



## American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

**Project Title: Health Navigation Management System**

**Section: P**

**Group: 08**

**SUBMITTED TO: MD ABDULLAH ALL MAHMUD**

**WRITTEN BY : RAKIBUL ISLAM AKASH**

**Semester: Fall 25-26**

<b>Group:</b>		<b>Section:</b>
<b>SL</b>	<b>Student Name</b>	<b>Student ID</b>
1	1. Rakibul Islam Akash	23-50363-1
2	2. Md Rakib Hossain	23-50379-1
3	3. Riana Ramzan	23-50383-1
4	4. Md Ahanaf Tajware Abir	22-49718-3

## **Table of Contents**

1. Project Proposal.....	3-6
1.1 Background to the Problem .....	3-4
1.2 Selection of Process Model .....	4-6
2. Software Requirements Specification (SRS) / PRD .....	7-10
2.1 Scopes and Features .....	7
2.2 User Story Table .....	8
2.3 Requirements Traceability Matrix .....	8
2.3.1 Functional Requirements .....	9
2.3.2 Non-Functional Requirements .....	10
3. Software Design .....	11-34
3.1 System Design .....	11-13
3.2 UI Design using Figma .....	14-34
4. Git Workflow .....	35-36
5. Software Testing .....	37-49
6. Conclusion .....	50

## **1. PROJECT PROPOSAL**

### **1.1 Background to the Problem**

The use of information and communication technology has changed the way healthcare services are delivered across the world. Despite these advancements, many healthcare systems, especially in developing regions, still face serious challenges. Medical services are often scattered and poorly connected, making it difficult for patients to find the right doctors, choose reliable diagnostic laboratories, manage prescriptions, or keep track of medical reports and test samples. As a result, patients experience delays in treatment, higher medical costs, and unnecessary stress.

The **Health Navigation Management System (HNMS)** is designed to reduce these problems by bringing patients, hospitals (doctors), pathology laboratories, and administrators onto a single digital platform. The main goal of the system is to make healthcare services easier to access and manage by improving communication and coordination among all stakeholders involved in patient care.

From the **patient's point of view**, HNMS provides a simple and secure way to register, log in, book appointments, upload prescriptions, and store medical reports. Patients can receive suggested medical tests based on uploaded prescriptions, choose suitable laboratories according to location, price, and ratings, and schedule appointments with doctors or labs both online and offline. By keeping all medical records in one place, the system helps patients maintain their health history without relying on physical documents.

From the **hospital and doctor's perspective**, the system helps manage appointments, review patient reports, and provide medical evaluations more efficiently. Doctors can be listed under hospitals with specific specialties and availability schedules, allowing patients to find appropriate medical professionals easily. This digital process reduces administrative workload and supports better clinical decision-making.

From the **pathology laboratory perspective**, HNMS enables test booking, sample tracking, and report delivery through a structured system. Patients can track the status of their test samples in real time and receive digital copies of reports before collecting physical copies. This improves transparency and reduces uncertainty during the diagnostic process.

The **administrator** plays an important role in maintaining the system. Through a centralized dashboard, administrators can manage users, hospitals, labs, feedback, and service listings while monitoring overall system activity. This helps ensure service quality, data security, and smooth operation of the platform.

Additionally, HNMS includes features such as doctor recommendations, lab selection options, pharmacy suggestions, and health rating with future risk assessment. By analyzing past medical records, test results, and doctor evaluations, the system can provide approximate health insights and preventive recommendations. These features encourage early awareness and healthier lifestyle choices.

In conclusion, the Health Navigation Management System aims to simplify healthcare navigation by connecting patients, healthcare providers, and diagnostic services through a single, integrated platform. By improving accessibility, coordination, and record management, the system seeks to enhance the overall quality and efficiency of healthcare services.

## **1.2 Selection of Process Model**

### **Software Development Model Used: Incremental Development Model**

#### **Justification for Using the Incremental Development Model**

The **Incremental Development Model** has been selected for the **Health Navigation Management System (HNMS)** because the system is **large-scale, modular, and safety-critical**, involving multiple stakeholders such as **patients, doctors, diagnostic laboratories, pharmacies, and system administrators**. This model enables structured growth of the system while maintaining reliability, flexibility, and quality—key requirements for healthcare software.

Each module can be **designed, implemented, tested, and deployed as separate increment**. The Incremental Model supports this modular architecture by allowing controlled development and delivery of individual system components without waiting for full system completion.

#### **Early Delivery of Working Software**

One of the primary advantages of the Incremental Model is **early availability of functional software**. In HNMS:

- Core features such as **user login, appointment booking, and report storage** can be delivered in early increments.
- Advanced features such as **AI-based test recommendations, health analytics, and risk scoring** can be added in later stages.

This approach allows **early user validation**, stakeholder feedback, and real-world testing, which improves system usability and reduces the risk of late-stage design failures.

## Risk Reduction in Healthcare Applications

Healthcare systems demand **high reliability, data accuracy, and patient safety**. The Incremental Model reduces development risk by:

- Testing each increment independently before integration
- Identifying defects early in the development lifecycle
- Preventing large-scale failures caused by unresolved design issues

By validating each functional increment separately, the model ensures that **critical healthcare operations remain stable and secure**.

## Flexibility to Handle Changing Requirements

Healthcare software is highly sensitive to **frequent requirement changes**, such as:

- Regulatory and compliance updates
- New healthcare policies or standards
- Feedback from patients, doctors, and administrators
- Future feature expansion (e.g., pharmacy integration, paid diagnostic services)

The Incremental Model allows **controlled modifications and feature additions** without affecting already deployed system components, making it ideal for evolving healthcare environments.

## Improved Testing, Quality Assurance, and Maintenance

Each development increment undergoes:

- Unit testing
- Integration testing
- User acceptance testing (UAT)

This step-by-step testing process ensures **higher software quality, better maintainability, and easier debugging**. Since healthcare applications require continuous availability and minimal downtime, incremental updates simplify long-term maintenance and system upgrades.

## Conclusion

The Incremental Development Model is the most suitable choice for the Health Navigation Management System because it:

- Enables early and continuous delivery of working features
- Minimizes risks associated with healthcare software
- Accommodation evolving requirements and regulations
- Ensures rigorous testing and high system reliability

Therefore, the Incremental Model provides a **balanced, safe, and efficient development approach** that aligns perfectly with the technical, operational, and regulatory demands of a healthcare management system.

## **2. SOFTWARE REQUIREMENTS SPECIFICATIONS (SRS) / PRODUCT REQUIREMENTS DOCUMENT (PRD)**

### **2.1 Scopes and Features**

The Health Navigation and Management System (HNMS) is a web-based healthcare management platform that supports five user roles: Patient, Hospital, Pathology Laboratory, Pharmacy, and Admin. The system focuses on secure authentication, profile management, laboratory test booking, dashboard monitoring, and role-based navigation.

