

Lab - 1

- 1) Hotel management
- 2) Credit card processing
- 3) Library maintenance
- 4) Stock maintenance
- 5) Passport automation

SPS

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1) Hotel management system

Problem statement:

problem 4

Efficient hotel management is crucial to ensure customer satisfaction. Traditional hotel management process is outdated and inefficient, they are prone to errors, often combined with human misunderstanding and booking conflicts.

This may lead to poor customer experiences, room assignments and poor management of hotel. So develop an application to manage the

above problem.

SRS.

Introduction.

Hotel management system is a tool for booking the rooms of hotel through online process.

i) Purpose (Motivation)

The main purpose is to provide a base for the foundation of the project. Also to manage hotel operations.

ii) Scope:

Due to the growing technology and modernisation, the traditional way of booking hotel is outdated. So, modernisation & updating according to the surroundings is necessary.

General Description.

Hotel management system is an independent system that will interface with external services such as payment gateway, booking confirmations, availability search, information about hotel and staff, to provide many services like outdoor con. Facilities, health etc.

Functional Requirements.

Some of the major functional requirements are,

- * Should allow guests to search for room availability.
- * Enable online booking, provide check in - check out processing.
- * It should manage hotel staffs, generate billing and invoices with multiple payment options.
- * It also should provide secure login and access controls.

Interface Requirements.

i) Hardware Requirements.

Integration with hotel property devices, Portable computers and many more.

ii) User Interface.

Web - based interface, mobile application

to book rooms, Responsive UI.

iii) Software Interfaces.

Payment gateway API's, OTA platforms, Database

Hotel management system, User validations

Reviews and ratings, Room booking API's

etc.



Performance Requirements

The system should support multiple simultaneous bookings & queries in short span of time, also it should handle huge data load, and it should update room status within few seconds after change is committed.

Design Constraints

- * This should be developed as a cloud-hosted solution for scalability & efficiency, should use secure authentication standards.
- * Database must ensure ACID properties.

Non-functional attributes

- Non-functional attributes must include:
- * Should ensure security, Reliability, Usability, Maintainability, Scalability, portability, etc.

Preliminary Schedule budget

Requirement Analysis 1 month 5000 \$.

Implementation 3 months 25,000 \$.

Testing & Deployment 1 month 8000 \$.

Maintenance 1 week per month 10,000 \$.

Estimated Time : 5-6 months, Cost - 60,000 \$.

2) Problem statement.

To make efficient, secure, real-time credit card payment & processing.

Introduction.

i) Purpose:

To specify the software requirements for credit card processing system. To make money transaction easy, efficient, without any fraud and misuse.

ii) Scope:

It will handle real-time transaction approval, error handling, security checks, reporting.

General Description.

Credit card processing system as middleware solution between merchant, banking systems.

- * Ensuring secure & authorized transactions,
- * Should also initiate payment requests for merchants as well as card holders.

Functional Requirements.

- * Authenticate cardholder & card details.
 - * Authorize (or) decline transactions.
 - * Support refunds & chargebacks.
 - * Detect frauds & misuse.
 - * Provide secure API's.
 - * Maintain transaction logs & auditing.
- Performance Requirements.
- * Transactions should run smoothly, response time should be few seconds.
 - * Should handle multiple transactions.

Non-functional Requirements.

- * Security, Scalability, Reliability, maintainability, Compliance, Usability.

Preliminary Schedule & Budget:

Phase	Duration	Cost -
Analysis.	4 weeks.	6000 \$
Implementation	8 weeks	10000 \$
Testing & deployment	12 weeks	15000 \$
Maintenance	1 year	8000 \$

Estimated time: 60-70 weeks, Cost: \$ 30000

3) LIBRARY MANAGEMENT

i) Problem Statement:

To maintain & manage library more efficiently and in a more ordered way.

INTRODUCTION

i) This covers the automation of all major library operations, including book cataloging, member management and to specify the requirements for a library management.

ii) Overview:
Library management system is a software application designed to replace a manual (or) outdated library process.

GENERAL DESCRIPTION:

The library Management System will be used by librarians for administration tasks and by library members for browsing and searching the catalog. It will be web-based application, ensuring easy access for all users without the need for special software.



