



American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

Fall 24 25

Section: B

Software Quality Assurance and Testing

MEDISPHERE-360: YOUR COMPLETE HEALTHCARE COMPANION

A Report submitted

By

SN	Student Name	Student ID
1	Rafsan Mahamud	22-46207-1
2	M Shahriar Alam Shajid	22-46242-1
3	Ishtiak Billah Emon	22-46229-1

Checked By Industry Personnel (Optional)

Name: **Adnan Md. Wahidur Rahman**

Designation: **Director & CTO**

Company:

Sign:



Date: 2nd February 2025

Software Test Plan

for

MediSphere-360: Your Complete Health Companion

Version 1.0 approved

Prepared by

1. Rafsan Mahamud
2. M Shahriar Alam Shajid
3. Ishtiak Billah Emon

Table of Contents

Revision History	3
1. TEST PLAN IDENTIFIER: RS-MTP01.3	Error! Bookmark not defined.
2. REFERENCES	Error! Bookmark not defined.
3. INTRODUCTION	Error! Bookmark not defined.
Background to the Problem.....	Error! Bookmark not defined.
Solution to the Problem.....	Error! Bookmark not defined.
4. REQUIREMENT SPECIFICATION	Error! Bookmark not defined.
4.1 System Features	Error! Bookmark not defined.
4.2 System Quality Attributes.....	Error! Bookmark not defined.
4.3 System Interface.....	Error! Bookmark not defined.
4.4 Project Requirements	Error! Bookmark not defined.
5. FEATURES NOT TO BE TESTED.....	Error! Bookmark not defined.
6. TESTING APPROACH.....	Error! Bookmark not defined.
6.1 Testing Levels.....	Error! Bookmark not defined.
6.2 Test Tools.....	Error! Bookmark not defined.
6.3 Meetings.....	Error! Bookmark not defined.
7. TEST CASES/TEST ITEMS.....	Error! Bookmark not defined.
8. ITEM PASS/FAIL CRITERIA.....	Error! Bookmark not defined.
9. TEST DELIVERABLES	Error! Bookmark not defined.
10. STAFFING AND TRAINING NEEDS.....	Error! Bookmark not defined.
11. RESPONSIBILITIES	Error! Bookmark not defined.
12. TESTING SCHEDULE	Error! Bookmark not defined.
13. PLANNING RISKS AND CONTINGENCIES	Error! Bookmark not defined.
14. APPROVALS	Error! Bookmark not defined.

Revision History

Revision	Date	Updated by	Update Comments
0.1	17 Jan 2025	M Shahriar Alam Shajid	First Draft: User profile test case
0.2	23 Jan 2025	Rafsan Mahamud	Second Draft: Update doctor appointment Test case
0.3	30 Jan 2025	Ishtiaq Billah Emon	Third Draft: System Attribute Update
0.4	2 Feb 2025	M Shahriar Alam Shajid	Final Update

1. Test Plan Identifier

TP-MS360-2025-001

- **TP** → Test Plan
- **MS360** → MediSphere-360
- **2025** → Year of execution
- **001** → First version of the test plan

This test plan covers the **Software Quality and Assurance Testing** for **MediSphere-360: Your Complete Health Companion**. It includes test scenarios for ensuring system functionality, security, and usability. The identifier helps in tracking, version control, and seamless test management.

2. References

- I) **Academic Course Materials** – Lecture slides and notes from the *Software Quality and Assurance Testing* course provided essential guidelines for testing methodologies and case studies.
- II) **Pixso** – Used for designing the **User Interface (UI)**, wireframes, and prototyping, ensuring a seamless and user-friendly experience.
- III) **Industry Standards & Best Practices** – Followed general software testing standards such as **ISO/IEC 25010** (Software Quality Model) and IEEE guidelines for test planning and execution.
- IV) **Online Research & Documentation** – Referred to various **software testing frameworks, case studies, and healthcare application research papers** to validate testing approaches.

