

Document Status: Approved

List of Abbreviations

DFD	Data Flow Diagram
E-R	Entity Relationship
RS	Requirement Specification

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1. Introduction

1.1 Purpose:

The purpose of this document is to outline the software requirements for a digital medication management system that helps patients track their prescriptions, dosages, and reminders.

1.2 Scope:

The scope of this project includes the design, development, testing, and deployment of a digital medication management system that:

- Allows patients to track their medications, dosages, and schedules
- Sends reminders and notifications for medication doses and refills
- Integrates with pharmacy systems for real-time updates on medication availability and pricing
- Provides a secure and user-friendly interface for patients to manage their medications
- Offers features for healthcare providers to monitor patient adherence and communicate with patients.

The scope of this project excludes:

- Development of a physical device or hardware component.
- Integration with electronic health records (EHRs) or other healthcare systems beyond pharmacy systems.
- Provision of medical advice or diagnosis.
- Development of a mobile app for healthcare providers.

1.3 Definitions, Acronyms and Abbreviations

SRS: Software Requirements Specification

UI: User Interface

API: Application Programming Interface

2. References

Business process requirements document

2.1 Coordinators

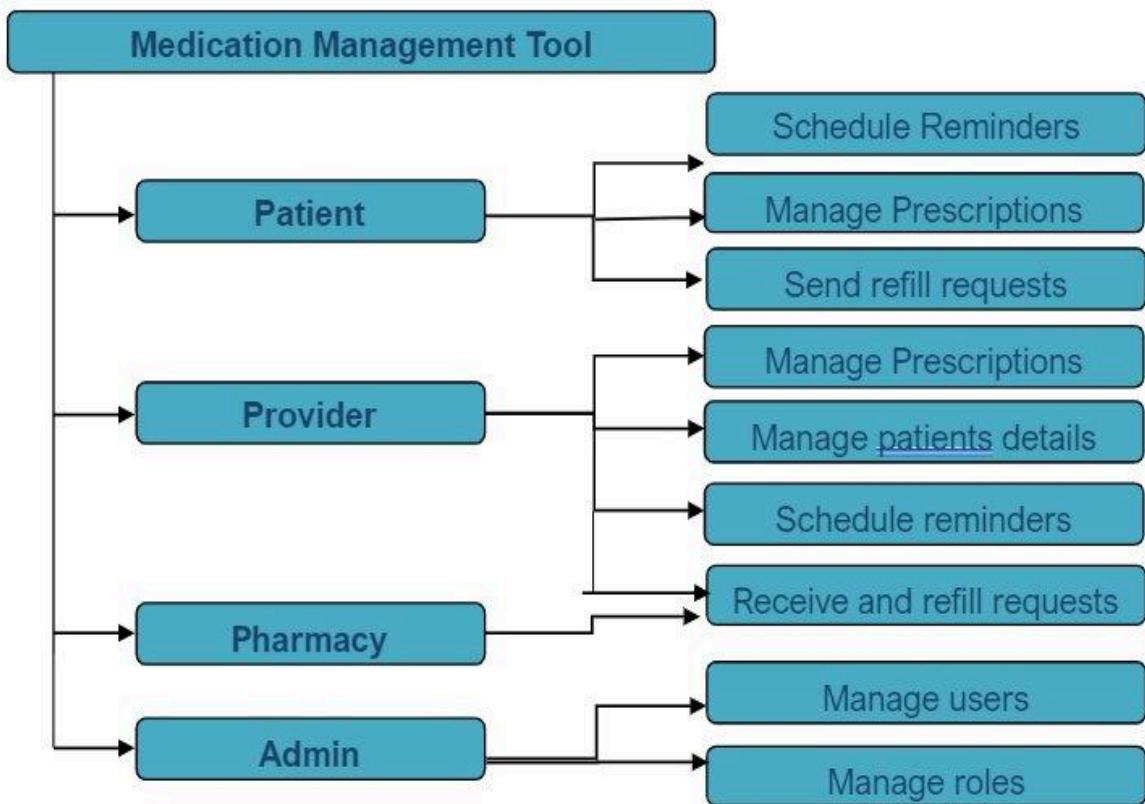
1. Bhagyashree

3. Software Requirements

3.1 Operational Requirements

The Medication Management Tool shall meet the following operational requirements:

