

# uSpark AI Medical Assistor

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Sprint 2 Presentation

 Team 1 - Rush Hour  
CS691  
April 2025



# AGENDA



## Team :

- Roles and Responsibilities
- Improvements

## Project Overview:

- Problem Statement
- Project Description
- Working Agreement
- Personas
- Product Design
- MVP Design

## Technology:

- Technologies
- Algorithms
- Diagrams

## Product Backlog

## Sprint Backlog:

- Backlog
- Test Cases
- Completed
- Not Completed

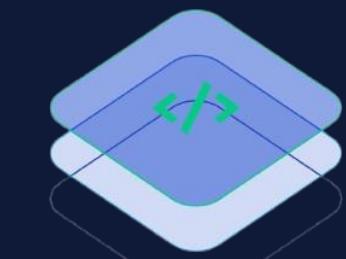
## Sprint 2 Metrics:

- Velocity
- Burndown Chart
- Committed Ratio

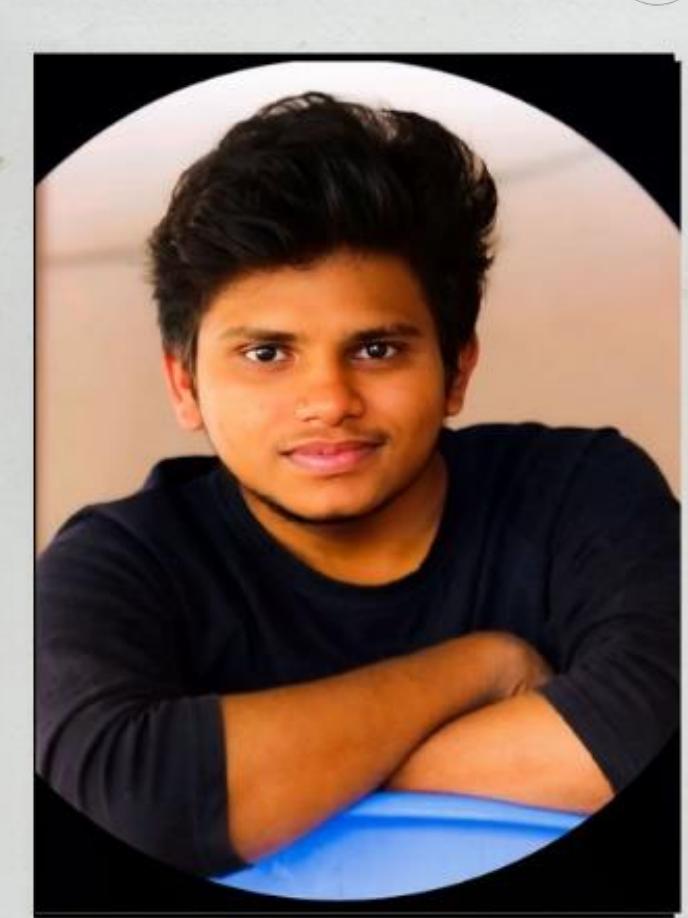
## Sprint 2 Retrospective

## Sprint 3 Planning

## Product Demo



# FULL STACK TEAM



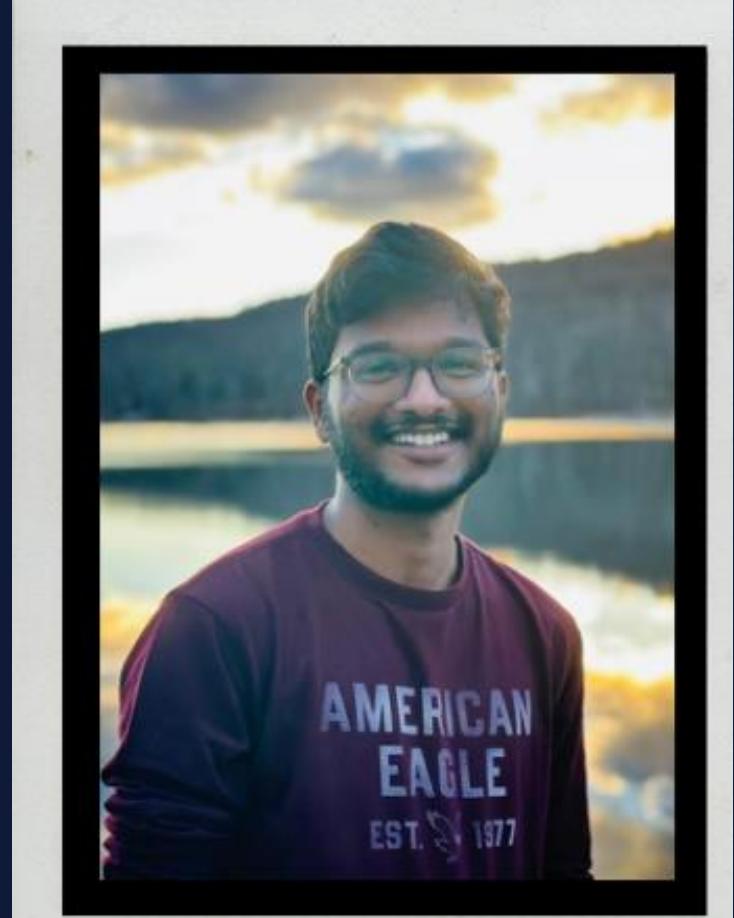
Avinash Manchala  
Full Stack Developer/ UI Designer



Rathan Jayanath Singavarapu  
Team Lead/Scrum Master/ Full  
Stack Developer



Koundinya Pidaparthi  
Lead Full Stack Developer



Sairam Maddela  
Full Stack Testing Engineer



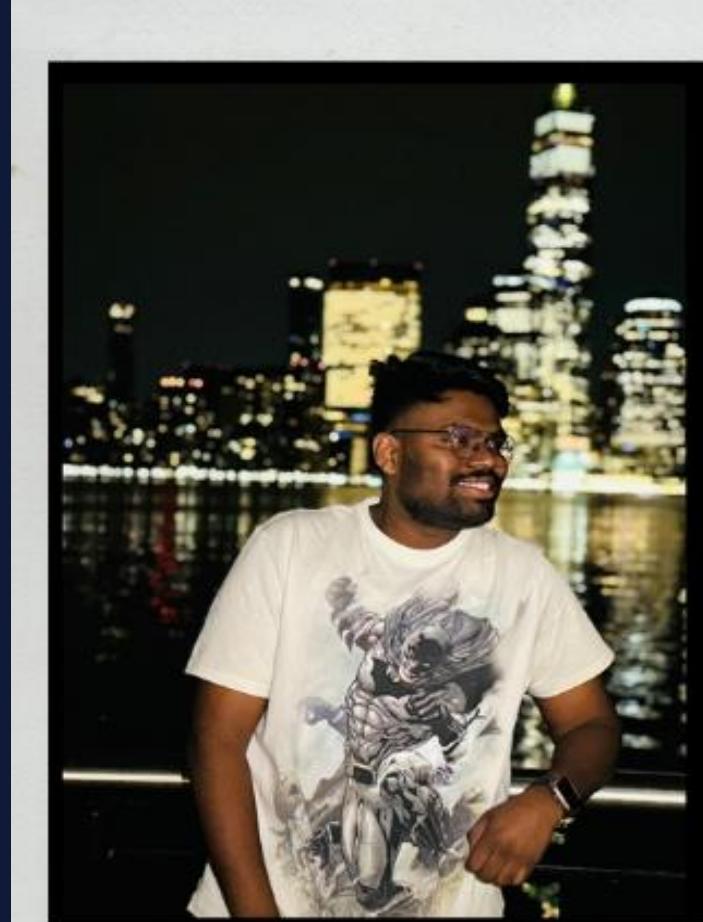
# ML AI TEAM



Pranay Kumar Reddy  
Lead AI, ML Engineer



Uday Kumar  
AI, ML Engineer/Tester



Murali Kummari  
AI, ML Engineer/Tester



Sujit Suprabhat Tubki  
Tester/Quality Assurance

## Improvements from professor

- Describe the features, technologies, and tools needed to describe why we are using it
- improved product backlog by adding titles and removing the features
- Modified the metrics and diagrams related to sprint based on the changes suggested
- Change the test case id separate test case ID numbers



# PROBLEM STATEMENT

Continuous Medical Assistance is one of a non-negotiable requirement these days and it can't be ignored. It is tedious to manage and store data related to a diagnosis of a patient for hospitals and for the patient as well. A simplified way of managing health care is needed, which can be achieved through AI chatbot and smart data storage system and like wise professionals in the medical sector can use a trained ML based algorithm service to reduce manual effort in the patient diagnosis. This creates a hassle-free environment for both patient and doctors.

# PROJECT DESCRIPTION

<b>Project Name:</b>	uSpark
<b>Team:</b>	Rush Hour
<b>Project Description:</b>	<p>A Smart application that includes chatbot that performs medical analysis, books appointment, recommends hospitals and generate segmented results</p> <p><b>For</b> users/patients and doctors <b>who</b> upload their scan images <b>the</b> uSpark Application <b>is a</b> smart Application based on MI and AL <b>that</b> eases the process of making appointments for the users and generate segmented results from scan images that are uploaded by user, that can be viewed by doctors <b>unlike</b> depending completely on manual diagnosis by doctors and booking appointments and consulting doctor for preliminary medical analysis <b>our application</b> automates the process of making in-person/virtual appointments and helps doctors in diagnosing the scan images that are uploaded by the user.</p>
<hr/>	
<b>Benefit Outcomes:</b>	<ul style="list-style-type: none"><li>• Automated way of making appointments</li><li>• Preliminary health analysis using chatbot</li><li>• Helps doctors in image analysis reducing manual work</li><li>• Efficient method of storing health data</li></ul>
<b>Github Link:</b>	<a href="https://github.com/htmw/2025S-RushHour/wiki">https://github.com/htmw/2025S-RushHour/wiki</a>



# PROJECT DESCRIPTION

A robust approach to ease the process of health care and management with just one click!