#### **Project Scope**

##### **In Scope**

The system shall provide:

- Multi-role signup and login
- OTP based password recovery
- Role-based dashboards
- Profile viewing and editing
- Secure password change
- Patient lab test booking
- Laboratory test management visibility through dashboard
- Role-based menu navigation
- Session based logout security

##### **Out of Scope**

The system will not handle:

- Emergency services
- Physical medicine delivery
- Surgical or hospital treatment operations

#### **Core Laboratory Focus**

The laboratory role in HNMS focuses on:

- Viewing incoming test bookings
- Monitoring sample status through dashboard
- Managing completed and pending lab reports
- Uploading diagnostic reports

## 2.2 User Story Table

ID	User Role	User Story	Priority
US01	New User	I want to sign up by selecting my role so I can access system services.	High
US02	User	I want to sign in using my credentials to access my dashboard.	High
US03	User	I want to recover my password using OTP verification.	High
US04	Patient	I want to book a lab test with preferred lab, date, and time.	High
US05	Lab	I want to view and manage lab test requests from patients.	High
US06	All Users	I want to view my profile information.	Medium
US07	All Users	I want to edit my profile with proper validation.	Medium
US08	All Users	I want to change my password securely.	Medium
US09	All Users	I want to logout to protect my account.	High
US10	Admin	I want to manage and verify system users.	High
US11	All Users	I want to use menu navigation to access system pages.	Medium

## 2.3 Requirements Traceability Matrix

Req ID	Requirement Description	Category	User Story
FR01	System shall allow role-based signup.	Functional	US01
FR02	System shall authenticate users during login.	Functional	US02
FR03	System shall allow OTP based password recovery.	Functional	US03
FR04	System shall allow patients to book lab tests.	Functional	US04
FR05	System shall allow labs to view booked tests.	Functional	US05
FR06	System shall allow users to view and edit profile.	Functional	US06, US07
FR07	System shall allow secure password change.	Functional	US08
FR08	System shall destroy session on logout.	Functional	US09
FR09	System shall allow admin to manage users.	Functional	US10
NFR01	Password must be minimum 8 characters.	Non-Functional	US01, US08
NFR02	Mandatory fields cannot be null.	Non-Functional	US07

### **2.3.1 Functional Requirements**

#### **Authentication**

- The system shall support Patient, Hospital, Lab, Pharmacy, and Admin roles.
- Email must be unique and valid.
- Password must be minimum 8 characters.
- User must select a role during signup.
- On successful signup, user shall be redirected to dashboard.

#### **Signin**

- User shall login using email or mobile and password.
- System shall validate credentials with database.

#### **Forgot Password**

- System shall send OTP to registered email or mobile.
- User shall reset password after OTP verification.

#### **Laboratory Module**

- Patient shall book lab tests with preferred lab, date, and time.
- Laboratory user shall view test requests on dashboard.
- Laboratory shall track sample status.
- Laboratory shall upload completed reports.

#### **Dashboard**

- System shall show role-based dashboard information.
- Laboratory dashboard shall show pending, in-progress, and completed tests.

#### **Profile Management**

- User shall view profile.
- User shall edit profile with validation.

#### **Change Password**

- Current password must match database.
- New password must follow rules.
- Confirm password must match.

#### **Logout**

- System shall destroy session on logout.

## **2.3.2 Non-Functional Requirements**

### **Security**

- Passwords shall be stored in encrypted format.
- OTP shall expire after limited time.
- Sessions shall be destroyed on logout.

### **Data Validation**

- Email must follow standard format.
- Phone number must be exactly 11 digits.
- Age must be minimum 15 years for patients.

### **Performance**

- Dashboard data shall load within acceptable response time.  
(I cannot verify exact seconds from PRD, so not stated numerically.)

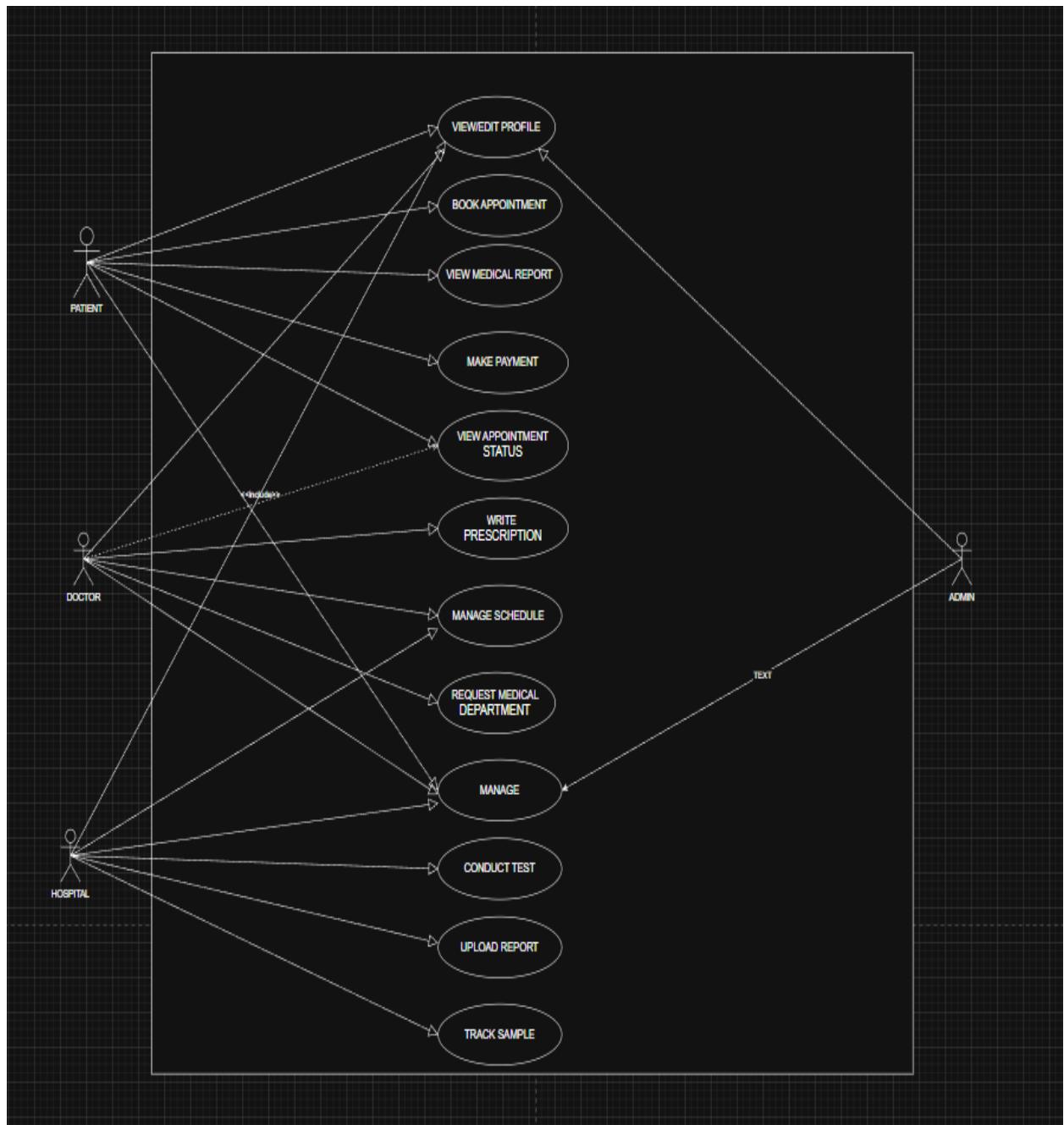
### **Usability**

- Interface shall be responsive.
- Menu navigation shall be user friendly.

