uSpark
AI Medical Assistor

Sprint 3 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 3 Metrics:

- Velocity
- Burndown Chart
- Committed Ratio

Sprint 3 Retrospective

Product Demo

FULL STACK TEAM

Avinash Manchala
Full Stack Developer/ UI Designer

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

Koundinya Pidaparthy
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

- Improve product backlog
- Modified the API screenshots
- Proper explanation of sprint planning

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

Project Name:	uSpark
Team:	Rush Hour
Project Description:	A Smart application that includes chatbot that performs medical analysis, books appointment, recommends hospitals and generate segmented results **For** users/patients and doctors **who** upload their scan images **the** uSpark Application **is a** smart Application based on MI and AL **that** 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 **unlike** depending completely on manual diagnosis by doctors and booking appointments and consulting doctor for preliminary medical analysis **our application** automates the process of making in-person/virtual appointments and helps doctors in diagnosing the scan images that are uploaded by the user.
Benefit Outcomes:	• Automated way of making appointments • Preliminary health analysis using chatbot • Helps doctors in image analysis reducing manual work • Efficient method of storing health data
Github Link:	https://github.com/htmw/2025S-RushHour/wiki

PROJECT DESCRIPTION

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

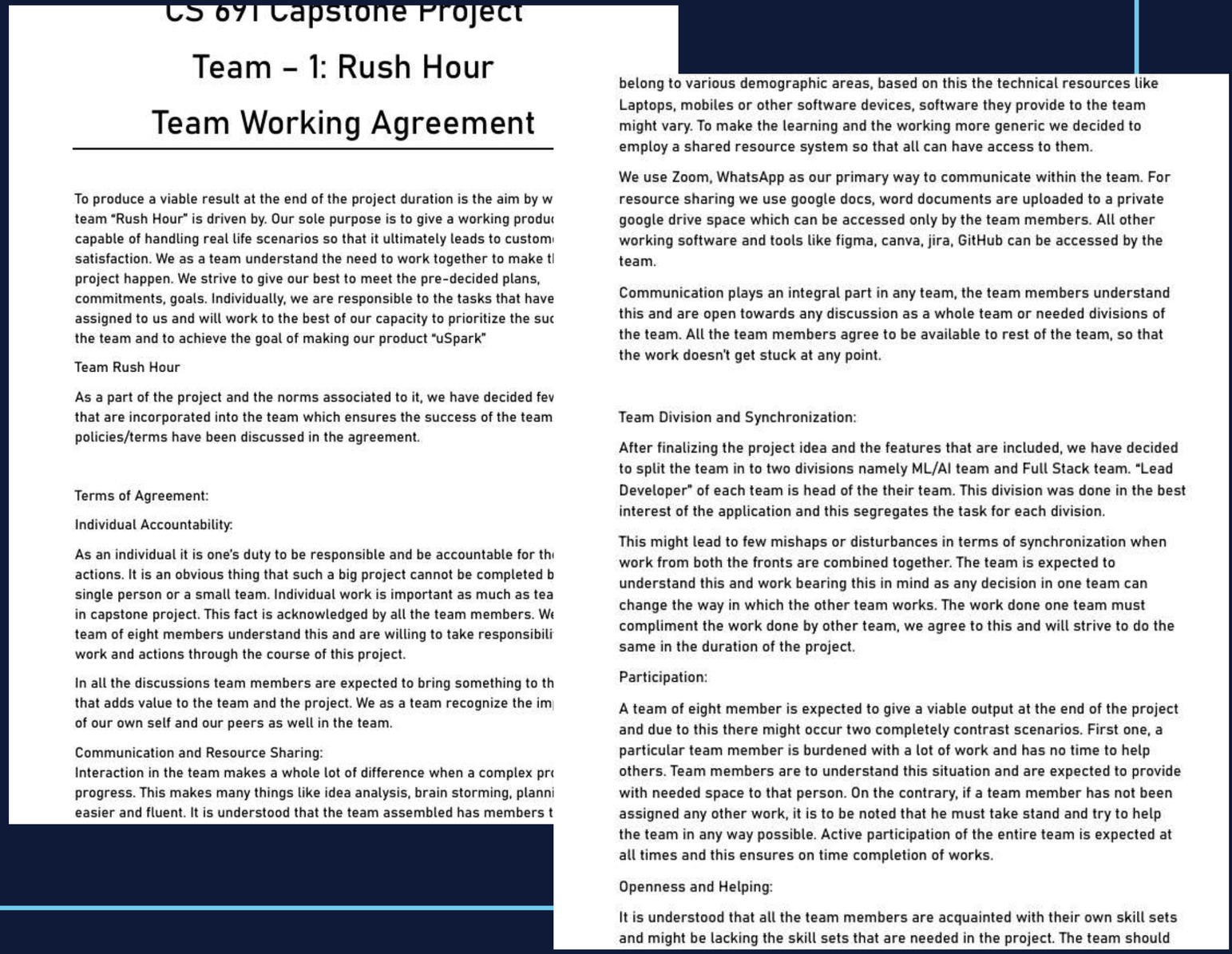
➔“uSpark” is an Intelligent full stack application incorporated with machine learning that is an ultimate go-to point for the users/patients for all their healthcare related issues. uSpark allows users to schedule appointments in a hassle-free manner.

➔ 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 w team "Rush Hour" is driven by. Our sole purpose is to give a working produc capable of handling real life scenarios so that it ultimately leads to custom satisfaction. We as a team understand the need to work together to make t 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 assigned to us and will work to the best of our capacity to prioritize the suc 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 fev 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 th actions. It is an obvious thing that such a big project cannot be completed b single person or a small team. Individual work is important as much as tea in capstone project. This fact is acknowledged by all the team members. We team of eight members understand this and are willing to take responsibili work and actions through the course of this project.

In all the discussions team members are expected to bring something to th that adds value to the team and the project. We as a team recognize the im 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 pr progress. This makes many things like idea analysis, brain storming, planni easier and fluent. It is understood that the team assembled has members t

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, 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 with needed space 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: NewYork
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.

CHALLANGES

- 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.

CHALLANGES

- 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.

CHALLANGES

- 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.

CHALLANGES

- 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

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.

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

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.

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

Product Design

Booting page

uSpark

Feeling Ill?
Chill.
Your Medical Assistant Is Here to Heal!

LOGIN AS DOCTOR

OR

LOGIN AS PATIENT

Useg

Search

Dr. Preethi

Good Morning **Dr. Preethi!**

Visits for Today
104

New Patients
40
51%

Old Patients
64
20%

Welcome to Useg.... please upload one card for detailed analysis

Submit

Upcoming
View All

Next Patient Meet
8 Feb, 2025 | 04:00 PM

Your Detailed Useg report is here, click view more to get a closer look

View More

Doctor Dash board

Search

Dr. Preethi

Good Morning **Dr. Preethi!**

Visits for Today
104

New Patients
40
51%

Old Patients
64
20%

Calendar

February 2025

SUN	MON	TUE	WED	THU	FRI	SAT
				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	

Upcoming
View All

M Next Patient Meet
8 Feb, 2025 | 04:00 PM

Patient List
Today

SM Stacy Mitchell — Weekly Visit — 9 : 15 AM
AD Amy Dunham — Routine Checkup — 9 : 30 AM
DJ Demi Joan — Report — 9 : 50 AM
SM Susan Myers — Weekly Visit — 10 : 15 AM

Consultation

DW Denzel White
Male - 28 Years 3 Months

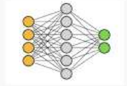
Fever | Cough | Heart Burn

Last Checked: Dr Everly on 21 April 2021 Prescription #2J983KT0

Observation: High fever and cough at normal hemoglobin levels.

Prescription: Paracetmol - 2 times a day
Dizopam - Day and Night before meal
Wikoryl

Useg



Chat Display

Dashboard
Profile
Appointment
Setting
Log Out
Delete Profile

Welcome User!

uSpark

Take Initial Assessment
General

Upload Previous reports
5 Reports

Previous Assessments
2 Assessments

Hello, I'm Uheal your virtual medical assistant

Hello U heal, I'm suffering from fever for the last two days

Have u take any medication or can i suggest some?

I tried some medication, but my fever was not in control.

Could you please suggest me Doctors near me?

Of course here are the list of hospitals near you, have a look

HOSPITAL 1 | HOSPITAL 2 | HOSPITAL 3 | HOSPITAL 4 | HOSPITAL 5 | HOSPITAL 6

Write a message...

Calendar

February 2025

SUN	MON	TUE	WED	THU	FRI	SAT
				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	