- Medication Scheduling: The system shall allow patients to schedule and manage their medication regimens, including dosages, frequencies, and refill reminders.
- Pharmacy Integration: The system shall integrate with pharmacy systems to retrieve real-time medication availability, pricing, and refill information.
- Patient Reminders: The system shall send reminders to patients via SMS, email, or in-app notifications for medication doses, refills, and appointments.
- Adherence Tracking: The system shall track patient adherence to medication regimens, including missed doses and late refills, and provide alerts to healthcare providers.
- Secure Messaging: The system shall provide a secure messaging platform for patients to communicate with healthcare providers, including secure messaging and video conferencing.
- Reporting and Analytics: The system shall generate reports and analytics on patient adherence, medication usage, and health outcomes, to support healthcare providers in making informed decisions.

FIGURE 2.1 USE CASE DIAGRAM

3.2 Functional Requirements

Requirement Tag ID	RS-1-1 Fetch all the users	
Source/Trigger	Admin	
Description	Input	-
	Process	Search for all the registered users.
	Output	Search successful.
Validation Method		

Requirement Tag ID	RS-1-2 Fetch Roles	
Source/Trigger	Hospital Staff	
Description	Input	-
	Process	Search all the roles
	Output	Search successful.
Validation Method		

Requirement Tag ID	RS-1-3 Fetch all prescriptions	
Source/Trigger	Patient	
Description	Input	patient id
	Process	Search for all the prescriptions given for that particular patient.
	Output	Search successful.
Validation Method		

Requirement Tag ID	RS-1-4 Add new prescription	
Source/Trigger	Patient	
Description	Input	prescription details, medication details, reminders
	Process	Collect all the details from the user and then add it into the database.
	Output	Prescription id
Validation Method		

Requirement Tag ID	RS-1-5 Fetch all refill requests	
Source/Trigger	Patient	
Description	Input	Patient id
	Process	Search for all the refill requests made by the patient.
	Output	Search successful.
Validation Method		

Requirement Tag ID	RS-1-6 Fetch all patients	
Source/Trigger	Provider	
Description	Input	-

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	<i>Process</i>	<i>Search all the patients based on the provider d.</i>
	<i>Output</i>	<i>Search successful.</i>
<i>Validation Method</i>		

Requirement Tag ID	<i>RS-1-7 Add new patient</i>	
<i>Source/Trigger</i>	<i>Provider</i>	
<i>Description</i>	<i>Input</i>	<i>Patient details, prescription details, medication details,</i>
	<i>Process</i>	<i>Create a new record of the patient and map prescription and medication details to it and set the reminders for medications.</i>
	<i>Output</i>	<i>Patient id</i>
<i>Validation Method</i>		

Requirement Tag ID	<i>RS-1-8 Fetch all the requests.</i>	
<i>Source/Trigger</i>	<i>Provider</i>	
<i>Description</i>	<i>Input</i>	<i>-</i>
	<i>Process</i>	<i>Search all the requests made for prescriptions.</i>
	<i>Output</i>	<i>Search successful.</i>
<i>Validation Method</i>		

Requirement Tag ID	<i>RS-1-9 Update request.</i>	
<i>Source/Trigger</i>	<i>Provider</i>	
<i>Description</i>	<i>Input</i>	<i>Updated request details .</i>
	<i>Process</i>	<i>Update the existing refill request details.</i>
	<i>Output</i>	<i>Search successful.</i>
<i>Validation Method</i>		

Requirement Tag ID	<i>RS-1-8 Fetch all the requests.</i>	
<i>Source/Trigger</i>	<i>Pharmacy</i>	
<i>Description</i>	<i>Input</i>	<i>-</i>
	<i>Process</i>	<i>Search all the requests made for medications.</i>
	<i>Output</i>	<i>Search successful.</i>
<i>Validation Method</i>		