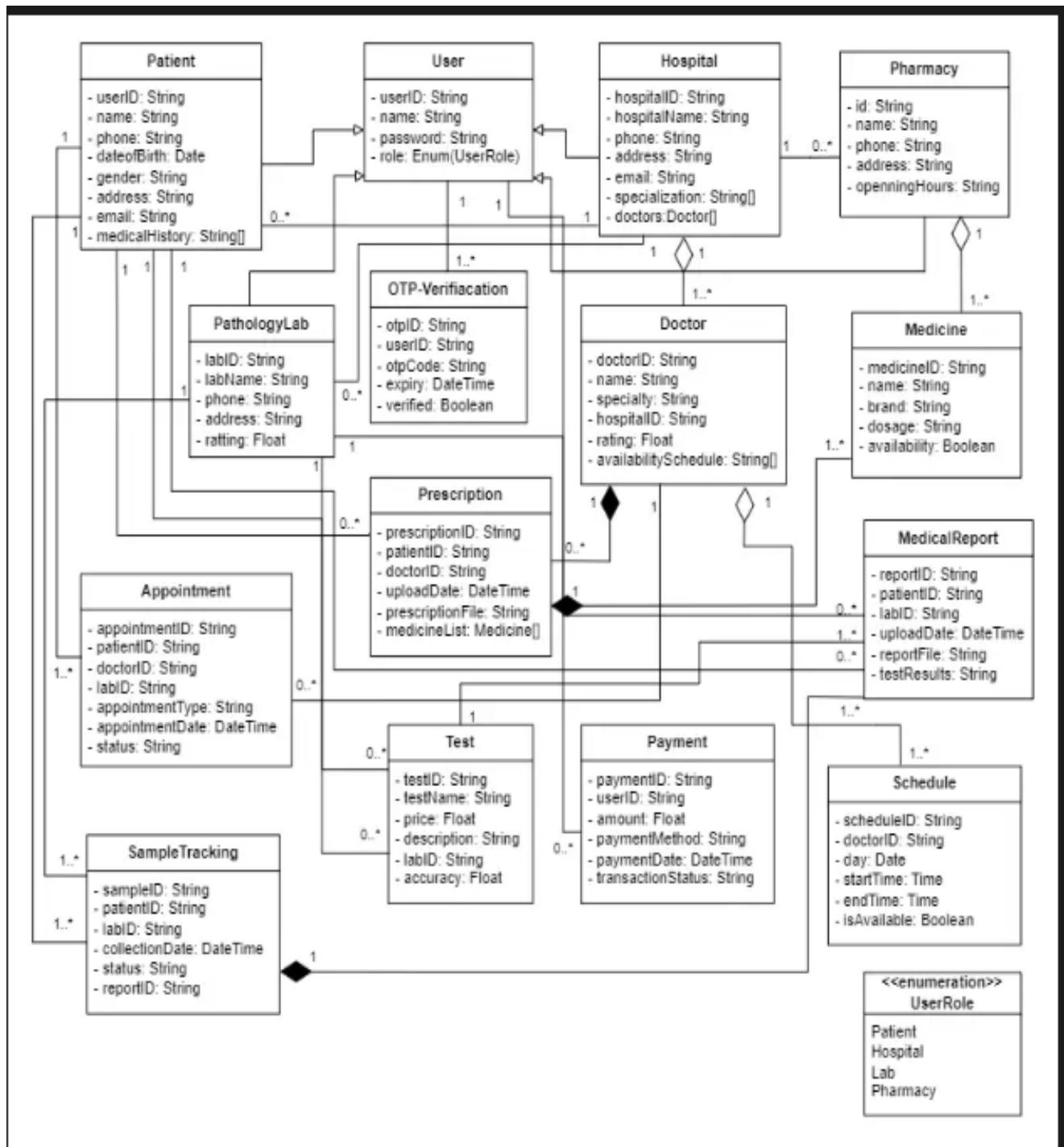
### 3. SOFTWARE DESIGN

#### 3.1 System Design:

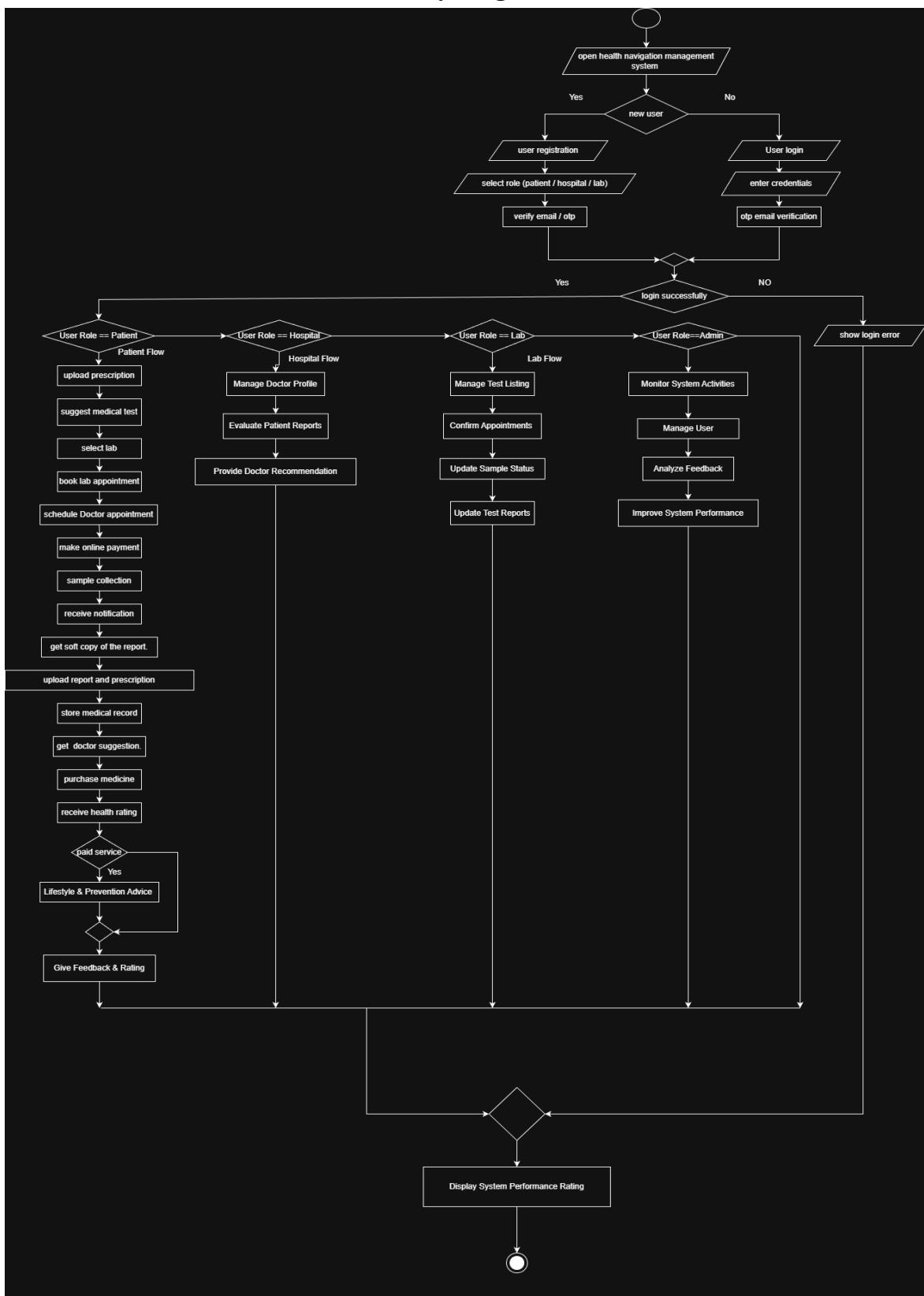
Use Case Diagram



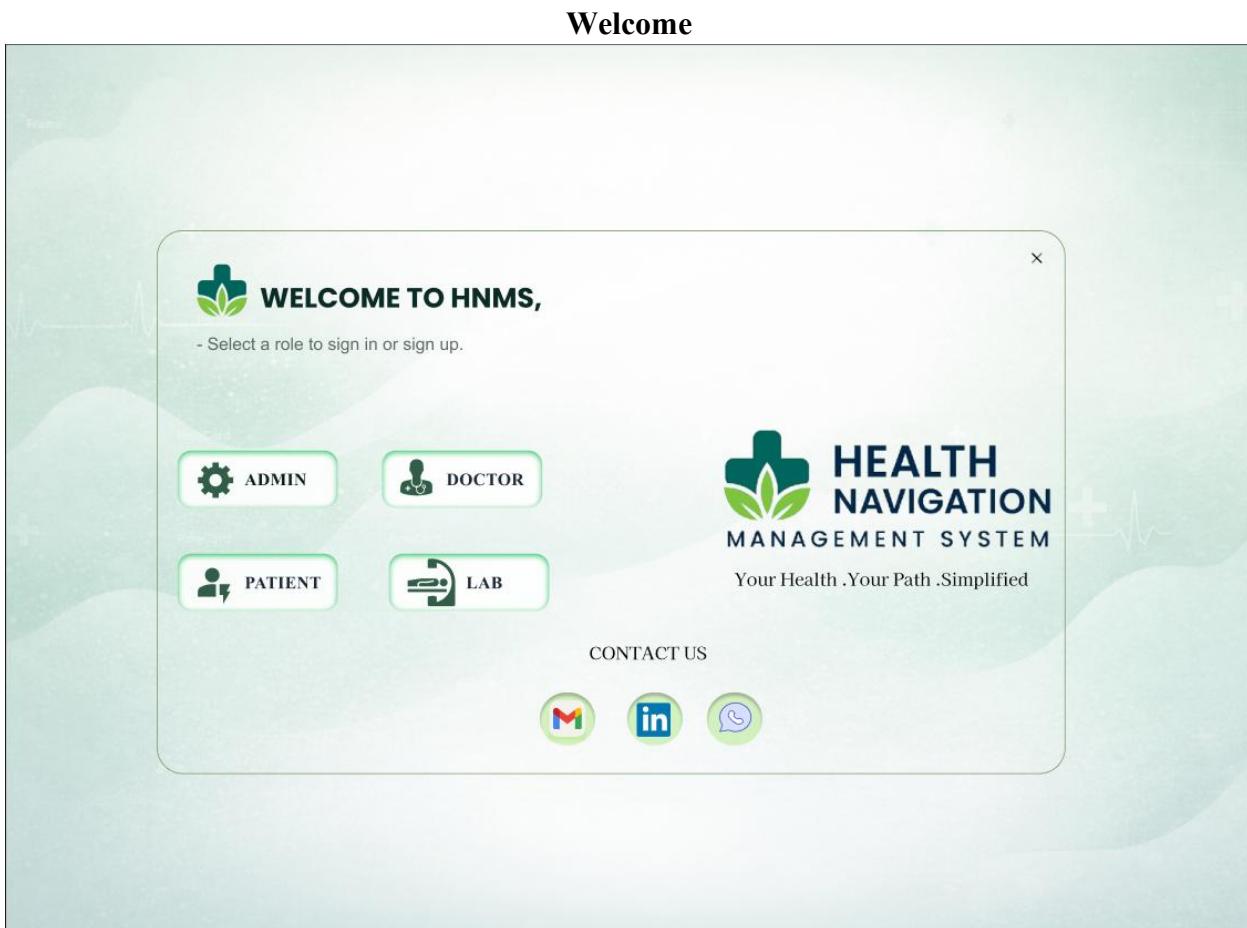
## Class Diagram



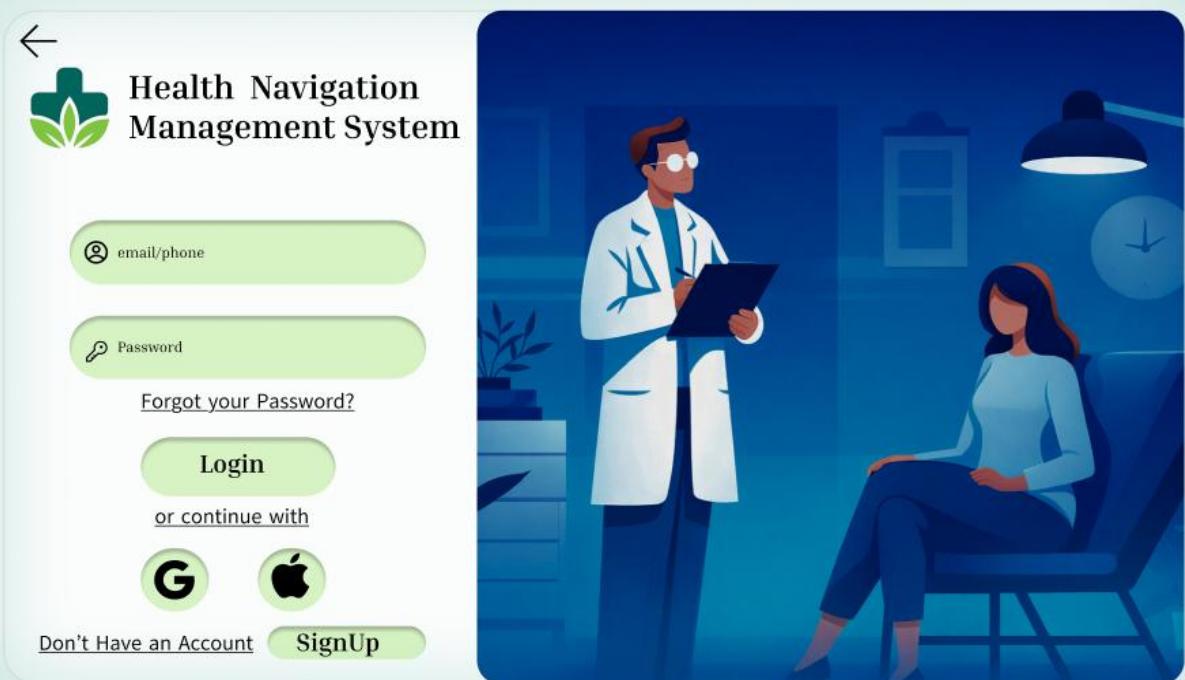
## Activity Diagram



## UI/Wireframe design using Figma:



## Patient Login:



## Patient Signup:

←

 Health Navigation Management System

 email/phone

 Full Name

 Password

 Confirm Password

or continue with

 SignUp

Have an Account

 Login



## Patient Dashboard

 **HNMS**

 [Dashboard](#)

 [Prescription](#)

 [Tests](#)

 [Emergency](#)

 [My Account](#)

 [Settings](#)

 [Log Out](#)



  Hello,Akash! 

**Available Features**

 Take Appointment

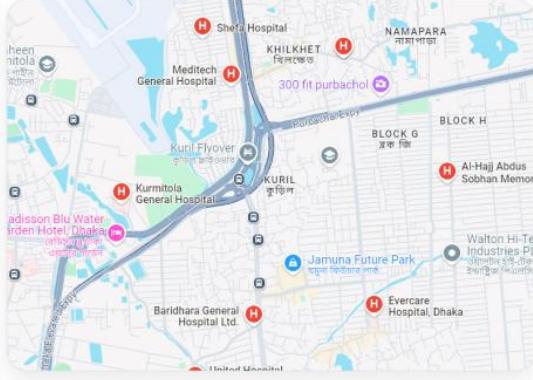
 Doctor Consultation

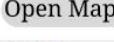
 Available Hospitals

 Track Sample

[See all](#)

**Nearby Hospital**



 Open Map

**Today's Schedule**

 13th May,2025

 0 APPOINTMENT'S

 0 TEST'S

[See all](#)

Page 17 of 50

## Forget Password



## Available Doctors:

 **HNMS**

 Dashboard

 Prescription

 Tests

 Emergency

 My Account

 Settings

 Log Out

 Search Doctor Here

  Hello,Akash! 

 Select the Department

Available Doctor See all



**Dr. Ishrat Jahan Alo**  
**MBBS, FCPS (ENT), MS**  
**(Otolaryngology)**  
**Coordinator & Senior Consultant**  
**ENT & Head Neck Surgery**  
**Child Specialist**



## Available Hospital

 **HNMS**

 Dashboard

 Prescription

 Tests

 Emergency

 My Account

 Settings

 Log Out

 Search Hospital Here

  Hello,Akash! 

