



**CSC 431**

## **Medication Monitor**

# **Software Requirements Specification (SRS)**

**Team #1**

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# Version History

Version	Date	Author(s)	Change Comments
1	2/22/21	Jin Curia, Isaac Attuah, Grace Gu	<ul style="list-style-type: none"><li>• First draft</li></ul>
2	3/3/21	Jin Curia, Isaac Attuah, Grace Gu	<ul style="list-style-type: none"><li>• Second draft</li></ul>
3	3/9/21	Isaac Attuah, Grace Gu, Jin Curia	<ul style="list-style-type: none"><li>• Added UML class diagram.</li><li>• Changed names of functional &amp; non-functional requirements.</li></ul>
4	5/4/21	Isaac Attuah, Grace Gu, Jin Curia	<ul style="list-style-type: none"><li>• Added table of tables</li><li>• Added table of figures</li><li>• Removed unused tables</li><li>• Removed unused table rows</li></ul>

# Table of Contents

CSC 431

Medication Monitor

Software Requirements Specification (SRS)	1
Version History	1
Table of Contents	2
Table of Tables	4
Table of Figures	5
System Requirements	7
Functional Requirements	7
Registering an account	7
Logging into an account	7
Updating personal information	7
Register medications	8
View medication information	8
Count medications	9
Identify medications	9
Set alerts	9
Non-Functional Requirements	10
Secure patient information	10
Fast image segmentation	10
Alert patient without delays	10
Requirement Title	11
System Constraints	11
Tool Constraints	11
Mobile Application Framework Constraint	11
Requirement Title	14
Requirements Modeling	15
User and System	15
Class Diagram	16
Evolutionary Requirements	17
Functional Requirements	17
Share User Information	17
Non-Functional Requirements	17
Secure User Information	17

# Table of Tables

<b>System Requirements</b>	<b>1</b>
Functional Requirements	1.1
Registering an account	1.1.1
Logging into an account	1.1.2
Updating personal information	1.1.3
Register medications	1.1.4
View medication information	1.1.5
Count medications	1.1.6
Identify medications	1.1.7
Set alerts	1.1.8
Non-Functional Requirements	1.2
Secure patient information	1.2.1
Fast image segmentation	1.2.2
Alert patient without delays	1.2.3
<b>System Constraints</b>	<b>2</b>
Tool Constraints	2.1
Mobile Application Framework Constraint	2.1.1
Language Constraints	2.2
React Framework	2.2.1
Platform Constraints	2.3
Mobile Phone Service Platform	2.3.1
<b>Evolutionary Requirements</b>	<b>4</b>
Functional Requirements	4.1
Requirement Title	4.1.1
Non-Functional Requirements	4.2
Requirement Title	4.2.1

# Table of Figures

<b>Requirements Modeling</b>	<b>3</b>
User and System	3.1
Class Diagram	3.2

# 1. System Requirements

## 1.1. Functional Requirements

### 1.1.1. Registering an account

Title	Registering an account
Description	Users can register an account to store their information.
Priority	Mandatory: 0
Precondition(s)	None.
Basic Flow	<ul style="list-style-type: none"><li>• User opens application</li><li>• User clicks Create Account</li><li>• User enters information into the account creation form</li><li>• User exits application to verify their account</li></ul>
Postconditions(s)	User is sent a verification email or SMS.

### 1.1.2. Logging into an account

Title	Logging into an account
Description	Users can log into existing accounts using the account's registration information.
Priority	Mandatory: 0
Precondition(s)	User account exists in the account database.
Basic Flow	<ul style="list-style-type: none"><li>• User opens application</li><li>• User enters phone number or email associated to account</li><li>• User presses login button</li><li>• User sees their full name displayed and enters their password</li><li>• User presses login button again</li></ul>
Postconditions(s)	User is directed to the user dashboard.

### 1.1.3. Updating personal information

Title	Updating personal information
Description	New users and existing users can update their personal information manually or by using an automated camera smart-feature.
Priority	Mandatory: 0
Precondition(s)	User is logged into an account and has internet access.
Basic Flow	<ul style="list-style-type: none"><li>• User views personal information on their dashboard, empty or non-empty.</li><li>• User presses update information button.</li><li>• The system opens their camera application. Else user enters information manually.</li><li>• User presents their ID or prescription label to the application.</li><li>• The application records the information.</li><li>• User presses “confirm”. User is now back at dashboard.</li></ul>
Postconditions(s)	User personal information is updated or remains the same.