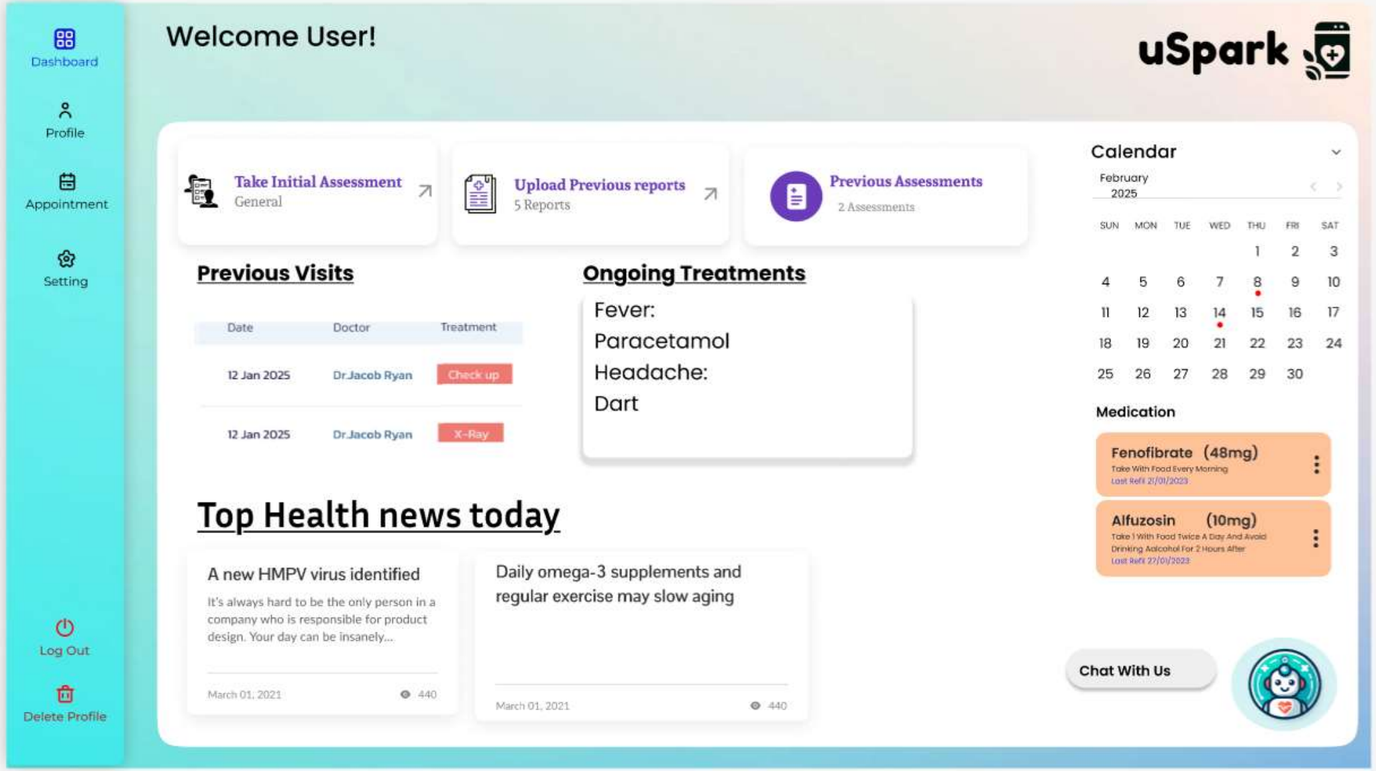
Medication

Fenofibrate (48mg)
Take With Food Every Morning
Last Refill 25/01/2023

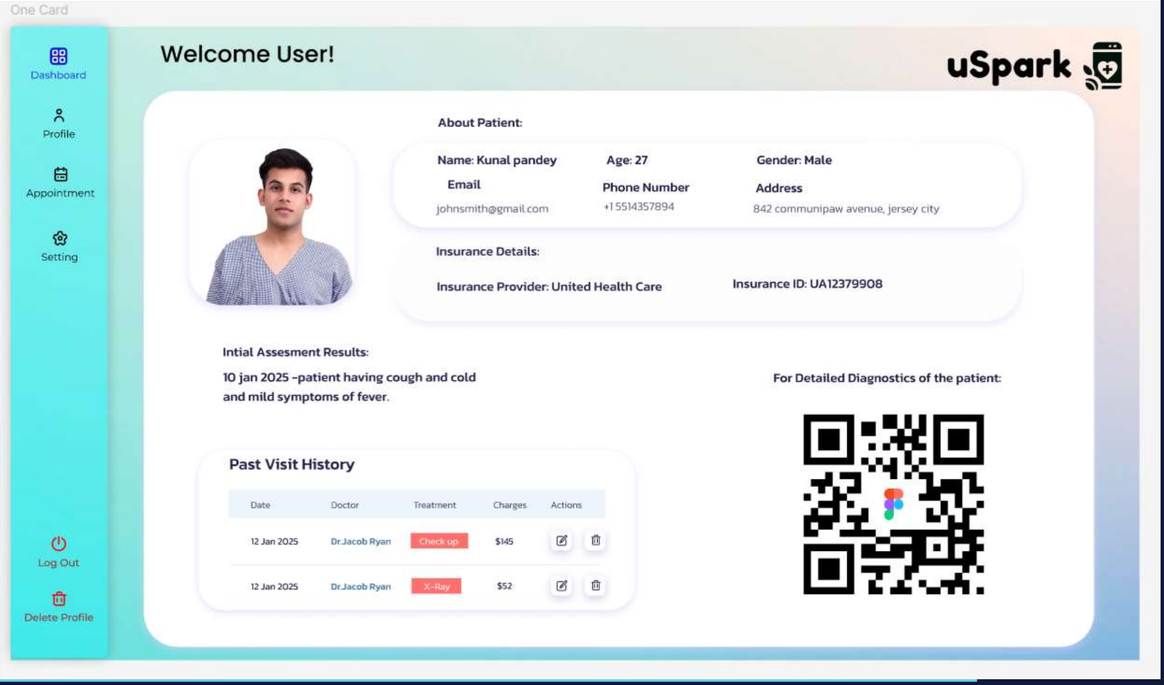
Alfuzosin (10mg)
Take 1 With Food Twice A Day And Avoid Drinking Alcohol For 2 Hours After
Last Refill 27/01/2023

MVP Design

Old Patient Dashboard



One Card



Technologies and Tools

Full Stack /ML AI Programming Languages

Node JS

React

Python

Redux

Axios

Material UI

- **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

Mongo DB

Amazon S3

MERN Stack

Faiss Vector 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

GitHub

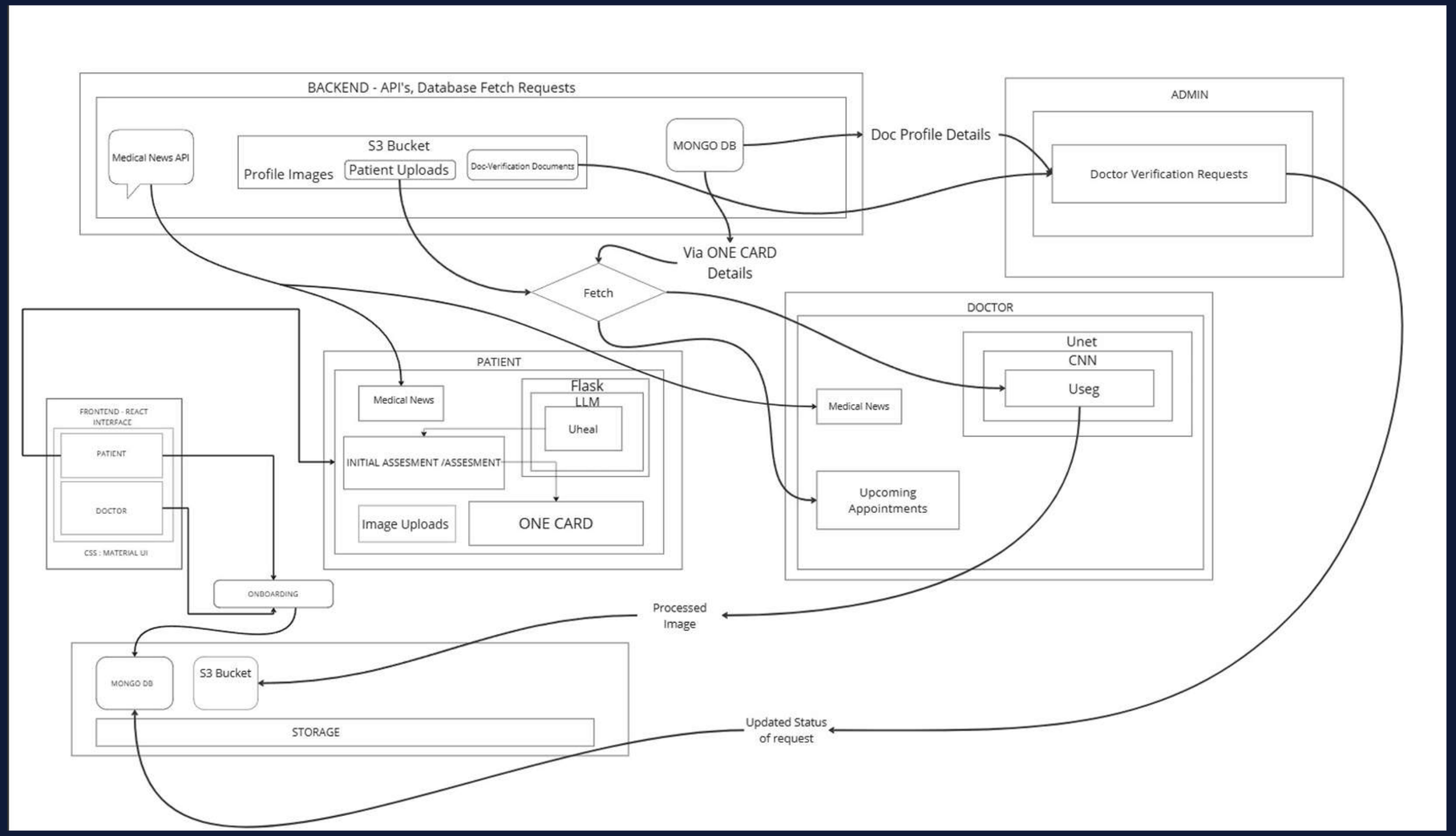
- **Docker –** Used to containerize applications for consistent deployment across environments.
- **VS Code –** Code editor for development with built-in Git and extension support.
- **GitHub –** Version control and collaboration platform for code.
- **Postman –** Tool for testing and verifying API functionality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

Algorithms And Models:

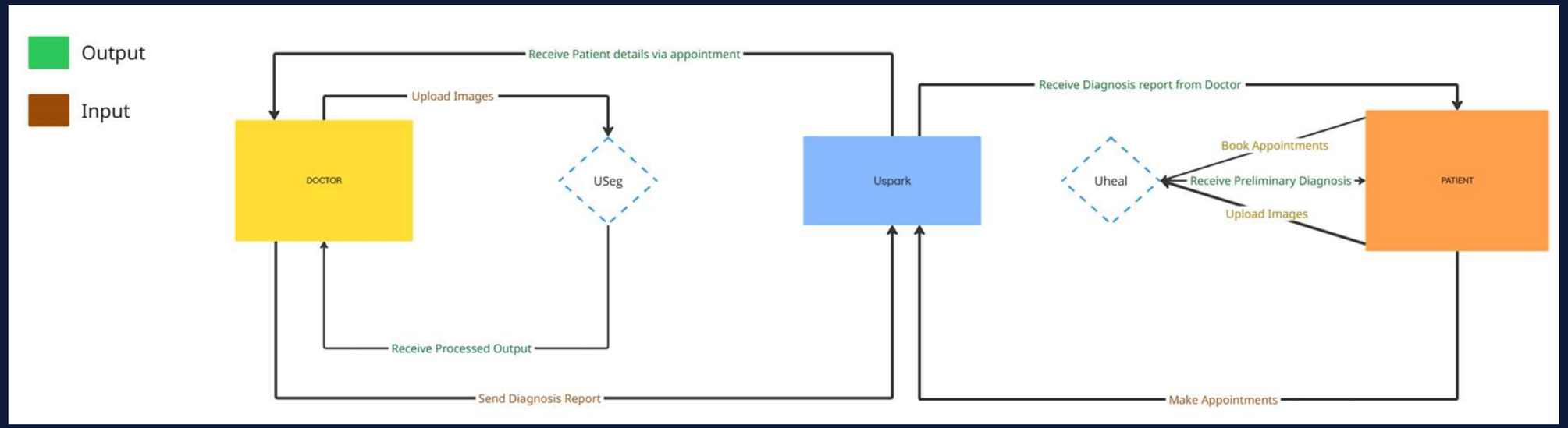
- **RAG (Retrieval-Augmented Generation):**
  Combines document retrieval with text generation to provide accurate, knowledge-based responses—used in our chatbot to give more informed medical answers.
- **DenseNet (Densely Connected Convolutional Network):**
  A deep learning model that strengthens feature 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