- “uSpark” is an Intelligent full stack application incorporated with machine learning that is an ultimate go-to point for the users/patients for all their healthcare related issues. uSpark allows users to schedule appointments in a hassle-free manner.
- These appointments can be virtual or in-person using “Uheal” a smart chatbot in the application that diagnoses the patient condition with the help of few questions. uSpark stores all the assessment details of the patient for further usage.
- Doctors can use uSpark as their personal virtual assistant that helps them in their work for managing appointments and patients records. It provides doctors with “Useg” a well-trained ML algorithm that precisely processes bio-medical images that produces an output

# Team Working Agreement

**Link:**  
[Team working agreement](#)

## CS 691 Capstone Project

### Team – 1: Rush Hour

#### Team Working Agreement

To produce a viable result at the end of the project duration is the aim by which our team "Rush Hour" is driven by. Our sole purpose is to give a working product capable of handling real life scenarios so that it ultimately leads to customer satisfaction. We as a team understand the need to work together to make the project happen. We strive to give our best to meet the pre-decided plans, commitments, goals. Individually, we are responsible to the tasks that have been assigned to us and will work to the best of our capacity to prioritize the success of the team and to achieve the goal of making our product "uSpark".

##### Team Rush Hour

As a part of the project and the norms associated to it, we have decided few norms that are incorporated into the team which ensures the success of the team. Policies/terms have been discussed in the agreement.

##### Terms of Agreement:

###### Individual Accountability:

As an individual it is one's duty to be responsible and be accountable for their actions. It is an obvious thing that such a big project cannot be completed by a single person or a small team. Individual work is important as much as team work in capstone project. This fact is acknowledged by all the team members. We as a team of eight members understand this and are willing to take responsibility for our work and actions through the course of this project.

In all the discussions team members are expected to bring something to the table that adds value to the team and the project. We as a team recognize the importance of our own self and our peers as well in the team.

###### Communication and Resource Sharing:

Interaction in the team makes a whole lot of difference when a complex project is in progress. This makes many things like idea analysis, brain storming, planning easier and fluent. It is understood that the team assembled has members from various backgrounds and

belong to various demographic areas, based on this the technical resources like Laptops, mobiles or other software devices, software they provide to the team might vary. To make the learning and the working more generic we decided to employ a shared resource system so that all can have access to them.

We use Zoom, WhatsApp as our primary way to communicate within the team. For resource sharing we use google docs, word documents are uploaded to a private google drive space which can be accessed only by the team members. All other working software and tools like figma, canva, jira, GitHub can be accessed by the team.

Communication plays an integral part in any team, the team members understand this and are open towards any discussion as a whole team or needed divisions of the team. All the team members agree to be available to rest of the team, so that the work doesn't get stuck at any point.

###### Team Division and Synchronization:

After finalizing the project idea and the features that are included, we have decided to split the team in to two divisions namely ML/AI team and Full Stack team. "Lead Developer" of each team is head of the their team. This division was done in the best interest of the application and this segregates the task for each division.

This might lead to few mishaps or disturbances in terms of synchronization when work from both the fronts are combined together. The team is expected to understand this and work bearing this in mind as any decision in one team can change the way in which the other team works. The work done one team must compliment the work done by other team, we agree to this and will strive to do the same in the duration of the project.

###### Participation:

A team of eight member is expected to give a viable output at the end of the project and due to this there might occur two completely contrast scenarios. First one, if a particular team member is burdened with a lot of work and has no time to help others. Team members are to understand this situation and are expected to provide the required help to that person. On the contrary, if a team member has not been assigned any other work, it is to be noted that he must take stand and try to help the team in any way possible. Active participation of the entire team is expected at all times and this ensures on time completion of works.

###### Openness and Helping:

It is understood that all the team members are acquainted with their own skill sets and might be lacking the skill sets that are needed in the project. The team should

# Persona 1

User: Doctor



## About

**Age:** 40

**Gender:** Female

**Occupation:** Senior Radiologist

**Location:** New York

**Hospital:** NYC Health + Hospitals

## DR. SARAH JOHN

### DESCRIPTION

A dedicated medical professional striving to provide accurate diagnoses while managing time efficiently, seeking AI-driven support to enhance patient care.

### CHALLENGES

- Spends too much time manually reviewing medical images.
- Struggles with unstructured patient history and reports.
- Managing appointments and last-minute schedule changes is inefficient.

### GOALS & NEEDS

- Wants AI-powered tools to assist in faster and more accurate diagnostics.
- Prefers a centralized system to access patient history easily.
- Needs a well-organized appointment and consultation management system.



# Persona 2

User: Patient



## About

**Age:** 45

**Gender:** Male

**Occupation:** Bank Manager

**Company:** TD Bank

**Location:** New Jersey

## MARK THOMPSON

### DESCRIPTION

A devoted parent striving to manage his family's health efficiently, looking for a hassle-free way to keep medical information organized and accessible.

### CHALLENGES

- He struggles to keep track of family health records.
- Maintaining work and health care responsibilities.
- Lack of a system to monitor recurring health issues.

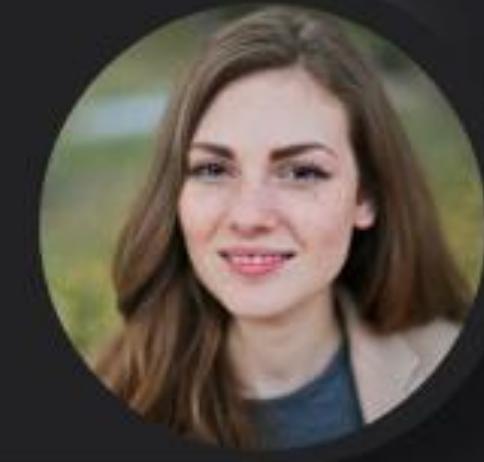
### GOALS & NEEDS

- Wants the best way to access and organize health information.
- Needs a straightforward approach to track symptoms and past treatments.
- Want more efficient way to navigate healthcare for his family.



# Persona 3

User: Admin



## About

**Age:** 38

**Gender:** Female

**Occupation:** Lab Technician

**Hospital:** NYC Health + Hospital

**Location:** New York

## EMILY CARTER

### DESCRIPTION

A diligent coordinator responsible for keeping healthcare operations smooth, looking for an efficient way to manage appointments and patient records seamlessly.

### CHALLENGES

- Managing a large volume of patient appointments manually.
- Ensuring that doctors' schedules are not overbooked.
- Keeping track of patient medical records efficiently.

### GOALS & NEEDS

- Wants a streamlined system to handle patient bookings and cancellations.
- Needs an easy way to access inbound and outbound patient records.
- Requires integration with hospital management systems (HMS).



# Persona 4

User: Patient



## About

**Age:** 32

**Gender:** Female

**Occupation:** Software Employee

**Company:** Accenture

**Location:** Brooklyn

## LISA BROWN

### DESCRIPTION

An individual who values convenience and reliable health guidance, looking for a simple way to make informed healthcare decisions without unnecessary hospital visits.

### CHALLENGES

- Doesn't visit hospitals often but needs occasional medical guidance.
- Wants reliable health information instead of Googling symptoms.
- Prefers flexible, on-demand healthcare services.

### GOALS & NEEDS

- Wants access to trusted medical advice without needing an appointment.
- Needs a way to consult a doctor only when necessary.
- Require better way to understand symptoms and health concerns.



# MVP



## uSpark Application

### BOOK APPOINTMENTS!!

uSpark allows users to make appointments which can be in-person or virtual based on their availability and doctor's availability , in contrast to the traditional way of making appointments

### CHATBOT – Uheal

uHeal conducts an assessment for the patients with the help of a series of questions, and also gives a few preventive measures and It also makes appointments for the user by giving recommendations about hospitals, in contrast to the traditional method of searching hospitals

### Useg

Useg is an ML algorithm that is used by doctors as a part of their diagnosis. This makes their work easier and helps them to narrow down the issue in a much quicker way

### HOSPITAL RECOMMENDATIONS

Users can now see recommendations of hospitals that might be suitable for their issue. These recommendations on their assessment done via a series of questions asked by our chatbot "Uheal"  
Distance from Hospital, working hours can be seen.

### ONE CARD

uHeal stores the details of the health issue of the patient which is obtained from the conducted assessment, all the assessment details are saved on ONE CARD along with the date of assessment. One card involves patient's assessment details, insurance details, personal details and a QR code that is used to share the ONE CARD, this completely eliminates the need for physical documents to store information.



# Product Design

Booting page

The bootstrapping page features a large "uSpark" logo with a stethoscope icon. Below it, the tagline "Feeling Ill? Chill. Your Medical Assistant Is Here to Heal!" is displayed. Two prominent buttons at the bottom are "LOGIN AS DOCTOR" and "LOGIN AS PATIENT". A central graphic shows a cartoon robot doctor surrounded by medical icons like a heart, a syringe, and a stethoscope.

The dashboard displays "Visits for Today" count (104), with breakdowns for "New Patients" (40) and "Old Patients" (64). It includes a "Search" bar, a "Good Morning Dr. Preethi!" greeting, and a "Upcoming" section showing a "Next Patient Meet" on 8 Feb, 2025, at 04:00 PM. A "Useg" report section is present with a placeholder for uploading a card and a "View More" button.

This dashboard is identical to the one above, showing "Visits for Today" (104), patient counts (40 New, 64 Old), and a "Patient List" with four entries: Stacy Mitchell (Weekly Visit), Amy Dunham (Routine Checkup), Demi Joan (Report), and Susan Myers (Weekly Visit). The "Consultation" section details symptoms for Denzel White (Fever, Cough, Heart Burn) and provides a prescription for Paracetamol and Diazepam. A "Useg" section is also included.

