

Test Case Planning

Group members	Vaishnavi Madagiri, Abhiram Allugubelli, Pooja Challala, Yasaswi Veera, Bella Lopez, Ahmed Abubakr Siddiq
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1. Use Case 1 - <<*Dose Reminder Notification System*>>

Test Case ID	TC01 - Positive Test Case (Reminder Triggered on Time)	
Test Objective	Verify that the system sends a reminder notification when the scheduled medication time arrives.	
Preconditions	Application is running. Patient P1 exists in the system. Prescription#1 exists for P1 with scheduled dose time: 8:00 AM. Notifications are enabled for the patient. Current system time is 7:59 AM.	
Test steps	<ol style="list-style-type: none">1. System monitors scheduled times in background.2. Time advances to 08:00 AM.3. Program checks for upcoming prescriptions.4. Reminder notification is generated.	
Input Values	Field	Value
	Patient ID	P1
	Prescription Number	1
	Scheduled Time	08:00
	Current Time	08:00
	Notifications	ON
Expected results	System sends notification: "Reminder: It's time to take Prescription #1." Notification appears before the dose is marked missed. Dose remains in "pending" status.	

Test Case ID	TC02 - Negative Test Case (Notifications Disabled)	
Test Objective	Verify that the system does NOT send reminders if notifications are turned off.	
Preconditions	Application is running. Patient P1 exists. Prescription#1 scheduled for 08:00 AM. Notifications are DISABLED for P1.	
Test steps	1. Time reaches 08:00 AM . 2. System checks reminder status. 3. Patient preferences are read.	
Input Values	Field	Value
	Patient ID	P1
	Prescription Number	1
	Scheduled Time	08:00
	Current Time	08:00
	Notifications	OFF
Expected results	No reminder is produced. No errors occur. Prescription state remains unchanged.	

Test Case ID	TC03 - Boundary Test Case (Reminder at Exact Minute)	
Test Objective	Confirm that the system triggers reminder exactly at the scheduled boundary time.	
Preconditions	<ul style="list-style-type: none">• Application is running.• Patient P1 exists.• Prescription#2 is scheduled for 09:30 AM.• Notifications are enabled.	

Test steps	1. System time reaches 09:30 AM exactly. 2. Reminder engine executes.	
Input Values	Field	Value
	Patient ID	P1
	Prescription Number	2
	Scheduled Time	09:30
	Current Time	09:30
	Notifications	ON
Expected results	Reminder fires at exactly 9:30 AM. System does not delay notification. No early / duplicate reminders.	

Test Case ID	TC04 - Negative Test Case (Invalid Notification Time Data)	
Test Objective	Verify system behavior if scheduled time is corrupted or missing.	
Preconditions	Application is running. Patient P1 exists. Prescription#3 exists with missing scheduled time.	
Test steps	1. Reminder service attempts to read schedule. 2. System fails to load time value.	
Input Values	Field	Value
	Patient ID	P1
	Prescription Number	3
	Scheduled Time	null
	Notifications	ON
Expected results	System displays/logs error: “Cannot send reminder: scheduled time not available.” No reminder is sent. System should not crash.	