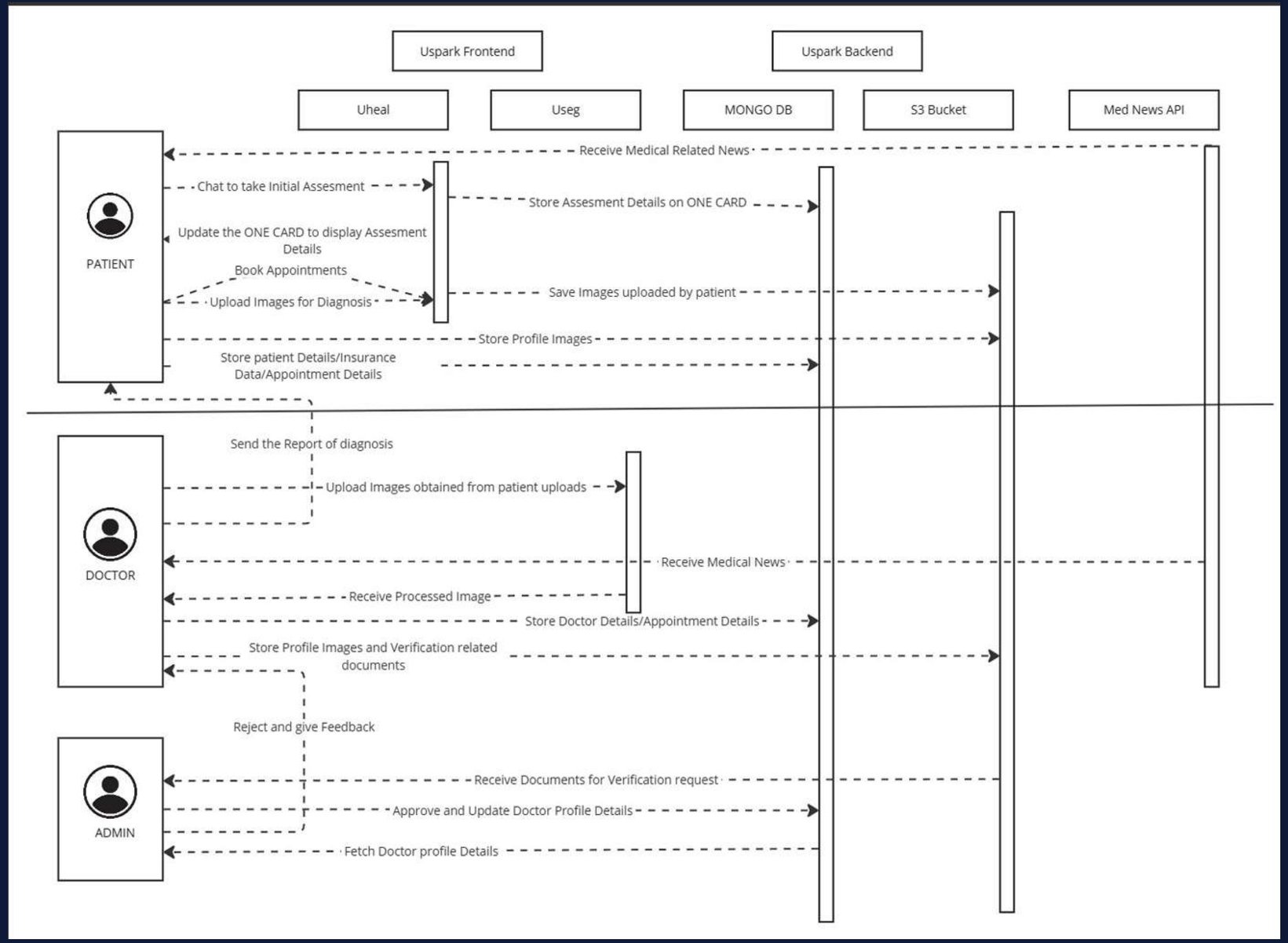
Architecture Diagram



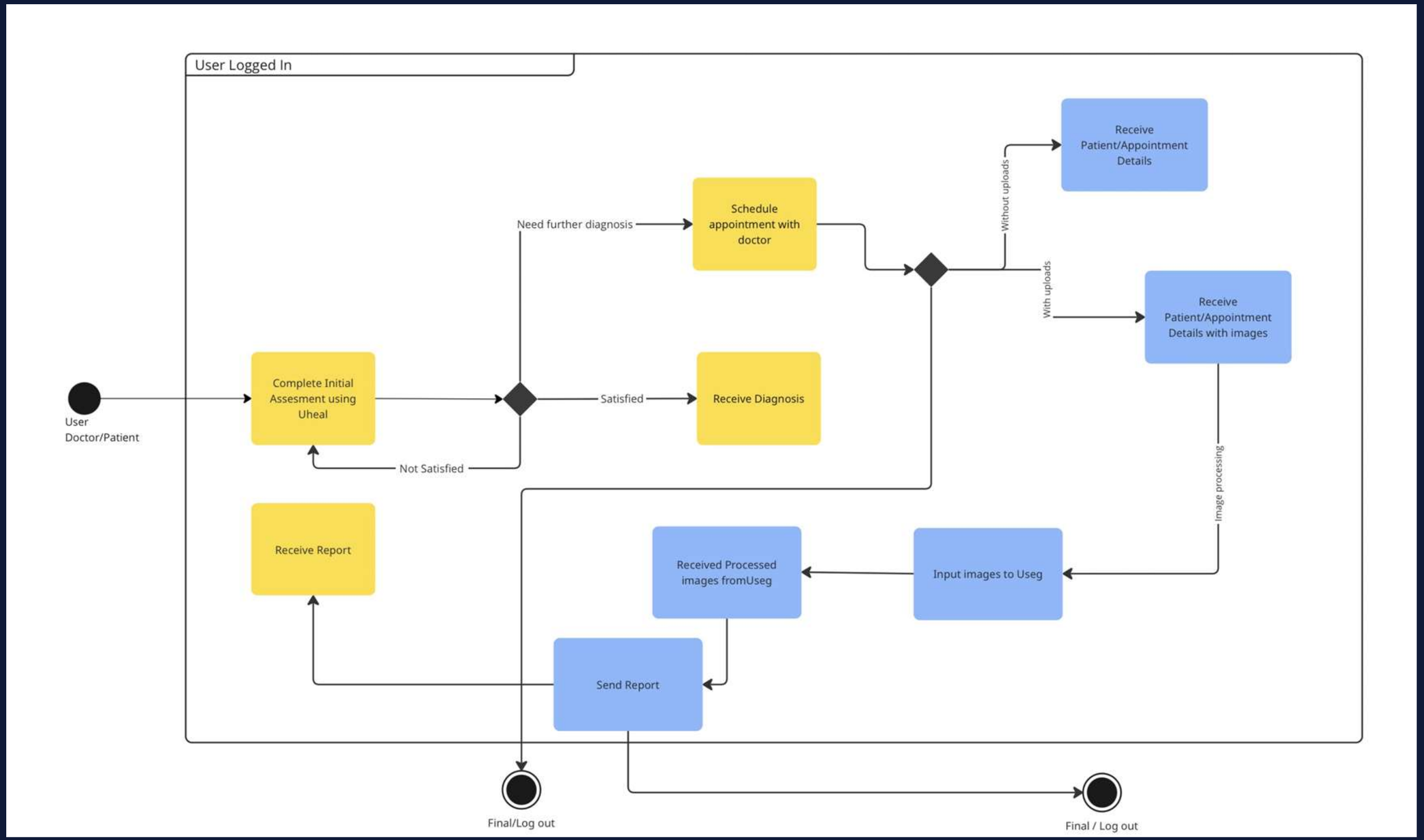
Context Diagram



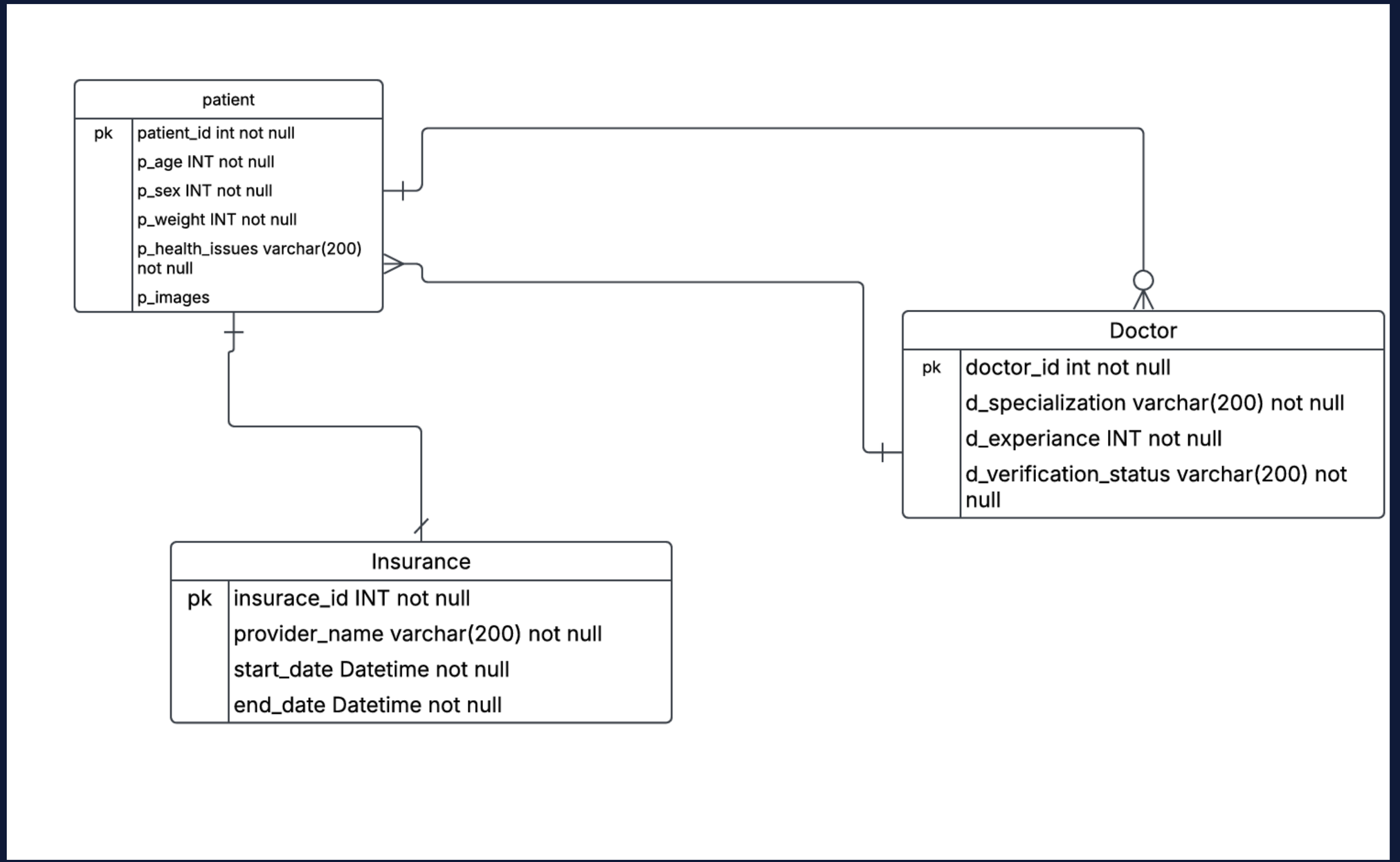
Sequence Diagram



State Diagram



Class Diagram



Sprint 2 Recap:

In Sprint 2, we focused on enhancing the functionalities of our application by improving patient experience, doctor assistance, and backend structures. The following features were successfully implemented:

- Hospital Recommendations: Users can view recommended hospitals based on their health assessments and proximity.
- ONE CARD Implementation: Patients’ personal details, insurance information, and health assessments are stored securely with a shareable QR code.
- Chatbot Enhancements: Uheal chatbot conducts assessments, provides preventive measures, and assists in appointment scheduling.
- Useg ML Model Integration: Doctors can utilize AI-powered biomedical image analysis to assist in diagnosis.
- 36 Story Points
- Completed 29 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.	So that, 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.	So that, 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	So that, the 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, Appointment confirmation via email/sms via uheal.	2
US_19	As a doctor, I want to login to my profile, and view my details	So that, 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.	So that, 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.	So that, Patient can select doctor, date, and time to schedule an appointment with confirmation.	2