Requirement Tag ID	<i>RS-1-9 Update request.</i>	
<i>Source/Trigger</i>	<i>Pharmacy</i>	
<i>Description</i>	<i>Input</i>	<i>Updated request details .</i>
	<i>Process</i>	<i>Update the existing refill request details.</i>
	<i>Output</i>	<i>Search successful.</i>
<i>Validation Method</i>		

3.3 User Interface Requirements

Main Screens



How does it work

Simplifying Medication Management, One Step at a Time

-  **Step 1**
Easily input your prescription details, including medication name, dosage, and instructions
-  **Step 2**
Set reminders for your medication doses and receive notifications when it's time to take them
-  **Step 3**
Track your medication doses and receive alerts when it's time to refill your prescriptions
-  **Step 4**
Integrate with your pharmacy systems for real-time updates and easy refills

Benefits for Healthcare Providers

-  **Improved Patient Adherence**
Our tool helps patients stay on track with their medication schedules, leading to improved health outcomes*
-  **Enhanced Patient Engagement**
Our tool empowers patients to take an active role in their healthcare, leading to better engagement and communication
-  **Streamlined Communication**
Our tool allows for seamless communication between patients, healthcare providers, and pharmacies

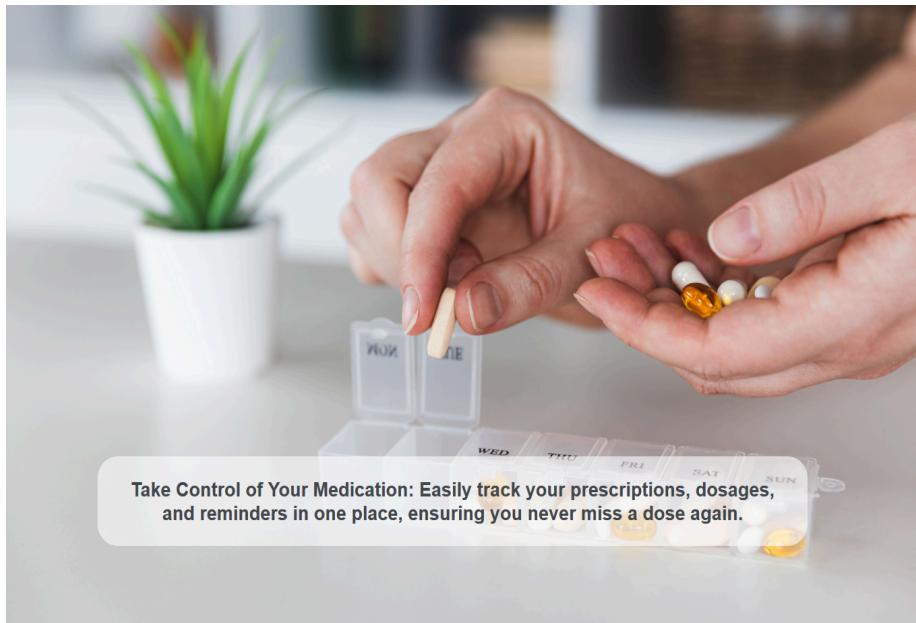
Med Tracker

Simplify your medication routine with our easy-to-use tool. Track your medications, set reminders, and receive notifications to ensure you never miss a dose



Copyright@medtracker 2024

User/ Patient



Welcome back!

User ID *

Password



Don't have an account? [CLICK HERE!](#)

LOGIN

Register User



Govt Id *

ID Type *

First Name *

Last Name

Date of Birth *

07/17/2024

Age *

1

Gender *

Contact Number *

Email *

Address *

BACK

REGISTER

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The dashboard shows a navigation menu on the left with options: DASHBOARD, PRESCRIPTIONS, REFILL, PROFILE, and SIGN OUT. The main area displays three summary cards: Total Prescriptions (3), Active Medications (3), and Refill Success Rate (13%). Below these is a table of providers:

SI no.	Provider Name	Contact No.	Address
1	Rainbow Hospital	+91 8324637280	Near Goa Hotel, Kalaburagi
2	Fortis Hospital	022-34567890	Mumbai
3	Max Hospital	044-56789012	Chennai
4	Medanta Hospital	0124-4567890	Gurgaon
5	AIIMS Hospital	011-45678901	Delhi
6	Aarogya Pharmacy	011-23456789	Delhi

