistency

→ Security → only authorized users can modify stock records

→ performance → stock updat should proces within 2 seconds.

→ Maintaibility → easy to add new items categories and reports.

Application - 05

passport Automation system:

problem Statement:
The Manual process of passport application and verification often result in delays, errors and lack of transparency, A passport Automation System is req. to automate application Submission, verification, and tracking ensuring faster processing and improved accuracy.

SRS

1. Introduction

1.1 purpose:
The passport Automation system aims to automate the process of applying verifying and issuing passports. It will reduce manual errors and improve efficiency.

1.2. Document Conventions
This document follows IEEE 830-1998 standard for software requirement Specifications

1.3 Intended Audience
This document is intended for applicants passport officials developers, system admin

1.4 project scope
The sys allows online passport application verification of details, appointment scheduling and status tracking

1.5 References : IEEE 830-1998 standard

2) Overall Description
2.1 product Perspective :
The system will act as an online platform integrated with a gov database for passport processing.

2.2 product Functions
It will handle new applications, renewals, verification, appointment, and issues status updates

2.3 User Classes
→ Applicant → Applies for passport and tracks status

→ passport officer → verifies applications and document

→ Administrator → Manages the system and reports

2.4 Operating Environment
The system will run as a web-based application with database connectivity and internet access.

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2.5) Constraints
Requires Secure authentication compliance with gov policies and reliable Serves

2.6) User Documentation
user manual & online help will be provided for applicats and staff

2.7) Assumptions & Dependencies
Depends on gov ID verification

3) Specific Req
3.1) Functional Req
-> Allow applicatiants to register & submit applications online
-> Provide doc upload & verification feature
-> Enable appointment Scheduling for verification / interviews
-> Enable status tracking for applicants

3.2) External Interface Req
-> User Interface -> online forms for application and status tracking
-> Hardware -> Desktop / mobile access, biometric Scanner
-> Software -> Database, gov verification APIs
-> Communication -> Secure intermediate connection

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3.3 Non Functional Req
-> Relaicability -> The sys must ensure data accuracy and integrity
-> Security -> Must encrypt perisonal data and follow gov securities standard
-> performance -> Application processing with 3 - 5 sec per request
-> Availability -> System should be accessible 24/7

4) Appendices
PAS -> Passport Automation sys
SSL -> Secure Socket layer