The chat interface greets the user with "Welcome User!". It features three main sections: "Take Initial Assessment" (General), "Upload Previous reports" (5 Reports), and "Previous Assessments" (2 Assessments). A calendar for February 2025 is shown on the right. The conversation log includes messages from the virtual assistant about medication history and hospital locations, along with a list of nearby hospitals (HOSPITAL 1-6). A "Medication" section lists "Fenofibrate (48mg)" and "Alfuzosin (10mg)". The bottom of the screen includes a message input field, a smiley face icon, a gear icon, and a circular "uSpark" icon.



# MVP Design



Old Patient Dashboard

Welcome User!

Take Initial Assessment General

Upload Previous reports 5 Reports

Previous Assessments 2 Assessments

Previous Visits

Date	Doctor	Treatment
12 Jan 2025	Dr.Jacob Ryan	Check up
12 Jan 2025	Dr.Jacob Ryan	X-Ray

Ongoing Treatments

Fever: Paracetamol

Headache: Dart

Top Health news today

A new HMPV virus identified

It's always hard to be the only person in a company who is responsible for product design. Your day can be insanely...

Daily omega-3 supplements and regular exercise may slow aging

March 01, 2021 440

March 01, 2021 440

Chat With Us

uSpark

Calendar

SUN	MON	TUE	WED	THU	FRI	SAT
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Medication

Fenofibrate (48mg)

Alfuzosin (10mg)

Chat With Us

uSpark

Log Out

Delete Profile

One Card

Welcome User!

About Patient:

Name: Kunal pandey Age: 27 Gender: Male

Email: johnsmith@gmail.com Phone Number: +15514357894 Address: 842 communipaw avenue, jersey city

Insurance Details:

Insurance Provider: United Health Care Insurance ID: UA12379908

Initial Assesment Results:

10 jan 2025 -patient having cough and cold and mild symptoms of fever.

For Detailed Diagnostics of the patient:

Past Visit History

Date	Doctor	Treatment	Charges	Actions	
12 Jan 2025	Dr.Jacob Ryan	Check up	\$145		
12 Jan 2025	Dr.Jacob Ryan	X-Ray	\$52		

uSpark

QR Code



# Technologies and Tools

## Full Stack /ML AI Programming Languages



- **Node.js** – JavaScript runtime used to build the backend services (server-side logic).
- **React.js** – JavaScript library for building dynamic, responsive frontends.
- **Redux** – Helps manage application-wide state in React smoothly.
- **Axios** – Used for making API requests between frontend and backend.
- **Material UI** – React-based UI toolkit for building visually appealing user interfaces.
- **Python** – Main language for AI/ML development and backend scripting.

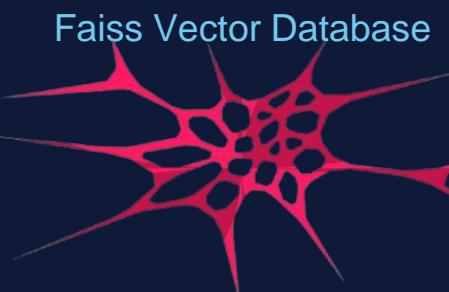


# Technologies and Tools

## Libraries, Algorithms and Frameworks, Database



Pytorch



Flask



TensorFlow



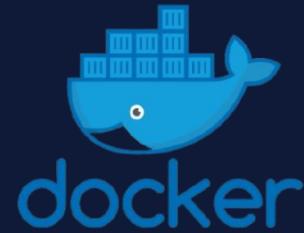
- **MongoDB** – NoSQL database for storing flexible healthcare records like assessments and profiles.
- **Amazon S3 (AWS)** – Cloud storage used for securely storing medical files, images, and reports.
- **Faiss Vector DB** – Specialized database used in AI for similarity search and fast retrieval (helpful in hospital recommendations).
- **TensorFlow** – ML framework used to build and train models like image processors.
- **PyTorch** – Another flexible ML library used for model experimentation.
- **Flask** – A Lightweight web framework to serve ML models via APIs.



# Technologies and Tools

## Tools

Docker



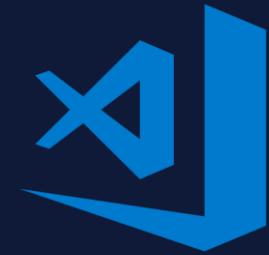
Jira



Figma



VS code



Postman



POSTMAN

GitHub



- **Docker** – Used to containerize applications for consistent deployment across environments.
- **VS Code** – Code editor for development with built-in Git and extension support.
- **GitHub** – Version control and collaboration platform for code.
- **Postman** – Tool for testing and verifying API functionality during development.
- **Figma** – Tool for designing UI/UX prototypes collaboratively.
- **Jira** – Agile tool for managing sprints, tasks, and team workflow.

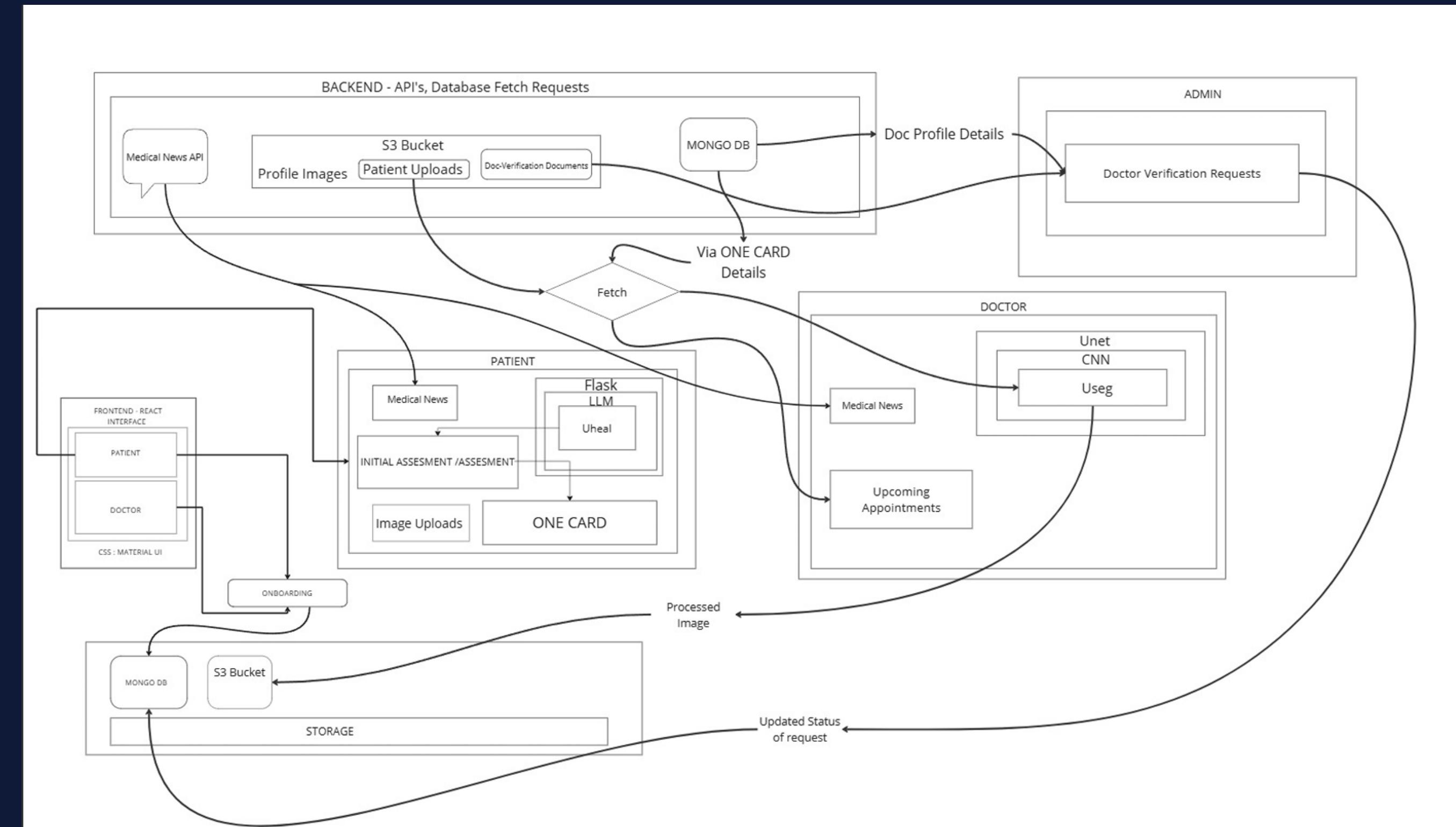
# Algorithms And Models:

- **RAG (Retrieval-Augmented Generation):**  
Combines document retrieval with text generation to provide accurate, knowledge-based responses—used in our chatbot to give more informed medical answers.
- **DenseNet (Densely Connected Convolutional Network):**  
A deep learning model that strengthens feature reuse and reduces computation, used for analyzing biomedical images efficiently.
- **ResNet (Residual Neural Network):**  
A powerful model designed to solve vanishing gradient issues helps improve the accuracy of medical image diagnosis.
- **DialoGPT:**  
A conversational AI model trained for dialogue generation—used to make our chatbot (*Uheal*) interactive and human-like in communication.