Notifications

- Your medication Cheston Cold needs to be refilled! [SEND](#)
- It is time to take your medication Sinorest [CONFIRM](#)
- Your prescription 728415 is about to expire in 2 days. [REFILL](#)

The page title is "Med Tracker". On the left is a sidebar with icons for DASHBOARD, PRESCRIPTIONS, REFILL, PROFILE, and SIGN OUT. The main content is titled "All Prescriptions" and includes filters for "Filter by Doctor Name" and "Filter by Hospital Name" and a "ADD NEW" button. A table lists prescriptions:

Prescription ID	Prescribed By	Prescribed At	Total Medications Given	Status
728415	Dr. Praveen Kumar	Rainbow Hospital	1	● i
728416	Dr. Praveen Kumar	Rainbow Hospital	1	● i
728417	Dr. Ahmed Khan	Rainbow Hospital	1	● i

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☰ Med Tracker

← Back

Prescription - #728416

Prescription ID:	728416	Ailment:	Common Cold
Prescribed At:	Rainbow Hospital	Start Date:	2024-08-01
Prescribed By:	Dr. Praveen Kumar	End Date:	2024-08-02
Status:	Active	Prescription:	VIEW PRESCRIPTION

Medication Details

Medication ID	Medication Name	Pharmacy Name	Quantity Available	Refill Threshold
1085	Cheston Cold	Aarogya Pharmacy	11	11

☰ Med Tracker

← Back

Prescription - #728416

Prescription ID:	728416
Prescribed At:	Rainbow Hospital
Prescribed By:	Dr. Praveen Kumar
Status:	Active

Medication Details

Medication ID	Medication Name	Pharmacy Name	Quantity Available	Refill Threshold
1085	Cheston Cold	Aarogya Pharmacy	11	11

RAINBOW HOSPITAL
#10-512/5 "SABERA TOWER" Near Goa Hotel, SB Temple Road, Brahmputra, KALABURAGI - 585 103
Dr. Ahmed Khan
M.B.B.S. M.S.(Gen. Surgery)
CONSULTANT GENERAL SURGEON

Pt's Name..... Age..... Wt.....
Ref. By Dr.....

Date: 25/07/23

BP:
Blistron 100 mg
Kefidone 100 mg
Diclofenac 50 mg
Cetirizine

Tad Polypod 100 mg
Tab Toff-D 100 mg before food
Tab Supradyn 100 mg

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Register Prescription Details

1 Prescription Details

Prescribed At *

Prescribed By *

Ailment *

Start Date *

08 / 01 / 2024

End Date *

08 / 01 / 2024

UPLOAD PRESCRIPTION

BACK

CANCEL

NEXT

Register Prescription Details

1 Prescription Details

2 Medication Details

SI No	Medication Name	Quantity Available	Refill Threshold	Dosage Time
1				8:00:00 AM
2				12:00:00 PM
				4:00:00 PM
				8:00:00 PM

BACK

CANCEL

PREScribe

MEDICATION MANAGEMENT TOOL

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☰ Med Tracker

Sent Refill Requests

+ NEW REQUEST

- ✉ Refill request for Cheston Cold has been sent to Aarogya Pharmacy for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for Sinorest has been sent to Aarogya Pharmacy for processing.
- ⌚ Refill request for 728416 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for Sinorest has been sent to Aarogya Pharmacy for processing.

☰ Med Tracker

Sent Refill Requests

+ NEW REQUEST

- ✉ Refill request for Cheston Cold has been sent to Aarogya Pharmacy for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for Sinorest has been sent to Aarogya Pharmacy for processing.
- ⌚ Refill request for 728416 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for 728415 has been sent to Rainbow Hospital for processing.
- ⌚ Refill request for Sinorest has been sent to Aarogya Pharmacy for processing.

Request Refill

Patient ID *
NP0108240758

Refill Type *
Prescription

Prescription ID *
Pending

Status *
Pending

CANCEL SEND ➤

MEDICATION MANAGEMENT TOOL

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Sent Refill Requests

Refill request for Cheston Cold has been sent to Rainb...

