

1/3/2025

Assignment # 1

Software Engineering



HealthHub

Group Members Info

<i>Name</i>	<i>Roll Number</i>	<i>Section</i>
<i>Anas Imran</i>	<i>21i-2520</i>	<i>C</i>
<i>Huzaifa Khalid</i>	<i>21i-0527</i>	<i>C</i>
<i>Nida Azam</i>	<i>21i-0433</i>	<i>C</i>

Roles	
Role	Member Name
Product Owner	Nida Azam
Scrum Master	Anas Imran
Developer	Huzaifa Khalid

Introduction:

In our project, Health Hub, developed using the MERN Stack, we've crafted a transformative healthcare platform catering to three distinct user roles: administrators, doctors, and clients. Administrators oversee the platform's operations, managing user accounts and ensuring system functionality. Doctors utilize Health Hub for appointments, accessing patient records securely, and providing personalized care. Clients benefit from personalized health assessments, appointments with doctors, and streamlined management of medical records and medications. With a focus on user-centric design and advanced technology, Health Hub empowers administrators, doctors, and clients alike to engage with healthcare services efficiently and securely, fostering a collaborative approach to wellness management.

Problem Statement:

The problem of inefficient healthcare management, lack of digital patient records, and difficulty in doctor-patient communication that

affects patients, doctors, and healthcare administrators

the impact of which is delays in patient treatment, difficulty in managing appointments, and lack of centralized medical history.

A successful solution would be a MERN Stack-based healthcare management platform that provides a centralized system for patient records, doctor consultations, and appointment scheduling. The system will allow secure and efficient interaction between doctors and patients. Features include role-based access, real-time updates, and a user-friendly interface. The platform will enhance medical record management, improve doctor-patient communication, and reduce administrative burdens in healthcare facilities.

Project Scope:

HealthHub is a groundbreaking healthcare platform designed to transform how individuals manage their well-being and interact with healthcare services. It offers personalized health assessments, telehealth consultations, medical records management, medication adherence and reminders, integration with remote monitoring devices, wellness challenges and incentives and health education resources. The software aims to empower users to take charge of their health and promote preventive care strategies.

Methods of Communication:

To ensure smooth coordination and collaboration, the team will use multiple communication channels:

- Email: Used for formal discussions, documentation sharing, and final submissions.
- Messenger (WhatsApp/Discord/Meet): For quick updates, daily discussions, and informal queries.
- Phone Calls: For urgent matters and decision-making discussions.
- Google Docs & GitHub Issues: Used for tracking progress and discussing tasks asynchronously.

Communication Response Time:

- Email: Responses are expected within 24 hours.
- Messenger (WhatsApp/Discord/Meet): Team members should respond within 2-3 hours during working hours.
- Phone Calls: Must be answered immediately or returned within 1 hour.

Meeting Attendance:

- Meetings will be held twice a week (Tuesday and Saturday).
- Attendance is mandatory, and missing meetings without prior notice is not allowed.
- If a member cannot attend, they must inform the Scrum Master (Anas) at least one day in advance.
- Emergency meetings may be scheduled as needed.

Meeting Runtime:

- Meetings will be held online via Google Meet or face-to-face depending on availability.
- Anas (Scrum Master) will lead the meetings, set the agenda, and track progress.
- Nida (Product Owner) will discuss feature requirements and updates.
- Huzaifa (Developer) will provide technical progress and challenges.
- Meeting minutes will be recorded by Anas and shared with the team afterward.

Meeting Preparation:

- Each team member must review their assigned tasks before meetings.
- If any issues arise, they should be documented in the shared project board before the meeting.
- The Scrum Master (Anas) will ensure that all members are prepared before each session.

Version Control:

- GitHub will be used for version control.
- Only fully functional and tested code will be committed to the main branch.
- Buggy or incomplete code should be pushed to a separate feature branch for review.
- Commit messages should follow a clear structure, such as:

✓ "Added user authentication module"

✗ "Update file" (Not allowed)

Work Division:

- Nida (Product Owner) will manage requirements, user stories, and backlog.
- Anas (Scrum Master) will oversee progress, ensure smooth collaboration, and facilitate meetings.
- Huzaifa (Developer) will handle development tasks such as coding, debugging, and unit testing.
- Work will be divided based on team strengths and workload balance.

Submitting Assignment:

- Assignments must be completed two days before the deadline for review.
- Anas (Scrum Master) will review and compile the final submission.
- Final submission will be handled by Anas after review by all team members.
- Everyone is responsible for reviewing their part before submission

Consistency Planning:

- If a team member drops out, tasks will be redistributed among remaining members.
- If a member consistently misses meetings, the Scrum Master (Anas) will address the issue directly. If unresolved, it will be escalated to the instructor.
- If a team member is academically dishonest, it will be reported immediately to maintain integrity.

