

Software Requirement Specification

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1. Project Description

The Medicine Tracker is an application designed to help users manage their medications efficiently.

Users can:

- *Add their medications with details such as name, dosage, and frequency.*
- *Set reminders to take medications on time.*
- *Receive refill reminders based on the last fill date and prescription quantity.*

This project aims to improve medication adherence and reduce the risk of missed doses or late refills.

2. Functional Requirements

FR01	The software must enable the user to create an account using an email address and password.
FR02	The software must enable the user to verify their account using email address verification.
FR03	The software must enable the user to sign into their account.
FR04	The software must enable the user to sign out of their account.
FR05	The software must enable the user to add one or more medication names to a list of medications.
FR06	The software must enable the user to add strength and dosage to a medication.
FR07	The software must enable the user to add current quantity to a medication.
FR08	The software must enable the user to add frequency and time to a medication.
FR09	The software must enable the user to update a medication from their list.
FR10	The software must enable the user to delete a medication from their list.
FR11	The software must enable the user to receive a notification to take medicine at the correct date and time.
FR12	The software must enable the user to receive a notification to refill a prescription 2 weeks before it runs out.
FR13	The software must enable the user to receive a notification to refill a prescription 1 week before it runs out.

FR14	The software must enable the user to receive a notification to refill a prescription daily within 1 week before it runs out.
FR15	The software must enable the user to dismiss a notification.
FR16	The software must enable the user to archive a medicine/make the prescription inactive & stop future reminders.

3. Non-Functional Requirements

NFR01	The email for account verification should be sent with a latency of no greater than 10 minutes.
NFR02	Newly created medications should appear on the user's medication list with a latency of no greater than 30 seconds.
NFR03	The app will use HTTPS/TLS to encrypt a user's data in transit, and will use Google-managed keys to encrypt all data server-side.
NFR04	The app will handle errors and provide informative feedback to the user without crashing. Ex. required fields
NFR05	The app will run on both Android and Apple (iOS) devices.

4. Use Case Specification

<< Select **three functional requirements** and describe them in detail using use cases.>>