### 1.1.4. Register medications

Title	Register medications medication
Description	Users can register their medications manually or by using an automated camera smart-feature.
Priority	Mandatory: 0
Precondition(s)	User is logged into an account and has internet access.
Basic Flow	<ul style="list-style-type: none"><li>• User is viewing their dashboard.</li><li>• User selects “Medications” .</li><li>• User selects Add medication.</li><li>• The system opens their camera application.</li><li>• User shows medication label or the medication itself.</li><li>• The system records this information.</li><li>• User presses “confirm”. User returns to medication list.</li></ul>
Postconditions(s)	User’s medication list is updated.

### 1.1.5. View medication information

Title	View medication information
Description	Users can view detailed information about their medication, dose, dose quantity, refill quantity, date filled, directions, side effects, drug interactions, all simultaneously.
Priority	Mandatory: 0
Precondition(s)	<ul style="list-style-type: none"><li>• User is logged in.</li><li>• User's medication list is non-empty.</li></ul>
Basic Flow	<ul style="list-style-type: none"><li>• User is viewing their medication list.</li><li>• User targets a specific medication and presses "view information"</li><li>• The system returns a summary of their user-specific medication information.</li><li>• User selects non-user-specific medication information.</li><li>• The system displays a summary of the medication, interactions, and side effects, etc.</li></ul>
Postconditions(s)	None.

### 1.1.6. Count medications

Title	Count medications
Description	Users can identify and count medications using their camera.
Priority	Mandatory: 0
Precondition(s)	User is logged in and has internet access.
Basic Flow	<ul style="list-style-type: none"><li>• User selects the Identification/Counter tool from the Tools menu.</li><li>• The system opens the camera.</li><li>• User targets the medication collection with camera.</li><li>• The system counts and returns a list of medication names, quantities, and total quantity.</li><li>• User can select update medication quantity or exit.</li></ul>
Postconditions(s)	User can view their dose scheduler in its own pane on the User Dashboard.

### 1.1.7. Identify medications

Title	Identify medications
Description	Users can identify unknown medication(s) using their camera.
Priority	Mandatory: 0
Precondition(s)	User is logged in and has internet access.
Basic Flow	<ul style="list-style-type: none"><li>• User opens Pill Identification tool.</li><li>• The system opens the camera.</li><li>• User targets the collection.</li><li>• The system</li></ul>
Postconditions(s)	None.

### 1.1.8. Set alerts

Title	Dose reminder
Description	Users can schedule their doses and receive reminders as alerts from the application.
Priority	Mandatory: 0
Precondition(s)	User has a non-empty medication list.
Basic Flow	<ul style="list-style-type: none"><li>• User opens dose schedule.</li><li>• System returns summary of schedule and pending alerts.</li><li>• User selects adjust schedule.</li><li>• System returns a menu for the user to include / exclude medications, and pre-constructed schedule suggestions.</li></ul>
Postconditions(s)	Schedule is updated in the system with the changes.

## 1.2. Non-Functional Requirements

### 1.2.1. Secure patient information

Title	Secure patient information
Description	Personal and medication information for users should be encrypted due to the sensitivity of the data.
Priority	Mandatory: 0
Applicable FR(s)	<ul style="list-style-type: none"><li>• Registering/Logging in account.</li><li>• Update personal information</li></ul>



### 1.2.2. Fast image segmentation

Title	Fast image segmentation
Description	The user's device should complete image segmentation within 5 seconds. Fast is defined as between 0-5 seconds.
Priority	Important: 1
Applicable FR(s)	<ul style="list-style-type: none"><li>• Smart-count/Smart-identifier</li><li>• Update personal information</li></ul>

### 1.2.3. Alert patient without delays

Title	Alert patient without delays
Description	The dose alerts should be in sync with the user device system clock. No time delays at all.
Priority	Mandatory: 0
Applicable FR(s)	<ul style="list-style-type: none"><li>• Dose reminder</li></ul>

## 2. System Constraints

### 2.1. Tool Constraints

References:

- <https://nodejs.org/en/>

#### 2.1.1. Mobile Application Framework Constraint

Title	Mobile Application Framework Constraint
Description	Our application will use Node.js for launching both the frontend and backend of the app.
Priority	Mandatory: 0

### 2.2. Language Constraints

References:

