



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

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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.)

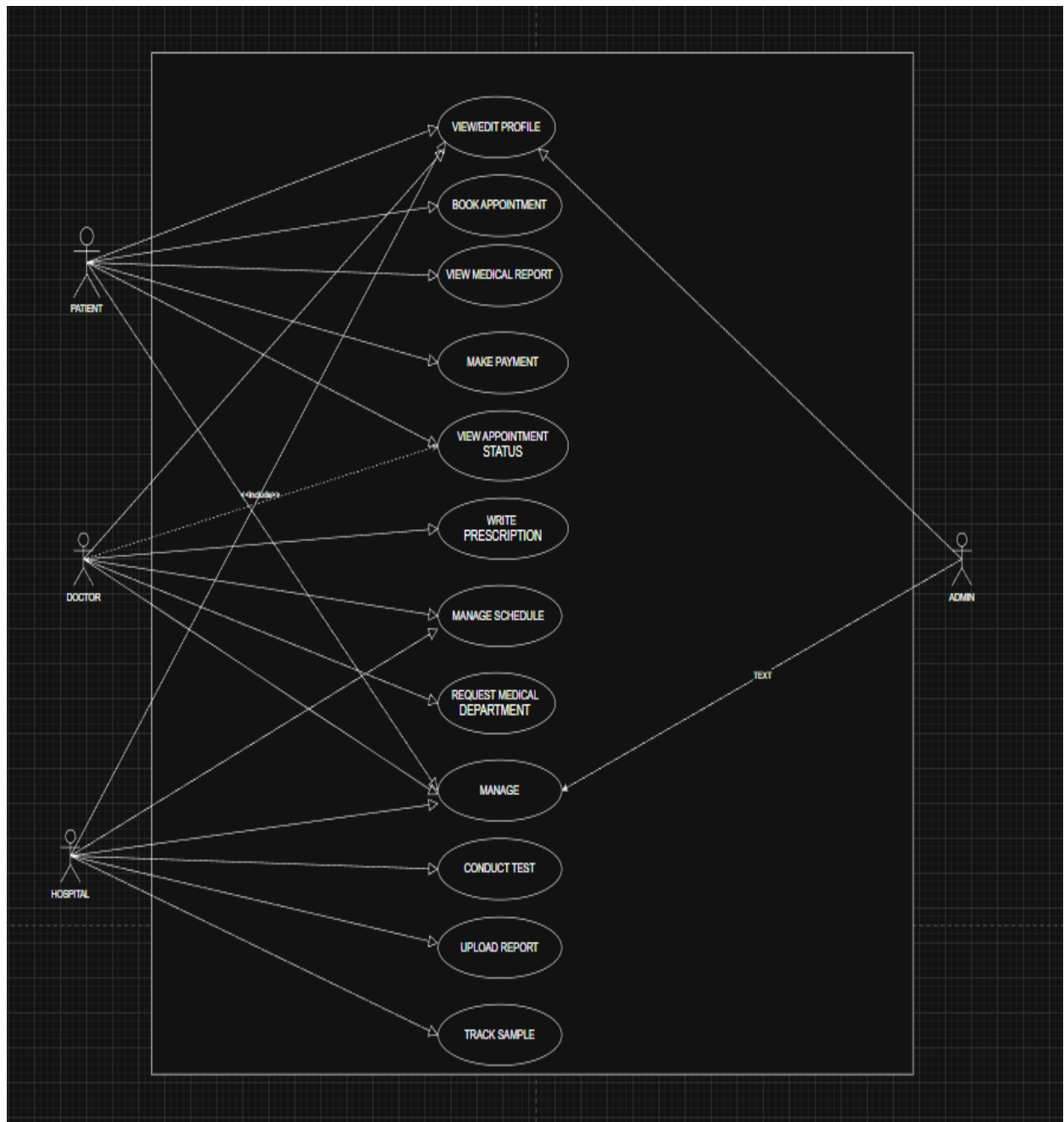
Usability

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

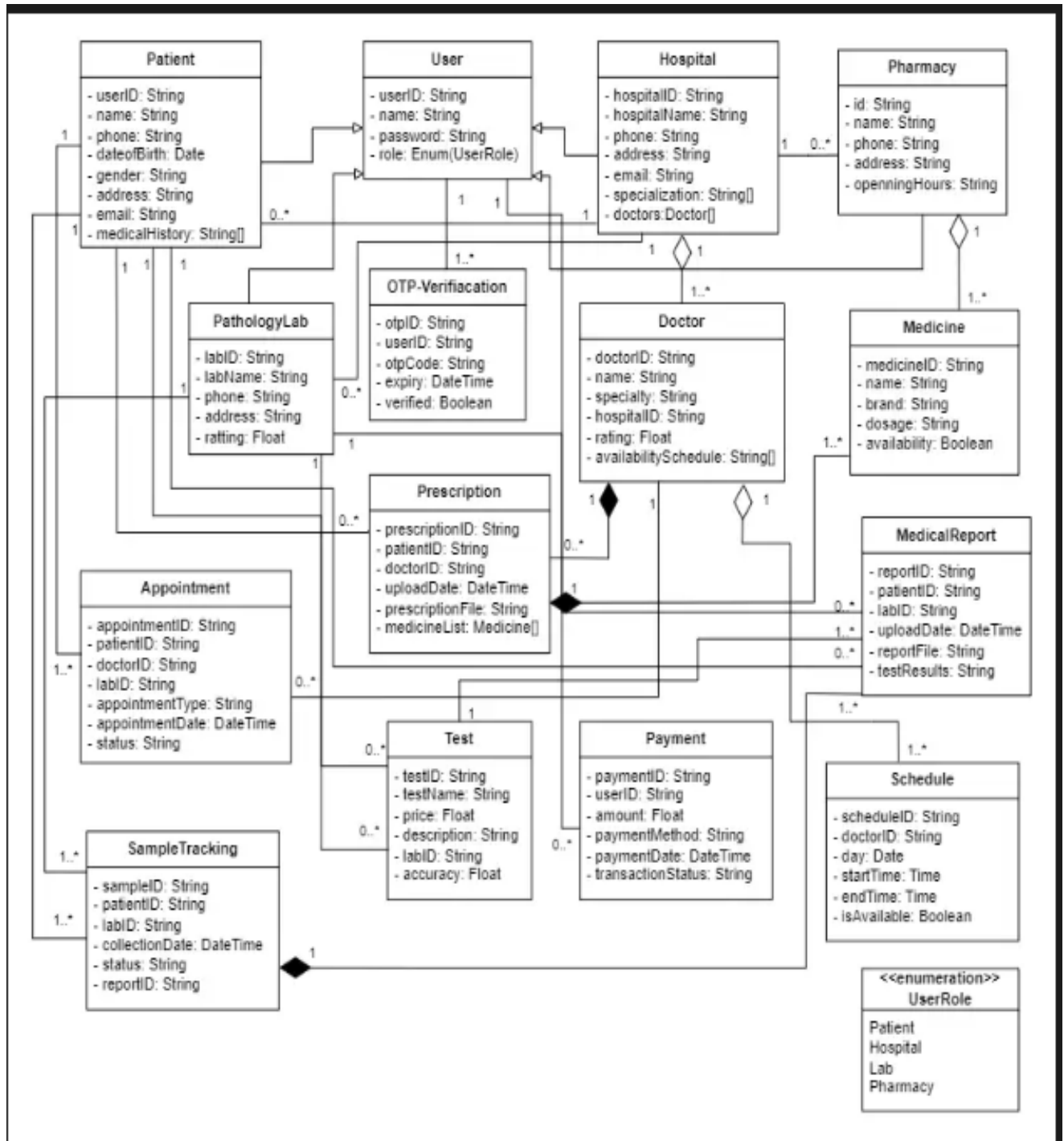
3. SOFTWARE DESIGN

3.1 System Design:

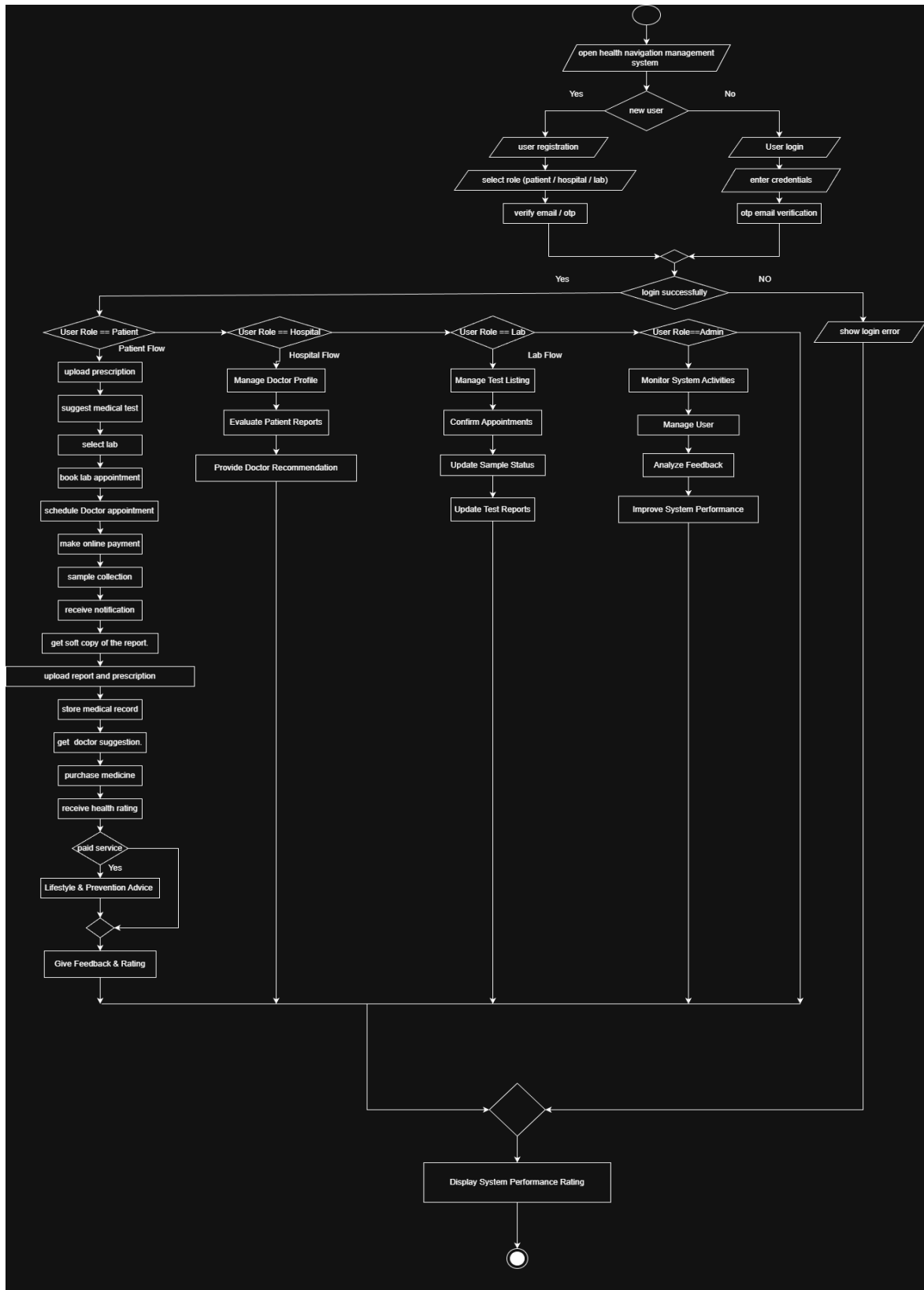
Use Case Diagram



Class Diagram