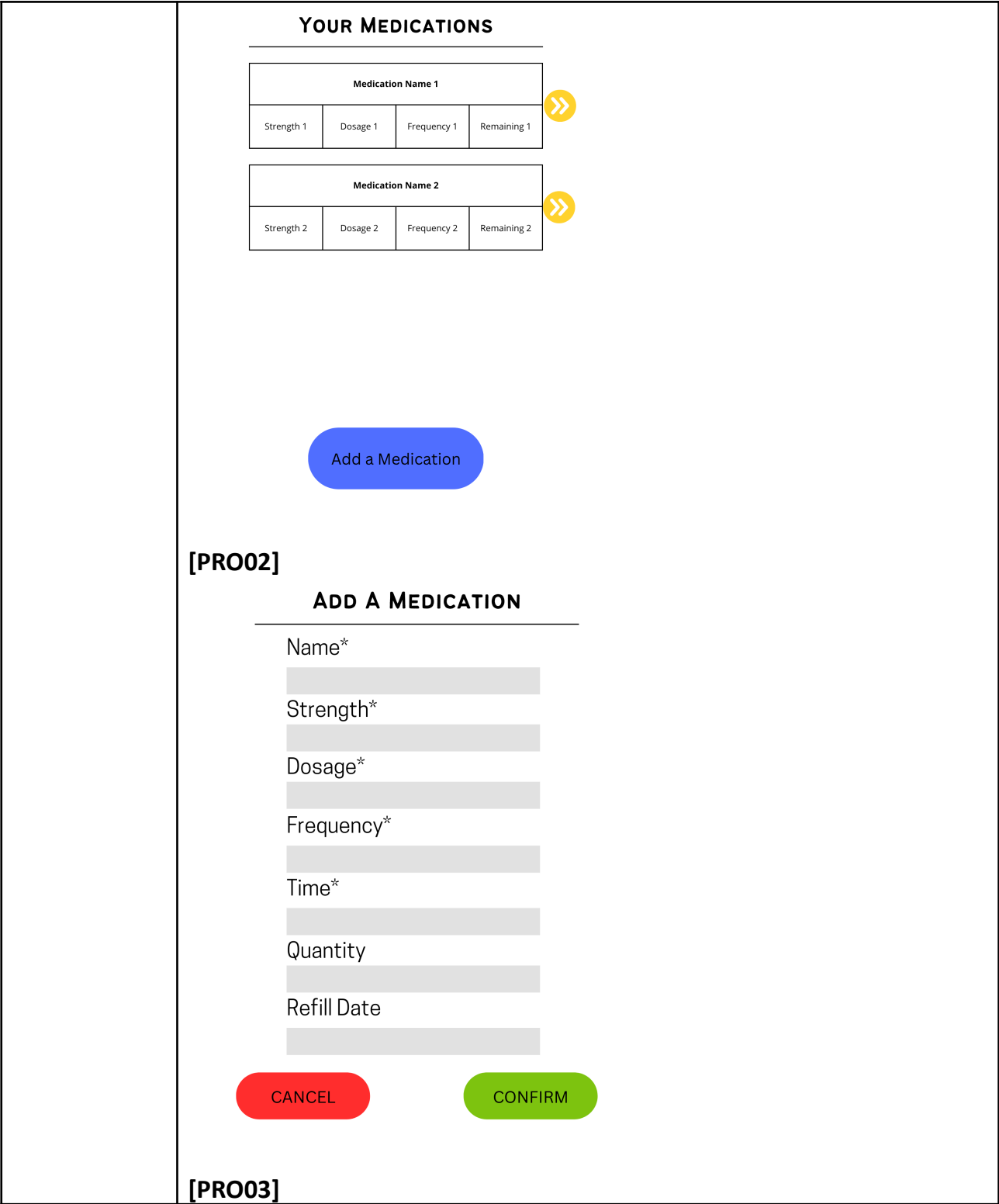
1)

UC01 Name:	Maintain medicine
Description:	The software allows the user to maintain (create, read, update, delete) one or more medications associated with their user account.
Actor:	User
Entry condition:	The actor selects the option to maintain medicine
Basic path:	<ol style="list-style-type: none"> The user's medication list screen contains a list of medications previously added [PRO01] . The options: <ul style="list-style-type: none"> — Add — Click to View, Edit (existing medication) — Click to View, Delete (existing medication) When the user selects the add medication icon, the system presents a screen containing a medication form: [PRO02][A02][A03][A04][A05] <ul style="list-style-type: none"> - Name (editable) - Strength (editable) - Dosage (editable) - Frequency (editable) - Time (editable) - Current Quantity (or Previous Refill Date and Refill Quantity) The options: <ul style="list-style-type: none"> — Confirm — Cancel <ol style="list-style-type: none"> The actor selects the option Confirm[A01] The system returns to the medication list screen with newly added medication visible.
Alternative paths:	<p>[A01] The actor selects the Cancel option from the add medication screen.</p> <ol style="list-style-type: none"> The system returns to the medication list screen(basic path step 1) without any changes made. <p>[A02] The actor selects the Edit option: Edits and Confirms</p> <ol style="list-style-type: none"> The user clicks an existing medication to view details.