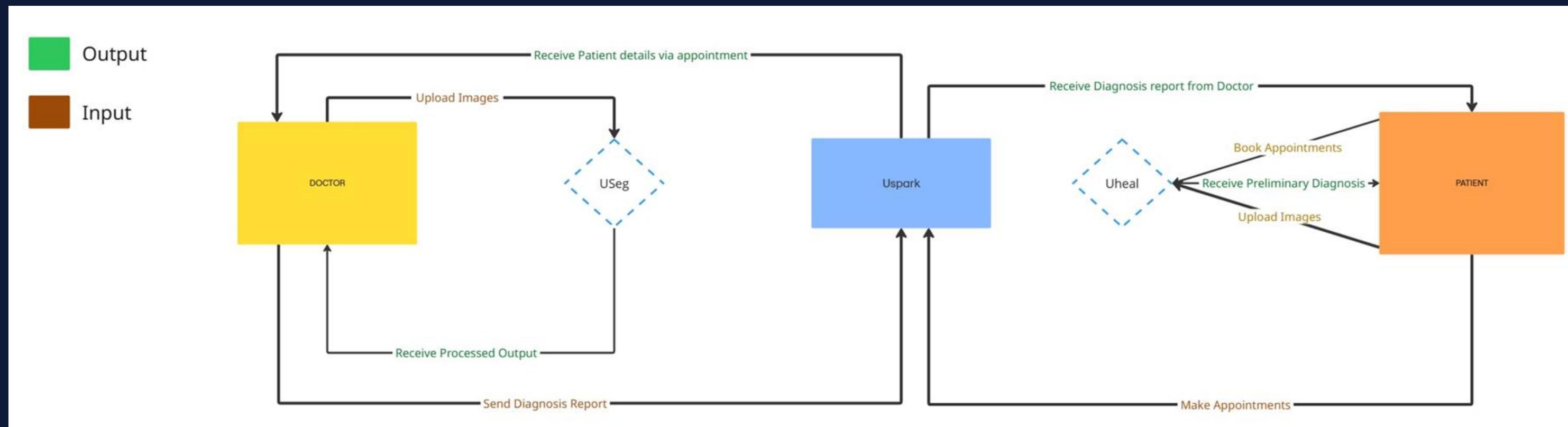


# Diagrams

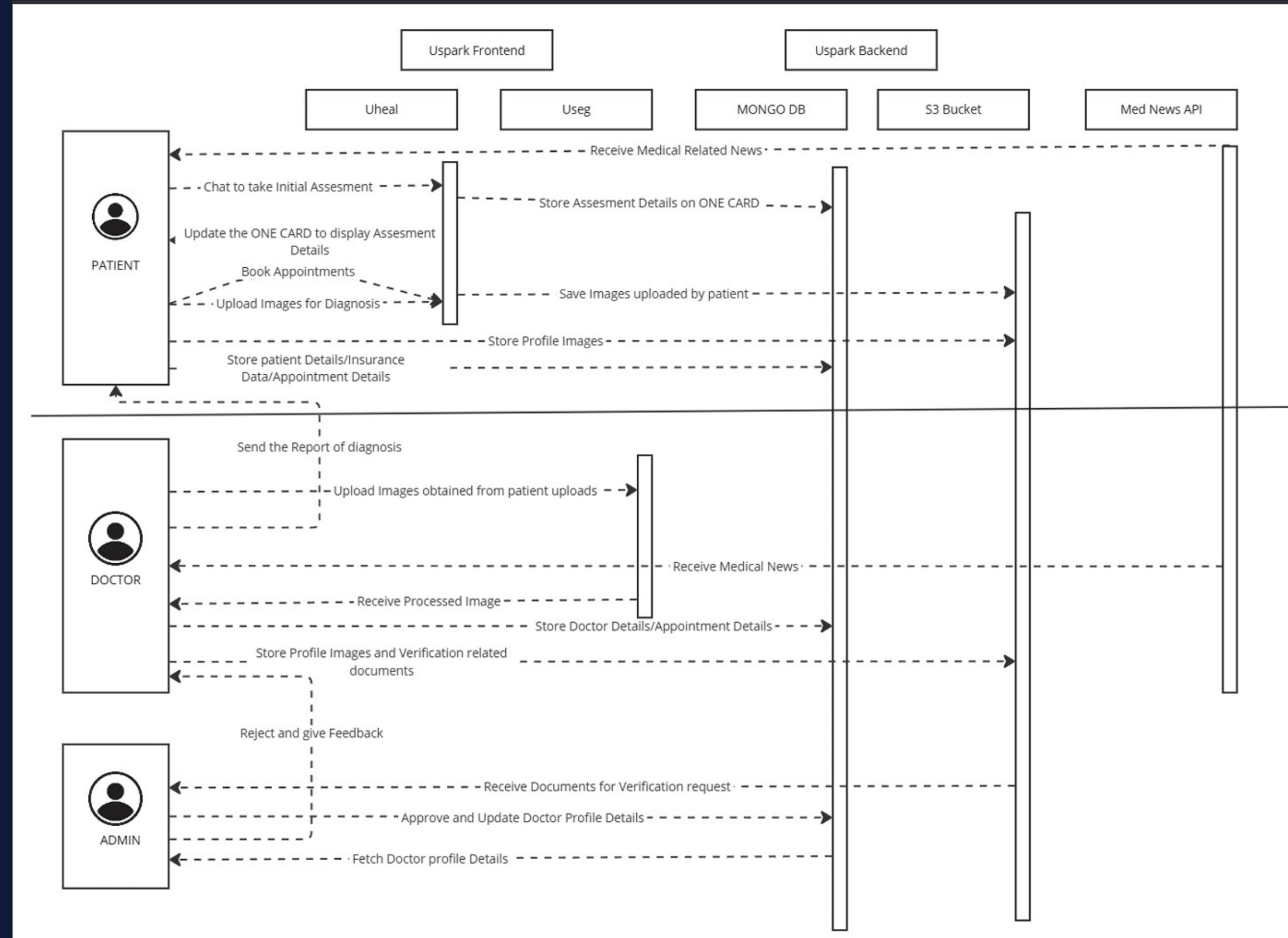
# Architecture Diagram



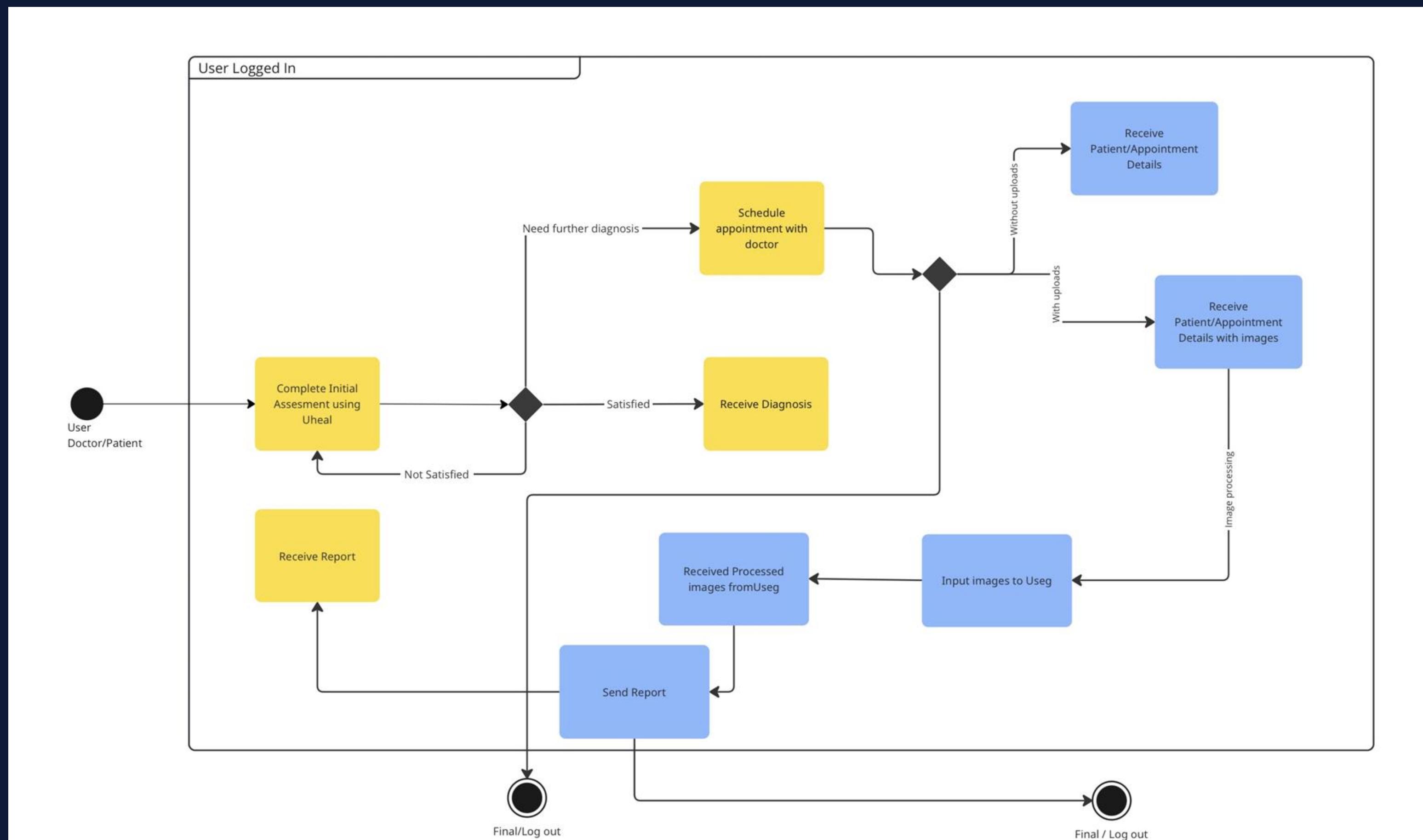
# Context Diagram



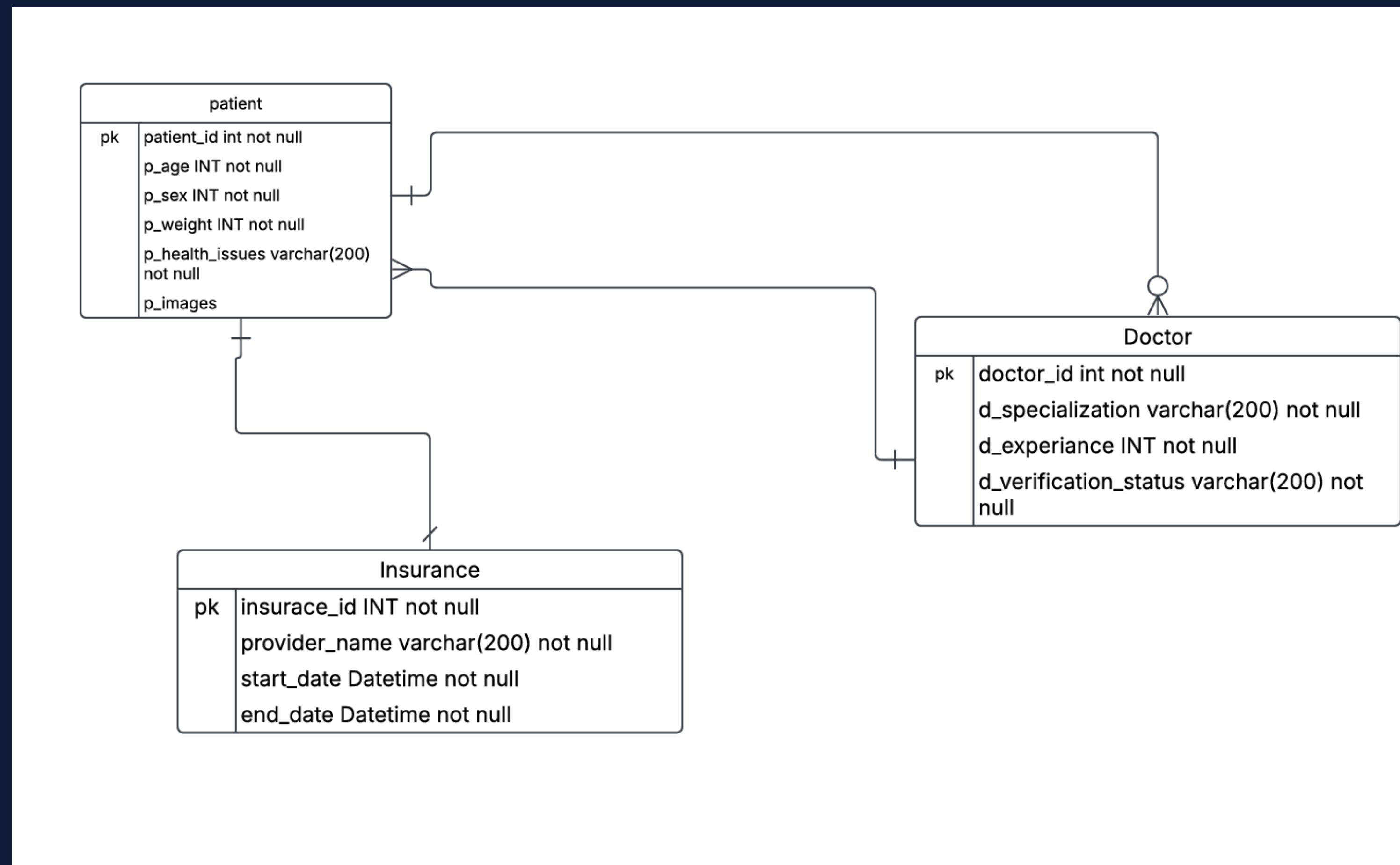
# Sequence Diagram



# State Diagram



# Class Diagram



# Sprint 1 Recap:

In Sprint 1, we focused on building the foundation of our application by enabling key functionalities for patients, doctors, and admins. The following features were successfully implemented:

- Sign-up via email, phone, or social media, and successful login post-registration.
- Patient Profile Management: Patients can create and update their personal and insurance details.
- Doctors can register and submit credentials for verification.
- Integration of AI-generated heatmaps and segmentation for enhanced diagnostic visuals.
- Admins can review and verify doctor credentials, approving or rejecting them.
- Doctors can log in and access their profile and dashboard after approval.
- 31 Story Points
- Completed 100% of the Story Points



# Product Backlog

S.NO	USER STORIES	ACCEPTANCE CRITERIA	STORY POINTS
US_23	As a doctor, I want to get heat maps and segmented outputs for easier diagnosis.	Doctor receives a list of potential diagnoses based on patient data.	8
US_27	As an admin, my dashboard needs access by me only not by others for security purposes.	Admin dashboard is secured with role-based access control and audit logs.	5
US_12	As a patient, I want to see ratings and reviews for doctors before booking an appointment	Patient can view average ratings and user reviews for each listed doctor.	5
US_26	As an admin, I want to manage and verify doctors' credentials before they are approved.	Admin can view, verify, and approve doctor credentials via dashboard.	5
US_24	As a doctor, I want to get potential diagnoses based on biomedical images.	Doctor receives a list of potential diagnoses based on patient data.	5
US_22	As a doctor, I want to upload medical images (X-rays, MRIs, CT scans) for AI processing.	Doctor can upload and review medical images linked to a patient.	5
US_18	As a doctor, I want to register and submit my credentials for verification.	Doctor can submit credentials and profile information for verification.	5
US_17	As a patient, I want to link my health insurance to cover consultation charges.	Patient can link valid insurance information to be used during billing.	5



# Product Backlog

S.NO	USER STORIES	ACCEPTANCE CRITERIA	STORY POINTS
US_15	As a patient, I want to join a video call for virtual consultations	Patient can join secure video calls at scheduled consultation time.	5
US_21	As a doctor, I want to manage my patients' health records and notes.	Doctor can write or update notes in their profile, and the system will save the information securely.	3
US_13	As a patient, I want to receive a preliminary diagnosis from application based on my symptoms.	Chatbot provides preliminary diagnosis based on patient's symptom inputs.	3
US_1	As a patient, I want to sign up using email, phone, or social media so that I can access the application.	Patient can sign up using email, or social media with validation and secure transmission.	3
US_11	As a patient, I want to search for doctors based on specialty, availability, and location.	Patient can search for doctors using filters like specialization and rating.	3
US_8	As a patient, I want to choose between virtual or in-person appointments.	Patient can choose virtual or in-person consultation during appointment booking.	3
US_6	As a patient, I want to share my medical history with doctors for better diagnosis.	Patient can share selected medical records with doctors before or during appointments.	3
US_5	As a patient, I want to store my past medical assessments and reports for future reference.	Patient can upload medical files and view/download them later securely.	3



# Product Backlog

S.NO	USER STORIES	ACCEPTANCE CRITERIA	STORY POINTS
US_4	As a patient, I want to view my past appointments and prescriptions in my profile.	Patient can view historical appointments and prescriptions from profile.	3
