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## SOFTWARE ENGINEERING

### Feasibility Study Report

### Pharmacy Management System

Submitted to

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# 1. Introduction

## 1.1 Overview of the project

A software programme known as a pharmacy management system automates a pharmacy's daily activities. The system controls the inventory, sales, and purchases of medications with the goal of streamlining and optimising the pharmacy's operations. Maintaining precise records of patient data, medicines, and invoices is also helpful.

The following stages are commonly involved in building a pharmacy management system:

Requirement analysis is figuring out what the pharmacy and its employees need to manage things like inventory, sales, and customer data. Based on the investigation, a list of functional and non-functional requirements is created.

Design: The system's high-level and low-level designs are created during the design phase. Determining the system's architecture, data model, and user interface design are all included in this.

Development: Based on the design parameters, the system is created during the development phase. This include developing databases, writing code, and putting the user interface into practise.

Testing: During the testing phase, both functional and non-functional requirements are tested on the system. Testing the user interface, database, and module integration are all included in this.

**Deployment:** The system is put into the production environment after it has been examined and authorised.

**Maintenance:** During the maintenance phase, the system is continuously supported and maintained, including updates, bug repairs, and upgrades.

A pharmacy management system can help the business run more efficiently, provide better customer service, and spend less money on overhead. Additionally, it can aid in maintaining accurate data, minimising errors, and ensuring regulatory compliance. All things considered, a pharmacy management system can be a useful tool for any pharmacy seeking to streamline its processes and boost its bottom line.

## 1.2 Objectives of the project

The following are the primary goals of creating a pharmacy management system:

The goal of a pharmacy management system is to automate and streamline a pharmacy's daily operations, including managing inventory, sales, and customer data. By doing so, manual labour can be cut down on and operational effectiveness increased.

**Increase accuracy and decrease errors:** By automating routine processes like writing prescriptions, monitoring inventory levels, and generating reports, a pharmacy management system can assist to increase accuracy and decrease errors.

Improve customer service: By giving quick access to customer information, prescription history, and other pertinent data, a pharmacy management system can help to improve customer service. This can facilitate more individualised care from pharmacy employees and boost client satisfaction.

Profitability improvement: A pharmacy management system can assist in improving profitability through improved inventory control, waste reduction, and sales growth through efficient marketing and customer relationship management.

Ensure regulatory compliance: By keeping correct records, monitoring inventory levels, and providing reports as needed by regulatory agencies, a pharmacy management system can help to assure regulatory compliance.

Real-time data and insights can be provided via a pharmacy management system, which can do this for important variables including inventory levels, sales, and consumer behaviour. This can assist pharmacy managers and owners in making wise choices and seeing areas for development.

### 1.3 The need for the project

Inventory Management: A pharmacy management system allows pharmacies to manage their medicine inventory, including stock levels, expiration dates, and purchase orders. This helps to avoid stockouts and waste, resulting in increased profitability.

Prescription Management: Pharmacies can manage patient prescription data with a pharmacy management system, including the ability to refill prescriptions, track patient prescription history, and manage billing and insurance claims. This improves customer service while also ensuring regulatory compliance.

Efficiency: A pharmacy management system aids in the automation and simplification of many manual processes associated with running a pharmacy,

such as inventory tracking, prescription filling, and billing. This increases operational efficiency and saves pharmacy staff time.

**Analysis of Data:** A pharmacy management system can provide real-time data and insights into key metrics such as inventory levels, sales, and customer behaviour. This assists pharmacy owners and managers in making informed decisions and identifying areas for improvement.

**Security:** A pharmacy management system can aid in the protection and privacy of sensitive data such as patient information, medication inventory, and financial transactions. This contributes to the prevention of data breaches and ensures regulatory compliance.

## 1.4 Overview of existing systems and technologies

For pharmacy management systems, there are several existing systems and technologies. Here are a couple of examples:

**PIS (Pharmacy Information System):** A PIS is a software system that is specifically designed for pharmacies. Prescription processing, inventory management, patient records, and billing are all included.