 Select the Category

Available Hospital See all



**Evercare Hospital, Dhaka**  
is a private hospital in the Bashundhara Residential Area, known for introducing online appointments and payments in 2015 and achieving Bangladesh's first successful autologous stem cell transplantation in 2016.

**Book an appointment**

## My Account

The image shows the 'My Account' screen of the HNMS mobile application. On the left is a vertical navigation bar with the following items:

- HNMS logo
- Dashboard
- Prescription
- Tests
- Emergency (highlighted in pink)
- My Account
- Settings
- Log Out

The main content area is titled 'MY ACCOUNT'. It contains three input fields with 'EDIT' buttons:

- USER NAME: masked text
- PHONE: masked text
- PASSWORD: masked text

A small user icon is located in the top right corner of the main content area.

## Settings

The image shows the HNMS mobile application interface. On the left is a vertical navigation bar with the following items:

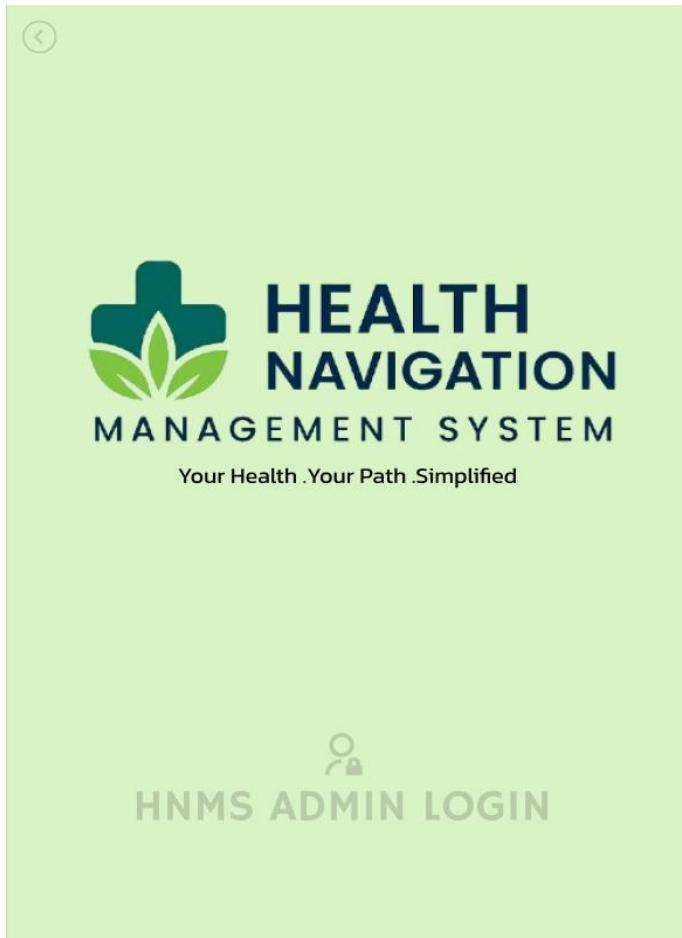
- HNMS logo
- Dashboard
- Prescription
- Tests
- Emergency
- My Account
- Settings (selected)
- Log Out

The main content area is titled "SETTINGS". It contains three sections:

- NOTIFICATION**: Manage reminders and notifications.
- Appearance**: Switch between light and dark mode.
- Preference**: Manage language and user preference.

A green profile icon is located in the top right corner of the main content area.

## Admin Login



X



**SIGN IN AS ADMIN**

-sign in via your valid Admin ID & Password.

 ADMIN ID

 ADMIN PASSWORD

[Forgot your Password?](#)

**SIGN IN**

## Admin Dashboard

**HNMS**

[Dashboard](#)

[Hospitals](#)

[Patients](#)

[Doctor](#)

[Pharmacy](#)

[My Account](#)

[Settings](#)

[Log Out](#)

Search Here



Hello,Admin! 

[See all](#)

**Available Features**

**Total Registered**

**PATIENTS**

**HOSPITALS**

**DOCTORS**

**PHARMACYS**

**Total Registered**

**17**

**REGISTRATION REQUEST**

**Suspended**

**107**

**USER**

**Browse**

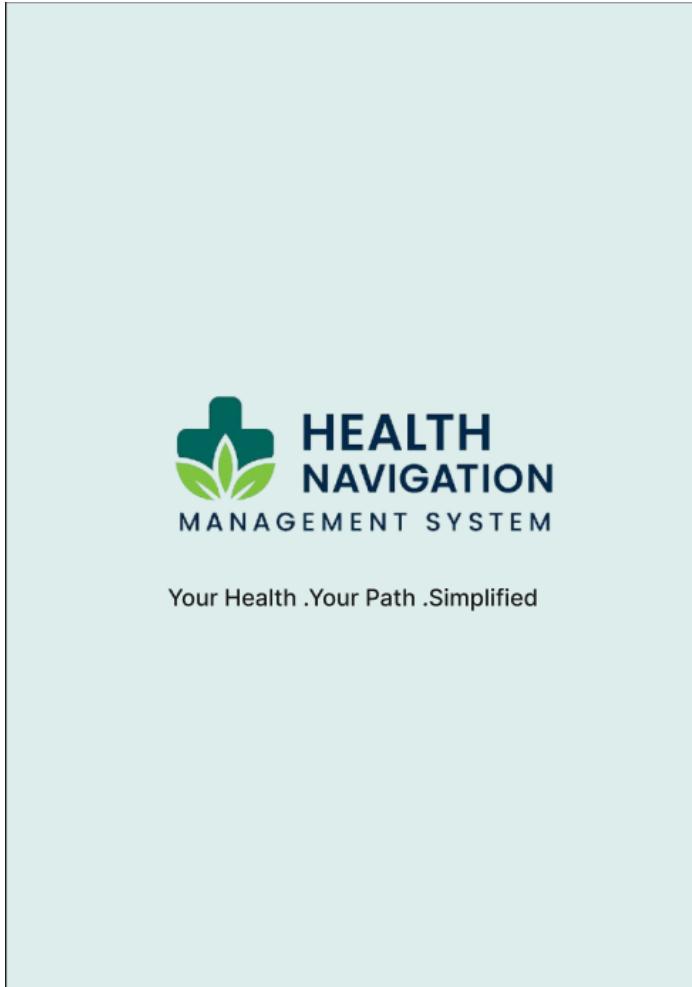


**USER HISTORY**

**OTHERS**

Total Registered	Total Registered	Total Registered	Total Registered
9267	267	1267	867
PATIENTS	HOSPITALS	DOCTORS	PHARMACYS

## Dr Login



[Sign In As A Doctor](#)

### Login

Sign in with your email/phone number

Email Address

 Email Address

Password

 \*\*\*\*\*

[Forgot Password?](#)

[Login](#)

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

## Dr Forget Password



Sign In As A Doctor

### Forgot Password

Please enter your email address. We'll send you OTP to reset your password.

Email Address

Send

← Back to Log in

## Password Reset



Your Health .Your Path .Simplified



Sign In As A Doctor

### Password reset

We send a code to riana23@gmail.com.