US_3	As a patient, I want to create and update my profile with personal details, and insurance information.	Patient can create and update personal profile with validated fields.	3
US_14	As a patient, I want suggestions whether I need an in-person visit, virtual consultation, or self-care.	AI engine suggests whether doctor consultation is needed based on symptoms.	3
US_2	As a patient, I want to reset my password in case I forget it.	Patient can reset password via email link after identity verification.	2
US_9	As a patient, I want to receive appointment confirmation via email or SMS.	Appointment confirmation via email/sms via uheal.	2
US_19	As a doctor, I want to login to my profile, and view my details	Doctor can log in, update profile, and manage security settings.	2
US_20	As a doctor, I want to see a list of my upcoming and past appointments.	Doctor sees dashboard listing upcoming appointments by date/time.	2
US_7	As a patient, I want to schedule an appointment with a doctor based on available time slots.	Patient can select doctor, date, and time to schedule an appointment with confirmation.	2



# Product Backlog

S.NO	USER STORIES	ACCEPTANCE CRITERIA	STORY POINTS
US_10	As a patient, I want to reschedule or cancel an appointment.	Patient can reschedule or cancel an appointment with confirmation and reason.	1
US_16	As a patient, I want recommend doctors based on my condition.	Patient can enter their symptoms, and the system will use AI to suggest the best doctor.	1
US_25	As a doctor, I want to receive notifications when a patient books or cancels an appointment.	Doctor is notified of upcoming, missed, or rescheduled appointments.	1



# SPRINT 2 STORIES

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_02	As a patient, I want to reset my password in case I forget it.	Patient can reset password via email link after identity verification.	Password reset functionality	2
US_03	As a patient, I want to create and update my profile with personal details, medical history, and insurance information.	Patient can create and update personal profile with validated fields.	Patient profile management	3
US_05	As a patient, I want to store my past medical assessments and reports for future reference.	Patient can upload medical files and view/download them later securely.	Share medical history with doctors	3
US_06	As a patient, I want to share my medical history with doctors for a better diagnosis.	Patient can share selected medical records with doctors before or during appointments.	Appointment scheduling via Uheal.	3
US_07	As a patient, I want to schedule an appointment with a doctor based on available time slots.	Patient can select doctor, date, and time to schedule an appointment with confirmation.	Appointment scheduling via Uheal.	2
US_08	As a patient, I want to choose between virtual or in-person appointments.	Patient can choose virtual or in-person consultation during appointment booking.	Choose virtual or in-person consultation via Uheal.	3



# SPRINT 2 STORIES

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_09	As a patient, I want to receive appointment confirmation via email or SMS.	Appointment confirmation via email/sms via uheal.	Appointment confirmation via email/SMS via Uheal.	2
US_10	As a patient, I want to reschedule or cancel an appointment.	Patient can reschedule or cancel an appointment with confirmation and reason.	Reschedule or cancel appointments via Uheal.	1
US_13	As a patient, I want to receive a preliminary diagnosis from application based on my symptoms.	System provides preliminary diagnosis based on patient's symptom inputs.	AI-based preliminary diagnosis via Uheal.	3
US_16	As a patient, I want recommend doctors based on my condition.	Patient can enter their symptoms, and the system will use AI to suggest the best doctor.	AI doctor recommendations based on condition.	1
US_19	As a doctor, I want to manage my profile, including my specialty, availability, and appointment preferences.	Doctor can log in, update profile, and manage security settings.	Doctor profile management	2
US_20	As a doctor, I want to see a list of my upcoming and past appointments.	Doctor sees dashboard listing upcoming appointments by date/time.	Appointment Scheduling	2