Refill request for 728415 has been sent to Rainb...

Refill request for 728415 has been sent to Rainb...

Refill request for 728415 has been sent to Rainb...

Refill request for Sinorest has been sent to Aar...

Refill request for 728416 has been sent to Rainb...

Refill request for 728415 has been sent to Rainb...

Refill request for Sinorest has been sent to Aarogya Pharmacy for processing.

Request Refill

Patient ID *
NP0108240758

Refill Type *
Medication

Medication Name *

Refill Quantity *
1

Status *
Pending

CANCEL SEND ➔

Med Tracker



Nitya Patil

+91 6362029192
nitya.patil@gmail.com
Kalaburagi

USER DETAILS

Govt Id *	4567 8901 2345	ID Type *	Aadhar card
First Name *	Nitya	Last Name *	Patil
Date of Birth *	01 / 15 / 2001	Age *	23
Gender *	Female	Contact Number *	+91 6362029192
Email *	nitya.patil@gmail.com	Address *	Kalaburagi

Provider



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+29

Happy Patients

+382

Successful
Surgeries Performed

+26

Years of service

+25

Prestigious Awards



Arav Jain

I had an amazing experience at Rainbow Hospital! The doctors and nurses were so caring and attentive. Dr. Varalakshmi and Dr. Tulika Tayal were especially wonderful. They took the time to answer all my questions and made me feel so comfortable. I highly recommend Rainbow Hospital to anyone looking for top-notch care.



Kavya Reddy

I had a complicated pregnancy, but the team at Rainbow Hospital was with me every step of the way. They were professional, caring, and always available to answer my questions. I felt so supported and cared for, and I couldn't have asked for a better experience. Thank you, Rainbow Hospital!



Vihaan Gupta

I was blown away by the level of care my child received at Rainbow Hospital. The pediatric specialists were knowledgeable and compassionate, and the facilities were clean and modern. I felt so confident in the care my child was receiving, and I'm so grateful to have Rainbow Hospital in our community.



ABOUT

At Rainbow Hospital, our mission is to provide compassionate, high-quality healthcare to our patients and their families. We are committed to delivering exceptional medical care, promoting health and wellness, and improving the quality of life for our community.

AROUND THE WEB



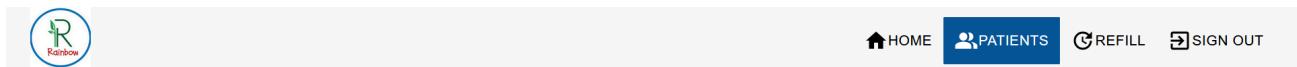
LOCATION

Sabera Tower, SB Temple Rd, beside Goa Hotel,
Bhampur, Kalaburagi, Karnataka 585102

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Available Patients

Filter by Patient ID



New Patient



Roopa Jidagi



Nitya Patil



Shruti Patil



Swati Patil



Ganesh PH

A modal window titled 'Register Patient Details' is displayed. It is divided into three tabs: 1. Patient Details, 2. Prescription Details, and 3. Medication Details. The first tab is active, showing fields for Govt Id*, ID Type*, First Name*, Last Name, Date of Birth (set to 08/01/2024), Age (set to 1), Gender*, Contact Number*, Email*, and Address*. There is also a placeholder image of a patient profile. Navigation buttons 'BACK' and 'NEXT' are at the bottom, along with a 'CANCEL' button.

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Available Patients

PATIENTS

REFILL SIGN OUT

Filter by Patient ID

Swati Patil

Patient Details

Prescribed By *

Dr. P. Kumar

2 Prescription Details

3 Medication Details

Ailment *

Start Date *

08/01/2024

End Date *

08/01/2024

UPLOAD PRESCRIPTION

BACK

NEXT

CANCEL

Available Patients

PATIENTS

REFILL SIGN OUT

Filter by Patient ID

Swati Patil

Patient Details

Prescription Details

Medication Details

+ SI No

Medication Name

Quantity Available

Refill Threshold

Dosage Time

1

2

3

8:00:00 AM

12:00:00 PM

4:00:00 PM

8:00:00 PM

BACK

NEXT

CANCEL

PREScribe

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HOME PATIENTS REFILL SIGN OUT