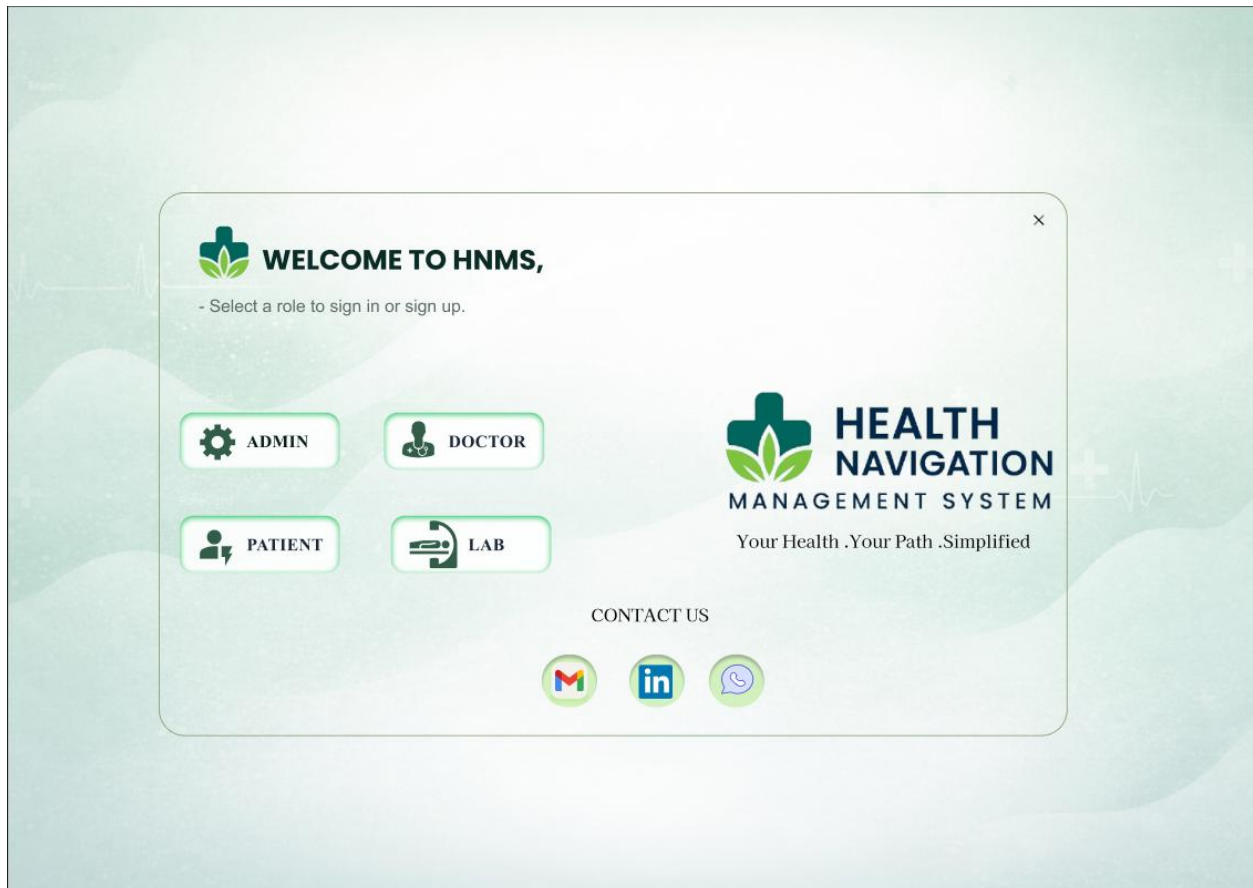


Activity Diagram





UI/Wireframe design using Figma:

Welcome





Patient Login:




Health Navigation Management System

[Forgot your Password?](#)

[or continue with](#)



[Don't Have an Account](#)



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


See all




Take Appointment



Doctor Consultation



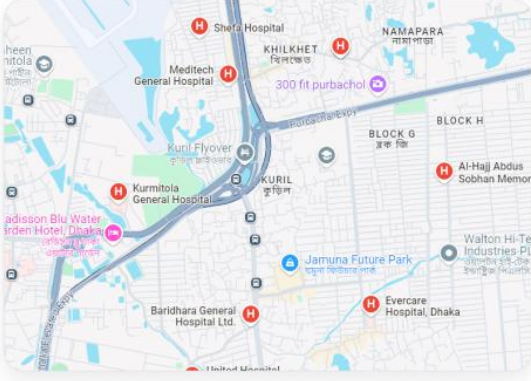
Available Hospitals



Track Sample


Nearby Hospital


Open Map



Today's Schedule


See all

13th May,2025



0


APPOINTMENT'S



0


TEST'S

Forget Password

**HEALTH
NAVIGATION**
MANAGEMENT SYSTEM


×

FORGET PASSWORD?
Enter your email and we'll send you a reset link


rakibrakibulislamakash40@gmail.com


Send reset link


[BACK TO LOGIN](#)





Available Doctors:


**HNMS**


 Dashboard


 Prescription

 Tests

 Emergency

 My Account

 Settings

 Log Out

 Hello,Akash! 