**EHR (Electronic Health Records):** An EHR is a digital copy of a patient's medical records. It contains details such as a medical history, test results, and medication records. EHRs can communicate with pharmacy management systems to provide a complete picture of a patient's health information.

Barcoding is a technology used in pharmacies to track inventory. Each medicine bottle is labelled with a unique barcode that can be scanned at various stages of the medication dispensing process to ensure accuracy and inventory levels.

**Point-of-Sale (POS) Systems:** POS systems are used in pharmacies to process sales transactions. They can also be integrated with inventory management systems to track real-time sales and inventory levels.

**Automated Dispensing Systems:** Automated dispensing systems are used in pharmacies to manage and dispense medications. They can automate prescription filling and labelling, reducing errors and increasing efficiency.

**Cloud-based systems** enable pharmacies to store their data and software in the cloud rather than on local servers. This has the potential to provide advantages such as scalability, flexibility, and cost savings.

**Mobile Applications:** Pharmacy operations such as inventory management and prescription processing can be managed using mobile applications. They can also give patients access to their medication records and enable them to request refills.

## 1.5 Scope of the project

Main actors of this system:

1. Super admin
2. System user
3. Shopkeeper
4. Customer

Main use cases associated

1. Manage users and full application
2. Manage medicines
3. Manage sales
4. Manage stocks
5. Manage company
6. Manage inventory
7. Login and logout from system

8. Update my profile
9. Change account password
10. View stocks
11. Add medicines
12. Create bills
13. Orders for medicine
14. View bills
15. Make payments

## 1.6 Deliverables

A pharmacy management system's deliverables include:

Management software for medicines, sales, stocks, company information, inventory, and orders.

The user interface allows for simple navigation and use of the software application.

All necessary information, such as patient and medication details, stock levels, and sales data, should be stored in a database.

Reporting functionality for generating sales, inventory, and other metrics reports.

Security features to safeguard patient information and other sensitive information.

Capabilities for integrating with other healthcare systems, such as EHRs.

Users can use training and support resources to learn how to use the system effectively.

Compliance with all relevant data privacy, security, and drug safety laws, regulations, and industry standards.

Scalable infrastructure that can accommodate growth and changes in the pharmacy's operations over time.

Features that can be tailored to the pharmacy's specific needs and workflows.

## 2 Feasibility Study

After completing the project Pharmacy Management System, studying and analysing all of the system's existing or required functionalities, the next task is to conduct a feasibility study for the project. Given unlimited resources and infinite time, all projects are feasible. The feasibility study takes into account all of the possible solutions to the given problem. The proposed solution should meet all of the user requirements and be adaptable enough to allow for future changes based on new requirements.

### 2.1 Financial feasibility

This is a critical factor to consider when creating a project. We chose the technology with the lowest possible cost in mind.

The organisation must bear all hardware and software costs.

Overall, we estimate that the benefits to the organisation from the proposed system will undoubtedly outweigh the system's initial and ongoing costs.

### 2.2 Technical feasibility

This included investigating the function, performance, and constraints that may have an impact on the ability to achieve an acceptable system. For this feasibility study, we investigated the entire functionality to be provided in the system, as described in the System Requirement Specification (SRS), and determined

whether or not everything was feasible using various types of frontend and backend platforms.

## 2.3 Resource and time feasibility

The availability of resources such as personnel, equipment, and technology required to successfully implement the system is referred to as resource feasibility. Hardware upgrades, software development, and database management may be required for a pharmacy management system. It may also necessitate the hiring of specialists such as software developers, database administrators, and system analysts. It is critical to assess the availability and accessibility of these resources to determine whether the project is resource feasible.

The timeline required to complete the project successfully is referred to as time feasibility. Developing and implementing a pharmacy management system can be a time-consuming process, so it is critical to assess the project's timeline to ensure that it can be completed within a reasonable timeframe. The project timeline should take into account factors such as resource availability, potential delays, and other unforeseen circumstances that may impact the timeline.