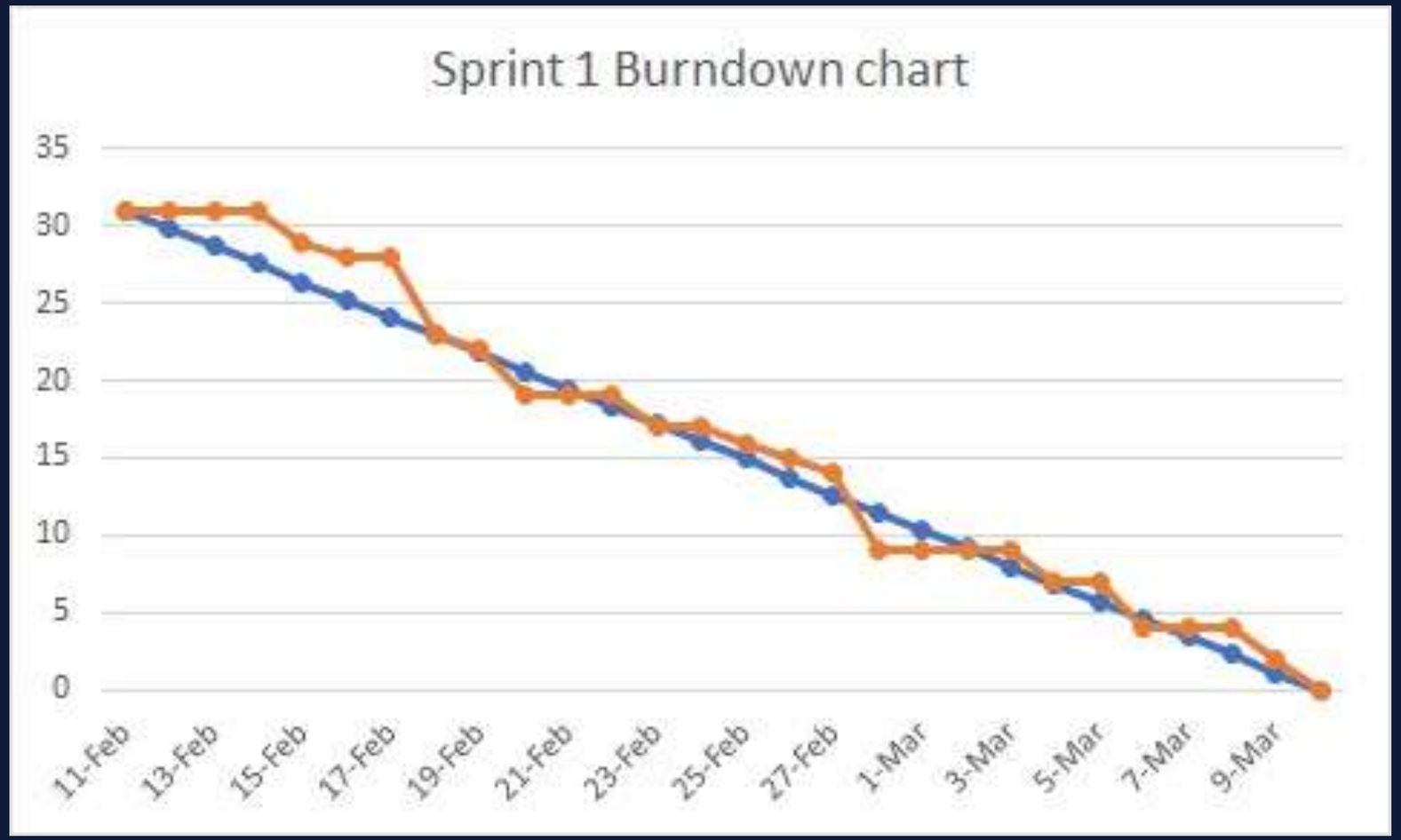
Product Backlog

S.NO	USER STORIES	ACCEPTANCE CRITERIA	STORY POINTS
US_10	As a patient, I want to reschedule or cancel an appointment.	So that, 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.	So that, 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.	So that, Doctor is notified of upcoming, missed, or rescheduled appointments.	1

SPRINT 1 SUMMARY

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_01	As a patient, I want to sign up using email, phone, or social media so that I can access the application.	So that, Given a patient accesses the signup page, When they enter valid credentials (email, phone, or social media), Then they should successfully create an account and log in.	Patient sign-up via email, phone, or social media	3
US_17	As a patient, I want to link my health insurance to cover consultation charges.	So that, Given a patient is logged in, when they update personal, medical, or insurance details, then the changes should be saved.	Patient profile management	5
US_18	As a doctor, I want to register and submit my credentials for verification.	So that, Given a doctor registers, when they submit credentials, then the system should send it for admin approval.	Doctor registration and Onboarding	5
US_22	As a doctor, I want to get heat maps and segmented outputs for easier diagnosis.	So that, Given an image is processed, when AI detects anomalies, then the doctor should receive a heatmap/segmentation output.	AI-based heat maps & segmented output via Useg.	8
US_25	As an admin, I want to manage and verify doctors' credentials before they are approved.	So that, Given a doctor submits credentials, when the admin reviews them, then they should be able to approve or reject the request.	Manage doctor verification & approval via Admin dashboard.	5
US_26	As an admin, I want to manage and verify doctors' credentials before they are approved.	So that, Given a doctor logs in and submits documents for verification, they must be verified by admin	Admin Dashboard	5

SPRINT 1 BURNDOWN CHART



SPRINT 2 SUMMARY

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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, Patient can choose virtual or in-person consultation during appointment booking.	Choose virtual or in-person consultation via Uheal.	3

SPRINT 2 SUMMARY

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_09	As a patient, I want to receive appointment confirmation via email or SMS.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, 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.	So that, Doctor sees dashboard listing upcoming appointments by date/time.	Appointment Scheduling	2

SPRINT 2 SUMMARY

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
US_21	As a doctor, I want to manage my patients' health records and notes.	So that, 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.	So that, 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.	So that, Doctor is notified of upcoming, missed, or rescheduled appointments.	Receive notifications for appointments	1

SPRINT 2 BURNDOWN CHART

SPRINT 3 STORIES

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.	So that, 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.	So that, 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	So that, 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.	So that, 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	So that, 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.	So that, Doctor receives a list of potential diagnoses based on patient data.	Receive notifications for appointments	5

SPRINT 3 STORIES

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.	So that, 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.	So that, 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.	So that, System provides preliminary diagnosis based on patient's symptom inputs.	AI-based preliminary diagnosis via Uheal.	1
US_22	As a doctor, I want to upload medical images (X-rays, MRIs, CT scans) for AI processing.	So that, 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

SPRINT 3 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_04	TC_36	View Past Appointments and Prescriptions in Profile	1. Launch the application 2. Login as a patient using valid credentials 3. Navigate to the “Appointments“, section 4. Verify that all previous appointment details 5. Verify that prescription history	All prescriptions related to past appointments are visible under the prescriptions section.	Pass
US_11	TC_37	Search Doctors Based on Specialty, Availability	1. Login as a patient 2. Navigate to the "Find Doctors" page 3. Enter or select a specialty, Availability, and Location filter 4. Click on "Search" button	List of doctors matching selected specialty, availability, and location criteria is displayed.	Pass
US_12	TC_38	View Doctor Ratings and Reviews Before Booking	1. Login 2. Navigate to "Find Doctors" 3. Search for a doctor 4. Check ratings and reviews displayed for each doctor	Ratings and reviews should be correctly visible under each doctor’s profile before booking.	Fail
US_14, US_15	TC_39	Suggest In-Person, Virtual on Symptoms	1. Login 2. While Booking an appointment 3. will Provide a select option to select 4. Select which mode you want	System suggests either in-person visit, virtual consultation, or self-care based on symptom severity	Pass

SPRINT 3 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_24	TC_41	Get Potential Diagnoses from Biomedical Images	1. Login as a doctor 2. Navigate to "Image Diagnosis" section 3. Upload a biomedical image (e.g., X-ray, MRI) 4. Click "Analyze	System processes the image and displays a list of potential diagnoses based on analysis.	Pass
US_5	TC_42	Upload and Store Past Medical Assessments and Reports	1. Login as patient 2. Navigate to "Medical Records" 3. Upload assessment files or reports 4. Save the uploaded files	Files are securely uploaded, stored, and available for future view/download.	Fail
US_08	TC_43	Choose Between Virtual or In-Person Appointment	1. Login as a patient 2. Navigate to "Book Appointment" 3. Select doctor and preferred date/time 4. Choose either "Virtual" or "In-Person" option 5. Confirm booking	Appointment is successfully booked with selected consultation type (Virtual/In-Person) shown in confirmation.	Pass

SPRINT 3 TEST CASES

US_ID	TC_ID	Test Case	Steps	Execution Status	Result
US_13	TC_44	Get Preliminary Diagnosis Based on Symptoms	1. Login as a patient 2. Navigate to "Symptom Checker" 3. Enter symptoms in the form 4. Submit assessment	System displays a preliminary diagnosis based on the entered symptoms.	Pass
US_22	TC_45	Upload Medical Images for AI Processing	1. Login as doctor 2. Navigate to "Upload Images" 3. Select patient 4. Upload X-ray/MRI/CT scan file 5. Submit for processing	Medical images are securely uploaded, linked to the patient, and ready for AI analysis.	Pass

SPRINT 3 STORIES COMPLETED

S.NO	USER STORIES	ACCEPTANCE CRITERIA	FEATURE	STORY POINTS
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SPRINT 3 STORIES COMPLETED