	<ol style="list-style-type: none">2. The system opens up a medication detail screen [PRO03] with existing values for:<ul style="list-style-type: none">- Name- Strength- Dosage- Frequency- Time- Current Quantity (or Previous Refill Date and Refill Quantity)3. The user selects Edit.4. The user edits one or more fields5. The user selects Confirm.6. The system returns the user to the medication list screen with changes reflected. <p>[A03] The actor selects the Edit option: Doesn't Edit and Cancels</p> <ol style="list-style-type: none">1. The user clicks an existing medication to view details.2. The system opens up a medication detail screen [PRO03] with existing values for:<ul style="list-style-type: none">- Name- Strength- Dosage- Frequency- Time- Current Quantity (or Previous Refill Date and Refill Quantity)3. The user selects Edit and the fields become editable [PRO04]4. The user doesn't edit a field.5. The user selects Cancel.6. The system returns the user to the medication list screen with no changes reflected. <p>[A04] The actor selects the Edit option: Edits and Cancels</p> <ol style="list-style-type: none">1. The user clicks an existing medication to view details.2. The system opens up a medication detail screen [PRO03] with existing values for:<ul style="list-style-type: none">- Name- Strength- Dosage- Frequency- Time- Current Quantity (or Previous Refill Date and Refill Quantity)
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	<ol style="list-style-type: none">3. The user selects Edit and the fields become editable [PRO04]4. The user edits a field.5. The user selects Cancel.6. The system prompts the user to confirm the discard of current changes.7. The user selects "Yes, I'm sure" [PRO05]8. The system returns the user to the medication list screen with no changes reflected. <p>[A05] The actor selects the Delete option and confirms Delete.</p> <ol style="list-style-type: none">1. The user clicks an existing medication to view details.2. The system opens up a medication detail screen [PRO03] with existing values for:<ul style="list-style-type: none">- Name- Strength- Dosage- Frequency- Time- Current Quantity (or Previous Refill Date and Refill Quantity)3. The user selects Delete.4. The system renders a popover/modal with the choice to delete forever or deactivate. [PRO06]5. The user selects delete.6. The system returns the user to the medication list screen with the medication permanently removed. <p>[A06] The actor selects the Delete option and confirms Deactivate.</p> <ol style="list-style-type: none">1. The user clicks an existing medication to view details.2. The system opens up a medication detail screen [PRO03] with existing values for:<ul style="list-style-type: none">- Name- Strength- Dosage- Frequency- Time- Current Quantity (or Previous Refill Date and Refill Quantity)3. The user selects Delete.4. The system renders a popover/modal with the choice to delete forever or deactivate.5. The user selects deactivate.
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	6. The system returns the user to the medication list screen with the medication shown as inactive. [PRO07]																																			
Exception paths:	<p>[E01] Invalid medication information</p> <ol style="list-style-type: none">1. System displays message indicating the existence of invalid information. (Ex. medication dosage cannot exceed medication quantity).2. User selects OK to exit message.3. The system returns to create medication screen. <p>[E02] Add new medication: required field empty</p> <ol style="list-style-type: none">1. System displays message indicating the required fields in order to add a new medication.2. User selects OK to exit message.3. The system returns to create medication screen.																																			
Business Rules:	<p>[BR01] Medication name, dosage, and frequency are required attributes. Medication quantity and refill date are optional.</p> <p>[BR02] A 32 char uuid must be used to uniquely identify a user in the system.</p>																																			
Data description	<table><thead><tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th></tr></thead><tbody><tr><td>Medication Name</td><td>String</td><td>75</td><td>N/A</td></tr><tr><td>Strength</td><td>int</td><td>4</td><td>N/A</td></tr><tr><td>Dosage</td><td>int</td><td>2</td><td>N/A</td></tr><tr><td>Frequency</td><td>Enum (ex. DAILY, WEEKLY, AS_NEEDED)</td><td>12</td><td>N/A</td></tr><tr><td>Time</td><td>Date</td><td>24</td><td>N/A</td></tr><tr><td>Quantity</td><td>int</td><td>4</td><td>N/A</td></tr><tr><td>Refill Date</td><td>Date</td><td>24</td><td>N/A</td></tr></tbody></table>				Name	Type	Length	Mask	Medication Name	String	75	N/A	Strength	int	4	N/A	Dosage	int	2	N/A	Frequency	Enum (ex. DAILY, WEEKLY, AS_NEEDED)	12	N/A	Time	Date	24	N/A	Quantity	int	4	N/A	Refill Date	Date	24	N/A
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Time	Date	24	N/A																																	
Quantity	int	4	N/A																																	
Refill Date	Date	24	N/A																																	
Prototype:	[PRO01]																																			



