Software Requirements Specification

Version 1.0

***June 22/6/2020***

***Pharmacy management system***

Jima Shammout

Joelle Mousa

Ronnie Nicola

Shaza Dakhil

# Table of Contents

[Table of Contents i](#_Toc77487619)

[List of Figures ii](#_Toc77487620)

[1.0. Introduction 3](#_Toc77487621)

[1.1. Purpose 3](#_Toc77487622)

[1.2. Scope of Project 3](#_Toc77487623)

[1.3. Glossary 3](#_Toc77487624)

[1.4. References 4](#_Toc77487625)

[1.5. Overview of Document 4](#_Toc77487626)

[2.0. Overall Description 5](#_Toc77487627)

[2.1 System Environment 5](#_Toc77487628)

[2.2 Functional Requirements Specification 6](#_Toc77487629)

[2.2.1 Pharmacist Use Case 6](#_Toc77487630)

[Use case: Search for medicines 7](#_Toc77487631)

[2.2.2 Pharmacist Use Case 7](#_Toc77487632)

[Use case: Ordering medicines 7](#_Toc77487633)

[2.2.3 Assistant Use Case 7](#_Toc77487634)

[Use case: Buying and selling report 7](#_Toc77487635)

[2.2.4 System Use Cases 8](#_Toc77487636)

[Use case: Validity alert 8](#_Toc77487637)

[2.2.5 Assistant Use Case 9](#_Toc77487636)

[Use case: Update Medicines 9](#_Toc77487638)

[2.3 User Characteristics 9](#_Toc77487648)

[2.4 Non-Functional Requirements 10](#_Toc77487649)

[3.0. Requirements Specification 11](#_Toc77487650)

[3.1 External Interface Requirements 11](#_Toc77487651)

[3.2 Functional Requirements 11](#_Toc77487652)

[3.2.1 Search for medicines 11](#_Toc77487653)

[3.2.2 Ordering medicines 11](#_Toc77487654)

3.2.3 Assistant Use Case…………………………………………………………………………...12

3.2.4 System Use Cases…………………………………………………………………………….12

3.2.5 Update Person………………………………………………………………………………...12

3.3 Detailed Non-Functional Requirements…………………………………………………………...13

3.3.1 Logical Structure of the Data…………………………………………………………………13

3.3.2 Security……………………………………………………………………………………….13

# List of Figures

[Figure 1 - System Environment 5](#_Toc77487669)

[Figure 2 - System Use Cases 8](#_Toc77487671)

[Figure 3 - Logical Structure of the pharmacy Manager Data 14](#_Toc77487672)

# *1.0. Introduction*

## 1.1. Purpose

The purpose of this document is to present a detailed description of the Pharmacy management system. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

## 1.2. Scope of Project

Developing an automated system to work in a clear and integrated way that allows organizing the process of managing the storage and dispensing of medicines, dealing with bills, and computerized accounting.

## 1.3. Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| prescription | A physician's order for the preparation and administration of a drug or device for a patient. A prescription has several parts. the inscription, which contains the names and quantities of the ingredients; the subscription or directions for compounding the drug; giving the directions to be marked on the container. |
| Database | Collection of all the information monitored by this system. |
| Software Requirements Specification | A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document. |
| Stakeholder | Any person with an interest in the project who is not a developer. |
| User | Pharmacist and his assistant. |

## 1.4. References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

## 1.5. Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

# *2.0. Overall Description*

## 2.1 System Environment

Figure - System Environment

Pharmacist

System

Interface manegment

Store monitoring

Pharmacy management system

## The pharmacist has many responsibilities for managing the pharmacy. It is necessary to equip it with a computer system that gets him the ability to carry out all the tasks of the pharmacy (storing and organizing drug names, organizing research and accounting ....).

System To monitor the quantity and duration of medications.

## 2.2 Functional Requirements Specification

This section shows us usage cases for the Pharmacist , Assistant and the System.

The Pharmacist has two use case,

The System has two use case,

The Assistant has one use case,

### ***2.2.1 Pharmacist Use Case***

#### **Use case:** Search for medicines **:**

Pharmacist

Search medicines

**Brief Description**

The pharmacist searches for the name of the product within the system to give it to the customer, bearing in mind that some medicines are only given by prescription from a specialist doctor.

**Initial Step-By-Step Description**

1. Searching for the drug either by its name or the name of the manufacturer.
2. Show information of medicines that are identical or similar to the research, with information (price, manufacturer, expiry date).
3. Selecting the required medicine and entering the desired quantity where the program shows an alert when selecting these medications and an alert appears if the medicine has expired.
4. Show available medicine alternatives if the required medicine is not available.

