

# Software Requirement Specification

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## 1. Project Description

*Our project is an alarm system designed to help users manage their medications effectively. This application allows users to create profiles, set up medication reminders, and monitor their medication schedules. It also aims to improve adherence by sending timely notifications to users and enabling them to track whether they have taken their prescribed doses.*

## 2. Functional Requirements

<b>FR01</b>	The software must enable the user to add/delete alarms
<b>FR02</b>	The software must enable the user to create a profile
<b>FR03</b>	the software must enable the user to set a snooze option to reminders
<b>FR04</b>	The software must enable the user to add other user profiles for reminders
<b>FR05</b>	The software must enable the user to confirm the medication was taken
<b>FR06</b>	The software must enable the user to check medication interactions once a new medication is added
<b>FR07</b>	The software must enable the user's doctor to monitor their prescription and schedule
<b>FR08</b>	The software must enable user to add medication instruction to medications (such as taking with food)
<b>FR09</b>	The software must enable the user to export medication information as text
<b>FR10</b>	The software must enable the user to add diagnosis' to profile
<b>FR11</b>	The software much enable users to opt in to receiving information on new medication relevant to their diagnosis
<b>FR12</b>	The software must enable the user to send mail notification messages of side effects/comments/concerns with their medication
<b>FR13</b>	The software must enable the user to set refill reminders for their medications
<b>FR14</b>	The software must enable the user to send email requests to their doctor and pharmacy for medication refills

## 3. Non-Functional Requirements

<b>NFR01</b>	Drug Interaction Notifications/Warning within 10 seconds of medication submission.
<b>NFR02</b>	Snoozing reminder time within 15 minutes of scheduled reminder

<b>NFR03</b>	All personal and medication-related data should be encrypted and stored within 2 minutes of submission.
<b>NFR04</b>	if users run into a downtime error, send 1 bug report to administrator within 2 minutes
<b>NFR05</b>	Dual-Factor Authentication for User Authentication response time within 30 seconds
<b>NFR06</b>	All error messages must be displayed within 10 seconds of submission.

## 4. Use Case Specification

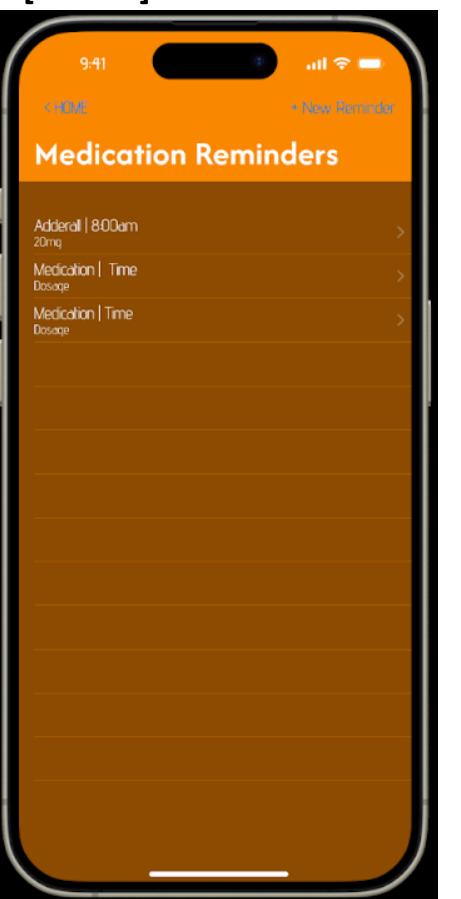
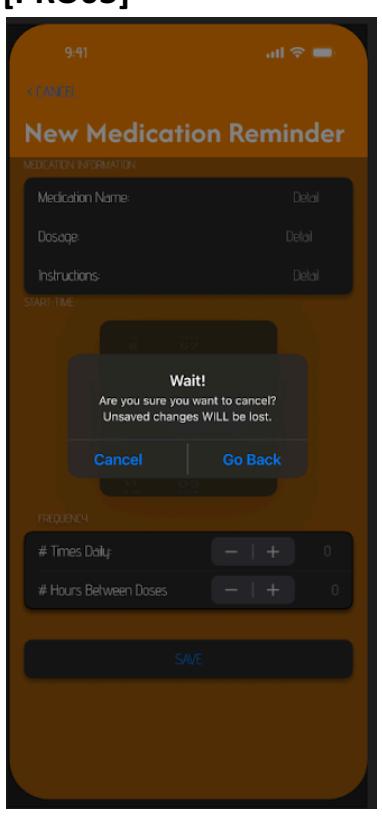
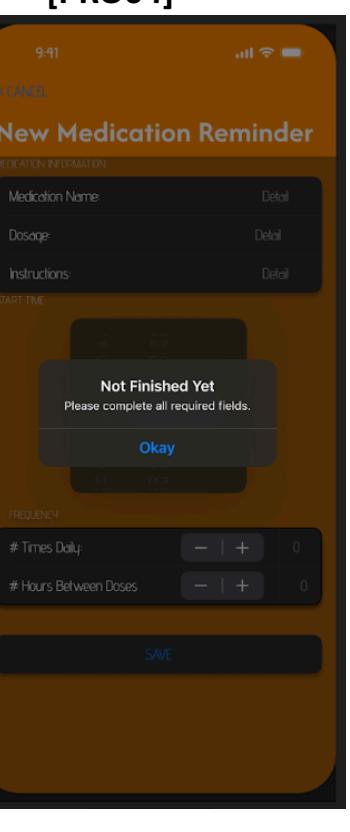
*<< Select three functional requirements and describe them in detail using use cases.>>*

