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1. Project Description

A healthcare web app that enables doctors and patients to record and share health documents. The web app will use ai to create a quick summary of a patient's health information via a QR code scan in the event of an emergency.

2. Functional Requirements

FR01	the software must enable users to create and manage accounts			
FR02	the software must enable doctors to view and update account records			
FR03	the software must enable an ai system to read and summarize account records			
FR04	the software must enable users to upload a pdf form for their records			
FR05	the software must enable doctors to download a pdf form of a patient's records			
FR06	the software must enable user to securely share their info with a doctor using a pin			
FR07	the software must enable a user to create a qr code that contains their pin			
FR08	the software must enable doctors to scan a qr code to access documents			
FR09	the software must enable patients to see who has access to their account, and who has viewed it			
FR10	the software must enable doctors to remove patients from their view			
FR11	the software must enable patients to remove doctors from having access to their records			
FR12	The site must have authentication checks to not allow access to patient records for non-medical workers			

FR13	The doctors account should have a list view of every patient in their care			
FR14	Two different account types able to be created, one for patients, one for doctors			
FR15	Before the patient commits changes to their medical records, they must be presented with an end user agreement			
FR16	Before a doctor's changes are committed a patient's records, the patient must hit an agree button			
FR17	The software must enable the patient to view a doctor's changes before agreeing to them			
FR18	Doctors should have public and private keys, that allow patients to share with them based on if the doctor's account is set to public or private			

3. Non-Functional Requirements

The Ai must be able to accurately summarize a patient's medical data in no longer than 15 seconds, including the most important points first in case of an emergency.				
The software must be able to load a patient's record within 2 seconds of the request				
The software must update an account record within 2 seconds of the request				
The web app will be hosted using https protocol				
A pdf must be downloaded within 10 seconds of the request				
The web app will route traffic through a firewall				
The UI must be intuitive and easy to navigate for patients and doctors alike				
Authentication checks must utilize two factor authentication				
The web app must not allow users to inject sql commands				
The data must be updated at least within 10 minutes of uploading them				
Site should allow for a single log in to keep user logged in for no more than 30 minutes without their sessions expiring				
Site should have 99.90% uptime				
The database should be able to store over 10,000 entries				
The system should keep a log of actions access to developers				

4. Use Case Specification

UC01 Name:	Manage Records				
Description:	The software allows patient/doctor to add/update their Medical Records				
Actor:	Patient and Doctor				
Entry Condition:	Either the patient or the doctor wants to manage medical records				
Basic Path:	 The system presents the customer registration screen containing: [PRO01] Page Navigation Options Embedded PDF editor PDF management buttons Download PDF Template Upload PDF Save Cancel The actor selects the option 'Download PDF' [A01] [A02] The system downloads a .pdf file containing an editable table to the actors drive The actor uploads an updated version of the template using 'Upload PDF' [E01] The actor clicks save and the system updates the database and the page [BR01] 				
Alternative Paths:	[A01] (editing the pdf in the browser) 1. The actor selects a field in the "PDF editor" 2. The "download pdf template" and "upload pdf" options are grayed out indicating that they are unusable at the moment [A06] 3. The actor edits/adds/deletes information in the selected field a. The actor may repeat steps 1 and 2 for as many fields as they choose 4. The actor selects save [A03](cancel), [A04](back), [E02], [BR01] 5. The system displays a message that the changes have been successfully saved 6. The "upload pdf" and "download pdf template" become no longer grayed out 7. Return to step 1 of the basic path				