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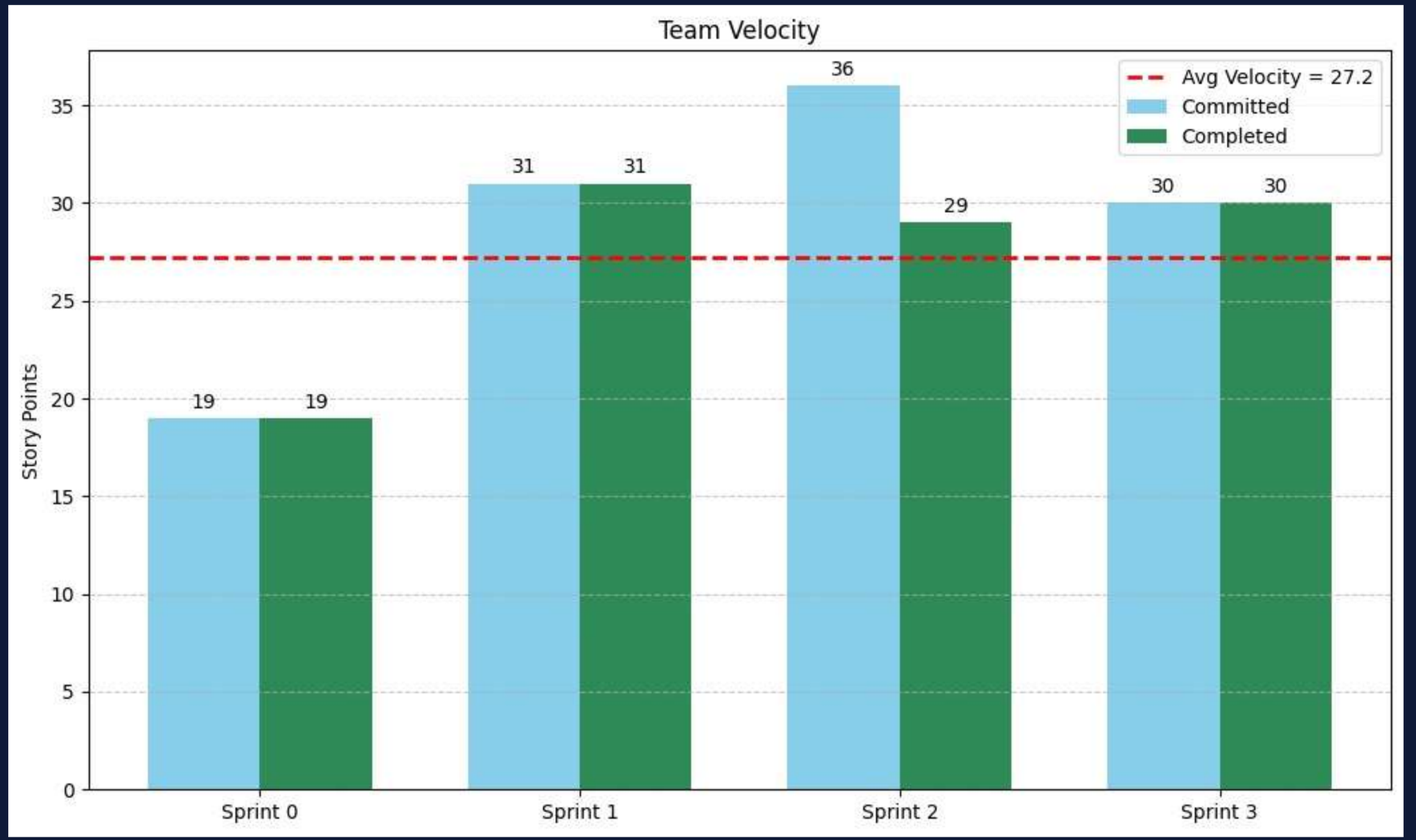
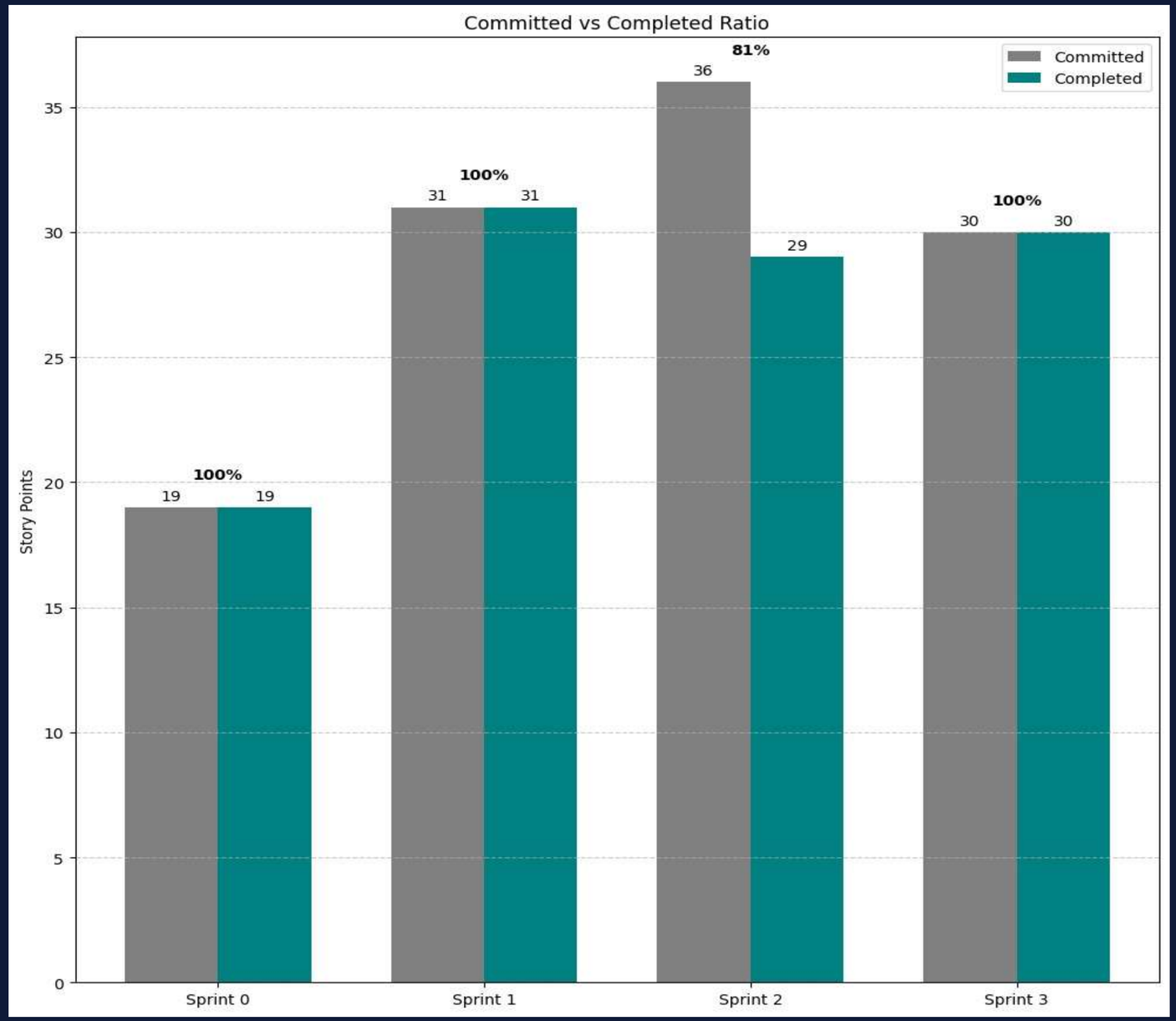
Sprint Velocity:

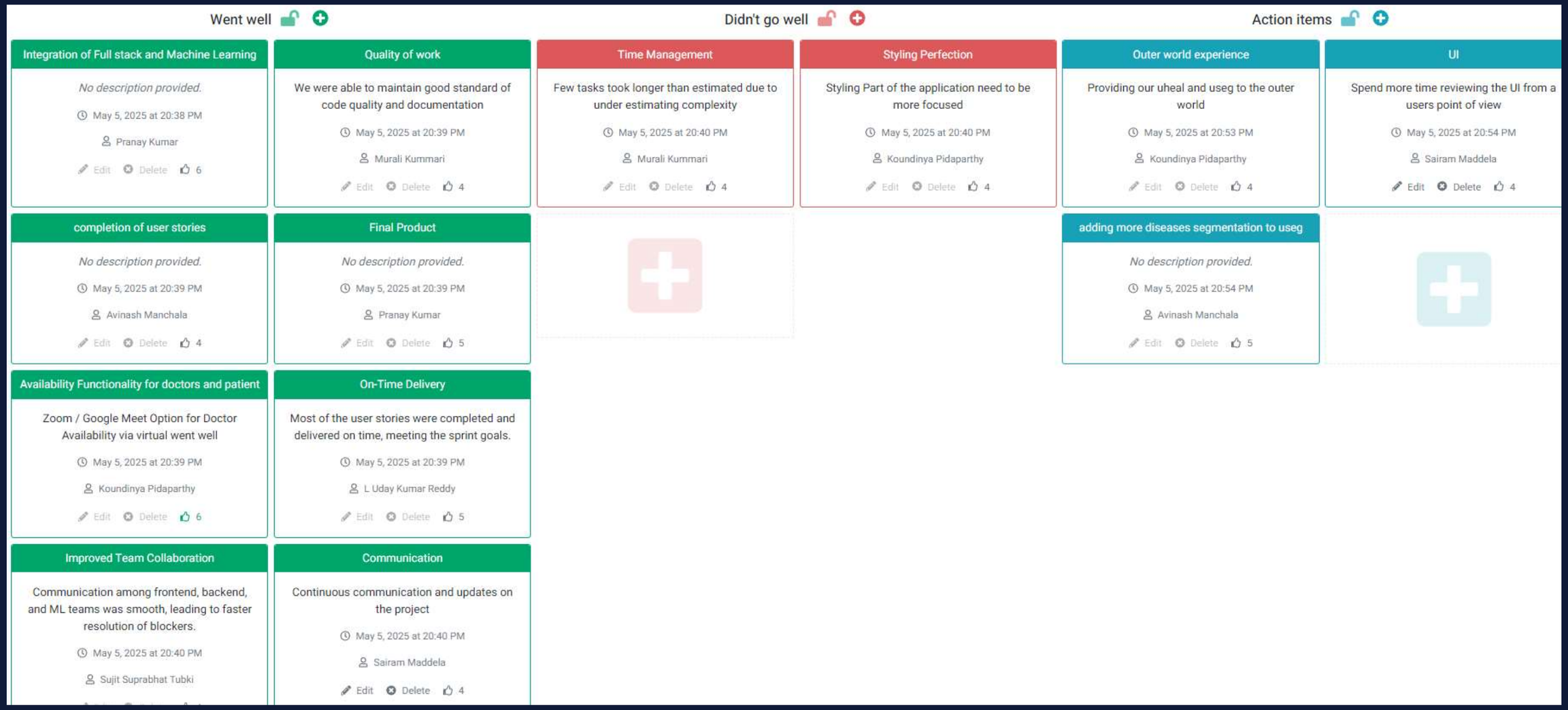


METRICS - BURNDOWN CHART

METRICS - COMMITTED RATIO



Sprint Retrospective:



Went well

Integration of Full stack and Machine Learning
No description provided.
May 5, 2025 at 20:38 PM
Pranay Kumar
Edit Delete 6

Quality of work
We were able to maintain good standard of code quality and documentation
May 5, 2025 at 20:39 PM
Murali Kummari
Edit Delete 4

completion of user stories
No description provided.
May 5, 2025 at 20:39 PM
Avinash Manchala
Edit Delete 4

Final Product
No description provided.
May 5, 2025 at 20:39 PM
Pranay Kumar
Edit Delete 5

Availability Functionality for doctors and patient
Zoom / Google Meet Option for Doctor Availability via virtual went well
May 5, 2025 at 20:39 PM
Koundinya Pidaparthy
Edit Delete 6

On-Time Delivery
Most of the user stories were completed and delivered on time, meeting the sprint goals.
May 5, 2025 at 20:39 PM
L Uday Kumar Reddy
Edit Delete 5

Improved Team Collaboration
Communication among frontend, backend, and ML teams was smooth, leading to faster resolution of blockers.
May 5, 2025 at 20:40 PM
Sujit Suprabhat Tubki

Communication
Continuous communication and updates on the project
May 5, 2025 at 20:40 PM
Sairam Maddela
Edit Delete 4

Didn't go well

Time Management
Few tasks took longer than estimated due to under estimating complexity
May 5, 2025 at 20:40 PM
Murali Kummari
Edit Delete 4

Styling Perfection
Styling Part of the application need to be more focused
May 5, 2025 at 20:40 PM
Koundinya Pidaparthy
Edit Delete 4

Action items

Outer world experience
Providing our uheal and useg to the outer world
May 5, 2025 at 20:53 PM
Koundinya Pidaparthy
Edit Delete 4

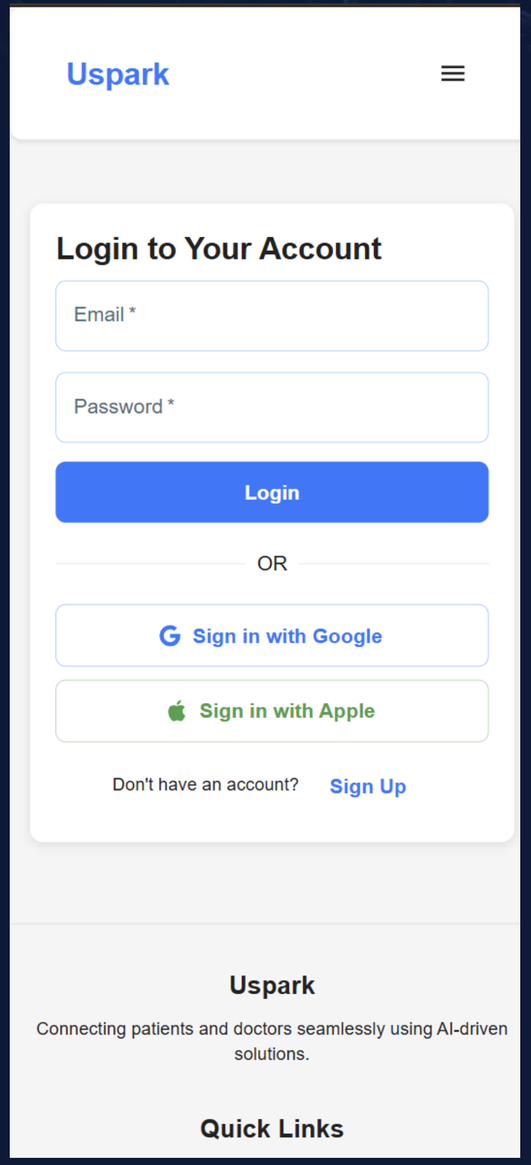
UI
Spend more time reviewing the UI from a users point of view
May 5, 2025 at 20:54 PM
Sairam Maddela
Edit Delete 4