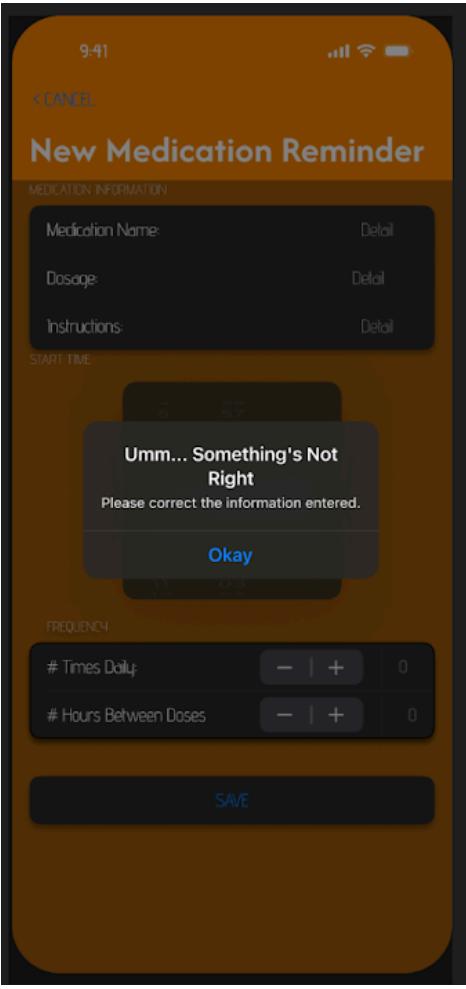
<b>UC01 Name:</b>	Add Medication Reminder
<b>Description:</b>	This use case allows users to set up a reminder in order for them to take their medications
<b>Actor:</b>	User
<b>Entry condition:</b>	The user has already logged in and navigated to the “Add Medication Reminder” section.
<b>Basic path:</b>	<ol style="list-style-type: none"> <li>1. The system displays a form where the user is able to enter details:[PRO01] <ul style="list-style-type: none"> <li>a. Medication Name(Editable)</li> <li>b. Dosage(Editable)</li> <li>c. Instructions(Editable)</li> <li>d. Time(Selectable)</li> <li>e. Frequency Per Day(Selectable)</li> <li>f. Hours Between Doses(Selectable)</li> </ul> </li>   <li>2. The user fills in the required information and clicks on “Save”           <p>OPTIONS:</p> <ul style="list-style-type: none"> <li>-SAVE</li> <li>-CANCEL[A01]</li> </ul> <p>[PRO01][BR01]</p> </li>   <li>3. The system confirms that the reminder has been set and displays it in the users “Medication Reminder” list page.</li> <p>[PRO02][E01][E02]</p> <li>4. Use case is concluded</li> </ol>

