# **Software Requirement Specification**

Group members	Kabita Chand	
	Kyle Luchsinger	
	Nima Behboudi	
	Bilal Othman	
	Fredy Bashizi Balibuno	
	Sriram Sathvik Vangipurpau	

#### 1. Project Description

Our project aims to develop a comprehensive medical application that simplifies healthcare management for patients and providers. The application will offer features such as easy appointment scheduling, prescription management, and tracking medical history.

## 2. Functional Requirements

FR01	Making/Canceling/Changing an Appointment the software must enable customers and providers to manipulate their appointments
FR02	Providers are able to create a new prescription for a patient, edit an existing prescription to adapt to changing needs, and delete a prescription when no longer needed. Patients can refill prescriptions when refills are needed.
FR03	Allowing providers to create and edit medical history for a patient, also allowing them to delete or remove patient history. Allow patients/their guardians to view medical history.

## 3. Non-Functional Requirements

NFR01	Appointment updates/cancellations go through the same day the request was made.	
NFR02	Patient history and information is only accessible to the patient and their healthcare provider.	

## 4. Use Case Specification

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

UC01 Name:	Making/Canceling/Changing an Appointment			
Description:	The software allows the user to make an appointment with a care			
	provider, change an appointment based on changing needs, and			
	cancel an appointment if circumstances arise.			
Actor:	Patient/Provider			
Entry	Actor selects the option "Edit Appointments"			
condition:				
Basic path:	1. The system presents the actor with a list of appointments and a			
	button to schedule a new appointment [PRO01].			
	- Back (to previous page)			
	- Search Appointments			
	- New Appointment			
	- [List of appointments in chronological order]			
	<ul> <li>2. The actor selects "New Appointment" [A01][A02]</li> <li>3. System presents a screen asking for input: [PRO01]</li> </ul>			
	a. Back (to previous page) b. Location (Editable)			
	c. Doctor (Editable)			
	d. Date (Editable) [E01]			
	e. Time (Editable) [E01]			
	f. Reason for Visit (Editable)			
	g. Confirm Appointment			
	4. Actor selects "Confirm Appointment" [E02]			
	5. Actor is taken to the confirmation screen and receives a			
	confirmation email detailing their appointment. Patient history updated.			
	6. Actor is prompted with the "Home" button to return to the home screen.			

# Alternative paths:

#### [A01] The actor selects "Search Appointments"

- 1. The actor inputs parameters. The search bar checks the "Reason for Visit" variable
  - Search Bar (Editable)
  - Time Range (Editable) [E01]
  - Search
- 2. Actor clicks the "Search" button and a curated list based on parameters is generated.
- 3. Merge with [A02]

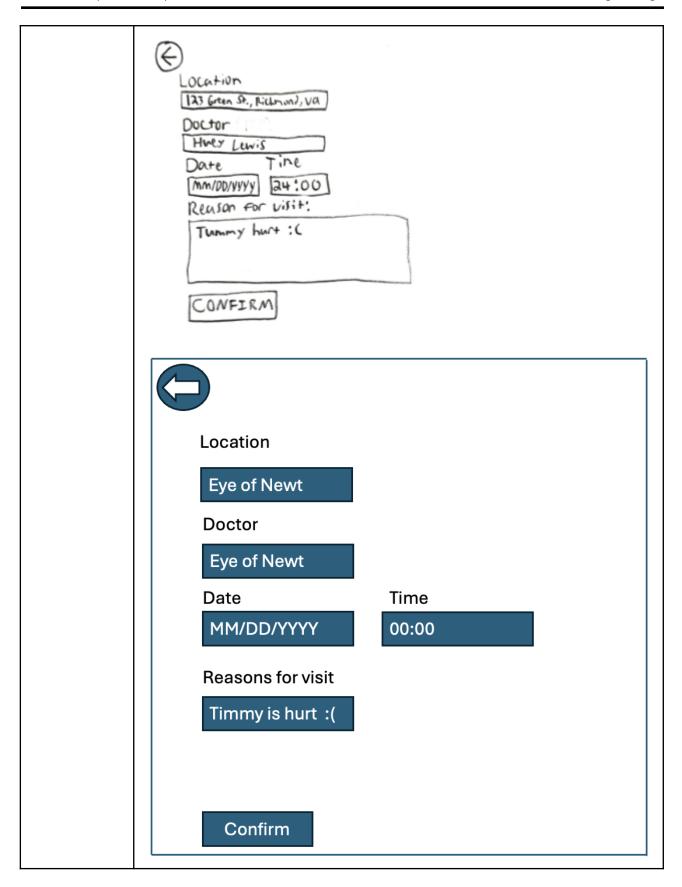
#### [A02] The actor selects the appointment they want to edit.