- <https://reactnative.dev/>

#### 2.2.1. React Framework

Title	React Native Framework
Description	JavaScript is required for using both Node.js and React Native. The frontend and backend will both be compiled as JavaScript.
Priority	Mandatory: 0

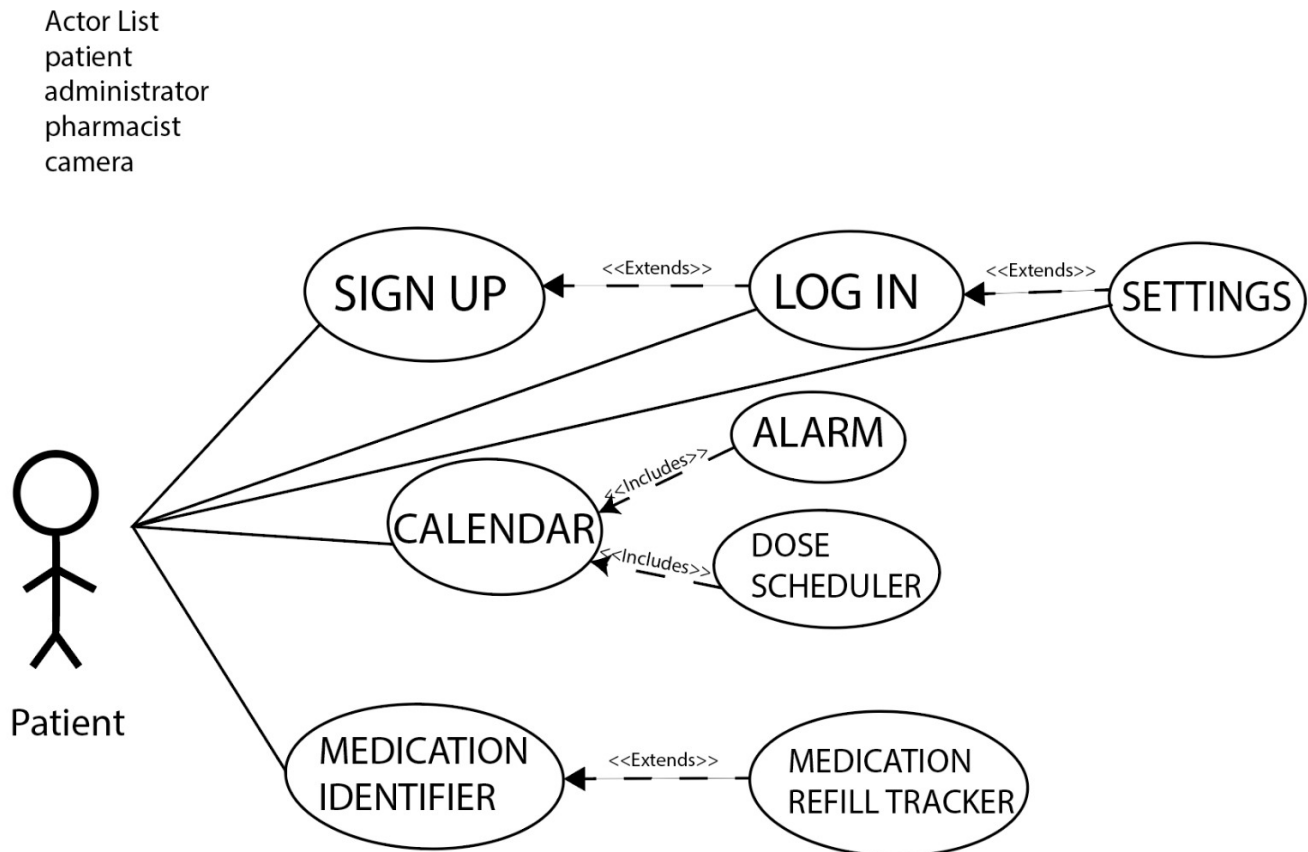
### 2.3. Platform Constraints

#### 2.3.1. Mobile Phone Service Platform

Title	Mobile Phone Service Platform
Description	Node.js and React Native combined allows us to deploy the application for iOS and Android platforms simultaneously.
Priority	Mandatory: 0