<b>Alternative paths:</b>	<p><b>[A01] The user/actor selects the “CANCEL” option</b></p> <ol style="list-style-type: none"> <li>1. The user cancels the process before saving their information.             <ol style="list-style-type: none"> <li>i. Medication Name</li> <li>ii. Dosage</li> <li>iii. Instructions</li> <li>iv. Time</li> <li>v. Frequency</li> <li>vi. Hours</li> <li>vii. The options:                     <ol style="list-style-type: none"> <li>1. Save</li> <li>2. Cancel</li> </ol> </li> </ol> </li> <li>b. The user selects the cancel option <b>[PRO01]</b></li> <li>c. System prompts the user with a confirmation message saying “Are you sure you want to cancel? Unsaved changes WILL be lost.” <b>[PRO03]</b></li> <li>d. The user confirms the cancellation by selecting “Cancel” <b>[PRO03]</b></li> <li>e. The system discards all entered data and returns to the Reminders List Page without saving any of the information. <b>[PRO02]</b></li> <li>f. Use case is concluded</li> </ol>
<b>Exception paths:</b>	<p><b>[E01]The user selects “Save” option but has incomplete information</b></p>

	<ol style="list-style-type: none"><li>1. The user enters partial information (such as only inputting the medication name but don't mention the time or frequency)<ol style="list-style-type: none"><li>i. Medication Name</li><li>ii. Time</li><li>iii. Frequency</li><li>iv. Dosage</li><li>v. Hours</li><li>vi. The options:<ol style="list-style-type: none"><li>1. Save</li><li>2. Cancel</li></ol></li></ol></li><li>b. The user enters the Medication Name but does not specify the Time or Frequency</li><li>c. The system detects that some required fields are missing when the user tries to save their information and displays an error message saying:<ol style="list-style-type: none"><li>i. "Please complete all required fields." <b>[E02][PRO04]</b></li></ol></li><li>d. The user is prompted to provide the missing information before proceeding and selecting "Save."</li><li>e. The use case returns to step 1 of the basic path</li></ol> <p><b>[E02] The user selects "Save" option but has entered invalid information</b></p> <ol style="list-style-type: none"><li>1. The user enters invalid data (e.g., enters a character instead of int for dosage) which would result in the system displaying an error message and prompts the user to correct it <b>[PRO05]</b></li><li>2. User must dismiss the message by pressing "Okay" and is brought back to the prompt to retry the entrance of data</li></ol>
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<b>Business Rules:</b>	[BR01] . All fields are required. [BR02] . The medication name must be selected from the pre-configured list of medications																																			
<b>Data description</b>	<table border="1"><thead><tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th><th></th></tr></thead><tbody><tr><td>Time (Reminder)</td><td>Clock</td><td>-</td><td>-</td><td></td></tr><tr><td>Medication</td><td>String</td><td>50</td><td>-</td><td></td></tr><tr><td>Instructions</td><td>String</td><td>5,000</td><td></td><td></td></tr><tr><td>Dosage</td><td>Int</td><td>5,000</td><td>-</td><td></td></tr><tr><td>Frequency</td><td>Int</td><td>1,000</td><td>-</td><td></td></tr><tr><td>Hours</td><td>Int</td><td>1,000</td><td>-</td><td></td></tr></tbody></table>	Name	Type	Length	Mask		Time (Reminder)	Clock	-	-		Medication	String	50	-		Instructions	String	5,000			Dosage	Int	5,000	-		Frequency	Int	1,000	-		Hours	Int	1,000	-	
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Prototype:	[PRO01] 	[PRO02] 
	[PRO03] 	[PRO04] 

	<b>[PRO05]</b>  <p>The screenshot shows a mobile application interface titled "New Medication Reminder". At the top, there is a navigation bar with a back arrow labeled "CANCEL" and a signal strength icon. Below the title, there is a section labeled "MEDICATION INFORMATION" containing fields for "Medication Name", "Dosage", and "Instructions", each with a "Detail" button. Underneath this is a "START TIME" section with a date and time picker set to "2018-01-01 10:00". A central modal dialog box displays the error message "Umm... Something's Not Right" and the sub-instruction "Please correct the information entered." with an "Okay" button. At the bottom of the screen, there is a "FREQUENCY" section with two input fields: "# Times Daily" and "# Hours Between Doses", both currently set to "0". Below these fields is a large "SAVE" button.</p>