Received Refill Requests



Request ID	Request Details	Refill Status	Requested On	Actions
3B30CAB	NP0108240758 requested for refill of 728415.	●	2024-08-01	
E5D26C8	NP0108240758 requested for refill of 728415.	●	2024-08-01	
12BE018	NP0108240758 requested for refill of 728415.	●	2024-08-01	
A963DE6	NP0108240758 requested for refill of 728415.	●	2024-08-01	



HOME PATIENTS REFILL SIGN OUT

Received Refill Requests



Request ID	Request Details	Refill Status	Requested On	Actions
3B30CAB	NP0108240758 requested for refill of 728415.	●	2024-08-01	
A963DE6	NP0108240758 requested for refill of 728415.	●	2024-08-01	

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The screenshot shows a dashboard titled "Received Refill Requests". A central modal window is open, displaying "Refill Details" for a patient. The modal contains the following information:

Patient ID:	NP0108240758
Prescribed By:	Dr. Praveen Kumar
ailment:	Cough
Prescribed On:	2024-08-01
Refill Requested On:	2024-08-01
Comments:	(empty)

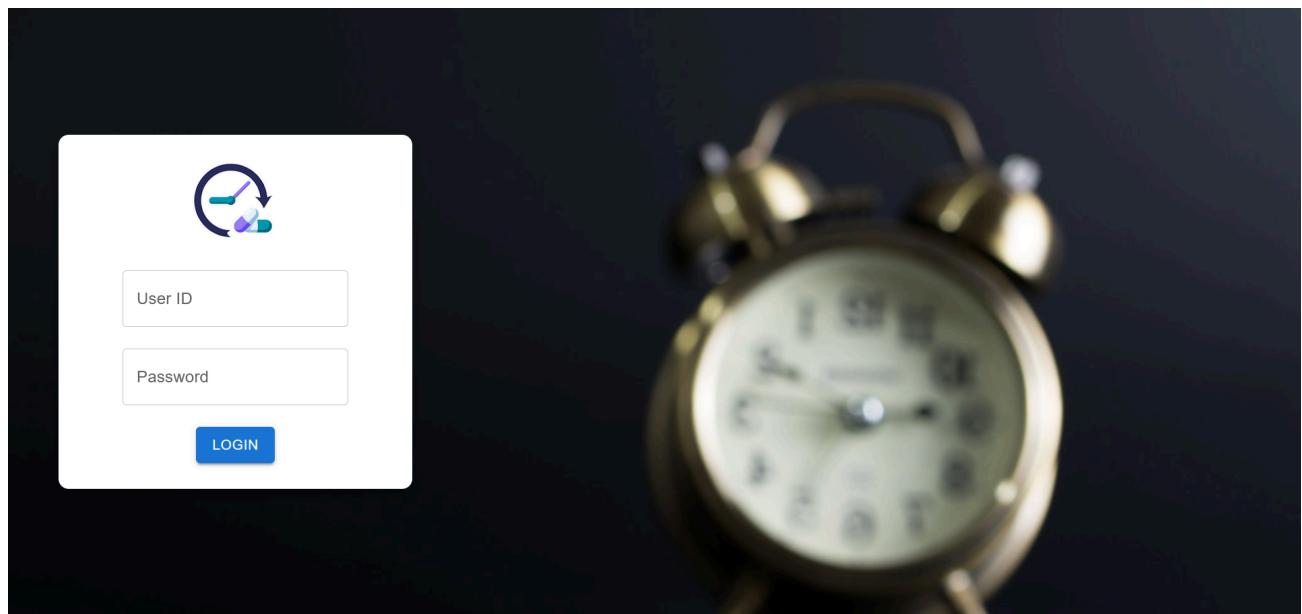
At the bottom of the modal are two buttons: "CANCEL" (gray) and "CONTINUE" (blue).

On the left side of the dashboard, there is a summary card with the number "4" and the text "Total Requests". Below this, a table lists four refill requests with their respective IDs and details.

