



Software Requirements Specification

for

PHARMACY MANAGEMENT SYSTEM

Version 1.0 approved

Prepared by

NAME:

USN:

individual contribution:

1. Introduction

2. System Requirements

**PES University
02-02-2021**

Table of Contents

Table of Contents

Table of Contents ii

Revision History ii

1. Introduction

1.1 Purpose

1.2 Intended Audience and Reading Suggestions

1.3 Product Scope

1.4 References

2. Overall Description

2.1 Product Perspective

2.2 Product Functions

2.3 User Classes and Characteristics

2.4 Operating Environment

2.5 Design and Implementation Constraints

2.6 Assumptions and Dependencies

3. External Interface Requirements

3.1 User Interfaces

3.2 Software Interfaces

3.3 Communications Interfaces

4. Analysis Models

5. System Features

5.1 System Feature 1

5.2 System Feature 2

6. Other Nonfunctional Requirements

6.1 Performance Requirements

6.2 Safety Requirements

6.3 Security Requirements

6.4 Software Quality Attributes

6.5 Business Rules

7. Other Requirements

Appendix A: Glossary

Revision History

| Name | Date | Reason For Changes | Version |
|------|------|--------------------|---------|
| | | | |
| | | | |

1. Introduction

1.1 Purpose

The pharmacy management system is built for the sake of ensuring effective and clear data saving and manipulating as well as neat work on the pharmacy medical products. This refers to the pharmacy management system project that highly minimizes time and resource by which searching the

ingly minimize time and resources by which, securing the medicine data you can get the data in the quickest time. And almost the resources are wisely used since most actions are done on the pharmacy system. Some of the resources minimized include paper, manpower and related things. The other thing is for storing data in a secure way. A summarized list of drugs dispensed to patients can be viewed for monitoring purposes. Also PMS will be able to generate reports on the list of drugs dispensed in the polyclinic for a given time period. And there is a message alert for the user if the stock holding quantity reaches a low level. Thus, the pharmacist will need to replenish the drugs.

1.2 Document Conventions

- 1. The whole of the document is typed in arial font, with headings in "heading2" text of font size 17 with text in bold and paragraph texts in font size 11 with text in italics.*
- 2. The points are in a numbered list as first heirarchy followed by bullets as second hierarchy.*
- 3. The points to be highlighted for better understanding are underlined.*
- 4. PMS- pharmacy management system.*
- 5. JDK- java development kit*
- 6. IDE- integrated development environment*

1.3 Intended Audience and Reading Suggestions

This project is a prototype for the flight management system and it is restricted within the college premises. This has been implemented under the guidance of college professors. This document is intended to be used by prospective users of the proposed pharmacy management system; these are the doctor, cashier, administrator and customers.

This document contains the "overall description" section which contains the perspective, functions, design, functions

etc, intended to give a brief aspect of the pharmacy management system. This is followed by External Interface requirements containing communication, software and user interfaces which tells us about the various interfaces we associate with. The document follows with analysis models such as the uml models. Next in the document is the system features which explains in details the features of our pharmacy management system.

1.4 Product Scope

The system is to be developed to ease the process of managing the sale of pharmaceutical products in a pharmacy and also to better manage the records about these products. Information about medical items can be found within this web application. The application helps people working in pharmacies as salespeople to easily navigate through the sale of these products even if they have little or no information about them. This is possible as the application provides a platform where additional helpful information describing the medical items can be added for ease of sale of these items. This therefore means that the pharmacies can be able to employ an individual who is computer literate rather than one who is literate on pharmaceutical products. This therefore, shows that the application ensures employment to non-experienced salespeople on these products.

With the development of specific and potent synthetic drugs, the emphasis of the pharmacist's responsibility has moved substantially towards the utilization of scientific knowledge in the proper use of modern medicines and the protection of the public against dangers that are inherent in their use. Pharmacists are employed in regulatory control and drug management, community pharmacy, hospital pharmacy, the pharmaceutical industry, academic activities, training of other health workers, and research. In all these fields, their aim is to ensure optimum drug therapy, both by contributing to the preparation, supply and control of medicines and associated products, and by providing information and advice to those who prescribe or use pharmaceutical products.

1.5 References

- 1. Learn JavaFX 8: Building User Experience and Interfaces with Java 8 Book by Kishori Sharan*

2. Overall Description

2.1 Product Perspective

The project starts by adding a dealer and by adding details of customers. The user can now purchase new medicines by the desired dealer and then can sell them to the customer. The purchasing and selling of medicines is reflected in the inventory section. The main aim of the Pharmacy Management project is to add and sell medicines. We aim to easy the work and improve the efficiency of the pharmacies.