Product Backlog:

ID	User Story	Priority	Acceptance Criteria
1	As a user, I want to register on Health Hub so that I can access and view my health analytics, enabling me to make informed decisions and maintain my well-being effectively	1	<ul style="list-style-type: none"> Given that I am on the HealthHub registration page, when I fill in the required registration fields with valid information including my full name, email address, and password, then upon submission, a new user account should be created for me.
2	As a user of Health Hub, I want to log in with my specified role and password so that I can access personalized features and functionalities based on my role within the healthcare ecosystem.	1	<ul style="list-style-type: none"> Given that I am on the HealthHub login page, when I enter my registered email address and password corresponding to my specified role (e.g., administrator, doctor, or client), then upon submission, I should be authenticated and granted access to the system.
3	As a user I want to view my health analytics so that I can take rational choices and maintain my well-being	2	<ul style="list-style-type: none"> Given that I have opened the health assessment menu when I click on the view health analytics then it should display all the health-related options in human readable way.
4	As a user I want to receive my health status and risk factor so that I can keep record of my health stats and devise a plan accordingly.	2	<ul style="list-style-type: none"> Given that I have opened the health analytics option when I fill in the required data then it should display all the stats and risk factor in a more visualized way. Given that I have opened the health analytics option when I fill the required data wrong then it should display error message and ask me to re-enter the information.
5	As a user I want to get recommendations from the system according to my health stats so that I can get a better health plan.	3	<ul style="list-style-type: none"> Given that it displayed all the health analytics options when I ask for recommendation then it should perform certain function on my data and provide me with personalized proactive recommendations.
6	As a user, I want to access health care professionals through telehealth so that I do not have to go outside for booking appointment.	2	<ul style="list-style-type: none"> Given that I have selected for telehealth feature when I search for professional then it displays all the health care professionals in my area with their contact information
7	As a user, I want to schedule virtual consultations with healthcare professionals through HealthHub's telehealth feature to obtain medical advice and treatment	3	<ul style="list-style-type: none"> Given that users are presented with options to schedule virtual consultations with healthcare professionals when accessing the

	conveniently.		<p>schedule virtual consultations then it should book appointments with the professional.</p> <ul style="list-style-type: none"> Given that user has accessed the schedule virtual consultation when selected a desired time slot, the system confirms the appointment and notifies the user of the scheduled virtual consultation
8	As a user, I want to securely store my medical records within Health Hub so that I can maintain a centralized repository of my health information at any time.	5	<ul style="list-style-type: none"> Given that users have medical records when user click on view records then users can view and access their stored medical records from any device with internet access, ensuring seamless accessibility.
9	As a user, I want to access my test results in HealthHub so that I can compare my past medical test history and evaluate the changes in result.	5	<ul style="list-style-type: none"> Given that users have accessed test records when user click on view test record history then user can search tests using keywords or filters.
10	As a user, I want to access treatment plans stored in HealthHub so that I can review my past track of my ongoing healthcare journey and devise a new plan based on that.	4	<ul style="list-style-type: none"> Given that users have accessed treatment plans when user click on Give recommendation then user can get new treatment plan based on past plans.
11	As a user, I want to share specific medical records with my healthcare providers through HealthHub so that to facilitate continuity of care and informed decision-making	6	<ul style="list-style-type: none"> Given that the user has medical history when user wants to share information then User can select and share individual medical records or sets of records with designated healthcare providers securely
12	As a user concerned about my long-term health, I want HealthHub to utilize modern techniques to predict potential health issues early, allowing for timely interventions and preventive measures.	5	<ul style="list-style-type: none"> Given that I am a user of HealthHub, when I regularly input my health data and engage with the platform's features, Then the platform should use modern techniques to analyze my data over time, identifying any emerging patterns or trends indicative of potential health issues
13	As a user of HealthHub, I want a platform which analyzes my provided health data so that it provides me with personalized insights into my health risks	5	<ul style="list-style-type: none"> Given that I am a user of HealthHub, when I provide my health data such as medical history, lifestyle habits, and biometric measurements then the platform should use advanced technologies to analyze my data and identify potential health risks.