Request ID	Request Details
3B30CAB	NP0108240758 requested for refill
E5D26C8	NP0108240758 requested for refill
12BE018	NP0108240758 requested for refill
A963DE6	NP0108240758 requested for refill

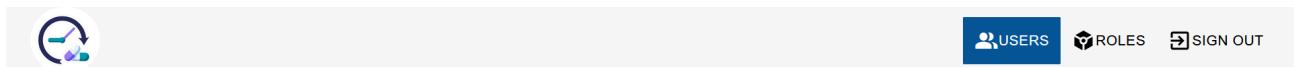
On the right side, there is a summary card with the number "1" and the text "Denied Requests".

Admin



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View Users

SI No.	User ID	First Name	Last Name	Password	Role	Update	Delete
1	F1DDE55	Roopa	Jidagi	Roopa@1234	PATIENT		
2	0D90C42	Nitya	Patil	Nitya@1234	PATIENT		
3	501C14D	Shruti	Patil	Shruti@1234	PATIENT		
4	A239745	Swati	Patil	Swati@1234	PATIENT		
5	BF208A3	Ganesh	PH	Ganesh@1234	PATIENT		

SI No.	User ID	First Name	Role	Update	Delete
1	F1DDE55	Roopa	PATIENT		
2	0D90C42	Nitya	PATIENT		
3	501C14D	Shruti	PATIENT		
4	A239745	Swati	PATIENT		
5	BF208A3	Ganesh	PATIENT		

Update User

User ID *

Password *

Confirm Password *

Role *

CANCEL
UPDATE

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View Roles

SI No.	Role Name	Role Description	Update	Delete
1	PROVIDER	One who provides medications.		
2	PATIENT	One who is under medication		
3	PHARMACIST	One who refills medication		
4	ADMIN	One who manages the users and roles.		



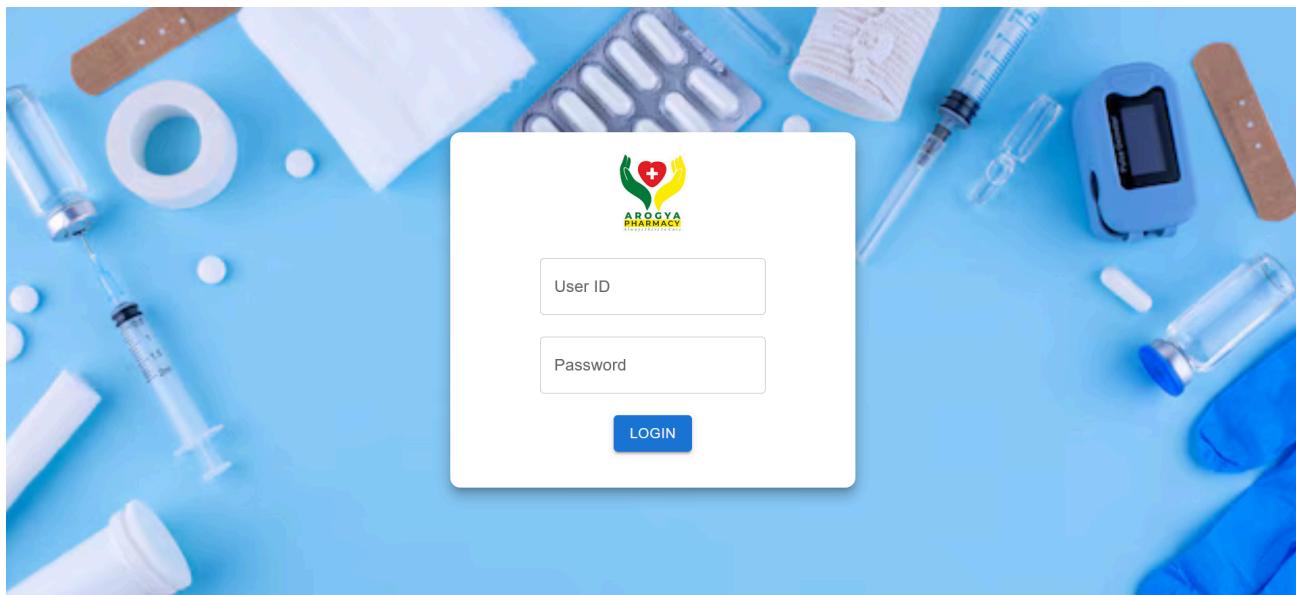
View Roles

SI No.	Role Name	Role Description	Update	Delete
1	PROVIDER	One who provides medications.		
2	PATIENT	One who is under medication		
3	PHARMACIST	One who refills medication		
4	ADMIN	One who manages the users and roles.		