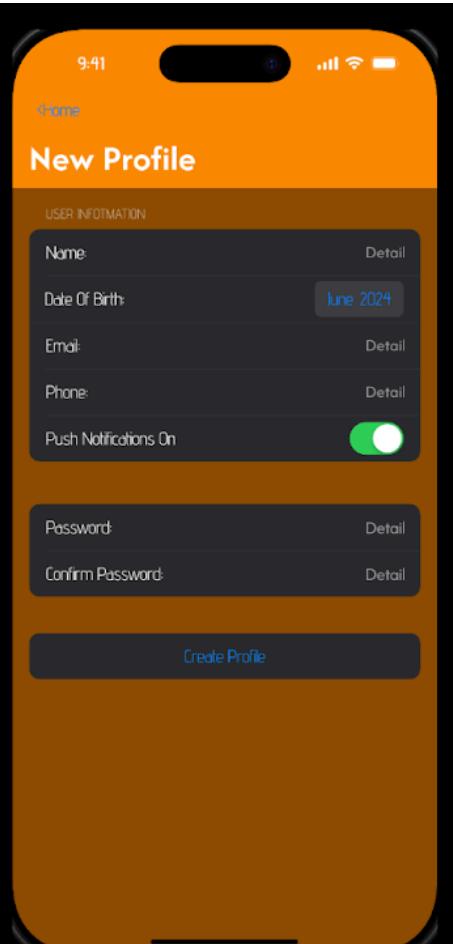
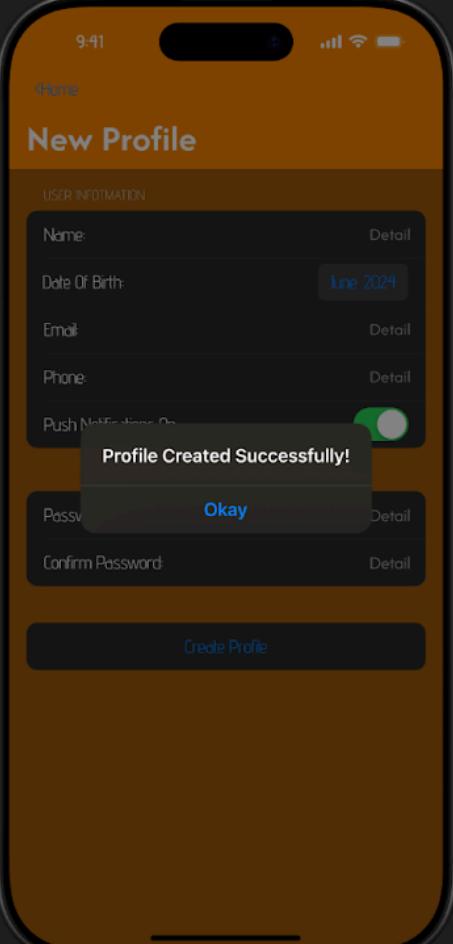
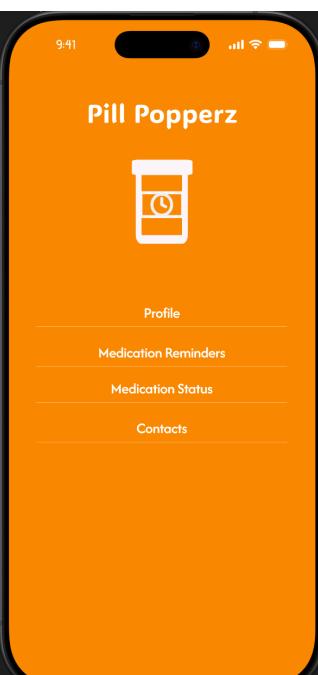
<b>UC02 Name:</b>	Confirm that medication was taken.
<b>Description:</b>	The user after snoozing the Medication Alert <b>[PRO01]</b> can set the Medication Status to “Taken” from the Medication Status page. This checks off the medication that has been taken for the day and turns off the alert.
<b>Actor:</b>	User
<b>Entry condition:</b>	The medication status is set to “Not Taken” at the time the user is trying to mark the medication as “Taken”. The user has navigated to the Medication Status Page
<b>Basic path:</b>	<ol style="list-style-type: none"> <li>1. The user selects the Medication Status to “Taken.” <b>[PRO02]</b>            OPTIONS:            -Taken            - Not Taken <b>[A01]</b></li> <li>2. The program confirms that the medication was not previously taken and then sets the new status to taken and displays such on the Medication Status page <b>[BR01][BR02][E01][E02][E03]</b></li> <li>3. The reminder for that medication is turned off.</li> <li>4. This use case is concluded</li> </ol>
<b>Alternative paths:</b>	<p><b>[A01] User selects “Not Taken” option</b></p> <ol style="list-style-type: none"> <li>1. The program confirms that the medication was already not taken and does nothing more.</li> <li>2. This use case is concluded</li> </ol>
<b>Exception paths:</b>	<p><b>[E01] System loses connection before saving</b></p> <ol style="list-style-type: none"> <li>1. System loses connection while confirming medication is taken causing an error</li> <li>2. User is taken back to Medication Status Page to retry confirming medication is taken. <b>[PRO02]</b></li> </ol> <p><b>[E02] The user does not select “Taken” option before alert times out</b></p> <ol style="list-style-type: none"> <li>1. The user does not mark the medication as taken by the end of the day.</li> </ol>