- 1. Actor is presented with appointment information, a confirm edit button, and a cancel appointment button [PRO01]
  - a. Back (to previous page)
  - b. Location (Editable)
  - c. Doctor (Editable)
  - d. Date (Editable) [E01]
  - e. Time (Editable) [E01]
  - f. Reason for Visit (Editable)
  - g. Confirm Edit
  - h. Cancel Appointment
- 2. Actor edits information and selects "Confirm Edit" [BR03][A03][E02][E03]
- 3. Actor is taken to the confirmation screen and receives a confirmation email detailing their appointment. Patient history updated.
- 4. Actor is prompted with the "Home" button to return to the home screen.

## [A03] Actor selects "Cancel Appointment"

- Actor is prompted "Are you sure?" [BR01][E03]
  - a. YES
  - b. NO
- 2. Actor selects "YES" [A04]
- Actor is taken to the confirmation screen and receives a confirmation email detailing their cancellation. Patient history updated.

	[PRO01]				
	Visit	· · · · · · · · · · · · · · · · ·			
	Reason for	String	100	-	
	Time	String	5	XX:XX	
	Date	String	10	MM/DD/YYYY	
	Location Doctor	String String	100 50		
accompaint	Name	Type	Length	Mask	
Data description	Nove 5	Time	Lawart	D4-cl.	
Data	advance.				
	1 -	nts must ma	ke appointm	ent edits at least 24 hou	ırs in
	hours in adv	ance, they ar	e eligible for	full refund.	
	[BR02] If a patient has pre-paid for services and cancels at least 24				
Rules:	[BR01] Patients must cancel an appointment 24 hours prior to the day of the appointment.				
Business	[RR01] Patients must cancel an appointment 24 hours prior to the				
	return to the appointment information screen.				
			-	alter the appointment a	and
			_	ed is less than 24 hours	_
					2000
			ne home scre	en.	
	than 30 min			y icave the screen for i	11016
-				ey leave the screen for i	more
paths:	1			ner date/time.	
Exception	[E01] Actor s	selects invali	d date/time		
	1. Actor	is taken back	. to appointm	nent information [A02]	
	[A04] Actor			antinformatic (face)	
		screen.	With the 110		, the
	_	_	with the "Ho	me" button to return to	n the
	<ol><li>4. Actor (Patient) receives refund if services were prepaid [BR02]</li></ol>				
			eives refund	if services were prepaid	



UC02 Name:	Creating/Refilling/Canceling/Updating a Prescription			
Description:	The software allows a user to request a refill for their prescription.			
	It also allows a doctor to create a prescription for a patient, update			
	dosage/medication type, and cancel a prescription for a patient.			
Actor:	Patient/Provider			
Entry	Actor selects the option "Edit Prescriptions"			
condition:				
Basic path:	1. The system presents the actor with a list of current			
	prescriptions, and if actor is a Provider, a button to			
	add/cancel a prescription			
	a. Add Prescription (PROVIDER)			
	b. Cancel Prescription (PROVIDER)			
	c. [List of Prescriptions - Alphabetical Order]			
	2. Actor (PATIENT) selects a prescription from the list.			
	[A01][A02][A03]			
	3. Actor is prompted with prescription information			
	a. Back (to previous page)			
	b. Medication Name [E01]			
	c. Dosage			
	d. Frequency			
	e. Pharmacy <b>[E02]</b>			
	f. REFILL			
	4. Actor selects "REFILL" [E03][BR01]			
	5. Actor is taken to a confirmation screen and receives a			
	confirmation email detailing refill. Patient history updated.			
	6. Actor is prompted with the "Home" button to return to the			
	b. Actor is prompted with the Home button to return to the home screen.			
	Home scieen.			
Alternative	[A01] Actor selects "Add Prescription"			
paths:	1. Actor is prompted for input: [PRO01]			
	a. Back (to previous page)			
	b. Medication Name (Editable) [E01]			
	c. Dosage (Editable) <b>[E04]</b>			
	d. Frequency (Editable)			
	e. Pharmacy (Editable) <b>[E02]</b>			
	f. Refill Frequency (Editable - Dropdown List)			