Available Doctor


See all



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

Request an appointment

Available Hospital

 **HNMS**

Dashboard

Prescription

Tests

Emergency


My Account

Settings

Log Out

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


 **HNMS**


 Dashboard


 Prescription


 Tests

 Emergency

 My Account


 Settings

 Log Out




MY ACCOUNT

USER NAME




EDIT

PHONE



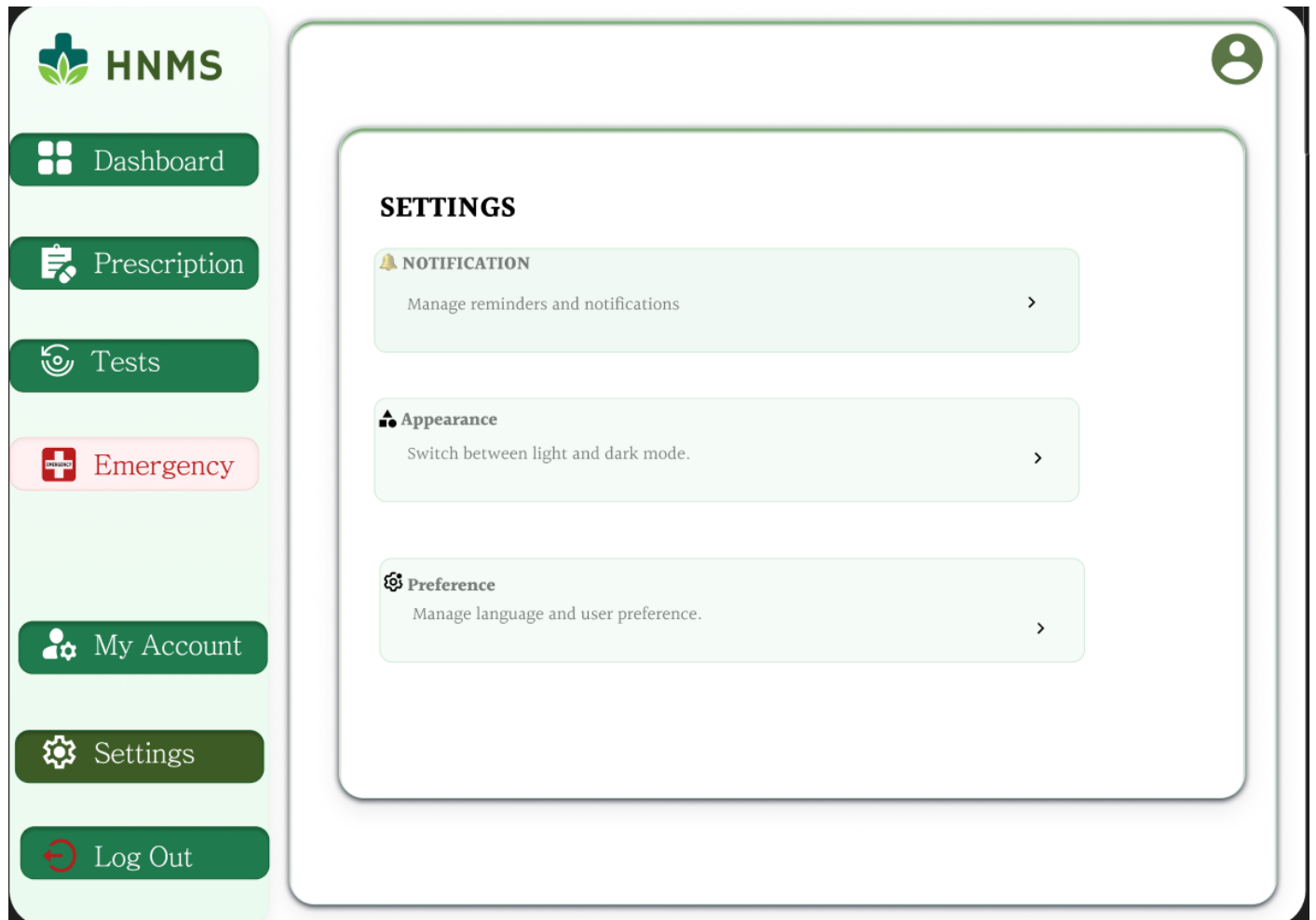
EDIT

PASSWORD

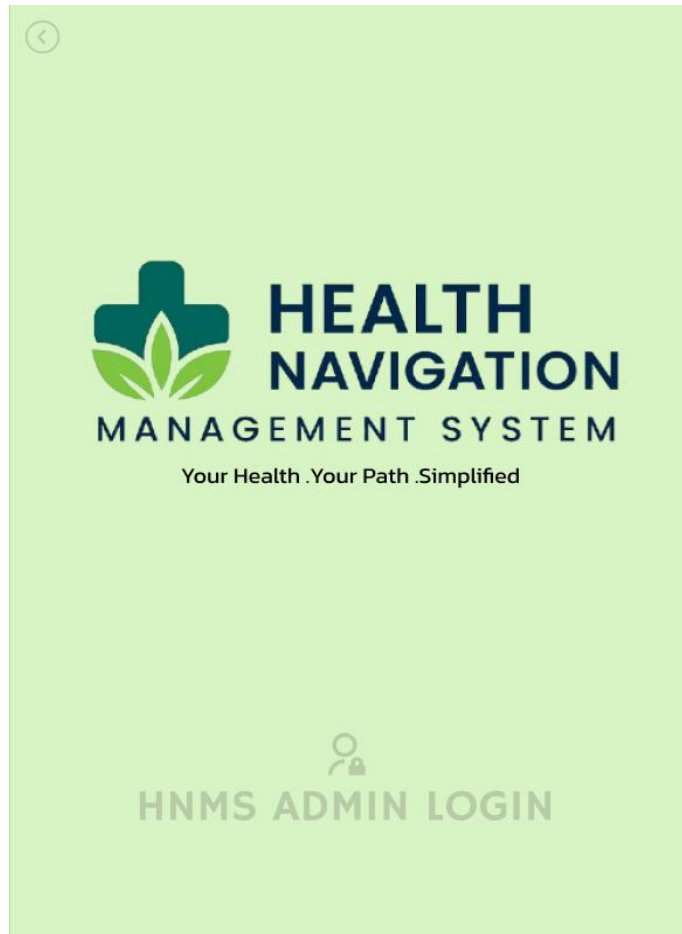


EDIT

Settings



Admin Login



SIGN IN AS ADMIN

-sign in via your valid Admin ID & Password.


 ADMIN ID

 ADMIN PASSWORD

[Forgot your Password?](#)

SIGN IN

Admin Dashboard



Dashboard

Hospitals

Patients

Doctor



Pharmacy


My Account

Settings

Log Out

Search Here



Hello,Admin!

Available Features

See all

Total Registered

9267

PATIENTS

Total Registered

267

HOSPITALS

Total Registered

1267

DOCTORS

Total Registered

867

PHARMACYS

Pending User

17


REGIRATION REQUEST

Suspended


107

USER

Browse



USER HISTORY



OTHERS

Dr Login