Modules:

Pharmacy Management Project contains 5 modules:

1. **Sale counter:** user can make sales for the added medicines.
2. **Purchase:** use can add new medicines or increase the quantity of existing medicines.
3. **Add customer:** add a new customer to the database.
4. **Add dealer:** a new dealer, the database.
5. **Inventory:** reflect all the available quantity of the medicines

2.2 Product Functions





The pharmacy management system provides functions on identification of medication dosages instruction, minimize human errors in medication safety, facilitate accessibility of drugs' information and information management among employees, provide optimal drugs movement in pharmacy units, enable reports within a significantly short period of time, despite simultaneous usage of databases for the purpose stated above. The system will solve the problem of the current system by minimizing time wastage and reducing resources which simply change manual based systems to computerized systems.

- 1. Store Medicine data's***
- 2. Search Medicine data effectively***
- 3. Update, delete, and Edit medicine information***
- 4. Generate report on medicine Prepare bill for the medicine***
- 5. Gives navigation or information for pharmacy organization***

2.3 User Classes and Characteristics

1. Hospital Staff

- ***Doctors: Their usage may tend to the level of less***

• Doctors: Their usage may tend to the level of less frequent. They need to have the knowledge regarding each drug type and dosages of the pharmaceuticals. They need to be a qualified medical practitioner.

• Nurses: Their usage is more frequent then the doctors but not the most frequent. They need to have the basic knowledge about the drugs prescribed by the higher authorities. They need to have a certain level of educational qualification of nursing.

2.Pharmacists

• Administrator: They belong to the usage category of most frequent as they tend to requirements of many customers. They may require knowledge regarding the different pharmaceuticals available in the pharmacy.

• Cashier: They also have a high frequency of usage. They only require basic computing knowledge. Requires no educational qualification.

3.Customers

There are many customers and they are the class that uses the pharmacy management system the most.

They only require the basic android or computer accessing knowledge to be able to place an order.

They don't require any educational qualifications.

2.4 Operating Environment

- 1. distributed database*
- 2. client/server system*
- 3. Operating system: Windows.*
- 4. database: Mysql database*
- 5. platform: JavaFX*

More on technologies used:

1.JavaFX

JavaFX is a Java library using which you can develop Rich Internet Applications. By using Java technology, these applications have a browser penetration rate of 76%.

2.MySQL Database

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company.

2.5 Design and Implementation Constraints

The designer normally will work under following constraints:

- 1. Hardware: The existing hardware will obviously affect the system design.*
- 2. Software: The available software (operating system, utilities, language etc.) in the market will constrain the design.*
- 3. Budget: The budget allocated for the project will affect the scope and depth of design.*
- 4. Time-scale: The new system may be required by a particular time (e.g. the start of a financial year). This may put a constraint on the designer to find the best design.*
- 5. Interface with other systems: The new system may require some data from another computerized system or may provide data to another system in which case the files must be compatible in format and the system must operate with a certain processing cycle.*

2.6 User Documentation

For the user documentation components we may use the following delivery formats and standards:

- 1. Quick Starter Guide: This explains the most fundamental parts of the software and give the main and most important instructions.*
- 2. Complete user manual: This gives an in-depth information and instructions about the software. This*

could either be an operation manual, installation manual, maintenance manual and so on.

3. Instruction video: This is a very efficient tool to provide the user with the details of the product in a visual manner.

4. Online Help: The users can be provided online help or customer care by arranging a helpline number or a help section.

For our software we may use either user manual or instruction video to help the user easily navigate through the product and use the product with more efficiency. This guide will ensure that even an amateur user is able to use the product in a hassle free manner.

2.7 Assumptions and Dependencies

Let us assume that this is a distributed pharmacy management system and it is used in the following application:

- 1. A request for ordering of medicines from the pharmacy .*
- 2. Calculation of medicine prices and calculating appropriate total bill for each customer.*
- 3. Assuming both the transactions are single transactions.*

3. External Interface Requirements

3.1 User Interfaces

- 1. Front-end software: JavaFX*
- 2. Back-end software: MySQL*

3.2 Hardware Interfaces

On the client side interface, the proposed system will require a device with a proper screen resolution and an equivalent amount of hardware requirements such as RAM. The software shall be well equipped enough to interact with hardware components of a system like its mouse and the keyboard. A coloured monitor screen, network card and a WIFI router is also needed. On the server side the software will be hosted on a web server.

Windows a browser which supports CGI, HTML & Javascript.