Update Role

Role Name *

Role Description *

Pharmacy

 **AROGYA PHARMACY** REFILL  SIGN OUT

Received Refill Requests

2
Total Requests**1**
Pending Requests**1**
Approved Requests**0**
Denied Requests

Request ID	Request Details	Refill Status	Requested On	Actions
9B7E704	Ms. Nitya Patil requested for refill of Cheston Cold.	●	2024-08-01	
0F1611D	Ms. Nitya Patil requested for refill of Sinorest.	●	2024-08-01	

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The screenshot shows a modal dialog titled "Refill Details" over a list of "Received Refill Requests". The modal contains the following information:

Requested By:	Ms. Nitya Patil
Requested for:	Cheston Cold
Refill Requested	2024-08-01
On:	2024-08-01
Quantity requested for refill:	10
Fulfilled Quantity:	_____
Comments:	_____

At the bottom of the modal are two buttons: "CANCEL" (gray) and "REFILL" (blue).

Background elements include a header with the Aranya logo, a "REFILL" button, a "SIGN OUT" button, and a summary bar showing 2 Total Requests and 0 Denied Requests.

The screenshot shows a modal dialog titled "Refill Details" over a list of "Received Refill Requests". The modal contains the following information:

Requested By:	Ms. Nitya Patil
Requested for:	Sinorest
Refill Requested	2024-08-01
On:	2024-08-01
Quantity requested for refill:	20
Fulfilled Quantity:	10
Comments:	Continue _____

At the bottom of the modal are two buttons: "CANCEL" (gray) and "REFILL" (blue).

Background elements include a header with the Aranya logo, a "REFILL" button, a "SIGN OUT" button, and a summary bar showing 2 Total Requests and 0 Denied Requests.

3.4 External Interface Requirements

The system shall integrate with pharmacy systems using APIs or other standardized interfaces.

The system shall support data exchange with healthcare providers and pharmacies.

4. Project Execution Related Requirements

4.1 Development Environment

- The system shall be developed using React and Spring Boot
- The system shall be developed using VS Code and Eclipse.

4.2 Design requirements

React js is used for designing this application.

4.3 Coding requirements

- The system shall be developed using React and Spring Boot Java Framework.
- The system shall follow Object Oriented Programming principles.

4.4 Error handling requirements

- The system shall provide error handling mechanisms to handle unexpected errors and exceptions.
- The system shall log errors and exceptions for debugging and troubleshooting purposes.

4.5 Resource Requirements

- The system shall require 1GB of storage
- The system shall be deployed on Tomcat Server.

4.6 Risk management

Not applicable.

4.7 Training Requirements

Proper training must be provided regarding the usage of the application to the end user.

The system shall provide user documentation and training materials.

5. Testing Requirements

- The system shall be tested to ensure that it meets the functional and non-functional requirements outlined in this document.
- The testing shall include unit testing, integration testing, system testing, and acceptance testing.
- The testing shall be performed by the development team and independent testers.

6. Quality Assurance Activities

- The project shall establish a quality assurance process to ensure that the system meets the required standards and specifications.
- The quality assurance process shall include code reviews, testing, and validation.
- The quality assurance process shall be performed by the development team and independent reviewers.

7. Software Acceptance Criteria

- The system shall be accepted by the stakeholders upon completion of the testing and quality assurance activities.
- The system shall meet the functional and non-functional requirements outlined in this document.
- The system shall be free from defects and errors.

8. Deliverables

8.1 List of Deliverables

Not applicable

8.2 Delivery

The system shall be delivered within 10 days.

9. Requirements Acceptance Statement

Not Applicable

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