## 2.4 Risk feasibility

The potential risks and challenges that may impact the success of a pharmacy management system are referred to as risk feasibility. The following are some of the most common risks associated with implementing a pharmacy management system:

Technical risks associated with implementing a pharmacy management system include hardware and software issues, data security, and data loss. These dangers can have an effect on the system's functionality, stability, and security.

Organizational risks are the risks associated with changes to the pharmacy's current processes, workflows, and operations. These risks may have an impact on the system's acceptance by staff, customers, and other stakeholders.

Financial risks are those associated with the cost of developing and implementing the pharmacy management system, as well as the potential return on investment (ROI). These risks may have an impact on the project's financial viability.

Legal and compliance risks refer to the dangers associated with the laws, regulations, and standards that govern the pharmacy industry. These dangers can jeopardise the pharmacy's ability to meet regulatory requirements and avoid penalties.

Before implementing a pharmacy management system, it is critical to identify and assess these risks. Risk management strategies such as risk assessment, risk mitigation, and risk monitoring can help to mitigate the impact of these risks and increase the project's chances of success. To address potential risks and ensure the successful development and implementation of the pharmacy management system, a risk management plan should be developed and implemented.

## 2.5 Social/legal feasibility

The impact of the system on society and stakeholders such as patients, healthcare providers, and pharmacists is referred to as social feasibility. The system should be designed in such a way that it improves the quality of healthcare services, increases patient safety and satisfaction, and meets stakeholders' expectations. Stakeholder engagement, surveys, and focus groups can all be used to assess social feasibility.

Legal feasibility refers to the system's compliance with pharmacy-related laws, regulations, and standards. The system must adhere to regulations governing patient data privacy and security, drug safety and efficacy, and pharmacy operations. Legal feasibility can be assessed using legal and regulatory analysis, compliance audits, and expert opinions.

A pharmacy management system must adhere to the following legal and regulatory frameworks:

1. The Health Insurance Portability and Accountability Act was enacted in 1996. (HIPAA)
2. Regulations of the Drug Enforcement Administration (DEA)
3. Regulations of the Food and Drug Administration (FDA)
4. Pharmacy laws and regulations vary by state.
5. Data Security Standards for the Payment Card Industry (PCI DSS)

It is critical that the pharmacy management system adheres to these legal and regulatory frameworks. Noncompliance with these regulations may result in fines, legal action, and reputational harm.

Finally, when developing and implementing a pharmacy management system, it is critical to consider social and legal feasibility. The system should be designed in such a way that it improves the quality of healthcare services, meets stakeholders' expectations, and adheres to legal and regulatory frameworks.

### 3 Considerations

There are several factors to consider when designing a pharmacy management system to ensure that it is effective, efficient, and user-friendly. Among these considerations are:

**User Interface:** The system should have an easy-to-navigate user interface, even for users with limited technical knowledge.

**Data security:** Data security should be built into the system to protect patient data and other sensitive information from unauthorised access or data breaches.

**Interoperability:** The system should be designed to seamlessly integrate with other healthcare systems, such as electronic health records (EHRs), to ensure efficient patient data sharing.

**Scalability:** The system should be designed to accommodate the pharmacy's growth and changes over time.

**Training and Support:** The system should include training and support resources to ensure that users are properly trained to use the system and that technical support is available if problems arise.

**Customization:** The system should be adaptable to the pharmacy's specific needs and workflows, allowing it to integrate seamlessly with existing processes.

**Compliance:** The system should be designed to be in accordance with all applicable laws, regulations, and industry standards, including those pertaining to data privacy, security, and drug safety.

**Performance:** The system should be designed to be dependable, fast, and efficient, allowing users to complete their tasks quickly.

## 4 References

<a href="https://www.academia.edu/39914042>Title\_of\_the\_Project\_Online\_Pharmacy\_Management\_System