Hardware requirements-

| | | |
|------------------|----------|---------------------|
| System | : | Pentium Dual |
| Core. | | |
| Hard Disk | : | 120 GB. |
| Ram | : | 1 GB |

3.3 Software Interfaces

The database system together with interfaces would run on a window based system. MySQL will be used to query the data.

| | |
|-------------------------|--|
| Operating system | <i>We have chosen Windows operating system for its best support and user-friendliness.</i> |
|-------------------------|--|

| | |
|-----------------|--|
| Database | <i>To save the drugs, dosage and customer details we have chosen MySQL database.</i> |
|-----------------|--|

Software requirements-

| | | |
|-------------------------|----------|---------------------------|
| Operating system | : | Windows |
| XP/7/10. | | |
| Language | : | Java (Install JDK |
| 1.8) | | |
| IDE | : | Netbeans |
| 8 2/Eclipse | | |

3.4 Communications Interfaces

This project supports all types of web browsers.

HTTP or HTTPS protocols will be used to facilitate the communication between the server and the client.

A Network Interface Card is required which allows a computer to connect to the network.

An Ethernet Connection Interface might also be required.

TCP/IP protocol Internet service provider to access and share information over the internet.

4. Analysis Models





5. System Features

5.1 SQL Database

5.1.1 Description and Priority

The pharmacy management system maintains information on drugs, drug dosage, pricing and availability. Of course, this project has a high priority because managing our health is very important and this project helps us do it very easily and efficiently.

5.1.2 Stimulus/Response Sequences

1. *Search for medicines.*
2. *Displays the requested medicine and places the order.*
3. *It displays the bill of the order.*

5.1.3 Functional Requirements

The user must have the basic knowledge to operate an android or a PC. The user must also have an internet connection in order to place the order. The pharmacist must also have internet connection to receive the order.

5.2 Client Server System

5.2.1 Description and Priority

The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).

5.2.2 Stimulus/Response Sequences

1. *Some sites are client sites and others are server sites.*
2. *All the data resides at the server sites.*
3. *All applications execute at the client sites*

5.2.3 Functional Requirements

The client(users) must have the basic knowledge to operate an android or a PC. The user must also have an internet connection in order to place the order.The server(pharmacist) should receive orders through the internet .

6. Other Nonfunctional Requirements

6.1 Performance Requirements

Performance: The pharmacy management system operates its function in a small amount of time which is less than a few seconds and can be accessed by one user at a time or concurrently. When the system may be busy due to malfunction operation it may wait up to a few minutes.

1.E-R Diagram

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- **entities**: Which specify distinct real-world items in an application.
- **attributes**: Which specify properties of an entity and relationships.
- **relationships**: Which connect entities and represent meaningful dependencies between them.

2.Normalisation

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once.

Storing information several times leads to wastage of storage space and increase in the total size of the data stored.

If a database is not properly designed it can give rise to modification anomalies. Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database. Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

6.2 Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

6.3 Security Requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

6.4 Software Quality Attributes

- 1. AVAILABILITY: The medicines should be available when the customers are placing the*

order.

2. CORRECTNESS: The medicines should be given correctly to the customer.

3. MAINTAINABILITY: The pharmacy should maintain the stock of the different medicines based on the purchase rate.

6.5 Business Rules

The software creators should not be held responsible for the failures created by the malfunctioning of the hardware system .

The warranty is only valid for the specified amount of time mentioned during the purchase.

Any maintenance series required post the expiration of warranty is subject to a fee.

The creators are not to be held responsible for any improper use made by the users' end.

7. Other Requirements

The pharmacy management system needs a legal approval from the government to run its system as a public medium where the abide to the given rules and regulations of the government.

n general, the following design objectives should be kept in mind:

1. Practicality: The system must be stable and can be operated by people with average

2. Efficiency: This involves accuracy, timeliness and comprehensiveness of the system output.

3. Cost: it is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy all the requirements.

4.Flexibility: The system should be modifiable depending on the changing needs of the user. Such modifications should not entail extensive reconstructing or recreation of software. It should also be portable to different computer systems.

5.Security: This is a very important aspect of the design and should cover areas of hardware reliability, fall back procedures, physical security of data and provision for detection of fraud and abuse.

System design involves first logical design and then physical construction of the system. The logical design describes the structure and characteristics of features, like the outputs, inputs, files, databases and procedures. The physical construction, which follows the logical design, produces actual program software, files and a working system.

Appendix A: Glossary

1.User-friendly: Is the way that the built system is not ambiguous which is clear for using the created software interface for manipulating actions or tasks. In the other way the proposed system is designed for human likable components in color, font and other related things.

2.Manual based system: The system that is used was paper based and arranged on the shelf through functionality of documents. Everything that is arranged, searched, updated and deleted is through humans only. In general manual based systems are un-computerized systems which are tedious in its data arrangement for efficient work.

3.Pharmacist: The profession who has knowledge on the medicine usage, instruction for use of those medicines for particular diseases and other related things.

4.Management system: A system in which manage, organize, formulate data's through a technical data structure arrangement.

5.Billing: The way in which generating paper which stores information about some specific data contains detailed explanation.