# SPRINT 2 STORIES

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_21	As a doctor, I want to manage my patients' health records and notes.	Doctor can write or update notes in their profile, and the system will save the information securely.	Manage patient health records and notes can be done with one card	3
US_22	As a doctor, I want to upload medical images (X-rays, MRIs, CT scans) for AI processing.	Doctor can upload and review medical images linked to a patient.	Upload medical images (X-rays, MRIs, CT scans) for AI processing via Useg.	5
US_25	As a doctor, I want to receive notifications when a patient books or cancels an appointment.	Doctor is notified of upcoming, missed, or rescheduled appointments.	Receive notifications for appointments	1



# SPRINT 2 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_02	TC_21	Request Password Reset Link	<ol style="list-style-type: none"><li>1. Forgot Password page --&gt;Enter email</li><li>2. Click 'Send Reset Link' button-&gt;Observe the success message</li></ol>	Success message 'Password reset email sent' should be visible in green.	Pass
US_02	TC_22	Reset Password Using Token	<ol style="list-style-type: none"><li>1. Visit the Reset Password page with a email</li><li>2. Enter a new password and confirm password</li><li>3. Click the Submit button</li></ol>	Password should be reset successfully.	Pass
US_03	TC_23	Complete Onboarding + Profile Update	<ol style="list-style-type: none"><li>1. Go to signup page → fill details-&gt;Select role as Patient.</li><li>2. Fill onboarding form --&gt;submit</li><li>3. Go to Profile page--&gt;Upload profile image</li><li>4. Update Details</li><li>5. Add insurance info</li></ol>	Profile and insurance info is updated successfully. Uploaded image is visible.	Pass
US_21	TC_24	View patient health records	<ol style="list-style-type: none"><li>1. Login as doctor</li><li>2. Navigate to "My Patients"</li><li>3. Click on "Manage" for any patient</li></ol>	Doctor is not able to see patient's full health history	Fail
US_21	TC_25	View patient health records	<ol style="list-style-type: none"><li>1. Login as doctor</li><li>2. Navigate to "My Patients"</li><li>3. Click on "Manage" for any patient</li></ol>	Doctor should see patient's full health history	Pass



# SPRINT 2 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_07	TC_26	Schedule an appointment with a doctor	<ol style="list-style-type: none"><li>1. Visit signup page--&gt; Fill signup form--&gt;Click signup</li><li>2. Select patient role--&gt;Fill onboarding details--&gt; Submit onboarding</li><li>3. Visit appointment page--&gt; Search doctor--&gt;Click 'Book'</li><li>4. Fill details--&gt;Select date--&gt;Pick time slot--&gt;Confirm--&gt;Verify"</li></ol>	The appointment's date/time is updated and displayed correctly	pass
US_9	TC_27	Book an appointment as a patient and verify confirmation	<ol style="list-style-type: none"><li>1. Sign up as a new patient--&gt;Complete onboarding</li><li>2. Go to dashboard--&gt;Search and select a doctor</li><li>3. Fill appointment form and submit</li></ol>	Appointment is booked and shown under 'Your Appointments'. Email/SMS confirmation is triggered.	Pass
US_10	TC_28	Reschedule an existing appointment	<ol style="list-style-type: none"><li>1. Sign up &amp; complete onboarding as a patient</li><li>2. Book a new appointment--&gt; Visit the Appointments page</li><li>3. Click the "Edit" (✎) button on that appointment</li><li>4. Change the date and/or time slot--&gt;Click "Save"</li><li>5. Observe the updated appointment details in the list</li></ol>	The Appointment doesn't get rescheduled	Fail



# SPRINT 2 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_10	TC_29	Reschedule an existing appointment	<ol style="list-style-type: none"><li>1. Sign up &amp; complete onboarding as a patient</li><li>2. Book a new appointment--&gt; Visit the Appointments page</li><li>3. Click the “Edit” (✎) button on that appointment</li><li>4. Change the date and/or time slot--&gt;Click “Save”</li><li>5. Observe the updated appointment details in the list</li></ol>	The appointment's date/time is updated and displayed correctly	Pass
US_10	TC_30	Cancel an existing appointment	<ol style="list-style-type: none"><li>1. Sign up &amp; complete onboarding as a patient</li><li>2. Book a new appointment--&gt; Visit the Appointments page</li><li>3. Click the “Edit” (✎) button on that appointment--&gt;Click “Cancel Appointment”</li><li>4. Confirm the cancellation in the dialog</li><li>5. Refresh or revisit the page</li></ol>	The appointment is removed from the list	Pass
US_16	TC_31	Recommend doctors to patients based on their condition	<ol style="list-style-type: none"><li>1. Patient logs into the application--&gt;Patient selects or inputs their health condition.</li><li>2. System suggests a list of doctors specializing in that condition.</li><li>3. Patient views doctor profiles and optionally books an appointment.</li></ol>	Patient is shown a list of recommended doctors relevant to the condition provided.	Pass



# SPRINT 2 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_06	TC_32	Add medical history	<ol style="list-style-type: none"><li>1. Log in as a patient</li><li>2. Navigate to profile or medical history section</li><li>3. Click "Add History"</li><li>4. Enter health issue, treatment, status</li><li>5. Save</li></ol>	Medical history is saved and visible in the patient's profile	Pass
US_20	TC_33	Sign up as doctor and verify booked appointments are shown	<ol style="list-style-type: none"><li>1. Sign up as a new doctor--&gt; Complete onboarding</li><li>2. Navigate to Doctor Dashboard--&gt; View availability calendar and select date</li><li>3. Click on booked time slot</li></ol>	Booked appointments are displayed correctly with patient details in a dialog.	Pass
US_25	TC_34	Verify doctor receives notification on patient appointment booking/cancellation	<ol style="list-style-type: none"><li>1. Log in as a doctor--&gt;Patient logs in and books an appointment with this doctor</li><li>2. Doctor checks for notification</li><li>3. Patient cancels the appointment--&gt;Doctor checks for cancellation notification</li></ol>	Doctor receives notifications when appointment is booked and when it is cancelled.	Pass
US_19	TC_30	Manage doctor profile (specialty, availability, preferences)	<ol style="list-style-type: none"><li>1. Visit signup page--&gt; Fill signup form--&gt;Click signup</li><li>2. Select Doctor role--&gt;Fill onboarding details--&gt; Submit onboarding</li><li>3. Visit profile page--&gt;Upload profile image--&gt;Update details</li><li>4. Save profile--&gt;Upload verification document--&gt;Confirm upload"</li></ol>	Profile image updated, details saved correctly, and verification document uploaded successfully	Pass



# SPRINT 2 STORIES COMPLETED

User ID	User Stories	Acceptance Criteria	Feature	Story Points
US_02	As a patient, I want to reset my password in case I forget it.	Patient can reset password via email link after identity verification.	Password reset functionality	2
US_03	As a patient, I want to create and update my profile with personal details, medical history, and insurance information.	Patient can create and update personal profile with validated fields.	Patient profile management	3
US_6	As a patient, I want to share my medical history with doctors for better diagnosis.	Patient can share selected medical records with doctors before or during appointments.	Share medical history with doctors	3
US_7	As a patient, I want to schedule an appointment with a doctor based on available time slots.	Patient can select doctor, date, and time to schedule an appointment with confirmation.	Appointment scheduling via Uheal.	2
US_9	As a patient, I want to receive appointment confirmation via email or SMS.	Appointment confirmation via email/sms via uheal.	Appointment confirmation via email/SMS via Uheal.	2
US_10	As a patient, I want to reschedule or cancel an appointment.	Patient can reschedule or cancel an appointment with confirmation and reason.	Reschedule or cancel appointments via Uheal.	1