- Functional Requirements:
- * Allow librarian to add, modify, remove books and other media from database.
 - * Each item shall have details like title, ISRM, genre and location.
 - * Maintain a record of each member, update their information and manage membership.
 - * Maintain a record of each member's borrowing history.

Interface Requirements:

i) User Interface:

- * A simple, clean, intuitive web interface for both library management.
- * Design shall be responsive to work on both desktop and mobile web browser.

ii) Integration Interface:

- * Integration with USB (or) Bluetooth barcode scanner for quick check-in, check-out.
- * Optional integration with an email service to send overdue notices and reservation confirmation.

Non-functional Attributes

Security, Reliability, Usability, Compatibility, maintainability, scalability.

Preliminary Schedule & Budget:

<u>Phase</u>	<u>Duration</u>	<u>Cost</u>
Analysis	3 weeks.	6000 \$
Implementation	7 weeks.	10,000 \$
Testing deployment	6 weeks.	52 000 \$
Maintenance	12 weeks.	150.00 \$ A

Estimated time: 35 weeks
Cost: \$ 80,000.

4) Stock Maintenance.

Problem & Statement.

The main purpose of the stock maintenance is to manage the entire details of the stock system in an automated way.

INTRODUCTION:

i) This is designed to manage, monitor, control inventory efficiently within an organization.

By using a stock maintenance system, business can prevent stockouts, overstocking & wastage.

ii) Scope:

This will cover the requirements of the stock maintenance system.

General Description.

The proposed system is an online platform, designed to manage & track inventory efficiently. Overall, this system aims to improve customer satisfaction, streamline operation, better decision making.

Functional Requirements

- * The system shall be internet oriented, ensuring that all user can access the platform.
- * This will manage to view, filter & print info about product.
- * Also this allows administration to manage & update product information.
- * Also allows customer login with their credentials.

Interface Requirements

Hardware:

- * HDD : 500 GB + minimum.
- * RAM : 4 GB + RAM.
- * A stable internet connection.

Software:

- * Windows 7 / Linux / MAC operating system.

Non-Functional Requirements:

Security, reliability, Usability, compatibility, maintainability, scalability.

Preliminary Schedule & Budget.

<u>Phase.</u>	<u>Duration.</u>	<u>Estimated Cost.</u>
Analysis	1 week.	30000 \$
Architecture	2 weeks	20000 \$
Development	7 weeks	60000 \$
Testing & Deployment	6 weeks	140000 \$
Total	<u>Estimated time:</u> 20 weeks	<u>Estimated Cost:</u> 180000 \$

refined no risk mitigation happening yet.

5) Passport Automation System.

Problem Statement:

To automate the dispatch of passports to all applicants effectively & efficiently.

INTRODUCTION:

There is an interface between the applicant & the authority responsible for the issue of passport.

i)

Purpose:

The complete process is done manually which is inefficient & time consuming. So, it has to be automated.

ii)

Scope:

The system reduces the time consumption & also reduces human error to improve efficiency.

General Description

The passport automation system acts as an interface between the applicant & administrator. This system tries to make the interface as simple as possible.

Functional Requirements.

- * System shall provide information about different types of passport guide.
- * The system shall authenticate users to ensure only valid users.
- * This can also provide multiple payment methods confirmation.
- * System also allows different departments to verify documents.
- * Also allows user to check the current status of their passport application.

Interface Requirements.

Hardware:

Processor: intel core i3 (or) above

RAM: 4 GB minimum

Storage: 500 GB SSD / HDD.

Software:

OS: windows | Linux | MAC

- * Database storage, like MySQL, etc.
- * Some Encryption tools, role based authentication.

Non-Functional Requirements

Security, Usability, Reliability, Manageability,
Scalability, Compatiblity.

Answers at www.stackoverflow.com

Preliminary Schedule & Budget

Answers at www.stackoverflow.com

<u>Phase</u>	<u>Time</u>	<u>Cost</u>
Analysis.	1 week	1000 \$
Architecture	3 weeks	2000 \$
Building & testing	7 weeks	30000 \$
Deployment	3 weeks	4000 \$
Maintenance.	12 weeks	70000 \$

So, the total estimated time is 30 weeks

and 1,50,000 \$ is the average estimated cost.

Answers at www.stackoverflow.com