	 Nothing happens Return to the previous path the actor was on
	[A03] (the actor selects cancel and has made changes in the pdf editor) 1. The system presents a pop-up giving the actor two select options, cancel or continue
	2. The actor selects cancel [A05]3. The changes in the pdf form are cleared, reverting to the previous version
	4. The "upload pdf" and "download pdf template" buttons become no longer grayed out5. Return to step 1 of basic path
	 [A04] (the actor selects back and has made changes in the pdf editor) 1. The system presents a pop-up giving the actor two select options, "go to previous page" or continue
	 2. The actor selects "go to previous page" [A05] 3. The changes to the pdf get discarded 4. The actor gets redirected to the previous page
	[A05] (the actor selected back or cancel, but hit continue in the popup) 1. The popup disappears
	 The user is kept on the page The system makes no changes Return to the previous path the actor was on
	 [A06] (the actor selects a pdf option when they are grayed out) 1. The actor presses either "download pdf template" or "upload pdf" and they are grayed out 2. The system presents a popup that says "please finish editing pdf by
	either selecting "save" or "cancel"" 3. The popup is removed when the actor presses anything outside of the borders of the popup 4. Return to the previous path the actor was on
Exception Paths:	[E01] Invalid file type upload 1. System displays message informing actor of invalid file type 2. Returns to step 4
	[E02] Field description too long1. System displays a message informing the actor that they have input too many characters in a particular field
Business Rules:	[BR01] 1. All data must be encrypted in database and in transition [BR02]
Data Description	

	Name	Туре	Length	Mask		
	Record	PDF	50 MB	-		
Prototype:	[PRO01] back doctor patient					

UC02 Name:	account creation				
OOOZ Name.	account creation				
Description:	he software allows a new user to create an account				
Actor:	New user				
Entry Condition:	The actor wants to make an account in the RBAC				
Basic Path:	1. The system presents the customer registration screen containing: [PRO01] - Login option for existing user - Sign up option for new users - Back button 2. The actor selects the sign up option [A01] [A02] 3. The system presents the customer to input their information: - First Name - Last Name - Email address				

Username Password 4. System checks to see that info is valid (ie user isn't already in database, email is a valid email etc) [E01] [E02] 5. Updates the database to include new patient information and presents the patient home page [PRO02] Alternative [A01] (Logging in an existing user) Paths: 1. The actor selects the login option 2. The system presents the customer to input their account details: Username Password 3. System looks up account info in database, and if info is correct presents user with patient home page [PRO02] [A02] (user selects the back button) 1. Returns the user to the home page Exception [E01] (User attempts to create an account when one already exists under the Paths: email) 1. System redirects to an error page that states that the account already 2. Error page displays login option, which then redirects to the login page **[E02]** (User email isn't a valid email address) 1. Page displays a pop-up error message that the email is invalid and prompts them to reenter their email and password 2. Wipes already inputted user info in the textbox **Business [BR01]** Database of all user info must not be visible to anyone on the front Rules: [BR02] Database can accept multiple users with same name as long as they have different emails Data Description Name **Type** Length Mask First Name String 25 Last Name String 25 50 **Email Address** String User_Name String 15 **** 20 Password String

50

String

User ID

Prototype:	[PRO01] Login page
	back doctor Patient
	email
	[PRO02] Patient home page
	back doctor patient
	profile settings

UC03 Name:	Al Summarization			
Description:	The doctor will have access to an AI tool which allows for the user to summarize specific areas of a patient's medical record.			
Actor:	Doctor			
Entry Condition:	Actor needs specific information quickly from a specific medical record			
Basic Path:	The system presents the doctor with the login page containing: [PRO01] -email (editable)			

-password (editable) -The options: — login — sign up 2. The doctor selects the login option, they enter the email and password 3. The doctor is sent to the doctor home page containing: [PRO02] — view patient — new patient profile settings — back 4. The doctor selects view patient [A02] [A03] [A04] 5. The system presents the doctor existing patients page containing: [PRO03] — edit — view — remove — back 6. The doctor clicks the view button [A05] [A06] [A07] 7. The doctor is sent to the records view page containing: [PRO04] — ai summarization — download pdf template — back 8. The doctor click the ai summarization button [A08] [A09] 9. The AI summarization page pops up on the right side of the screen containing: [PRO05] - enter prompt (edible) — download pdf template — back 10. The doctor enters a prompt and is given a summarization accordingly [A13] [A14] [A01] (the actor clicks signup and enters their email and password) Alternative Paths: 1. The use case returns to step 3 of the basic path [A02] (the actor selects back while on the doctor home page) 1. The use case returns to step 1 of the basic path [A03] (the actor selects new patient) 1. The doctor is sent to the doctor new patient page containing: [PRO06] - patient name (editable) - patient key (editable) - emergency key (editable) — back 2. The doctor enters patient name and key [A10] [A11] 3. The doctor returns to step 7 of the basic path [A04] (the actor selects profile settings) 1. The doctor is sent to the doctor profile settings page containing: [PRO07] - change email (editable)