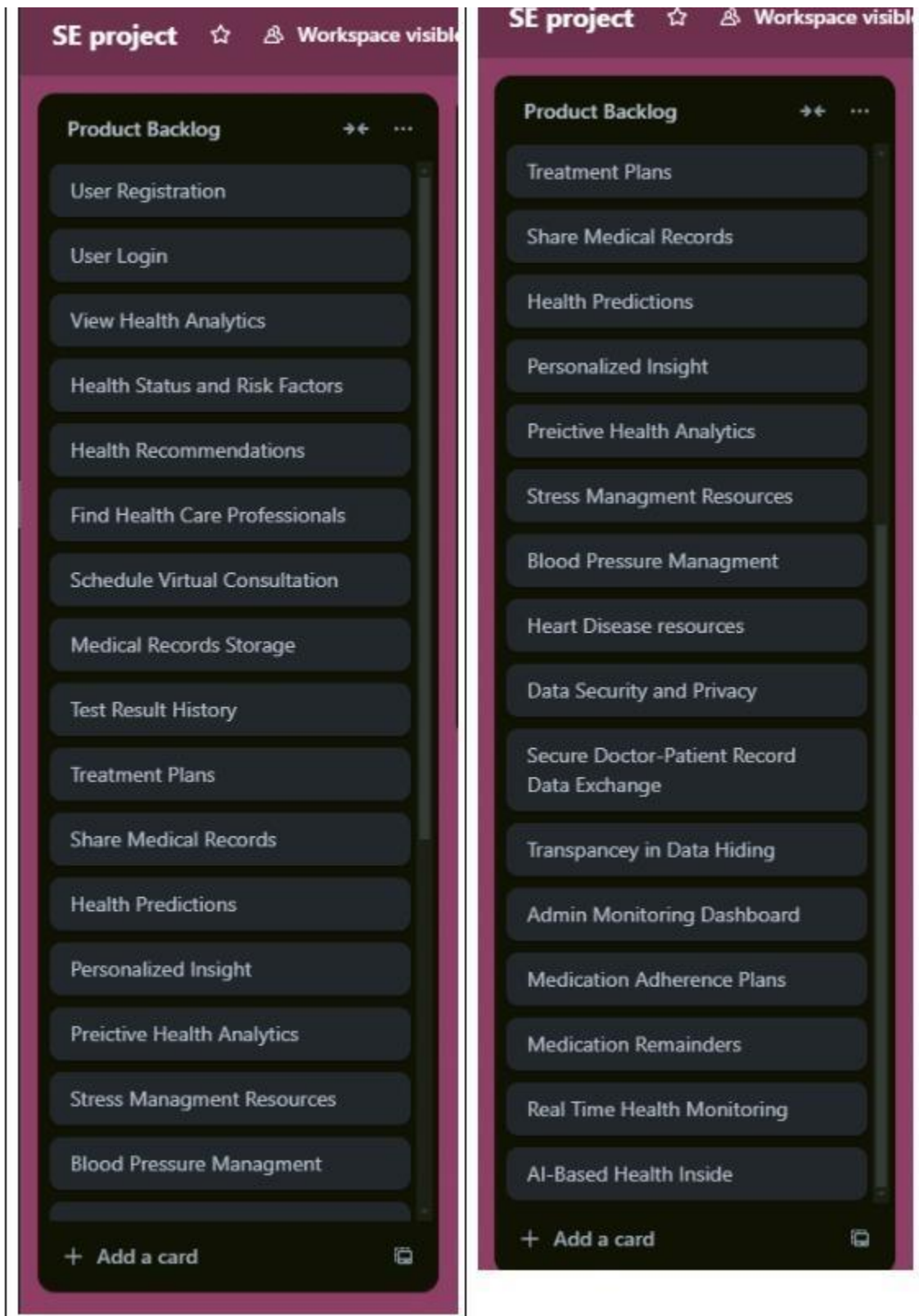
14	As a user of HealthHub, I want the platform to utilize advanced technologies to provide tailored health recommendations based on predictive health analytics.	6	<ul style="list-style-type: none"> Given that I am a HealthHub user, when I input my health data, including medical history, lifestyle habits, and biometric measurements, then the platform should employ
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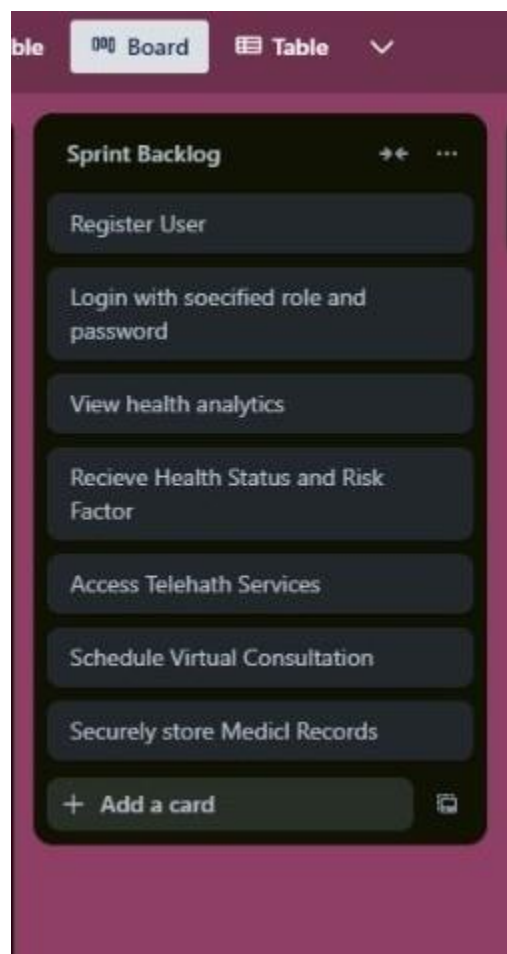
			contemporary methods to analyze my data and anticipate potential health risks.
15	As a busy professional, I want quick access to health education and resources for stress management techniques so that I can manage my stress level and improve my overall wellbeing.	8	<ul style="list-style-type: none"> Given Health hub is accessible to user when user navigate to main menu then there is appropriate section of “Stress Management” and clicking to this section provide valuable resources to stress management in form of videos or articles
16	As a user concerned with managing my blood pressure effectively, I want comprehensive knowledge on managing sudden rising and falling of blood pressure in form of articles, videos, and pictures so that I can reduce risk of blood pressure related issues in future	8	<ul style="list-style-type: none"> Given that I am a user concerned with managing my blood pressure effectively when I access the HealthHub platform then this should prominently address the sudden rising and falling of blood pressure and should contain a variety of resources including articles, videos, and pictures.
17	As a user facing heart disease issues, I want to gain comprehensive information and techniques in form of articles, videos, and interactive modules on exercise, diet, and stress management for healthy heart lifestyle to manage sudden happening heart attack issues and heart related diseases.	8	<ul style="list-style-type: none"> Given that a user, When I access the HealthHub platform, Then there should be a prominently displayed section dedicated to exercise, diet, and stress management specifically tailored for heart health.
18	As a user entrusting my health data to HealthHub, I want assurance that my information is protected from unauthorized access and breaches so that I did not face any problem in future	9	<ul style="list-style-type: none"> Given that I am a user of HealthHub when I access the platform or submit any health-related information then all data transmission between my device and the HealthHub servers should be encrypted using industry-standard protocols