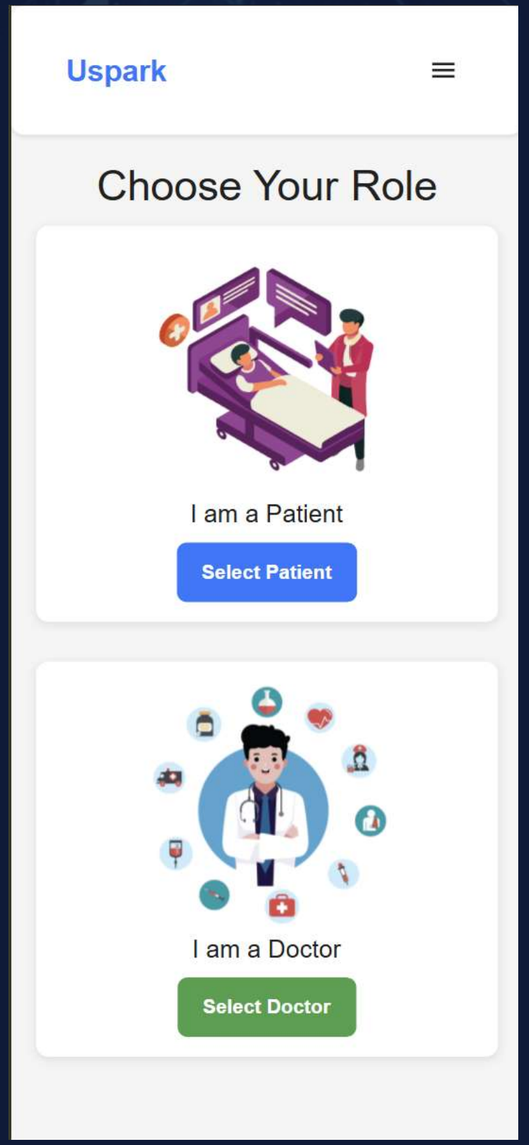
adding more diseases segmentation to useg
No description provided.
May 5, 2025 at 20:54 PM
Avinash Manchala
Edit Delete 5

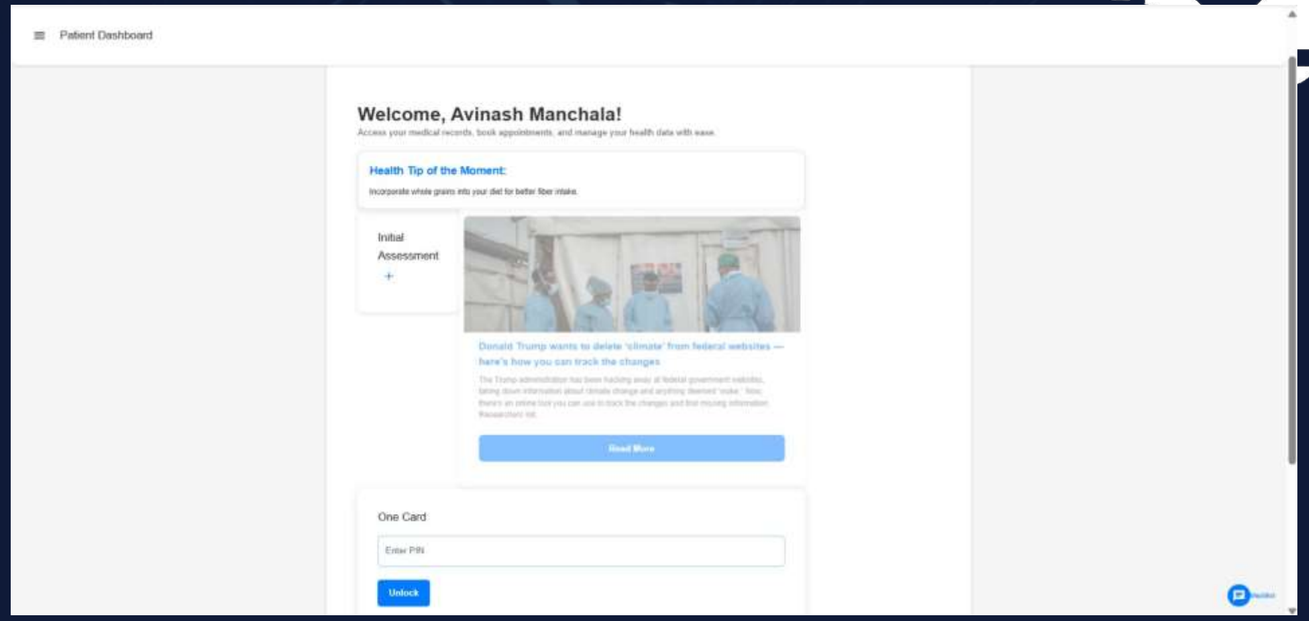
Sprint Retrospective:

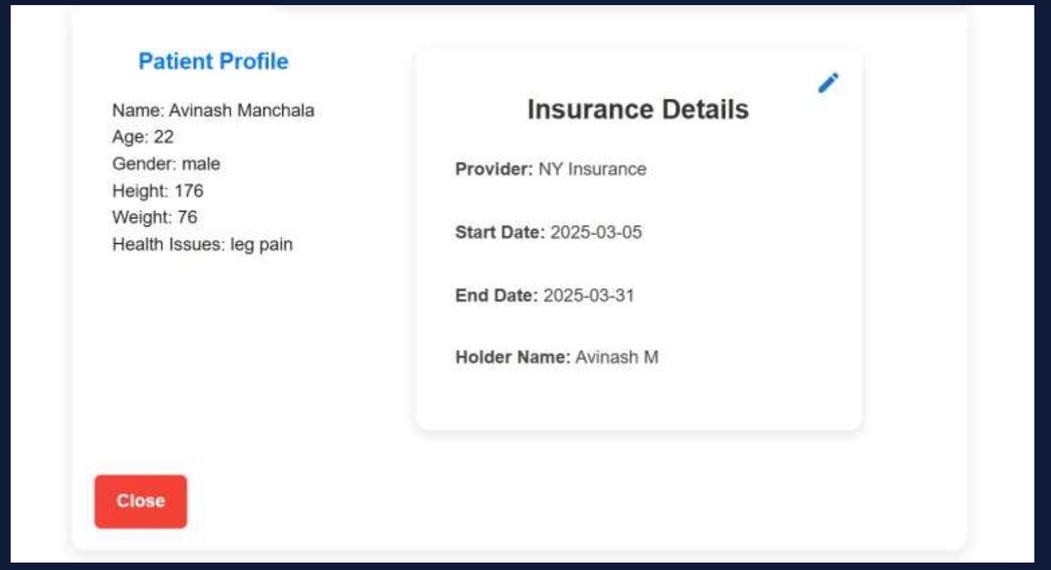
What Went Well	What Didn’t Go Well	Action Items
Integration of Full Stack and Machine Learning	Time management – some tasks took longer than expected	Spend more time reviewing the UI from a user's point of view
Quality of work – good code standards and documentation	Styling/perfection – UI styling needs improvement	Provide Useg and Uheal to the outside world
Completion of user stories		Add more disease segmentation to the Useg model
Final product stability		
Availability functionality via Zoom/Google Meet worked		
On-time delivery – met sprint goals		

Project Demo









Application Screenshots

Patient Dashboard

Latest in Health News

Oura Is Taking Its AI-Powered Wellness Advisor Out of Beta

Oura hopes it's AI will help guide you toward better health.

Read More

Book an Appointment

Booking Date: 2025-04-28

Search Doctors

Available Doctors

Dr. Daniel
General Physician
Bayonne VNA – 149 Lefante Way Suite 144 & 146, Bayonne

Book

Rathan Jayanath
rathan.jayanath@gmail.com

Age: 45 **Sex:** male

Height: 180 cm **Weight:** 80 kg

Insurance

Provider: —
Policy: —
Valid: 2025-04-28 → 2025-04-28

Recent Medical History

My Assessments

Outcome:
Date: 4/28/2025 - Time: 01:55 PM

Last Response: Doctor: Thank you for the detailed information! === Medical Report === - Fever: duration: 2 days, severity: Mild, location: Head - Pain: severity: 5 - Medications: None Doctor: No strong condition match was found based on reported symptoms. Doctor: Please note this is a preliminary virtual consultation. You should consult a physician if symptoms persist, worsen, or if you feel uncomfortable.