**Xref:** Section 3.2.1,

### ***2.2.2 Pharmacist Use Case***

#### **Use case: Ordering medicines**

**Diagram:**

Pharmacist

Ordering medicines

**Brief Description**

The pharmacist requests the medicines from the repository if they exist ,or from the company if they are not available to him.

**Initial Step-By-Step Description**

1. Show the option to send the order via e-mail or a text message that allows the user to enter the name of the company to be sent to, stating the names of the medicines and the quantity they want.
2. Registration of bills after the arrival of the medicines: (the name of the product with his company, its price, the quantity received and the discount if it exists and the date of the order as it appeared in the receipt.
3. Enter the sum of the medicine bills purchased for the system to add to the bills paid in the month.

**Xref:** Section 3.2.2

### ***2.2.3 Assistant Use Case***

#### **Use case: Buying and selling report**

**Diagram:**

Assistant

Make reports

**Brief Description**

Reporting the buying and selling process for the inventory at the end of each month.

**Initial Step-By-Step Description**

1. Print the medicine bill that was purchased from the warehouse during the month.
2. Printing the total price of medicine and products sold to customers during the month.
3. Print a report showing his total profit for the month.
4. Show the total inventory report, which contains the names and quantities of the remaining medicines in the pharmacy, medicines sold and total profit.

**Xref:** Section 3.2.3

### ***2.2.4 System Use Cases***

The System has the following two use cases:

Figure 2 - System Use Cases

System

Validity alert

Quantity control

**Repository monitoring Information use cases**

**Brief Description**

Show an alert with the names of medicines whose expiration date is close to expiry, and show a list containing the names of medicines and their quantities that are almost over.

**Initial Step-By-Step Description**

1. The program is 30 days short from the date of the expiration date of each medication entered. If this date comes and the medicine still exists, the name of this medicine is stored in a list that appears when the program is run.
2. Where the name of the drug is stored in this list automatically when its quantity is less than 10 cans.

**Xref:** Section 3.2.4

#### **2.2.5 Assistant Use Case**

#### **Use case: Update Medicines**

**Diagram:**

Assistant

Update Medicines

**Brief Description**

The assistant modifies the drug information.

**Initial Step-By-Step Description**

1. Amendment to the drug if it already exists (amend the expiration date, add an amount to the pre-existing amount).
2. Enter the price at which the medicine was purchased for the system to calculate the new price at which the customer will be sold Monitor the warehouse and store it in the drug information.
3. The presence of a cell next to each medication in which the names of medications can be modified as a substitute for them.

**Xref:** Section 3.2.5

## 2.3 User Characteristics

The language of the foreign Pharmacist and his assistant must be good and and able to deal with the computer.

## 2.4 Non-Functional Requirements

1. Protect the program with a username and password: Do not start with a password.

2. Encrypt monthly billing information and reports: that is, they are stored encrypted.

3. The inability of the program to work on other computer equipment: in order to protect its rights

4. The speed of execution of the request, research and printing operations: that is, the speed of response

# *3.0. Requirements Specification*

## 3.1 External Interface Requirements

## User Interface:

## Login screen: Users (pharmacist and his assistant) log in and access the system based on the privileges granted.

## Registration form: At the time of acceptance, details of the drug such as the name of the drug, type of drug, manufacturer, quantity, etc.

## Inventory management screen: current stock, usage.

## Admin screen: Add and remove system users / change rights, password, backup and restore operations, change configs, etc.

## Reporting tool: Reporting settings like billing etc.

## 3.2 Functional Requirements

The Logical Structure of the Data is contained in Section 3.3.1.

### ***3.2.1 Search for medicines***

|  |  |
| --- | --- |
| **Use Case Name** | Search for medicines |
| **XRef** | Section 2.2.1, Search for medicines |
| **Trigger** | A customer is asking for medicine. |
| **Precondition** | The customer has a prescription. |
| **Basic Path** | 1. Searching for the drug either by its name or the name of the manufacturer. 2. Show information of medicines that are identical or similar to the research, with information (price, manufacturer, expiry date). 3. Selecting the required medicine and entering the desired quantity where the program shows an alert when selecting these medications and an alert appears if the medicine has expired. 4. Show available medicine alternatives if the required medicine is not available. |
| **Postcondition** | The medicine searched for will be brought and ordered. |
| **Exception Paths** | The customer no longer wants to buy medicine |
| **Other** | The customer requests a drug that does not exist |