Your Health .Your Path .Simplified



Sign In As A Doctor

Login

Sign in with your email/phone number

Email Address

Password



[Forgot Password?](#)

Login

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

Dr Forget Password



Your Health .Your Path .Simplified



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



Your Health .Your Path .Simplified



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



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



Your Health .Your Path .Simplified

Sign Up

Fill up your basic information to sign up

Medical License No

Specialization's

Years of Experience

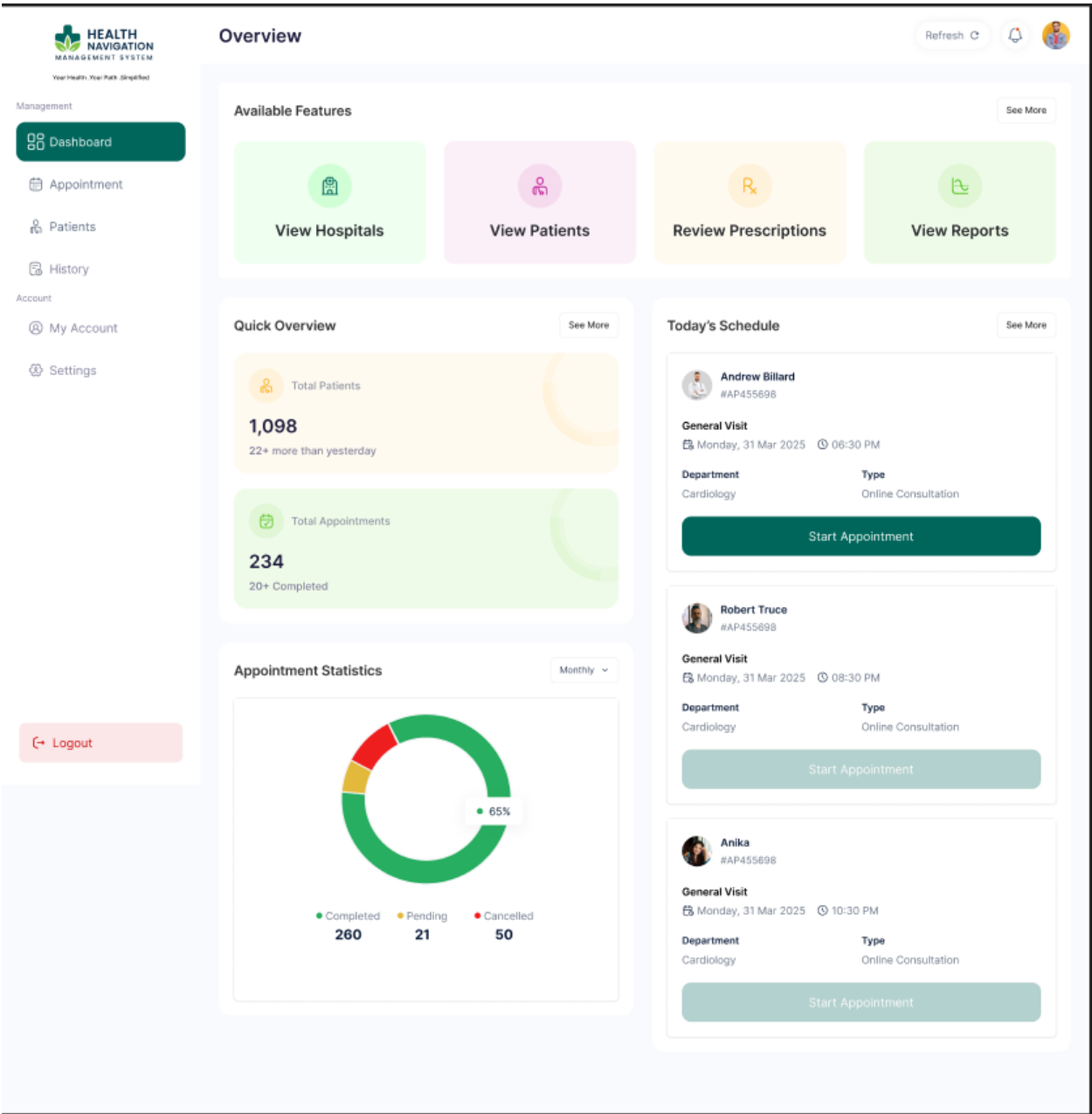


Degree Qualification


Affiliated Hospital/Clinic's

Sign Up

Dr Dashboard



Lab Sign up



HEALTH
NAVIGATION
MANAGEMENT SYSTEM

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](#)

Lab Signup



HEALTH
NAVIGATION
MANAGEMENT SYSTEM

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](#)

Lab Login



HEALTH
NAVIGATION
MANAGEMENT SYSTEM

Labrotary

Login

Please login to continue to your account.