- g. Confirm Prescription
- 2. Actor selects "Confirm Prescription"
- 3. Actor and Patient receive confirmation email, and prescription is added to list and sent for a First Fill at the listed pharmacy. Patient history updated.
- 4. Actor is prompted with the "Home" button to return to the home screen.

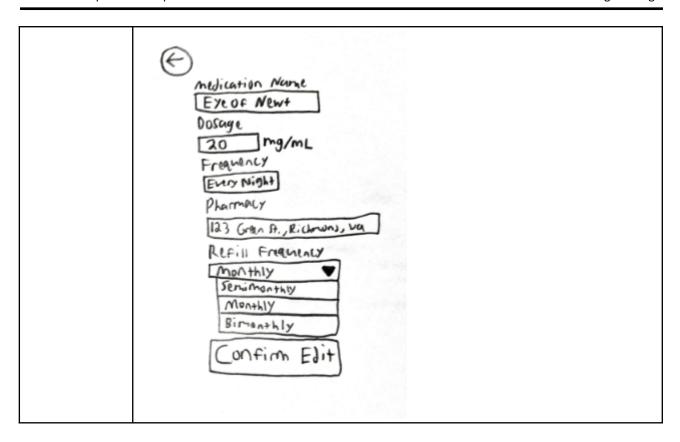
#### [A02] Actor selects "Cancel Prescription"

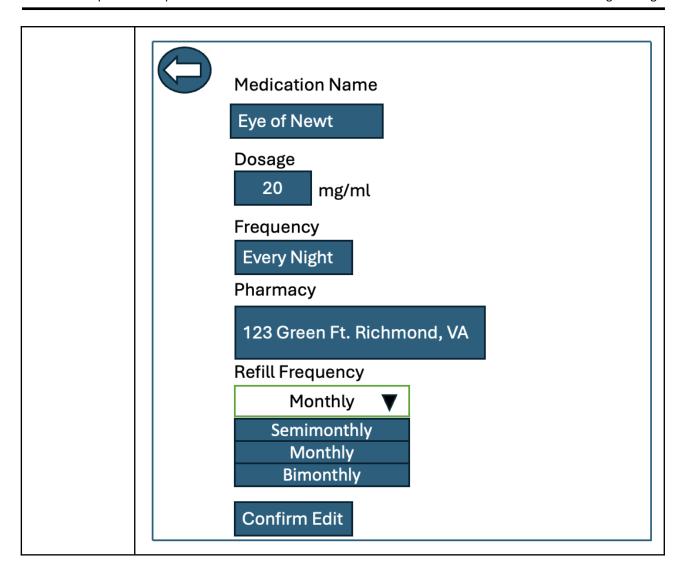
- 1. Actor is prompted to select which prescription they want to cancel from the list.
  - a. Back (to previous page)
  - b. [List of Prescriptions Alphabetical Order]
- 2. Actor is prompted "Are you sure you want to cancel?"
  - a. YES
  - b. No
- 3. Actor selects "YES" [A04]
- 4. Actor is taken to a confirmation screen and both the actor and patient receive a confirmation email detailing the cancellation of the prescription. Patient history updated.
- 5. Actor is prompted with the "Home" button to return to the home screen.