# SPRINT 2 STORIES COMPLETED

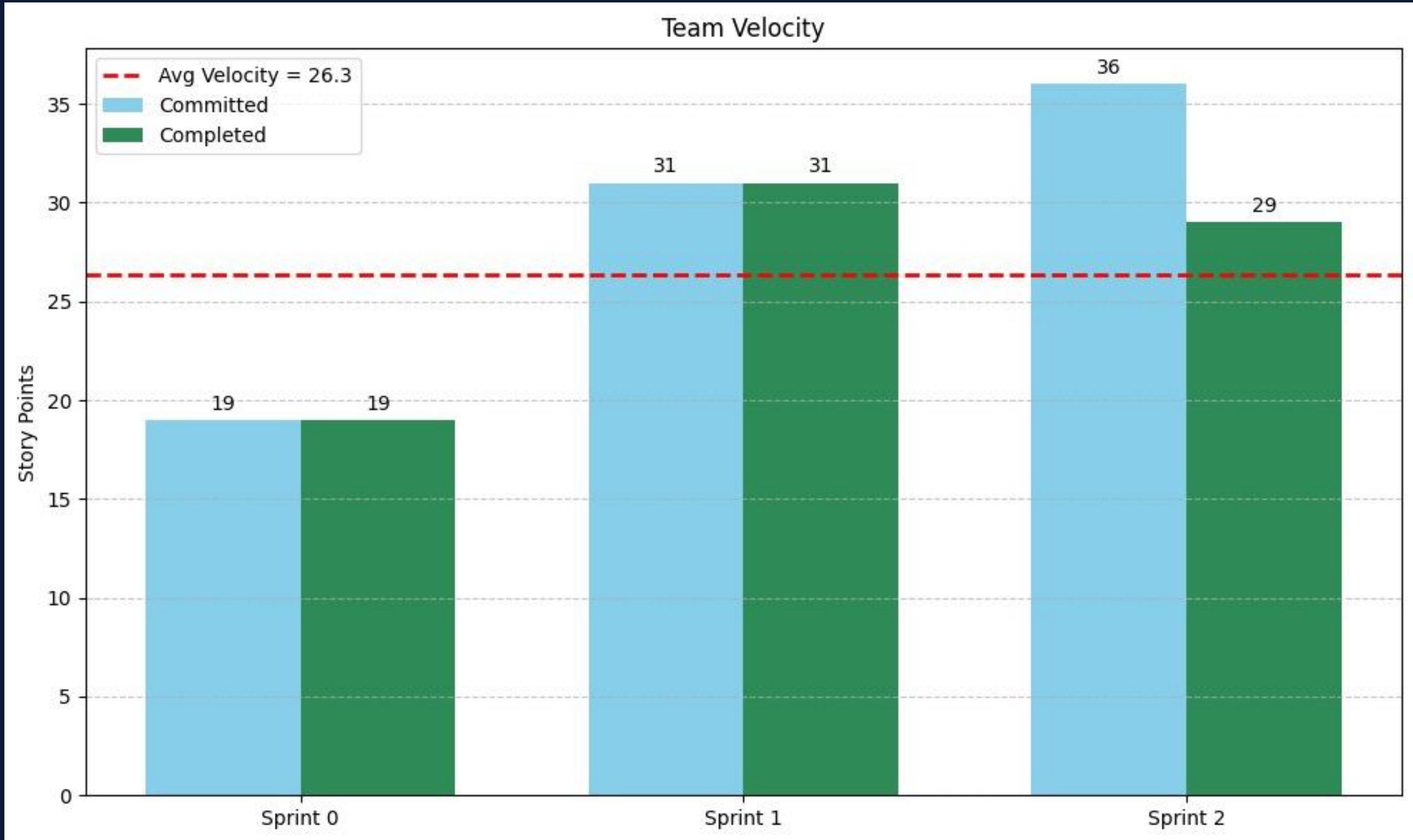
S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_16	As a patient, I want recommend doctors based on my condition.	Patient can enter their symptoms, and the system will use AI to suggest the best doctor.	AI doctor recommendations based on condition.	1
US_19	As a doctor, I want to manage my profile, including my specialty, availability, and appointment preferences.	Doctor can log in, update profile, and manage security settings.	Doctor profile management	2
US_20	As a doctor, I want to see a list of my upcoming and past appointments.	Doctor sees dashboard listing upcoming appointments by date/time.	Appointment Scheduling	2
US_21	As a doctor, I want to manage my patients' health records and notes.	Doctor can write or update notes in their profile, and the system will save the information securely.	Manage patient health records and notes can be done with one card	3
US_25	As a doctor, I want to receive notifications when a patient books or cancels an appointment.	Doctor is notified of upcoming, missed, or rescheduled appointments.	Receive notifications for appointments	1

# SPRINT 2 STORIES NOT COMPLETED



S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS	Completed Points
US_5	As a patient, I want to store my past medical assessments and reports for future reference.	Patient can upload medical files and view/download them later securely.	Upload & store medical assessments and reports	3	1
US_8	As a patient, I want to choose between virtual or in-person appointments.	Patient can choose virtual or in-person consultation during appointment booking.	Choose virtual or in-person consultation via Uheal.	3	1
US_13	As a patient, I want to receive a preliminary diagnosis from application based on my symptoms.	System provides preliminary diagnosis based on patient's symptom inputs.	AI-based preliminary diagnosis via Uheal.	5	3
US_22	As a doctor, I want to upload medical images (X-rays, MRIs, CT scans) for AI processing.	Doctor can upload and review medical images linked to a patient.	Upload medical images (X-rays, MRIs, CT scans) for AI processing via Useg.	3	2

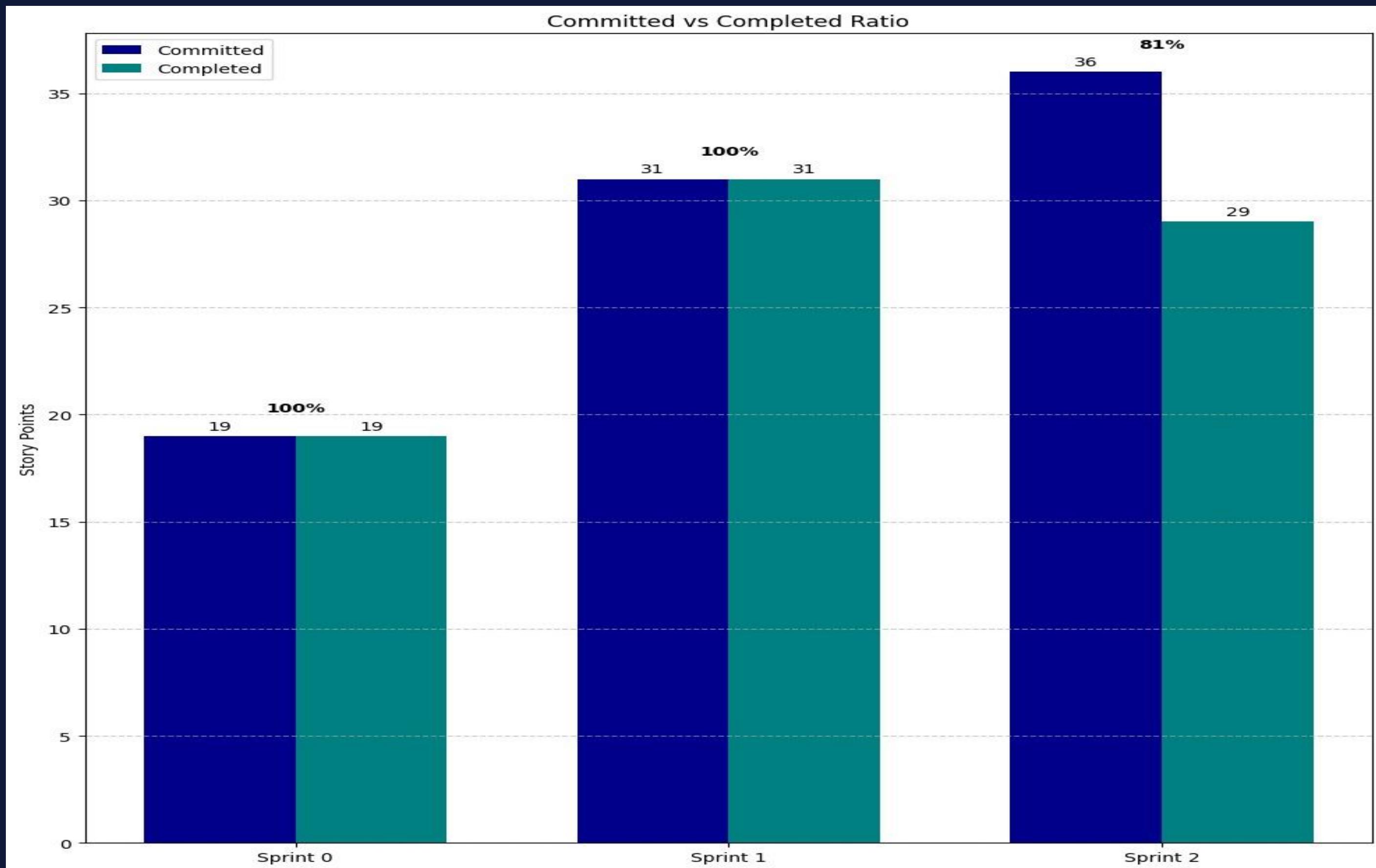
# Sprint Velocity:



# METRICS - BURNDOWN CHART



# METRICS - COMMITTED RATIO



# Sprint Retrospective

**Went well**  

sync between team mates  
*No description provided.*  
⌚ Apr 8, 2025 at 00:21 AM  
👤 Avinash Manchala  
 Edit  Delete  4

**Communication**  
good team communication for resolving issues  
⌚ Apr 8, 2025 at 00:21 AM  
👤 Sairam Maddela  
 Edit  Delete  5

Full stack Progress was good  
Full stack had lot of user stories for this sprint but it was completed so with great efficiency  
⌚ Apr 8, 2025 at 00:22 AM  
👤 Pranay Kumar  
 Edit  Delete  4

**Didn't go well**  

Work was delayed due to breaks and holidays  
Work was delayed due to spring breaks and holidays  
⌚ Apr 8, 2025 at 00:22 AM  
👤 Pranay Kumar  
 Edit  Delete  3

Low medical diagnosis accuracy  
Despite integration of the new models the efficiency was low  
⌚ Apr 8, 2025 at 00:23 AM  
👤 Pranay Kumar  
 Edit  Delete  3

story points  
Not able to complete all story points  
⌚ Apr 8, 2025 at 00:23 AM  
👤 Sairam Maddela  
 Edit  Delete  2

**Action items**  

**Testing and code push**  
Pipeline testing required - Team  
⌚ Apr 8, 2025 at 00:40 AM  
👤 RATHAN JAYANATH  
 Edit  Delete  1

**Estimation**  
Better estimate of story points - Team  
⌚ Apr 8, 2025 at 00:42 AM  
👤 RATHAN JAYANATH  
 Edit  Delete  1

**Mid sprint review**  
Conduct a mid sprint review and kT sessions - Scrum master  
⌚ Apr 8, 2025 at 00:43 AM  
👤 RATHAN JAYANATH  
 Edit  Delete  1

**Risk management**

# Sprint Retrospective

What Went Well	What Didn't Go Well	Action Items
Sync between team mates	Work was delayed	Testing and code push
Communication	Low medical diagnosis accuracy	Estimation
Full stack Progress was good	Story points	Mid sprint review
Emailing Setup	Previous Test cases (Failure)	Risk management
Product backlog, test cases	Limited Dataset Testing	
Better Chatbot Results	Not Working because of holidays	
Working during breaks		