Email

Password

☐ Keep me logged in


Login


[Forget 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

[Forget 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

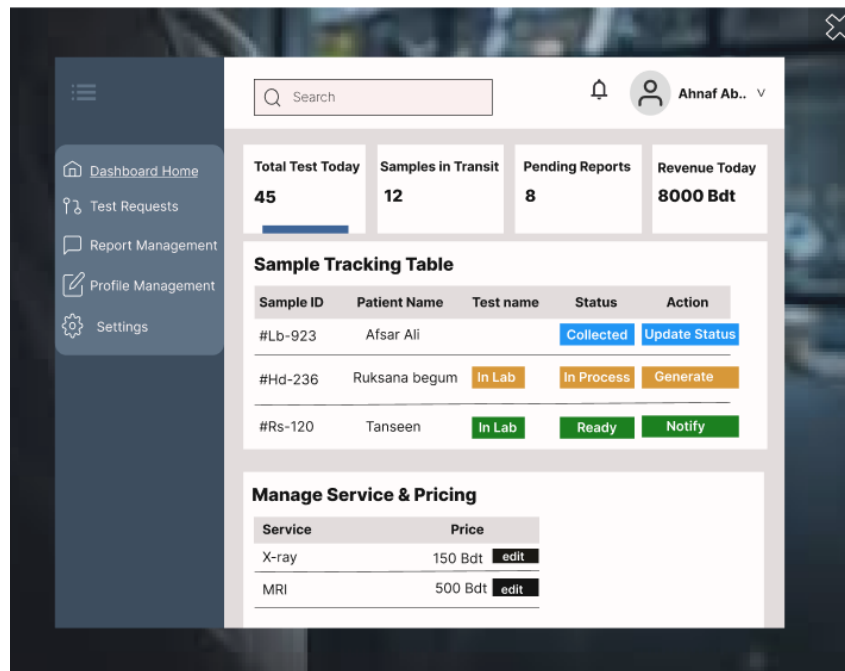
[Back to Login](#)



HEALTH NAVIGATION MANAGEMENT SYSTEM

Your Health . Your Path . Simplified

Dashboard

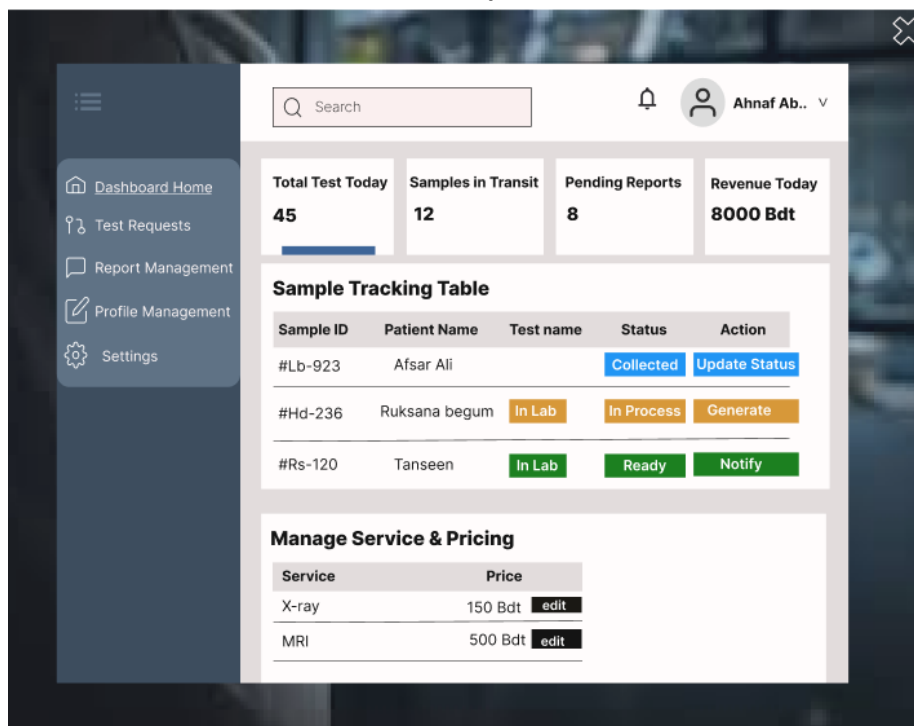


The screenshot shows the 'Dashboard' page of a medical management system. It features a dark sidebar with navigation links: Dashboard Home, Test Requests, Report Management, Profile Management, and Settings. The main content area has a top navigation bar with a search box, a notification bell, and a user profile for 'Ahnaf Ab..'. Below this is a summary section with four cards: 'Total Test Today' (45), 'Samples in Transit' (12), 'Pending Reports' (8), and 'Revenue Today' (8000 Bdt). The 'Sample Tracking Table' lists three samples with their IDs, patient names, test names, and status buttons. The 'Manage Service & Pricing' section shows a table of services and their prices.