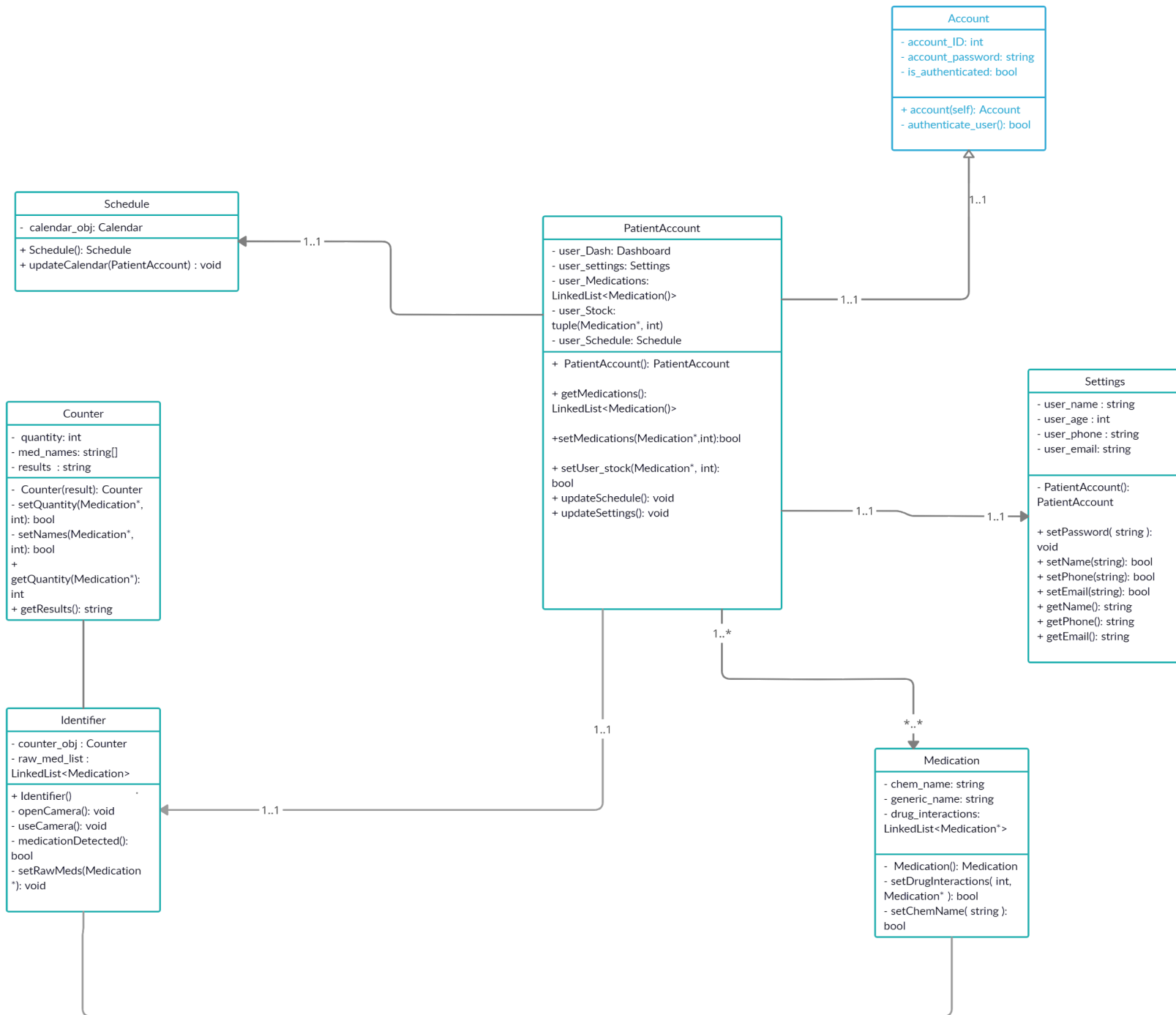
### 3. Requirements Modeling

#### 3.1. User and System



*User and System Diagram*

## 3.2. Class Diagram



**Class Diagram**

## 4. Evolutionary Requirements

### 4.1. Functional Requirements

#### 4.1.1. Share User Information

Title	Share user information
Description	Users can share requisite information with medical personnel or pharmacy
Priority	Important: 1
Precondition(s)	User specifies what information needs to be shared
Postconditions(s)	Information is shared with approved medical personnel or pharmacy

### 4.2. Non-Functional Requirements

#### 4.2.1. Secure User Information

Title	Secure user information
Description	Personal and medication information for users should be encrypted due to the sensitivity of the data and should only be accessible to medical personnel or pharmacy it has been granted access to by the user
Priority	Mandatory: 0
Applicable FR(s)	Share User Information