# Sprint 3 Planning:

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_4	As a patient, I want to view my past appointments and prescriptions in my profile.	Patient can view historical appointments and prescriptions from profile.	View past appointments & prescriptions	3
US_11	As a patient, I want to search for doctors based on specialty, availability, and location.	Patient can search for doctors using filters like specialization and rating.	Search doctors based on specialty, availability, and location via Uheal.	3
US_12	As a patient, I want to see ratings and reviews for doctors before booking an appointment	Patient can view average ratings and user reviews for each listed doctor.	View doctor ratings and reviews via Uheal.	5
US_14	As a patient, I want suggestions whether I need an in-person visit, virtual consultation, or self-care.	AI engine suggests whether doctor consultation is needed based on symptoms.	AI-based consultation suggestions via Uheal.	3
US_15	As a patient, I want to join a video call for virtual consultations	Patient can join secure video calls at scheduled consultation time.	Video call for virtual consultations via Uheal.	5
US_24	As a doctor, I want to get potential diagnoses based on biomedical images.	Doctor receives a list of potential diagnoses based on patient data.	Receive notifications for appointments	5



# Sprint 3 Planning:

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_5	As a patient, I want to store my past medical assessments and reports for future reference.	Patient can upload medical files and view/download them later securely.	Upload & store medical assessments and reports	2
US_8	As a patient, I want to choose between virtual or in-person appointments.	Patient can choose virtual or in-person consultation during appointment booking.	Choose virtual or in-person consultation via Uheal.	2
US_13	As a patient, I want to receive a preliminary diagnosis from application based on my symptoms.	System provides preliminary diagnosis based on patient's symptom inputs.	AI-based preliminary diagnosis via Uheal.	2
US_22	As a doctor, I want to upload medical images (X-rays, MRIs, CT scans) for AI processing.	Doctor can upload and review medical images linked to a patient.	Upload medical images (X-rays, MRIs, CT scans) for AI processing via Useg.	1

# Project Demo

**Uspark**

**Login to Your Account**

Email \*

Password \*

**Login**

OR

**G Sign in with Google**

**Apple Sign in with Apple**

Don't have an account? [Sign Up](#)

**Uspark**

Connecting patients and doctors seamlessly using AI-driven solutions.

**Quick Links**

**Uspark**

**Choose Your Role**



I am a Patient

**Select Patient**



I am a Doctor

**Select Doctor**

Patient Dashboard

Welcome, Avinash Manchala!

Access your medical records, book appointments, and manage your health data with ease.

**Health Tip of the Moment:**

Incorporate whole grains into your diet for better fiber intake.

Initial Assessment + 

Donald Trump wants to delete 'climate' from federal websites — here's how you can track the changes

The Trump administration has been hacking away at federal government websites, taking down information about climate change and anything deemed "woke." Now, there's an online tool you can use to track the changes and find missing information. Researchers init...

**Read More**

One Card

Enter PIN

Unlock

**P MedBot**

**Patient Profile**

Name: Avinash Manchala  
Age: 22  
Gender: male  
Height: 176  
Weight: 76  
Health Issues: leg pain

**Insurance Details**

**Provider:** NY Insurance

**Start Date:** 2025-03-05

**End Date:** 2025-03-31

**Holder Name:** Avinash M

**Close**

# Application Screenshots

Uspark

Dashboard Profile Appointments 🔔 m

## Patient Dashboard



**Doctor Behind Award-Winning Parkinson's Research Among Scientists Purged From NIH**

Leading scientists at the National Institutes of Health, the US's leading medical research agency, were swept up Tuesday in the Trump administration's latest firing blitz.

**Sai Ram Maddela**  
maddelasairam27@gmail.com

Age: 35 Sex: male  
Height: 130 cm Weight: 65 kg

**Insurance**  
Provider: **KP**  
Policy: **Test 2**  
Valid: 2025-04-07 → 2025-04-07

**Recent Medical History**

**Book an Appointment**

Booking Date: 2025-04-07

Search Doctors

Available Doctors

**Dr. Koundinya pidaparthys**  
General Physician  
NYC Health + Hospitals/Gotham Health, Gouverneur – 227 Madison Street, New York Book

**Dr. Koundinya Pidaparthys**  
General Physician  
Other – Book

**Your Appointments**

**KP**  
2025-04-09 at 13:00  
NYC Health + Hospitals/Gotham Health, Gouverneur  
227 Madison Street, New York  
Test 2 edit

**KP**  
2025-04-10 at 11:30  
NYC Health + Hospitals/Gotham Health, Gouverneur  
227 Madison Street, New York  
Test edit

**Rathan Jayanath**  
2025-04-23 at 13:00  
NYC Health + Hospitals/Gotham Health, Gouverneur  
227 Madison Street, New York  
something edit

**Uspark**  
Connecting patients and doctors seamlessly using AI-driven solutions.

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# Application Screenshots

Uspark

Dashboard Profile My Patients

Sairam Maddela

DOCTOR

maddelasairamgufus2023@gmail.com  
 Specialization: General surgeon  
 Experience: 20 years  
 Certifications: test

Verification:

PENDING

Select an Available Date

April 2025

S	M	T	W	T	F	S
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3

Available Day

Select a date to view available time slots.

# Application Screenshots

Uspark

Dashboard   Profile   My Patients  

## Doctor Profile

**Profile Picture**

**Full Name** Sairam Maddela

**Specialization** General surgeon

**Experience (years)** 20

**Certifications** test

**Select or Search Hospital** Hoboken University Medical Center

**Uploaded Verification Docs**

Drag & drop files here or [click to upload](#)

# Application Screenshots

## Doctor Availability

Define your availability slots for the next 3 months.

[Add Availability](#)

Start Date

End Date

[Clear Filters](#)

Showing 12 slots

Tuesday, Apr 15 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>	Wednesday, Apr 16 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>	Thursday, Apr 17 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>
Friday, Apr 18 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>	Monday, Apr 21 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>	Tuesday, Apr 22 <span>⌚ 12:00 - 17:00</span> <span>⌚ Slot Duration: 30 minutes</span>

1 2 3

# API Screenshots

The screenshot shows the Swagger UI interface for the Uspark Backend API. At the top, it displays the title "Uspark Backend API" with version 1.0.0 and OAS 3.0. Below the title, there's a "Servers" dropdown set to "http://localhost:5001 - local server" and an "Authorize" button with a lock icon. The main content area is titled "Admin" and describes "Admin-related endpoints for managing doctor verification". It shows a "POST /api/admin/verify-doctor/{id}" endpoint, which approves or rejects a doctor's verification request. The "Parameters" section includes a required parameter "id" of type string (path). The "Request body" section is marked as required and has a schema type of application/json. An example value is shown as a JSON object: { "doctor\_id": "123456789" }.

# API Screenshots

The screenshot shows the Swagger UI interface for the Uspark Backend API. At the top, it displays the title "Uspark Backend API" with version 1.0.0 and OAS 3.0. Below the title, there's a "Servers" dropdown set to "http://localhost:5001 - local server" and an "Authorize" button with a lock icon.

The API is organized into sections:

- Admin**: Admin-related endpoints for managing doctor verification
  - POST** /api/admin/verify-doctor/{id} Approve or reject doctor verification
  - GET** /api/admin/doctors Get list of all doctors
- Appointments**: Endpoints for booking, viewing, updating, and deleting appointments
  - POST** /api/appointments Book an appointment
  - GET** /api/appointments Get appointments for current user
  - PUT** /api/appointments/{id} Reschedule an appointment
  - DELETE** /api/appointments/{id} Cancel an appointment
- Authentication**: User authentication endpoints

# API Screenshots

**Appointments** Endpoints for booking, viewing, updating, and deleting appointments ^

**POST** /api/appointments Book an appointment  

**GET** /api/appointments Get appointments for current user  

**PUT** /api/appointments/{id} Reschedule an appointment   

**DELETE** /api/appointments/{id} Cancel an appointment  

**Authentication** User authentication endpoints ^

**POST** /api/auth/login Login with email and password  

**POST** /api/auth/oauth OAuth authentication  

**POST** /api/auth/signup Register a new user  

**POST** /api/auth/forgot-password Request password reset  

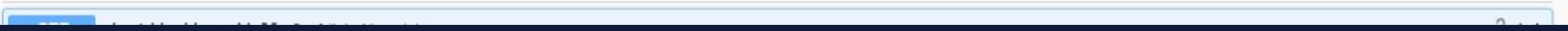
**POST** /api/auth/verify-reset-token Verify password reset token  

**POST** /api/auth/reset-password Reset user password  

**Chat** AI-powered chatbot endpoints ^

**POST** /api/chat Chat with AI Assistant  

**Dashboard** Dashboard view with full user data including QR code, profile, and related info ^



# WIKI PAGE

<https://github.com/htmw/2025S-RushHour/wiki>



**Home**

MuraliKumari29 edited this page now · [3 revisions](#)

**USpark - Pace University Capstone Project**



Live Website: [Coming soon..](#)

Team Email: [TeamUspark@gmail.com](mailto:TeamUspark@gmail.com)

## Project Description

A robust approach to ease the process of health care and management with just one click! "Uspark" is an Intelligent full stack application incorporated with machine learning that is an ultimate go-to point for the users/patients for all their healthcare

**Pages 1**

Find a page...

**Home**

- USpark - Pace University Capstone Project
- Project Description
- Team Members
- Languages and Tools
  - Programming Languages and Frameworks
  - Algorithms
  - Database
- Tools
- CS691 Deliverables
- Presentations (Sprint Reviews)
- Sprint 0

+ Add a custom sidebar

# THANK YOU

CONTACT US:

[teamuspark@gmail.com](mailto:teamuspark@gmail.com)