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

Service	Price
X-ray	150 Bdt edit
MRI	500 Bdt edit

Test Request



The screenshot shows the 'Test Request' page, which is identical in layout and content to the 'Dashboard' page. It includes the same sidebar, top navigation bar, summary cards, sample tracking table, and service pricing 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

Service	Price
X-ray	150 Bdt edit
MRI	500 Bdt edit

Git Workflow:

Git Branches

Branches

New branch

OverviewYoursActiveStaleAll

Q Search branches...

Default

Branch	Updated	Check status	Behind	Ahead	Pull request
main	6 minutes ago			Default	

Your branches

Branch	Updated	Check status	Behind	Ahead	Pull request
feature/T-03-appointment-booking	2 minutes ago		1	2	
stage	6 minutes ago		1	0	
dev	6 minutes ago		1	0	

Active branches

Branch	Updated	Check status	Behind	Ahead	Pull request
feature/T-03-appointment-booking	2 minutes ago		1	2	
stage	6 minutes ago		1	0	
dev	6 minutes ago		1	0	

Git Main

Health-Navigation-Management-System-... (Public)

PinWatch 0Fork 0Star 0

feature/T-03-appointment-booking had recent pushes 31 minutes agoCompare & pull request

main 4 Branches 0 TagsGo to fileAdd fileCode

AxisAkash docs: add final project reportc4fd8b2 · 2 minutes ago6 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

About

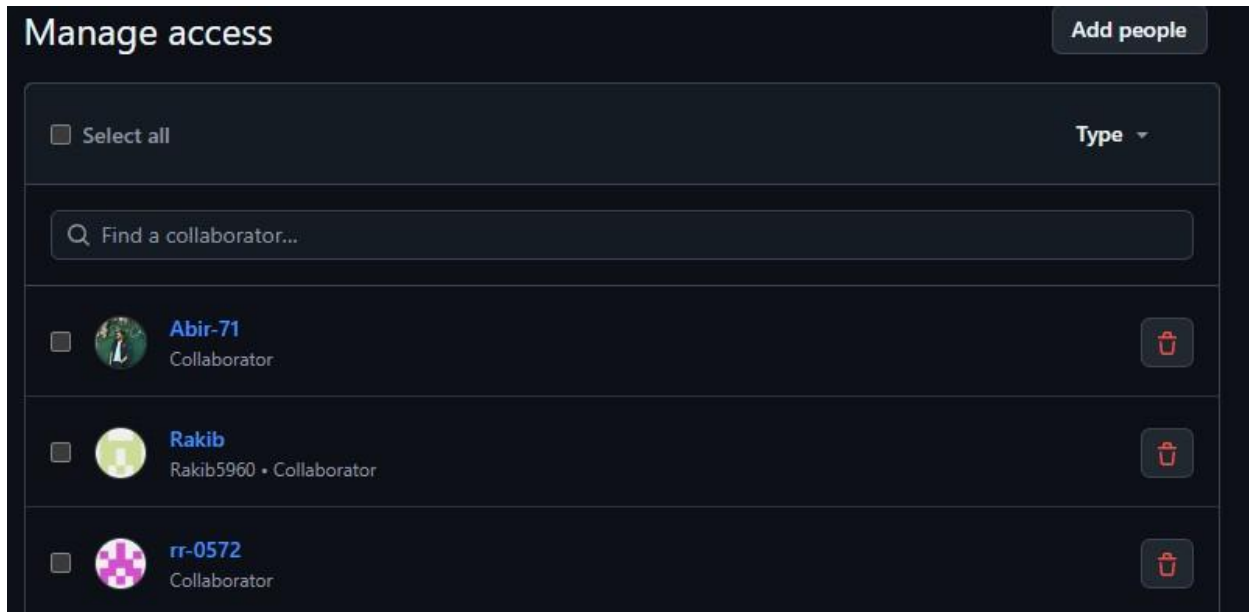
Health Navigation Management System (HNMS) is a digital platform that connects patients, doctors, hospitals, pathology labs, and administrators in one system. It simplifies appointments, prescriptions, lab tests, medical records, and healthcare coordination efficiently.

ReadmeActivity0 stars0 watching0 forks

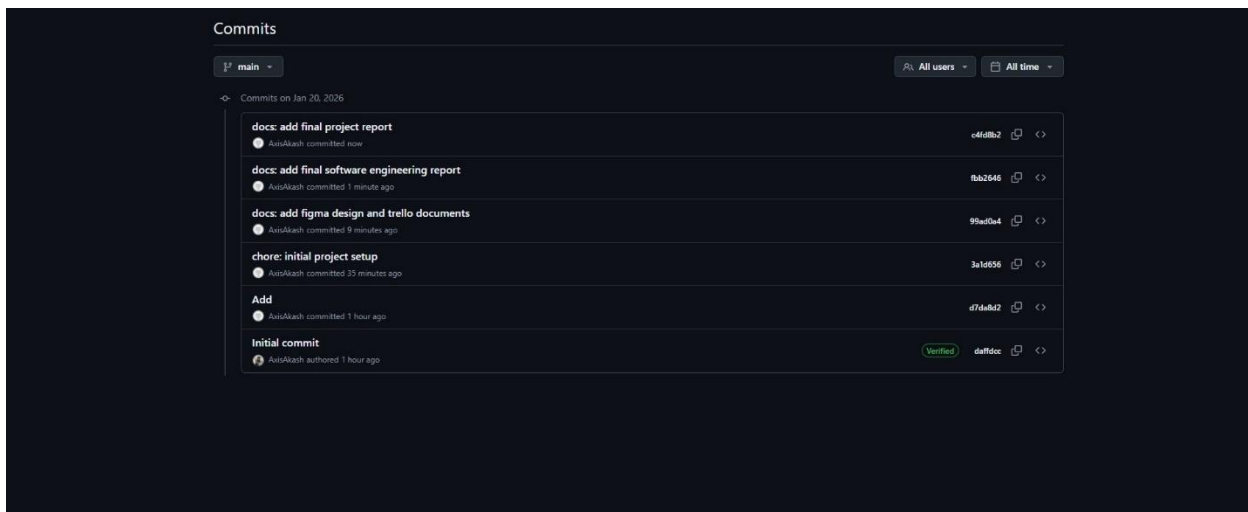
ReleasesNo releases publishedCreate a new release