#### [A03] Actor (PROVIDER) selects a prescription from the list.

- 1. Actor is prompted for input: [PRO01]
  - a. Back (to previous page)
  - b. Medication Name (NON-EDITABLE) [BR02]
  - c. Dosage (Editable) [E04]
  - d. Frequency (Editable)
  - e. Pharmacy (Editable) [E02]
  - f. Refill Frequency (Editable Dropdown List)
  - g. Confirm Edit
- Actor selects "Confirm Edit"
- 3. Actor is taken to a confirmation screen and both the actor and patient receive a confirmation email detailing the edit of the prescription. Patient history updated.

	•			
		is prompted screen.	with the "H	ome" button to return to the
	[A04] Actor selects "NO"			
	1. Actor	is taken bac	k to the pres	scriptions list.
Exception				
paths:	1. Alert		<b>not exist</b> ompt for inpu	ut again.
	[E02] Pharm	acy does no	ot exist	
	1. Alert ເ	user and pro	ompt for inpu	ut again.
	[E03] Not er	ough time	has passed t	o pass the "Refill Frequency".
	1. Notify	actor, retui	n actor to pr	rescription information.
	[E04] Invalid	l dosage am	ount, non-p	ositive, decimal
	1. Promp	ot the user t	o enter anot	her dosage amount.
				<b>G</b>
Business	[BR01] If the medication is requested earlier than the doctor's given			
Rules:	1.	•		or a report will be filed.
	1 -		_	used, a new prescription must be canceled if applicable.
	,	'	•	
Data				
description	Name	Туре	Length	Mask
	RX Name	String	25	-
	Dosage	Double	32	-
	(mg/ml)			
	Frequency	String	50	-
	Pharmacy	String	50	-
	Refill	String	15	- Semimonthly
	Frequency			- Monthly
				- Bimonthly
Ductot	[DDO04]			
Prototype:	[PRO01]			





UC03 Name:	Creating/Altering/Deleting Patient Medical History			
Description:	Allowing a healthcare provider to create a medical history for a new			
	patient, update a patient's history, and potentially delete a patient's			
	history is extraneous circumstances.			
Actor:	Provider			
Entry	Actor selects the option "Edit Patient's Medical History"			
condition:				
Basic path:	The system presents the actor with the options to add a			
	patient, delete a patient, or edit an existing patient's history.			
	a. Back (to previous page)			
	b. Add Patient			
	c. Search for Patient			

- 2. Actor selects "Add Patient" [A01][A02]
- 3. System prompts for patient information: [PRO01]
  - a. Back (to previous page)
  - b. Name (Editable)
  - c. Sex (Male/Female)
  - d. Gender (Editable)
  - e. Insurance Information
  - f. Contact Information (Email, Phone)
  - g. Guardians (People besides provider/patient who can access medical records) [BR02]
  - h. Medical Conditions (Editable List or N/A)
  - i. Confirm Patient
- 4. Actor selects "Confirm Patient"
- 5. Actor is taken to a confirmation screen and both the actor and patient receive a confirmation email detailing the creation of the patient history. Patient History started.
- 6. Actor is prompted with the "Home" button to return to the home screen.

# Alternative paths:

#### [A01] Actor selects "Search for Patient"

- 1. Actor is prompted for a password. [E02][BR01]
- 2. Actor is prompted by system for input:
  - a. Name (Editable)
  - b. Search
- 3. Actor selects "Search"
- 4. List of patients with that name is presented to the actor, general patient info is also presented to differentiate patients (Sex, age, etc.)
- 5. Actor selects the patient, patient information and history is shown: **[PRO01]** 
  - a. Back (to previous page)
  - b. Name (Editable)
  - c. Gender (Male/Female)
  - d. Insurance Information
  - e. Contact Information (Email, Phone)
  - f. Guardians (People besides provider/patient who can access medical records) [BR02]