### ***3.2.2 Ordering medicines***

|  |  |
| --- | --- |
| **Use Case Name** | Ordering medicines |
| **XRef** | Section 2.2.2, Ordering medicines |
| **Trigger** | The pharmacist orders the medicine from the repository. |
| **Precondition** | Unavailability of the drug in the pharmacy. |
| **Basic Path** | 1. Show the option to send the order via e-mail or a text message that allows the user to enter the name of the company to be sent to, stating the names of the medicines and the quantity they want. 2. Registration of bills after the arrival of the medicines: (the name of the product with his company, its price, the quantity received and the discount if it exists and the date of the order as it appeared in the receipt. 3. Enter the sum of the medicine bills purchased for the system to add to the bills paid in the month. |
| **Postcondition** | Approval of ordering medication. |
| **Exception Paths** | Inability to deliver the order. |
| **Other** | None |

### ***3.2.3 Assistant Use Case***

|  |  |
| --- | --- |
| **Use Case Name** | Assistant Use Case |
| **XRef** | Section 2.2.3, Assistant Use Case |
| **Trigger** | In the event of selling a drug. |
| **Precondition** | The customer paid the amount. |
| **Basic Path** | 1. Print the medicine bill that was purchased from the warehouse during the month. 2. Printing the total price of medicine and products sold to customers during the month. 3. Print a report showing his total profit for the month. 4. Show the total inventory report, which contains the names and quantities of the remaining medicines in the pharmacy, medicines sold and total profit. |
| **Postcondition** | Register the medicine sold in the inventory report. |
| **Exception Paths** | Reporting printer has crashed. |
| **Other** | In the absence of the assistant, the pharmacist must print the reports. |

### ***3.2.4 System Use Cases***

|  |  |
| --- | --- |
| **Use Case Name** | System Use Cases |
| **XRef** | Section 2.2.4, Validity alert, Quantity control |
| **Trigger** | Approach expiration or quantity approaching.. |
| **Precondition** | The system works to monitor medications. |

|  |  |
| --- | --- |
| **Basic Path** | 1. The program is 30 days short from the date of the expiration date of each medication entered. If this date comes and the medicine still exists, the name of this medicine is stored in a list that appears when the program is run. 2. Where the name of the drug is stored in this list automatically when its quantity is less than 10 cans. |
| **Postcondition** | The appearance of the alert and the pharmacist's see it. |
| **Exception Paths** | System crash malfunction. |
| **Other** | None. |

### ***3.2.5 Update Medicines***

|  |  |
| --- | --- |
| **Use Case Name** | Update Medicines |
| **XRef** | Sec 2.2.5 Update Medicines |
| **Trigger** | Replace expired medications and add new drug quantities. |
| **Precondition** | Receive the medicines that he was requesting. |
| **Basic Path** | 1. Amendment to the drug if it already exists (amend the expiration date, add an amount to the pre-existing amount). 2. Enter the price at which the medicine was purchased for the system to calculate the new price at which the customer will be sold Monitor the warehouse and store it in the drug information. 3. The presence of a cell next to each medication in which the names of medications can be modified as a substitute for them. |
| **Postcondition** | The database has been updated. |
| **Exception Paths** | Medicines are not available in the laboratory. |
| **Other** | None. |

## 3.3 Detailed Non-Functional Requirements

### ***3.3.1 Logical Structure of the Data***

The logical structure of the data to be stored in the internal pharmacy Manager database is given below.

The assistant

The pharmacist

Repository

System

Alerts

search

ordering

Update and reports

Figure - Logical Structure of the pharmacy Manager Data

The data descriptions of each of these data entities is as follows:

**Repository Data Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| StoreName | Text | Name of Store |  |
| CompanyName | Text | Name of Company |  |
| MedicineName | Text | Name of Medicine | May be several |

**Repository bill Data Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| MedicineName | Text | Name of Medicine |  |
| StoreName | Text | Name of Store | Used as key in Historical Society Database |
| MedicinePrce | Integer | purchase price |  |
| ImportedAmount | Integer | The number of medicine boxes | May be several |
| discount | Integer | Quotation from the company | Less than the buying price |
| date | Date | The date of the order was purchased |  |

**Inventory report Data Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| RemainingQuantity | Integer | Number of remaining cans |  |
| soldQuantity | Integer | Number of selling cans |  |
| RemainMedName | Text | Name of remaining Medicine |  |
| SoldMedName | Text | Name of selling Medicine |  |

**Medicines Data Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| Name | Text | Name of Medicine |  |
| AltMedName | Text | Name of alternative Medicine | Name of Company Name |
| Company Name | Text | Name of Company |  |
| date | Date | Production Date | expiry |
| Amount | Integer | Number of cans |  |
| Price | Integer | selling price | Different from the purchase price. |

**pharmacy Article Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| PharmacisName | Text | Name of pharmacy |  |
| AssistantName | Text | Name of assistant | May be several |
| InternName | Text | Name of internal medicines |  |

### ***3.3.2 Security***

The knowledge base should be protected so that no one can modify it except for the pharmacist and his assistant.