8

8

8

Continue

Didn't receive the email? [Click to resend](#)

← Back to Log in

## Dr Signup



Sign Up As A Doctor

### Sign Up

Fill up your basic information to sign up

Full Name

Email Address

Phone Number

Password



Next

## Dr Signup

 **HEALTH  
NAVIGATION  
MANAGEMENT SYSTEM**

Your Health .Your Path .Simplified

### Sign Up

Fill up your basic information to sign up

**Upload Medical License/Registration**

  
Drag & drop files or [Browse](#)  
Supported format: JPEG,PDF

**Upload National ID**

  
Drag & drop files or [Browse](#)  
Supported format: JPEG,PDF

**Upload Certificate's(Optional)**

  
Drag & drop files or [Browse](#)  
Supported format: JPEG,PDF

**Availability Schedule**

Select Time 

Select Date 

**Next**

## Dr Signup



**HEALTH  
NAVIGATION  
MANAGEMENT SYSTEM**

Your Health .Your Path .Simplified

### Sign Up

Fill up your basic information to sign up

**Medical License No**

**Specialization's**

**Years of Experience**

 (17)

**Degree Qualification**

**Affiliated Hospital/Clinic's**

**Sign Up**

## Dr Dashboard

 Year Health. Year Path. Simplified.

Management

- [Dashboard](#)
- [Appointment](#)
- [Patients](#)
- [History](#)

Account

- [My Account](#)
- [Settings](#)

[Logout](#)

Overview

Available Features

- [View Hospitals](#)
- [View Patients](#)
- [Review Prescriptions](#)
- [View Reports](#)

See More

Quick Overview

Total Patients: 1,098 (22+ more than yesterday)

Total Appointments: 234 (20+ Completed)

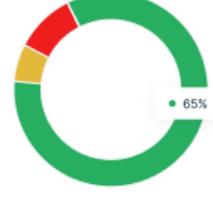
See More

Today's Schedule

Doctor	Visit Type	Date	Time	Action
Andrew Billard	General Visit	Monday, 31 Mar 2025	06:30 PM	<a href="#">Start Appointment</a>
Robert Truce	General Visit	Monday, 31 Mar 2025	08:30 PM	<a href="#">Start Appointment</a>
Anika	General Visit	Monday, 31 Mar 2025	10:30 PM	<a href="#">Start Appointment</a>

Appointment Statistics

Monthly



Status	Count
Completed	260
Pending	21
Cancelled	50

See More

## Lab Sign up



LABROTARY

**Sign up**

Sign up to enjoy the feature of Revolutie

Your Name

License ID

Email

Password  

Confirm Password  

**Sign up**

or

Already have an account?? [Login](#)

HEALTH  
NAVIGATION  
MANAGEMENT SYSTEM

## Lab Signup



## Lab Login



LABROTARY

**Sign up**

Sign up to enjoy the feature of Revolutie

Your Name  Ahnaf Abir

License ID  13579

Email  ahnafabir.71@gmail.com



Confirm Password  

**Sign up**

or

Already have an account?? [Login](#)

Labrotary

## Login

Please login to continue to your account.

Email

Password 

Keep me logged in

**Login**

[Forgot Password](#)

or

Didnt have an Account? [Go to Sign Up](#)

## Lab Login



Labrotary

## Login

Please login to continue to your account.

Email  
ahnafabir.71@gmail.com

\*\*\*\*\*

Keep me logged in

**Login**

[Forgot Password](#)

or

Didnt have an Account? [Go to Sign Up](#)

## Forget Password



## Forgot Password

Dont worries,we will send u reset instructions

Email Address

Reset Password

[Back to Login](#)



## Dashboard

The dashboard displays the following key metrics:

Total Test Today	Samples in Transit	Pending Reports	Revenue Today
45	12	8	8000 Bdt

**Sample Tracking Table**

Sample ID	Patient Name	Test name	Status	Action
#Lb-923	Afsar Ali		Collected	Update Status
#Hd-236	Ruksana begum	In Lab	In Process	Generate
#Rs-120	Tanseen	In Lab	Ready	Notify

**Manage Service & Pricing**

Service	Price
X-ray	150 Bdt
MRI	500 Bdt

## Test Request

The test request interface displays the same key metrics and sample tracking table as the dashboard.

Total Test Today	Samples in Transit	Pending Reports	Revenue Today
45	12	8	8000 Bdt

**Sample Tracking Table**

Sample ID	Patient Name	Test name	Status	Action
#Lb-923	Afsar Ali		Collected	Update Status
#Hd-236	Ruksana begum	In Lab	In Process	Generate
#Rs-120	Tanseen	In Lab	Ready	Notify

**Manage Service & Pricing**

Service	Price
X-ray	150 Bdt
MRI	500 Bdt

## Git Workflow:

### Git Branches

The screenshot shows a dark-themed Git branches interface. At the top right is a green "New branch" button. Below it is a navigation bar with tabs: Overview (selected), Yours, Active, Stale, and All. A search bar follows. The main area is divided into three sections:

- Default**: Shows one branch, `main`, updated 6 minutes ago, with a status of "Default".
- Your branches**: Shows three branches: `feature/T-03-appointment-booking` (updated 2 minutes ago, 1 commit behind), `stage` (updated 6 minutes ago, 1 commit behind), and `dev` (updated 6 minutes ago, 1 commit behind).
- Active branches**: Shows the same three branches as the "Your branches" section.

### Git Main

The screenshot shows a GitHub repository page for "Health-Navigation-Management-System--". The repository is public. The top bar includes buttons for Pin, Watch (0), Fork (0), Star (0), and a dropdown menu. The repository name is "Health-Navigation-Management-System--" and it has 4 branches and 0 tags.

The main content area shows a list of recent commits:

Author	Message	Time Ago	Commits
AxisAkash	docs: add final project report	2 minutes ago	6 Commits
docs	docs: add final project report	2 minutes ago	
project-simulator	chore: initial project setup	36 minutes ago	
CHANGELOG.md	chore: initial project setup	36 minutes ago	
Figma Final All design.docx	docs: add figma design and trello documents	11 minutes ago	
PROJECT_FEATURES.md	chore: initial project setup	36 minutes ago	
README.md	chore: initial project setup	36 minutes ago	
SE - Project Report.docx	Add	1 hour ago	
Software_Engineering_Group 8.Section_P Final...	docs: add final software engineering report	2 minutes ago	
Trello.docx	docs: add figma design and trello documents	11 minutes ago	

On the right side, there are sections for **About**, **Releases**, and **Packages**. The **About** section describes the repository as a digital platform connecting patients, doctors, hospitals, pathology labs, and administrators. The **Releases** section indicates "No releases published" and has a link to "Create a new release". The **Packages** section is currently empty.

## Git Collaborator

### Manage access

Add people Type ▾

Select all

Find a collaborator...

<input type="checkbox"/>	 <b>Abir-71</b> Collaborator	
<input type="checkbox"/>	 <b>Rakib</b> Rakib5960 • Collaborator	
<input type="checkbox"/>	 <b>rr-0572</b> Collaborator	

## Git Commit

### Commits

main All users All time

Commits on Jan 20, 2026

docs: add final project report AvisAkash committed now	c4fd8b2  
docs: add final software engineering report AvisAkash committed 1 minute ago	bb22646  
docs: add figma design and trello documents AvisAkash committed 9 minutes ago	99ed0a4  
chore: initial project setup AvisAkash committed 35 minutes ago	3a1d656  
Add AvisAkash committed 1 hour ago	d74a8d2  
Initial commit AvisAkash authored 1 hour ago	 daffdoc  

## 5. SOFTWARE TESTING

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>		Test Designed by: RIANA RAMZAN					
<b>Test Case: TC_01</b>		Test Designed Date:19-1-26					
<b>Test Priority: High</b>		Test Executed by:RIANA RAMZAN					
<b>Module Name: Authentication</b>		Test Execution Date:20-1-26					
<b>Test Title:</b> Verify login with valid email and password							
<b>Description:</b> Test the login functionality							
<b>Precondition:</b> User has a registered account							
<b>Dependencies:</b> Internet connection							
Test Steps	Test Data	Expected Results	Actual Results	Status			
1. Go to login Page 2. Enter email 3. Enter Password 4. Click Signin	Email: <a href="mailto:user@mail.com">user@mail.com</a> Password: ****	User is logged in successfully	As expected	Pass			