Packages

Git Collaborator



Git Commit



5. SOFTWARE TESTING

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: RIANA RAMZAN		
Test Case: TC_01		Test Designed Date:19-1-26		
Test Priority: High		Test Executed by:RIANA RAMZAN		
Module Name: Authentication		Test Execution Date:20-1-26		
Test Title: Verify login with valid email and password				
Description: Test the login functionality				
Precondition: User has a registered account				
Dependencies: 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: user@mail.com Password: ****	User is logged in successfully	As expected	Pass

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM	Test Designed by: RIANA RAMZAN
Test Case: TC_02	Test Designed Date: 19-1-26
Test Priority: High	Test Executed by: RIANA RAMZAN
Module Name: Authentication	Test Execution Date: 20-1-26
Test Title: Login with invalid password	
Description: Verify error message appears	
Precondition: User is registered	
Dependencies: 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: user@mail.com Password: 12345	Error message shown	As expected	Pass

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: RIANA RAMZAN		
Test Case: TC_03		Test Designed Date: 19-1-26		
Test Priority: High		Test Executed by: RIANA RAMZAN		
Module Name: Authentication		Test Execution Date: 20-1-26		
Test Title: Login with empty fields				
Description: Validate input fields				
Precondition: None				
Dependencies: Internet connection				
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

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: RIANA RAMZAN		
Test Case: TC_04		Test Designed Date: 19-1-26		
Test Priority: High		Test Executed by: RIANA RAMZAN		
Module Name: Registration		Test Execution Date: 20-1-26		
Test Title: Register doctor with valid data				
Description: Verify doctor registration				
Precondition: User not registered				
Dependencies: Internet connection				
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: doctor@mail.com Password: ****	Registration successful	As expected	FAILED

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

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

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

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: RAKIBUL ISLAM AKASH		
Test Case: TC_07		Test Designed Date: 19-1-26		
Test Priority: Medium		Test Executed by: RAKIBUL ISLAM AKASH		
Module Name: Forgot Password		Test Execution Date: 20-1-26		
Test Title: Forgot password with invalid email				
Description: Validate unknown email				
Precondition: User has a registered account				
Dependencies: Internet connection				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to Forget Password 2. Enter registered email 3. Click Submit	Email: gwez@mail.com	Email not found message	As expected	Pass

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

Test Steps	Test Data	Expected Results	Actual Results	Status
1. Open reset password link 2. Enter new password 3. Confirm new password 4. Click Reset	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
1. Login as patient 2. Observe dashboard elements	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: RAKIBUL ISLAM AKASH		
Module Name: Dashboard (Admin)		Test Execution Date:20-1-26		
Test Title: Verify admin dashboard statistics				
Description: Check admin overview data				
Precondition: Admin logged in				
Dependencies: 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 : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: MD.RAKIB HOSSAIN		
Test Case: TC_11		Test Designed Date:19-1-26		
Test Priority: Medium		Test Executed by: MD.RAKIB HOSSAIN		
Module Name: Profile		Test Execution Date:20-1-26		
Test Title: Update user profile				
Description: Verify profile update functionality				
Precondition: User logged in				
Dependencies: 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				

Project Name : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: MD.RAKIB HOSSAIN		
Test Case: TC_12		Test Designed Date:19-1-26		
Test Priority: Low		Test Executed by: MD.RAKIB HOSSAIN		
Module Name: Profile		Test Execution Date:20-1-26		
Test Title: Upload profile picture				
Description: Verify image upload				
Precondition: User has a registered account				
Dependencies: 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		
Test Title: Verify sidebar navigation				
Description: Ensure menu redirects correctly				
Precondition: User has a registered account				
Dependencies: 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
Test Title: Verify logout functionality	
Description: Ensure session ends	
Precondition: User has a registered account	
Dependencies: 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 : HEALTH NAVIGATION & MANAGEMENT SYSTEM		Test Designed by: MD.RAKIB HOSSAIN		
Test Case: TC_15		Test Designed Date:19-1-26		
Test Priority: High		Test Executed by: MD.RAKIB HOSSAIN		
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

Project Name: Health Navigation & Management System			Test Designed by: Abir	
Test Case ID: Lab 1			Test Designed date: 15.01.26	
Test Priority: Medium			Test Executed by: Abir	
Module Name: Laboratory Registration			Test Execution date: 16.0126	
Test Title: Verify registration with valid information				
Description: Test the laboratory registration page				
Precondition: User is not registered				
Dependencies: 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

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

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

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

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

Module Name: Laboratory Registration			Test Execution date: 16.0126	
Test Title: Verify registration with empty required fields				
Description: Validate required field enforcement in registration				
Precondition: User is on registration page				
Dependencies: 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

Project Name: Health Navigation & Management System			Test Designed by: Abir	
Test Case ID: Lab 5			Test Designed date: 15.01.26	
Test Priority: Medium			Test Executed by: Abir	
Module Name: Laboratory Login			Test Execution date: 16.0126	
Test Title: Verify login with invalid email format				
Description: Validate email format in login				
Precondition: User is on login page				
Dependencies: 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

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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>