	change password (editable) – back 2. The doctor enters a new email and returns back to step 1 of alternative path [A04] [A12] [A11]
A]	A05] (the actor selects back while on the doctor existing patients page) 1. The actor is redirected to step 3 of the basic path
[/	A06] (the actor selects edit) 1. The actor is redirected to the manage records use case
A]	A07] (the actor selects remove) 1. The doctor is redirected to [UC04] (undefined), use case for removing a patient from a doctor's view
[/	A08] (the actor selects back while on the view records page) 1. The doctor returns to step 5 of the basic path
L /	A09] (the actor selects the download pdf button on the view records page) 1. The pdf is downloaded onto the user's computer and they return to step 7 of the basic path
[A	A10] (the actor enters the emergency key in the new patient page) 1. The doctor returns to step 7 of the basic path
[/	A11] (the actor selects back in the new patient page) 1. The doctor returns to step 3 of the basic path
[A	A12] (the actor enters a new password) 1. The doctor returns to step 1 of alternative path [A04]
[A	A13] (the actor selects back while on the ai summarization page) 1. The doctor returns to step 5 of the basic path
_	A14] (the actor selects the download pdf button on the ai summarization
P	nage) 1. The pdf is downloaded onto the user's computer and they return to step 9 of the basic path
Exception [Exception	 The actor asks for data of a patient that they do not have access for. a. The actor responded with a message that lets them know that they do not have the ability to view said data. b. The actor is presented with an option to get access to that patient's record. The actor asks for a data that doesn't exist a. The actor is presented with a message that lets them know that it doesn't exist.
Business [E	BR01]

Rules:	The Al response time must be in under 15 seconds [BR02] The Al response must be 100% accurate to medical records [BR03] The Al response must be sent using HTTPS and through a secure firewall				
Description	Name	Туре	Length	Mask	
	Patient_Name	String	50	-	
	Allergies	String	25	-	
	Blood_Type	String	3	-	
	Major_Injury_His tory	String	1000	-	
	Prompt_Entry	String	1000	-	
	AI_Response	String	3000	-	
Prototype:		octor patient login sign up email password octor patient view patients new patient rofile settings			

[PRO03]
back doctor patient
[PRO04]
back doctor patient
ai summarization
download pdf template
[PRO05]
back doctor patient
ai summarization enter prompt download pdf template
[PRO06]
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Description:

A medical records sharing platform, supporting both emergency sharing and recipient specified sharing.

The program has a web front end, with different portals for doctors and patients. Patients are able to fill in and create medical fields or upload a pdf, which then fills in for a sql table on a database. Patients are also able to search for and share documents with doctors that have public accounts on the site, and patients have the ability to create emergency keys, in the form of qr codes, to enable doctors to access their records without sharing access.

The web app contains an Al tool which helps provide a quick summary of a patient's medical history for doctors who need quick access to specific information.

Doctors have the ability to edit records which are shared with them, and can access new records using an emergency key.

Both types of accounts can set their privacy status to public or private, to enable or disable new accounts from sharing/accessing documents with them. Accounts are created using an email, which is sent a verification email, and can be deleted.

Pages: Login page

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Doctor home page

back 	doctor patient	
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 	profile settings	

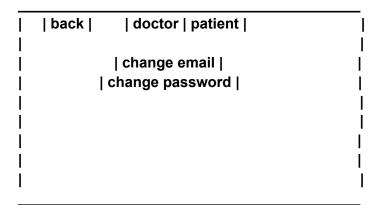
Doctor new patient page

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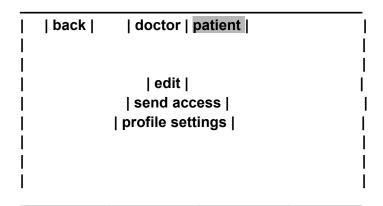
Doctor existing patients page	Doctor	existing	patients	page
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Doctor profile settings page



Patient home page



Patient send access page

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doctor name	
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# Profile settings page

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### Records view page

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ai summarization	
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# Al Summarization Page

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