19	As a doctor, I want secure exchange of health data of my patients' health and provide them with up-to-date information on their health, so that they get information for their well-being.	9	<ul style="list-style-type: none"> Given that I am a healthcare provider registered with HealthHub, when I communicate with patients or access their health records through the platform, then all communication channels should be encrypted to, and patient data should only be accessible to authorized healthcare providers with proper authentication.
20	As a user of HealthHub, I want clear and transparent information about how my health data is handled and protected to make informed decisions about sharing my information on the platform	9	<ul style="list-style-type: none"> Given that I am a user of HealthHub, when I review the privacy policy and terms of service, then the policy should clearly outline how user data is collected, stored, and used

21	As an administrator of Health Hub, I want to monitor the activities of doctors, clients, and appointments so that I can efficiently manage the healthcare services provided through the platform.	1	<ul style="list-style-type: none"> Given that I am logged in as an administrator, when I navigate to the admin dashboard, I should see an overview of all registered doctors, clients, and upcoming appointments.
22	As a user, I want to receive personalized adherence plans for my medications within HealthHub so that it helps me stay organized and ensure I take them correctly.	10	<ul style="list-style-type: none"> Given that user has enabled the medical adherence feature when users input the information about their prescribed medications, including name, dosage, and instructions then it should give reminder at specified time
23	As a user, I want to receive timely reminders for my medication doses so that it helps me remember to take them on time.	10	<ul style="list-style-type: none"> Given that the user has provided the prescribed medications information when it is the specified time then system should give push notifications on the HealthHub app, email, or SMS, according to user preferences.
24	As a user, I want to get my real-time health insights while monitoring devices so that it collects and evaluate different activity levels.	11	<ul style="list-style-type: none"> Given that a remote monitoring device is connected to HealthHub when I start using it then it should update the user's health dashboard with the latest data received from each connected device.
25	As a user of HealthHub, I want the platform to analyze my health data to provide me with personalized insights into my health risks and challenges.	12	<ul style="list-style-type: none"> Given that I am a user of HealthHub, when I provide my health data such as medical history, lifestyle habits, and biometric measurements, Then the platform should utilize AI-driven predictive analytics to analyze my data and identify potential health risks

Trello:





Github:

huzxaifa / SE-Project

Q Type 1 to search

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

General

Access

Collaborators

Moderation options

Code and automation

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Security

Code security

Deploy keys

Secrets and variables

Integrations

GitHub Apps

Who has access

Public repository
This repository is public and visible to anyone

Manage

PUBLIC REPOSITORY

This repository is public and visible to anyone.

Manage

DIRECT ACCESS

2 users have access to this repository. [2 collaborators](#).

Manage access

Add people

☐ Select all

Type ▾

Q Find a collaborator...

☐

Anas Imran
lAnasImran • Collaborator

☐

nidaAtGithub
Collaborator

GitHub repository Link:

<https://github.com/huzxaifa/SE-Project>