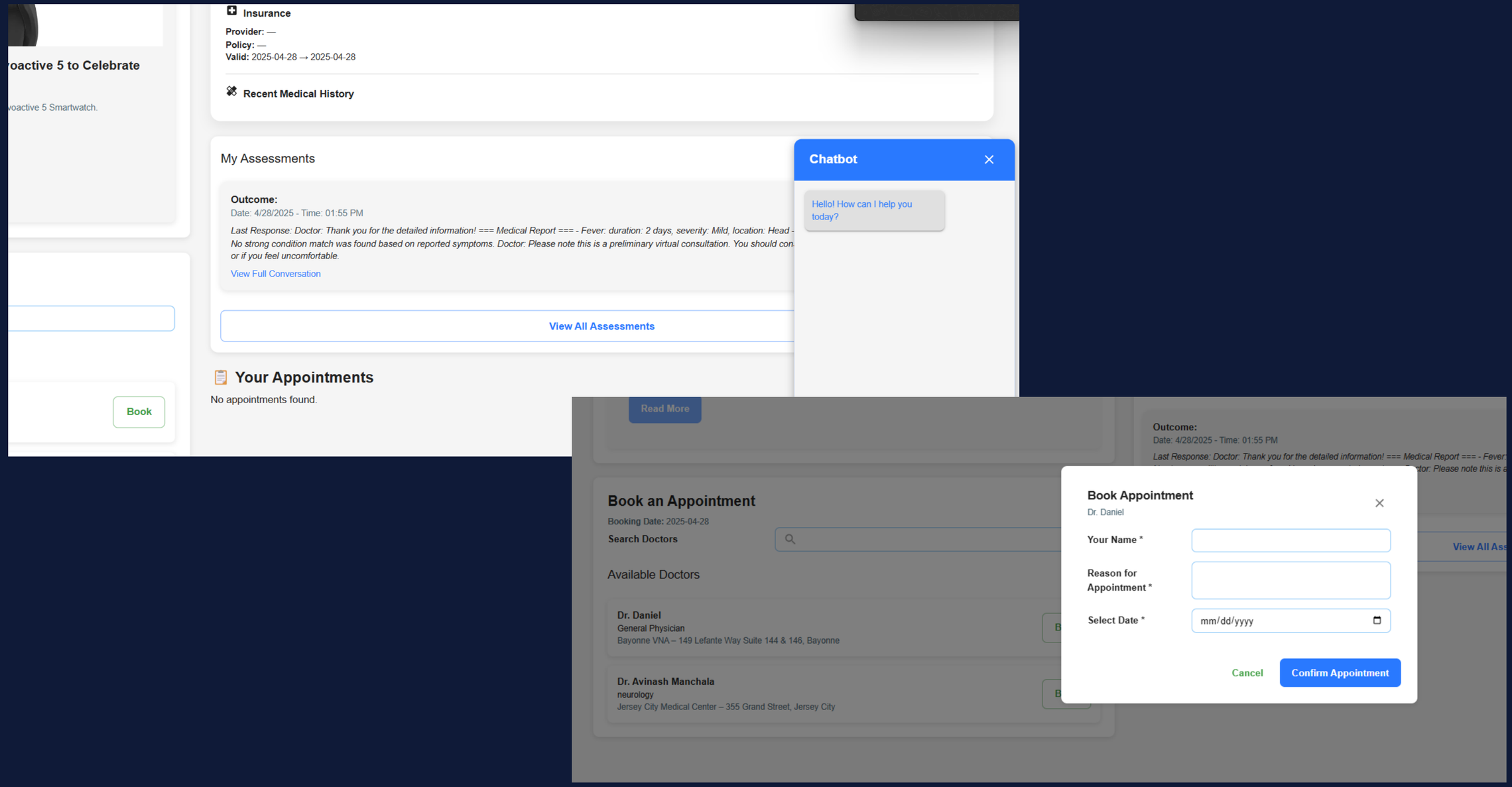
View Full Conversation

View All Assessments

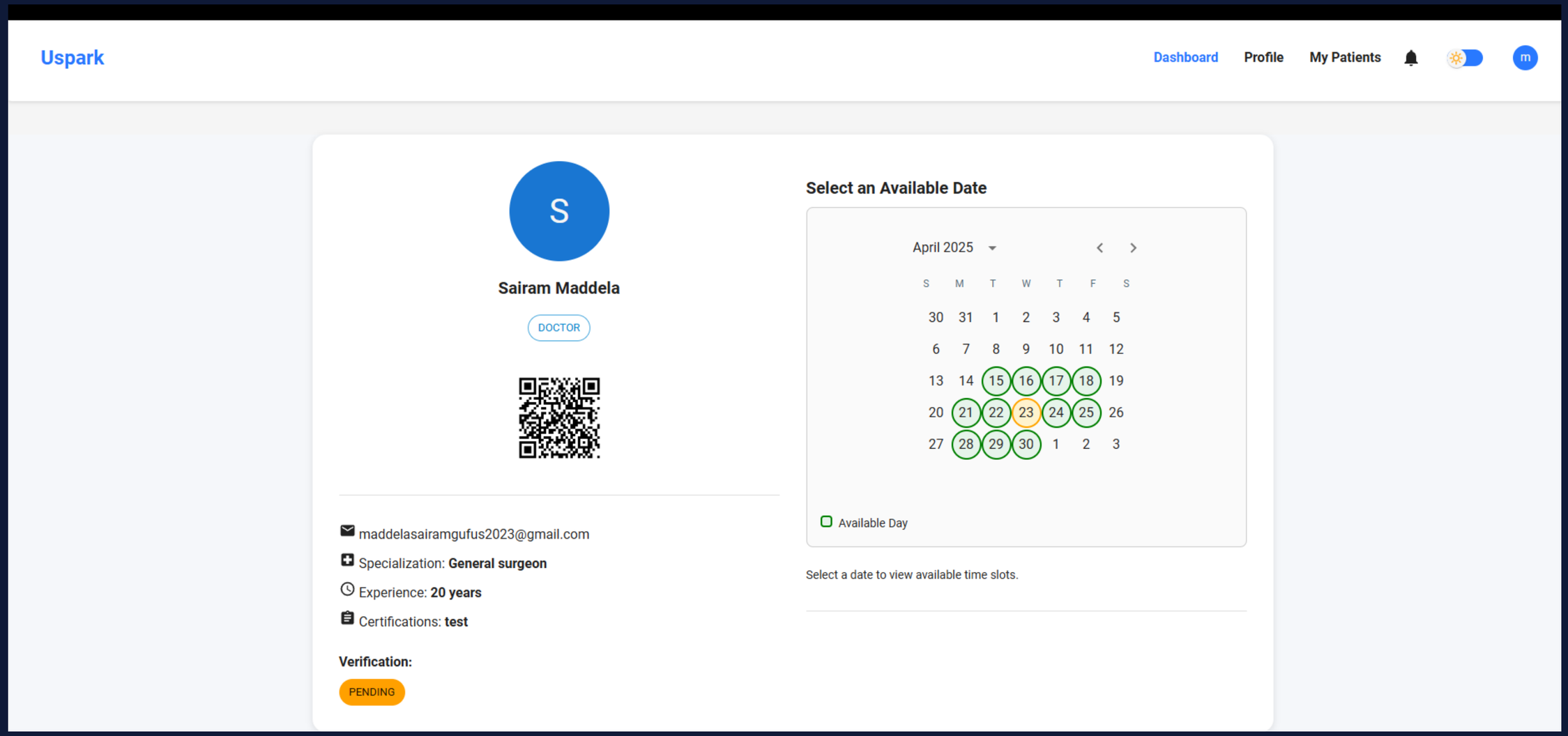
Your Appointments

No appointments found.

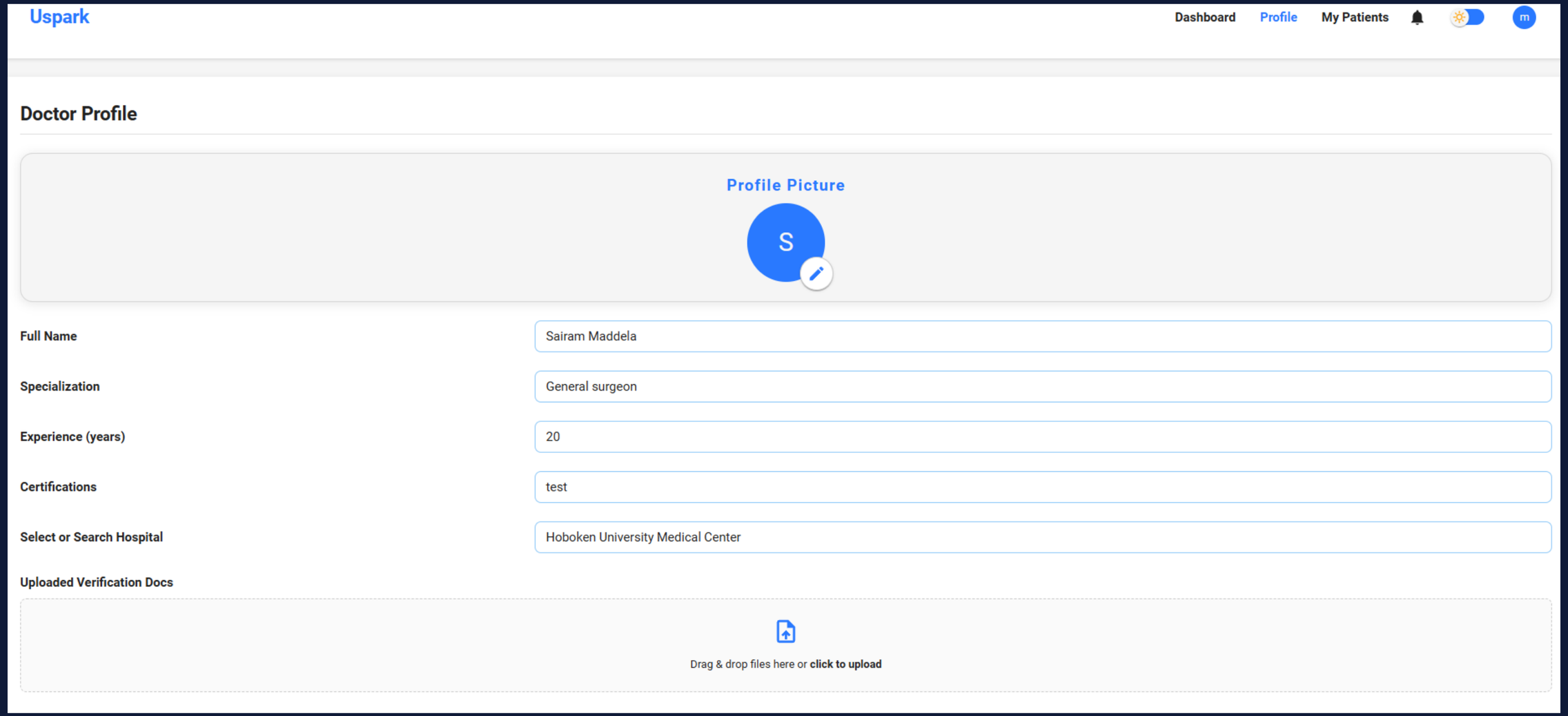
Application Screenshots



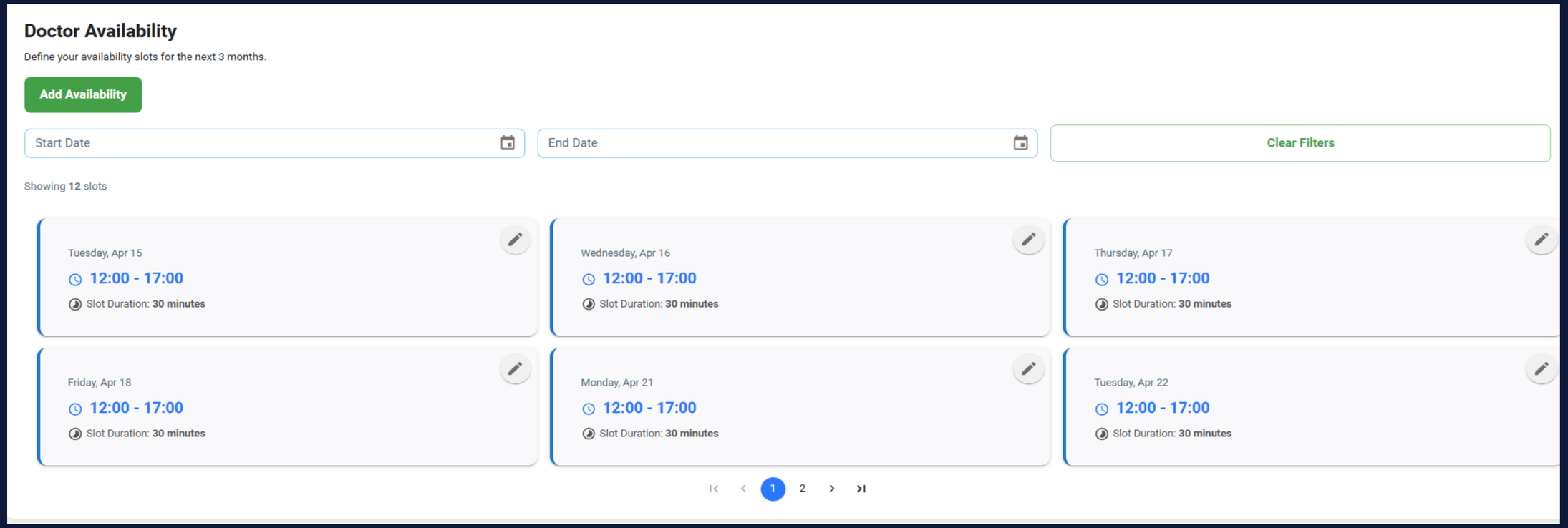
Application Screenshots



Application Screenshots



Application Screenshots



Application Screenshots

Uspark

Dashboard Profile My Patients

Upload and Manage Segmentations

Choose File Upload

Filter by Date

mm/dd/yyyy

Clear Filter

Segmented Images

No segmented images found. Upload a file to get started.

Uspark

Connecting patients and doctors seamlessly using AI-driven solutions.