MEDICATION DETAILS

Name*

Vitamin D

Strength*

2000 IU

Dosage*

2 Capsules

Frequency*

Daily

Time*

9:00 AM

Quantity

Not Provided

Refill Date

Not Provided

BACK

DELETE

EDIT

[PRO04]

EDIT MEDICATION

Name*

Vitamin D

Strength*

2000 IU

Dosage*

2 Capsules

Frequency*

Daily

Time*

9:00 AM

Quantity

Refill Date

CANCEL

CONFIRM

[PRO05]

Are you sure you want to discard your current changes?

Yes, I'm sure.

No, return to the edit view

[PRO06] (Delete or Deactivate)

Are you sure you want to delete this medication?

If you choose to deactivate instead, this medication will be saved under your inactive medications.

Delete

Deactivate

[PRO07]

	<h3>YOUR MEDICATIONS</h3>														
	<p>ACTIVE</p> <table border="1"> <tr> <td colspan="5">Medication Name 1</td> </tr> <tr> <td>Strength 1</td> <td>Dosage 1</td> <td>Frequency 1</td> <td></td> <td>Remaining 1</td> </tr> </table>					Medication Name 1					Strength 1	Dosage 1	Frequency 1		Remaining 1
	Medication Name 1														
	Strength 1	Dosage 1	Frequency 1		Remaining 1										
<p>INACTIVE</p> <table border="1"> <tr> <td colspan="5">Medication Name 2</td> </tr> <tr> <td>Strength 2</td> <td>Dosage 2</td> <td>Frequency 2</td> <td></td> <td>Remaining 2</td> </tr> </table>					Medication Name 2					Strength 2	Dosage 2	Frequency 2		Remaining 2	
Medication Name 2															
Strength 2	Dosage 2	Frequency 2		Remaining 2											
<p>Add a Medication</p>															

2)


UC02 Name:	Medicine Notification
Description:	User will receive a notification from app to take medication at assigned frequency/intervals
Actor:	Application
Entry condition:	The user doesn't refill medication when the pill amount is approaching empty(25% of total amount remaining)
Basic path:	<ol style="list-style-type: none"> The system presents the user with a take prescription notification containing: [PRO01] -Reminder to take medicine -The options: —Remind me Later —Medication Taken User chooses option Medication Taken[A01][E01] Notification dismisses Amount of medication left is updated[BR01] The use case is concluded
Alternative paths:	[A01] User selects the Remind Me Later option


	<div>1. The systems presents user with an amount of time remaining in countdown[PRO02] –30 minutes</div> <div>2. Countdown ends</div> <div>3. Returns to basic path step 1</div>												
Exception paths:	<div>[E01]</div> <div>1. There is no medication left ie. count of medicine left == 0</div>												
Business Rules:	<div>[BR01] Only if there is still medicine available in bottle</div>												
Data description	<table><thead><tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th></tr></thead><tbody><tr><td>Medication Taken</td><td>Boolean</td><td>N/A</td><td>N/A</td></tr><tr><td>Remind me Later</td><td>Boolean</td><td>N/A</td><td>*****</td></tr></tbody></table>	Name	Type	Length	Mask	Medication Taken	Boolean	N/A	N/A	Remind me Later	Boolean	N/A	*****
Name	Type	Length	Mask										
Medication Taken	Boolean	N/A	N/A										
Remind me Later	Boolean	N/A	*****										
Prototype:	<div><div>[PRO01]</div><div><div>Reminder!</div><div>Take Your Medicine or Remind Later</div><div><div>I've Taken my Medicine!</div><div>Remind Me Later</div></div></div></div> <div><div>[PRO02]</div><div><div>Friday, 27 December</div><div>12:00</div><div><div>MEDICATION TRACKER</div><div>TIME REMAINING... 29:00 remaining</div></div></div></div>												

3)