	<p>2. The user will be reminded again with the names of the medications that they have not taken in the day. [PRO03]</p> <p><b>[E03] The user selects “Taken” option but Medication Status was already TAKEN</b></p> <ol style="list-style-type: none"> <li>1. The user tries to mark a medication “taken” that has already been marked as taken prior to that.             <ol style="list-style-type: none"> <li>a. The user is notified that they have already marked this medication as taken. The user dismisses the message and is returned to Medication Status Page [PRO04]</li> <li>b. This use case is concluded</li> </ol> </li> </ol>																									
<b>Business Rules:</b>	<p>[BR01] . You can only take medication the set number of times a day</p> <p>[BR02] . Previous medication taken must be logged in system</p>																									
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<b>UC03 Name:</b>	Create User Profile
<b>Description:</b>	This use case allows for the user to create a profile, which includes their personal details and medication preferences
<b>Actor:</b>	User
<b>Entry condition:</b>	The user has launched the application and selected the option to create a new profile.
<b>Basic path:</b>	<p>1. The system displays a form for the user to input their profile information which includes [PRO01][E01]</p> <ul style="list-style-type: none"> <li>a. Name (required)</li> <li>b. Date of Birth (required)</li> <li>c. Gender/Pronouns (required)</li> <li>d. Email Address (required)</li> <li>e. Phone Number (required)</li> <li>f. Notification On (Optional)</li> <li>g. Password (required)</li> <li>h. Confirm Password (required)</li> </ul> <p>2. The user fills in all of the required fields and selects “Create Profile”</p> <p>OPTIONS:</p> <ul style="list-style-type: none"> <li>- Create Profile</li> <li>- Home [A01]</li> </ul> <p>3. The system validates the entered information, ensuring that all of the required fields are completed and that everything is in the correct format [BR01][E02]</p> <p>5. The system encrypts and stores the user’s profile information securely</p> <p>6. The system displays a success message: “Profile created successfully!” [PRO02]</p> <p>7. The user clicks “Okay” to dismiss the message and is automatically logged into their new account, and the system navigates to their home page [PRO03]</p> <p>8. This use case is concluded</p>

<b>Alternative paths:</b>	<p><b>[A01] The user selects “Home” option</b></p> <ol style="list-style-type: none"> <li>1. From the New Profile page the user selects the option - <b>Home</b></li> <li>2. The user is returned to home page, profile information doesn’t save changes <b>[PRO03]</b></li> <li>3. This use case is concluded</li> </ol>																																
<b>Exception paths:</b>	<p><b>[E01] The user selects “Save” option but has an existing profile under the entered email.</b></p> <ol style="list-style-type: none"> <li>1. The user is then just asked for their email address and password. <b>[PRO05]</b></li> <li>2. This takes the user to their profile home page. <b>[PRO03]</b></li> </ol> <p><b>[E02]The user selects “Save” option but has entered incomplete information</b></p> <ol style="list-style-type: none"> <li>1. If all required fields are not filled in, an error message “Not Finished Yet” is displayed <b>[PRO04]</b></li> <li>2. The user must then dismiss the message and finish completing the prompt.</li> </ol>																																
<b>Business Rules:</b>	<p><b>[BR01]</b> . All required fields must be completed before profile is created</p> <p><b>[BR02]</b> . Passwords must be at least 8 characters long and include uppercase, lowercase, numeric, and special characters</p>																																
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<b>Prototype:</b>	<b>[PRO01]</b> 	<b>[PRO02]</b> 
	<b>[PRO03]</b> 	<b>[PRO04]</b> 