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>		Test Designed by: RIANA RAMZAN
<b>Test Case: TC_02</b>		Test Designed Date: 19-1-26
<b>Test Priority: High</b>		Test Executed by: RIANA RAMZAN
<b>Module Name: Authentication</b>		Test Execution Date: 20-1-26
<b>Test Title:</b> Login with invalid password		
<b>Description:</b> Verify error message appears		
<b>Precondition:</b> User is registered		
<b>Dependencies:</b> Internet connection		

Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to login Page 2. Enter email 3. Enter Wrong Password 4. Click Signin	Email: <a href="mailto:user@mail.com">user@mail.com</a> Password: 12345	Error message shown	As expected	Pass

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RIANA RAMZAN</b>			
<b>Test Case: TC_03</b>	Test Designed Date: 19-1-26			
<b>Test Priority: High</b>	Test Executed by: <b>RIANA RAMZAN</b>			
<b>Module Name: Authentication</b>	Test Execution Date: 20-1-26			
<b>Test Title: Login with empty fields</b>				
<b>Description: Validate input fields</b>				
<b>Precondition: None</b>				
<b>Dependencies: Internet connection</b>				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to login Page 2. Leave fields empty 3. Click login	None	Validation message displayed	As expected	Pass

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RIANA RAMZAN</b>			
<b>Test Case: TC_04</b>	Test Designed Date: 19-1-26			
<b>Test Priority: High</b>	Test Executed by: <b>RIANA RAMZAN</b>			
<b>Module Name: Registration</b>	Test Execution Date: 20-1-26			
<b>Test Title: Register doctor with valid data</b>				
<b>Description: Verify doctor registration</b>				
<b>Precondition: User not registered</b>				
<b>Dependencies: Internet connection</b>				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to Doctor Registration 2. Fill all required fields 3. Click Register	Name: Dr. Rahman Email: <a href="mailto:doctor@mail.com">doctor@mail.com</a> Password: ****	Registration successful	As expected	FAILED

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RIANA RAMZAN</b>			
<b>Test Case: TC_05</b>	Test Designed Date: 19-1-26			
<b>Test Priority: Medium</b>	Test Executed by: <b>RIANA RAMZAN</b>			
<b>Module Name: Registration</b>	Test Execution Date: 20-1-26			
<b>Test Title: Register with existing email</b>				
<b>Description: Prevent duplicate registration</b>				
<b>Precondition: Email already registered</b>				
<b>Dependencies: Internet connection</b>				
Test Steps	Test Data	Expected Results	Actual Results	Status

1. Go to Registration page	Email: <u>user@gmail.com</u>	Error message shown	As expected	Pass
2. Enter already registered email				
3. Fill other required fields				
4. Click Register				

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RAKIBUL ISLAM AKASH</b>			
<b>Test Case: TC_06</b>	Test Designed Date: 19-1-26			
<b>Test Priority: High</b>	Test Executed by: <b>RAKIBUL ISLAM AKASH</b>			
<b>Module Name: Forgot Password</b>	Test Execution Date: 20-1-26			
<b>Test Title:</b> Forgot password with valid email				
<b>Description:</b> Verify reset link sent				
<b>Precondition:</b> User has a registered account				
<b>Dependencies:</b> Internet connection				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to Forget Password	Email: <u>user@mail.com</u>	Reset link sent to email	As expected	Pass
2. Enter registered email				
3. Click Submit				

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RAKIBUL ISLAM AKASH</b>							
<b>Test Case: TC_07</b>	Test Designed Date: 19-1-26							
<b>Test Priority: Medium</b>	Test Executed by: <b>RAKIBUL ISLAM AKASH</b>							
<b>Module Name: Forgot Password</b>	Test Execution Date: 20-1-26							
<b>Test Title: Forgot password with invalid email</b>								
<b>Description: Validate unknown email</b>								
<b>Precondition: User has a registered account</b>								
<b>Dependencies: Internet connection</b>								
Test Steps	Test Data	Expected Results	Actual Results	Status				
<ul style="list-style-type: none"> <li>1. Go to Forget Password</li> <li>2. Enter registered email</li> <li>3. Click Submit</li> </ul>	Email: <a href="mailto:qwez@mail.com">qwez@mail.com</a>	Email not found message	As expected	Pass				

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: RAKIBUL ISLAM AKASH</b>							
<b>Test Case: TC_08</b>	Test Designed Date: 19-1-26							
<b>Test Priority: High</b>	Test Executed by: <b>RAKIBUL ISLAM AKASH</b>							
<b>Module Name: Password Reset</b>	Test Execution Date: 20-1-26							
<b>Test Title: Reset password with valid new password</b>								
<b>Description: Verify password update</b>								
<b>Precondition: User opened reset link</b>								
<b>Dependencies: Internet connection</b>								

Test Steps	Test Data	Expected Results	Actual Results	Status
<ol style="list-style-type: none"> <li>1. Open reset password link</li> <li>2. Enter new password</li> <li>3. Confirm new password</li> <li>4. Click Reset</li> </ol>	Password: newpass123	Password updated successfully	As expected	Pass

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM	Test Designed by: RAKIBUL ISLAM AKASH			
Test Case: TC_09	Test Designed Date: 19-1-26			
Test Priority: High	Test Executed by: RAKIBUL ISLAM AKASH			
Module Name: Dashboard (Patient)	Test Execution Date: 20-1-26			
Test Title: Verify patient dashboard loads				
Description: Ensure dashboard opens correctly				
Precondition: User logged in				
Dependencies: Internet connection				
Test Steps	Test Data	Expected Results	Actual Results	Status
<ol style="list-style-type: none"> <li>1. Login as patient</li> <li>2. Observe dashboard elements</li> </ol>	None	Dashboard displayed	As expected	failed

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM	Test Designed by: RAKIBUL ISLAM AKASH
Test Case: TC_10	Test Designed Date: 19-1-26

Test Priority: High	Test Executed by: <b>RAKIBUL ISLAM AKASH</b>							
Module Name: Dashboard (Admin)	Test Execution Date:20-1-26							
<b>Test Title:</b> Verify admin dashboard statistics								
<b>Description:</b> Check admin overview data								
<b>Precondition:</b> Admin logged in								
<b>Dependencies:</b> Internet connection								
Test Steps	Test Data	Expected Results	Actual Results	Status				
1. Login as admin 2. Navigate to Admin Dashboard 3. Check widgets and statistics	None	All widgets load correctly	As expected	Pass				

Project Name : <b>HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	Test Designed by: <b>MD.RAKIB HOSSAIN</b>							
Test Case: TC_11	Test Designed Date:19-1-26							
Test Priority: Medium	Test Executed by: <b>MD.RAKIB HOSSAIN</b>							
Module Name: Profile	Test Execution Date:20-1-26							
<b>Test Title:</b> Update user profile								
<b>Description:</b> Verify profile update functionality								
<b>Precondition:</b> User logged in								
<b>Dependencies:</b> Internet connection								
Test Steps	Test Data	Expected Results	Actual Results	Status				
1. Login to system 2. Go to Profile page	None	Profile updated successfully	As expected	Pass				

3. Edit personal information				
4. Click Save				

<b>Project Name : HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	<b>Test Designed by: MD.RAKIB HOSSAIN</b>			
<b>Test Case: TC_12</b>	Test Designed Date:19-1-26			
<b>Test Priority: Low</b>	Test Executed by: <b>MD.RAKIB HOSSAIN</b>			
<b>Module Name: Profile</b>	Test Execution Date:20-1-26			
<b>Test Title:</b> Upload profile picture				
<b>Description:</b> Verify image upload				
<b>Precondition:</b> User has a registered account				
<b>Dependencies:</b> Internet connection				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Login to system 2. Go to Profile 3. Click Upload Photo 4. Select image 5. Click Save	None	Image uploaded successfully	As expected	Pass