- g. Medical Conditions (Editable List or N/A)
- h. Notes (Editable)
- i. Medical History (Editable)
- j. Undo
- k. Confirm Edits
- I. Delete Patient
- Actor edit/adds information then selects "Confirm Edits" [A02][A04]
- 7. Actor is prompted with "Are you sure you want to save these changes?" [BR03]
  - a. YES
  - b. NO
- 8. Actor selects "YES". [A03]
- 9. Changes are saved, and the actor is taken back to the patient information page.
- 10. For one week after the changes, selecting the undo button reverts the patient history to the previous iteration. After that week the previous iteration is deleted. [BR04]

#### [A02] Actor selects "Delete Patient"

- 1. Actor is prompted for a password again. [E02][BR01]
- 2. Actor is prompted with "Are you sure you want to delete this patient?" [BR03]
  - a. YES
  - b. NO
- 3. Actor selects "YES" [A03]
- 4. Actor receives a confirmation email that patient history will be deleted in ONE WEEK. Patient history has text input at the top: "PATIENT FILE WILL BE DELETED ON \_\_\_\_\_. SELECT UNDO TO CANCEL DELETION". [BR04]
- 5. Changes are saved, and the actor is taken back to the patient information page.

#### [A03] Actor selects "NO"

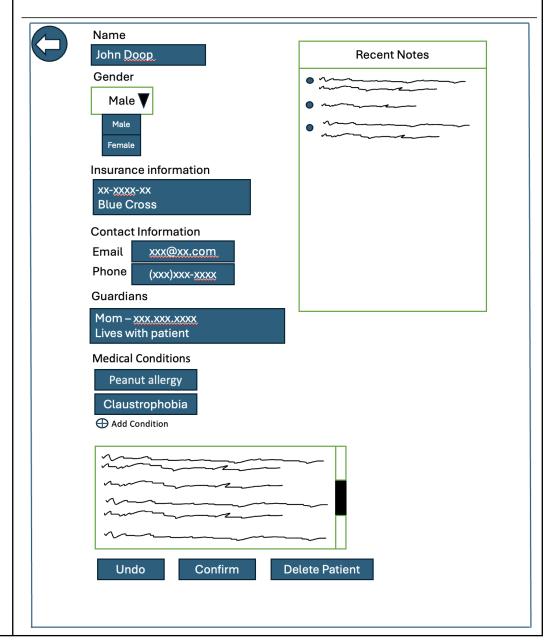
1. Actor is taken back to patient information.

### [A04] Patient selects "Undo"

		-		o the previous iteration,	, and
	1	•	sts are removed		
	2. Chang	es are save	d, and the acto	r is taken back to the pa	tient
	inform	nation page	<b>.</b>		
Exception					
paths:	[E01] No Pat	ient match	ing that query		
	1. Alert t	he actor ar	nd prompt for in	put again.	
	[E02] Incorre	ect passwo	rd		
			again, if incorred out of the progra	ct password is input thream.	ee
	[E03] Over o	ne week h	as passed, there	e is nothing to undo.	
	1. Returr	n the actor	to the patient ir	nformation screen.	
Business	[BR01]				
Rules:	1. Only authorized individuals can edit or view the patient files.				
	This constitutes that a provider has some kind of "Admin"				
	passw		·		
	[BR02]				
	1. The patient or their legal guardian has the right to view the				
	said fi	les at any t	ime and any loc	ation.	
	[BR03]				
	1. Deleting or modifying any patient information must have a				
		e-check, wh	nere the user ha	is to verify their choice.	
	[BR04]				
	· ·		•	re able to "undo" a char	nge
	or del	etion in the	e case of a mista	ke or accident.	
Data					
description	Name	Туре	Length	Mask	
	Name	String	50	-	
	Gender	String	6	- Male	$\dagger$
				- Female	
	Insurance	String	200	-	

_					
	Email	String	50	XXXXX@XXX.XXX	
	Phone	String	12	XXX-XXX-XXXX	
	Guardians	String[]	50/Entry	Maximum 5	
				Guardians	
	Medical	String[]	100/Entry	-	
	Conditions				
	Notes	String[]	200/Entry	-	
	Medical	String[]	500/Entry	-	
	History				

# Prototype: [PRO01]



Software Requirements Specification	CMSC 355 - Fundamentals of Software Engineering