UC03 Name:	Medicine Signin/Signout
Description:	The user will have to create an account for the application and will be able to sign in and out of their account to access medication list.
Actor:	User
Entry condition:	The user opens the application for the first time and creates an account, subsequent usage of the app will require signin/signout.
Basic path:	<ol style="list-style-type: none"> 1. The system presents the user with a login screen containing:[PRO01] <ul style="list-style-type: none"> - Email(editable) - Password(editable) - Log in - The options: <ul style="list-style-type: none"> —Log in —Create New Account —Forgot Password 2. The user inputs email and password and selects Log in[A01][A02] 3. System verifies if the information is valid ie. if account exists[BRO1] [BRO2] [E01] 4. User's account is logged into 5. The use case is concluded 6. The application opens to the home screen
Alternative paths:	<p>[A01] The user selects Create New Account</p> <ol style="list-style-type: none"> 1. The system presents a screen for entering the user's information containing:[PRO02] <ul style="list-style-type: none"> - Email(editable) -The options: <ul style="list-style-type: none"> —Verify Email —Back 2. The user enters email and selects "Verify Email" button[A03]

	<ol style="list-style-type: none">3. The application sends out email to inputted user email containing:<ul style="list-style-type: none">-Verification Link4. Email is verified5. The user is redirected to input password containing:[PRO03]<ul style="list-style-type: none">-Password(editable)<p>The options:</p><ul style="list-style-type: none">—Confirm Password—Back6. The user selects Confirm Password[A04]7. System verifies if the information is valid ie. if account exists[BRO1] [E01]8. New user account is created9. User's account is logged into10. The use case is concluded11. The application opens to the home screen <p>[A02] The user selects Forgot Password</p> <ol style="list-style-type: none">1. The systems presents screen to input email associated with account containing:[PRO04]<ul style="list-style-type: none">-Email<p>The options:</p><ul style="list-style-type: none">—Send Email Verification—Back2. The user enters email and receives email verification[A05]3. The user is redirected to change password page containing:[PRO05]<ul style="list-style-type: none">-New Password-Confirm New Password<p>The options:</p><ul style="list-style-type: none">—Reset Password—Back
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	<div>4. The user selects Reset Password[A06]</div> <div>5. Password associated with email is then changed</div> <div>6. The use case returns to step 1 of basic path</div> <div>[AO3] The user selects Back option</div> <div>1. The use case returns to step 1 of Create New Account</div> <div>[AO4] The user selects Back option</div> <div>1. The use case returns to step 5 of Create New Account</div> <div>[AO5] The user selects Back option</div> <div>1. The use case returns to step 2 of Basic Path</div>															
Exception paths:	<div>[E01] Invalid account information</div> <div>1. The application displays a message indicating the existence of invalid information.</div> <div>2. The use case returns to step 1 of the basic path.</div>															
Business Rules:	<div>[BR01] All attributes are mandatory</div> <div>[BR02] The email and password must be associated together with an account</div>															
Data description	<table><tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th><th></th></tr><tr><td>Email</td><td>String</td><td>50</td><td>N/A</td><td></td></tr><tr><td>Password</td><td>String</td><td>50</td><td>*****</td><td></td></tr></table>	Name	Type	Length	Mask		Email	String	50	N/A		Password	String	50	*****	
Name	Type	Length	Mask													
Email	String	50	N/A													
Password	String	50	*****													
Prototype:	<div>[PRO01]</div> <div><div><div>Login</div><div>Enter email and password to continue</div><div>EMAIL</div><div>email@blank.com</div><div>PASSWORD</div><div>*****</div><div>Log in</div><div>Forgot Password?</div><div>Create New Account</div></div></div> <div>[PRO02]</div>															




Create New Account
Already Registered? [Login Here](#)

EMAIL

Verify Email

[PRO03]




Email Verified!
Finish account by creating a password

PASSWORD

Confirm Password

[PRO04]




Forgot Password?
Enter email associated with account

EMAIL

Send Email Verification

[PRO05]



Change Password

Enter current email and new password

NEW PASSWORD

CONFIRM NEW PASSWORD

Reset Password