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM	Test Designed by:MD.RAKIB HOSSAIN							
Test Case: TC_13	Test Designed Date:19-1-26							
Test Priority: Medium	Test Executed by: MD.RAKIB HOSSAIN							
Module Name: Navigation	Test Execution Date:20-1-26							
<b>Test Title:</b> Verify sidebar navigation								
<b>Description:</b> Ensure menu redirects correctly								
<b>Precondition:</b> User has a registered account								
<b>Dependencies:</b> Internet connection								
Test Steps	Test Data	Expected Results	Actual Results	Status				
1. Login to system 2. Click Dashboard 3. Click Profile 4. Click Logout	None	Pages open correctly	As expected	Pass				

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM	Test Designed by: MD.RAKIB HOSSAIN							
Test Case: TC_14	Test Designed Date:19-1-26							
Test Priority: High	Test Executed by: MD.RAKIB HOSSAIN							
Module Name: Logout	Test Execution Date:20-1-26							
<b>Test Title:</b> Verify logout functionality								
<b>Description:</b> Ensure session ends								
<b>Precondition:</b> User has a registered account								
<b>Dependencies:</b> Internet connection								

Test Steps	Test Data	Expected Results	Actual Results	Status
1. Login to system 2. Click Logout button	None	User redirected to login page	As expected	Pass

Project Name : <b>HEALTH NAVIGATION &amp; MANAGEMENT SYSTEM</b>	Test Designed by: <b>MD.RAKIB HOSSAIN</b>			
Test Case: <b>TC_15</b>	Test Designed Date:19-1-26			
Test Priority: High	Test Executed by: <b>MD.RAKIB HOSSAIN</b>			
Module Name: Security	Test Execution Date:20-1-26			
Test Title: Access dashboard without login				
Description: Prevent unauthorized access				
Precondition: None				
Dependencies: Internet connection				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Open browser 2. Enter dashboard URL directly	None	Redirected to login page	As expected	FAILED

<b>Project Name:</b> Health Navigation & Management System		<b>Test Designed by:</b> Abir		
<b>Test Case ID:</b> Lab 1		Test Designed date: 15.01.26		
<b>Test Priority:</b> Medium		Test Executed by: Abir		
<b>Module Name:</b> Laboratory Registration		Test Execution date: 16.0126		
<b>Test Title:</b> Verify registration with valid information				
<b>Description:</b> Test the laboratory registration page				
<b>Precondition:</b> User is not registered				
<b>Dependencies:</b> None				
Test Steps	Test Data	Expected Results	Actual Results	Status(Fail or Pass)
1. Go to registration page 2. Enter License Number 3. Enter valid details 4. Enter password 5. Confirm Pass 6. Click Sign Up	Name: Ahnaf Abir  Licence Id:13579  Email: ahnafabir@email.com  Password: 12345  Confirm Pass:12345	User account should be created	As expected	Pass

<b>Project Name:</b> Health Navigation & Management System		<b>Test Designed by:</b> Abir
<b>Test Case ID:</b> Lab 2		Test Designed date: 15.01.26
<b>Test Priority:</b> Medium		Test Executed by: Abir
<b>Module Name:</b> Laboratory Login		Test Execution date: 16.0126
<b>Test Title:</b> Verify login with valid username and password		
<b>Description:</b> Test the login page		
<b>Precondition:</b> User is registered		

<b>Dependencies:</b> None				
<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Results</b>	<b>Actual Results</b>	<b>Status(Fail or Pass)</b>
1. Go to login page 2. Enter email 3. Enter password 4. Click Login	Email: ahnafabir.71@gmail.com  Password: 12345	User should log in successfully	As expected	Pass

<b>Project Name:</b> Health Navigation & Management System	<b>Test Designed by:</b> Abir			
<b>Test Case ID:</b> Lab 3	Test Designed date: 15.01.26			
<b>Test Priority:</b> Medium	Test Executed by: Abir			
<b>Module Name:</b> Forgot Password	Test Execution date: 16.0126			
<b>Test Title:</b> Verify forgot password with invalid email				
<b>Description:</b> Test the forgot password page with incorrect email				
<b>Precondition:</b> User account exists				
<b>Dependencies:</b> None				
<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Results</b>	<b>Actual Results</b>	<b>Status(Fail or Pass)</b>
1. Go to forgot password page 2. Enter email 3. Click submit	Email: wrongtest.com	System should show error message	Error message not shown	fail

<b>Project Name:</b> Health Navigation & Management System	<b>Test Designed by:</b> Abir
<b>Test Case ID:</b> Lab 4	Test Designed date: 15.01.26
<b>Test Priority:</b> Medium	Test Executed by: Abir

<b>Module Name:</b> Laboratory Registration		Test Execution date: 16.0126		
<b>Test Title:</b> Verify registration with empty required fields				
<b>Description:</b> Validate required field enforcement in registration				
<b>Precondition:</b> User is on registration page				
<b>Dependencies:</b> None				
Test Steps	Test Data	Expected Results	Actual Results	Status(Fail or Pass)
1. Open registration page 2. Leave email empty 3. Click submit	Name: (empty)  Email: (empty)	System should show required field error	Error shown	Pass

<b>Project Name:</b> Health Navigation & Management System		Test Designed by: Abir		
<b>Test Case ID:</b> Lab 5		Test Designed date: 15.01.26		
<b>Test Priority:</b> Medium		Test Executed by: Abir		
<b>Module Name:</b> Laboratory Login		Test Execution date: 16.0126		
<b>Test Title:</b> Verify login with invalid email format				
<b>Description:</b> Validate email format in login				
<b>Precondition:</b> User is on login page				
<b>Dependencies:</b> None				
Test Steps	Test Data	Expected Results	Actual Results	Status(Fail or Pass)
1. Open login page 2. Enter invalid email 3. Click submit	Email: ahnafabir.com  Password: 12345	System should show format error	Error shown	Pass

--	--	--	--	--

## Conclusion

The Health Navigation Management System (HNMS) has been proposed as a comprehensive digital solution to address the existing challenges in accessing and managing healthcare services. By integrating patients, doctors, diagnostic laboratories, pharmacies, and administrators into a single platform, the system improves coordination, reduces delays in treatment, and enhances overall service efficiency. The design focuses on user convenience, data accuracy, and secure handling of medical information, which are essential requirements for modern healthcare systems.

The adoption of the Incremental Development Model ensures a structured and reliable development process. Its modular approach allows core functionalities to be delivered early while enabling continuous improvement through feedback and requirement changes. Incremental development also reduces technical and operational risks by ensuring thorough testing at each stage, which is particularly critical in healthcare applications where reliability and safety are paramount.

Overall, HNMS demonstrates how information and communication technology can be effectively utilized to modernize healthcare service delivery. The system is scalable, flexible, and adaptable to future enhancements such as advanced analytics, AI-based recommendations, and extended healthcare integrations. With proper implementation and maintenance, HNMS has the potential to significantly improve healthcare accessibility, efficiency, and quality of patient care.

## Resources:

**Figma Design Link:**

<https://www.figma.com/design/9v4k3ZLJJbMwrULVnWT1UQ/Final-Design-Page?node-id=0-1&t=fTE9Z1uCkLDd08se-1>

**Trello Link:**

<https://trello.com/b/emb3Gumm/health-navigation-and-management-system>

**GitHub Respiratory Link:**

<https://github.com/AxisAkash/Health-Navigation-Management-System--.git>