Qu

About U

Upload and Manage Segmentations

Choose File Upload

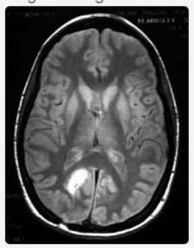
Filter by Date

mm/dd/yyyy

Clear Filter

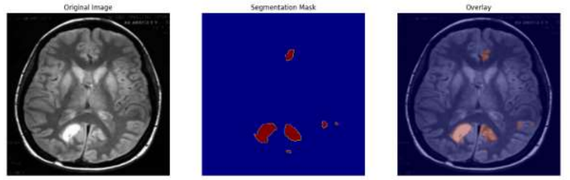
Segmented Images

Original Image



→

Segmented Image



Resegment

Delete

API Screenshots

```
 */
const API_BASE_URL = config.API_BASE_URL || "http://localhost:5001";
console.log({ API_BASE_URL });
/**
 * Axios instance with predefined base URL.
 */
export const api = axios.create({
  baseURL: API_BASE_URL,
  headers: { "Content-Type": "application/json" },
});

/**
 * API request to log in a user with credentials.
 *
 * @param {Object} credentials - The user's email and password.
 * @returns {Promise<Object>} Response containing authentication token.
 */
export const loginApi = (credentials) => api.post("/auth/login", credentials);

/**
 * API request to log in a user using OAuth (Google, Apple, etc.).
 *
 * @param {Object} providerData - OAuth provider data.
 * @returns {Promise<Object>} Response containing authentication token.
 */
export const oauthLoginApi = (providerData) =>
  api.post("/auth/oauth", providerData);

/**
 * API request to sign up a new user.
 *
```

API Screenshots

```
 * @param {Object} userData - User registration details.
 * @returns {Promise<Object>} Response containing authentication token.
 */
export const signupApi = (userData) => api.post("/auth/signup", userData);

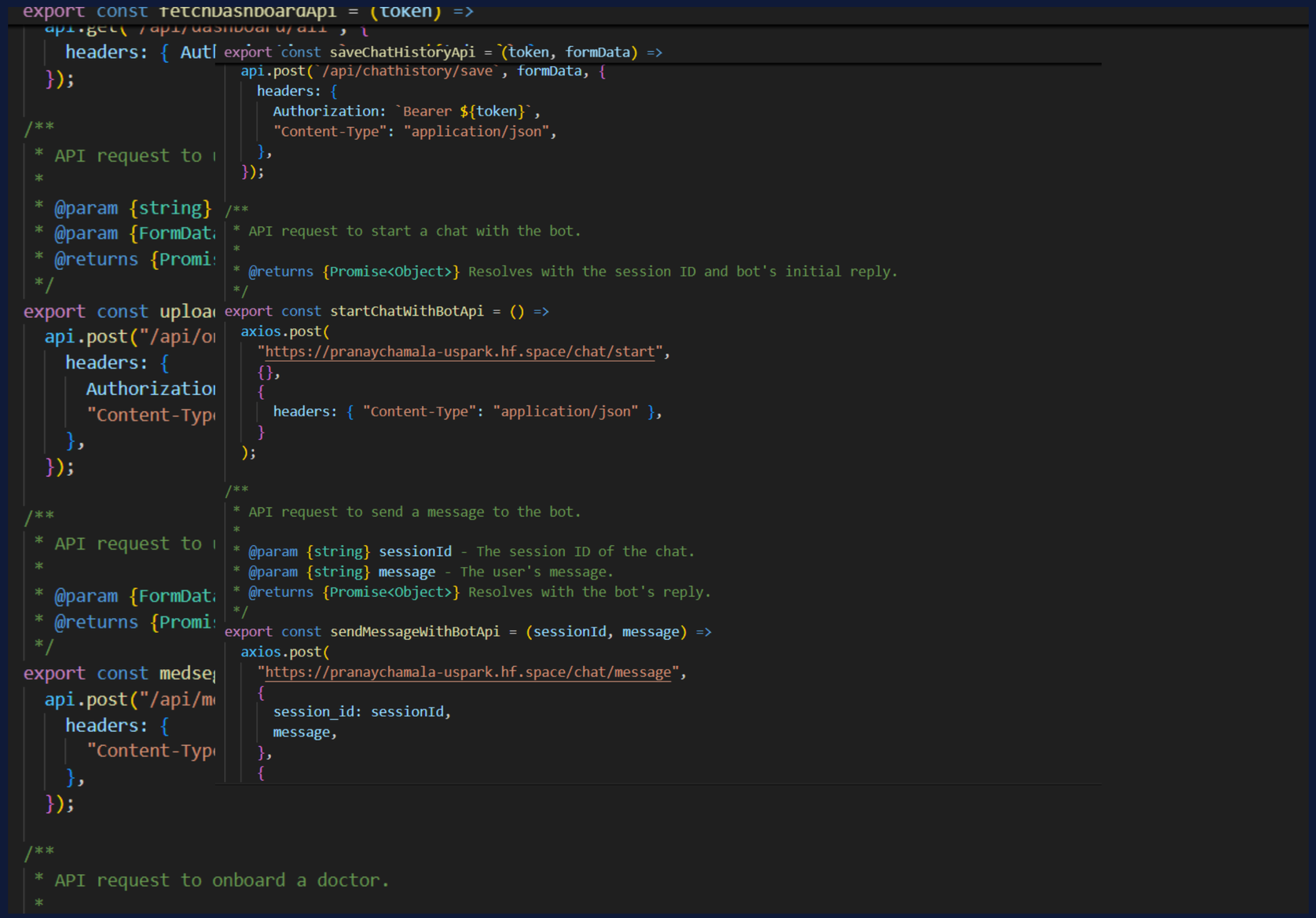
/**
 * API request to sign up a new user via OAuth.
 *
 * @param {Object} providerData - OAuth provider data.
 * @returns {Promise<Object>} Response containing authentication token.
 */
export const oAuthSignupApi = (providerData) =>
  api.post("/auth/oauth", providerData);

/**
 * API call to verify a doctor's status.
 *
 * @param {string} doctorId - The unique identifier of the doctor.
 * @param {string} decision - The verification decision (e.g., "approved" or "rejected").
 * @returns {Promise<Object>} Resolves with the verification response.
 */
export const verifyDoctorApi = (doctorId, decision) =>
  api.post(`/api/admin/verify-doctor/${doctorId}`, { decision });

export const adminDoctorApi = () => api.get(`/api/admin/doctors`);

export const fetchProfileApi = (token) =>
  api.get("/api/profile", {
    headers: { Authorization: `Bearer ${token}` },
  });
```

API Screenshots



```
export const fetchDashboardApi = (token) =>
  api.get("/api/dashboard/all", {
    headers: { Aut
  });

/**
 * API request to
 *
 * @param {string}
 * @param {FormDat
 * @returns {Promi
 */
export const uploa
  api.post("/api/o
    headers: {
      Authorizatio
      "Content-Typ
    },
  });

/**
 * API request to
 *
 * @param {FormDat
 * @returns {Promi
 */
export const medse
  api.post("/api/m
    headers: {
      "Content-Typ
    },
  });

/**
 * API request to onboard a doctor.
 *
```

```
export const saveChatHistoryApi = (token, formData) =>
  api.post(`/api/chathistory/save`, formData, {
    headers: {
      Authorization: `Bearer ${token}`,
      "Content-Type": "application/json",
    },
  });

/**
 * API request to start a chat with the bot.
 *
 * @returns {Promise<Object>} Resolves with the session ID and bot's initial reply.
 */
export const startChatWithBotApi = () =>
  axios.post(
    "https://pranaychamala-uspark.hf.space/chat/start",
    {},
    {
      headers: { "Content-Type": "application/json" },
    }
  );

/**
 * API request to send a message to the bot.
 *
 * @param {string} sessionId - The session ID of the chat.
 * @param {string} message - The user's message.
 * @returns {Promise<Object>} Resolves with the bot's reply.
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export const sendMessageWithBotApi = (sessionId, message) =>
  axios.post(
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    {
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      message,
    },
    {
```

API Screenshots

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    {
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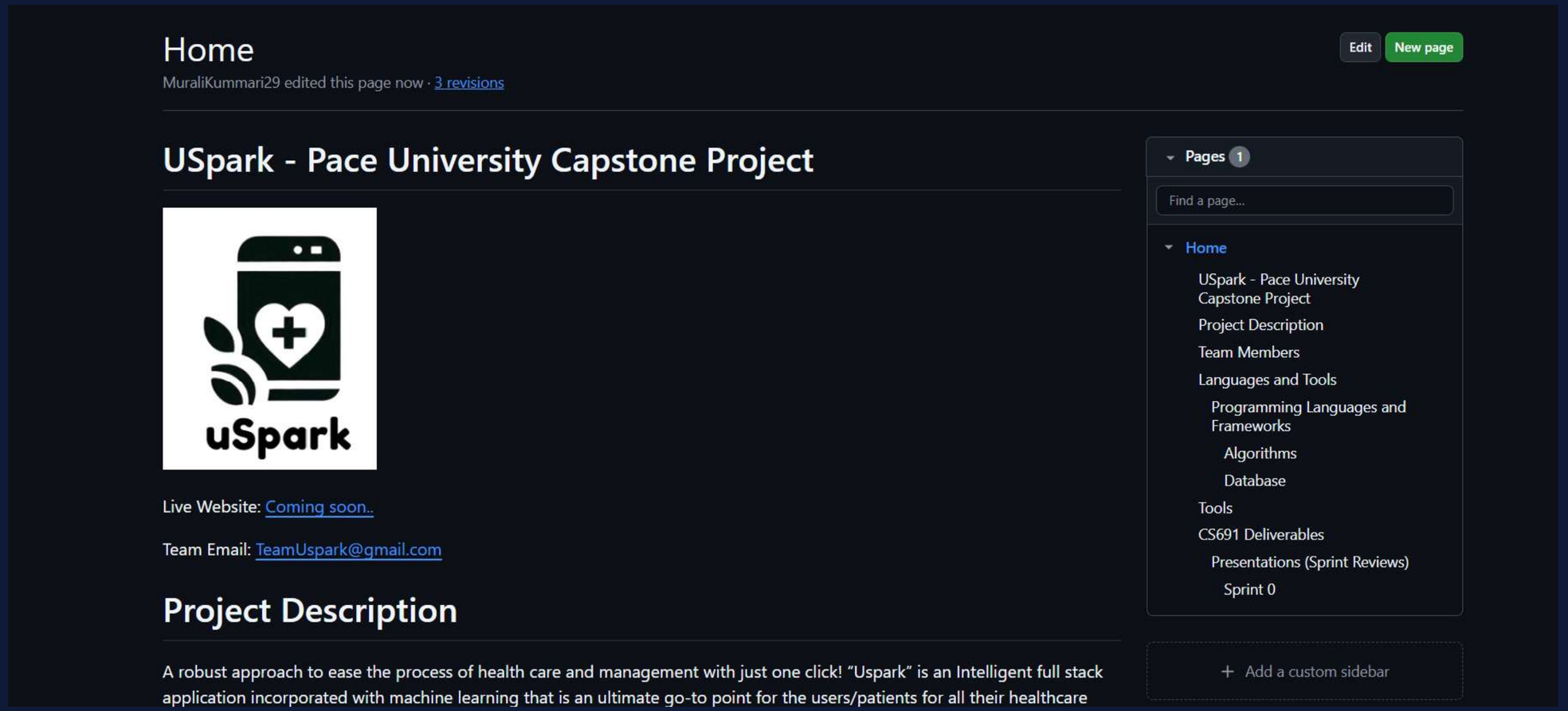
      message,
    },
    {
```

WIKI PAGE

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



THANK YOU

CONTACT US:

teamuspark@gmail.com