3. Introduction

MediSphere-360 is an all-in-one digital healthcare platform designed to enhance telemedicine, pharmacy integration, and secure payment processing. It allows users to **book online consultations, manage prescriptions, update health records, and make secure transactions** seamlessly. The platform connects patients with doctors for virtual consultations, generates digital prescriptions linked to pharmacies, and ensures hassle-free payments through multiple methods, including insurance. With different features,

MediSphere-360 aims to revolutionize digital healthcare by making it **efficient, accessible, and secure** for all.

Introduction to MediSphere-360: Your Complete Health Companion

1. Background to the Problem

In recent years, **telemedicine and digital healthcare services** have gained popularity, providing remote medical assistance to patients worldwide. However, despite its advantages, telemedicine faces several **critical issues**:

- **Limited Accessibility & Digital Divide** – Many users, especially in rural areas, struggle with access to stable internet and digital health services.
- **Data Security & Privacy Concerns** – Sensitive patient information is often at risk due to inadequate cybersecurity measures.
- **Inefficient Appointment & Prescription Management** – Patients face difficulties in managing online consultations, prescriptions, and follow-ups due to unstructured systems.
- **Lack of Integration with Pharmacies** – Many telemedicine platforms do not connect directly with pharmacies, leading to delays in medicine procurement.
- **Payment & Insurance Challenges** – Users often experience difficulties in processing online payments and integrating health insurance with digital healthcare platforms.

2. Solution to the Problem

MediSphere-360: Your Complete Health Companion is designed to address these challenges by offering a **comprehensive, secure, and user-friendly digital healthcare ecosystem**. The platform ensures:

- **Seamless Telemedicine Services** – Enables smooth virtual consultations with doctors and easy appointment scheduling.
- **Enhanced Security & Data Protection** – Implements robust encryption and privacy controls to safeguard patient data.
- **Integrated Pharmacy & Prescription Management** – Connects users directly with pharmacies for real-time medicine availability and automated prescription tracking.

- **Personalized User Settings & Profile Management** – Allows users to update health records, preferences, and notifications effortlessly.
- **Secure & Flexible Payment System** – Supports multiple payment methods, including insurance integration, to ensure hassle-free transactions.

By bridging the gaps in digital healthcare, **MediSphere-360** empowers users with an all-in-one health companion, making healthcare more **accessible, secure, and efficient**.

4. REQUIREMENTS SPECIFICATION:

4.1. System Feature:

1. Registration / Sign Up

- Requirements:
 - i. User should give valid mail address, Valid and unique username, Institution name. Date of birth, Valid password, Confirm valid password
- Priority Level: High
- Precondition: User must have a valid email address or a valid phone number.

2. User Authentication

- Requirements:
 - i. The system shall allow users to create accounts using email or phone number and password
 - ii. The system shall allow users to create accounts using email or phone number and password
 - iii. The system shall enable users to log in using their credentials
 - iv. The system shall provide a password recovery option
 - v. The system shall provide a "Forgot Password" feature allowing users to reset their passwords via email or phone.
- Priority Level: High
- Precondition: User have valid e-mail address or a phone number

3. AI-Driven Symptom Analysis

- Requirements:
 - i. The system shall allow users to input symptoms through a user-friendly interface
 - ii. The AI module shall analyze the symptoms and provide a list of possible diagnoses.
 - iii. The system shall offer recommendations for further actions based on the analysis
- Priority Level: High
- Precondition: User must log in (with a valid email or phone and a password) into the system.

4. Image Diagnostics

- Requirements:
 - i. The system allow users to upload images such as X-rays, MRIs, and CT scans.

- ii. The AI module shall analyze the images and detect abnormalities.
 - iii. The system shall provide a report detailing the findings from the image analysis.
- **Priority Level:** High
- **Precondition:**
 - i. User must log in (with a valid email or phone and a password) into the system.
 - ii. User must have test report.

5. Remote Consultations

- **Requirements:**
 - i. The system shall enable users to search for healthcare professionals by specialty.
 - ii. The system allow users to book appointments for video consultations.
 - iii. The system shall support video calls between users and healthcare professionals.
- **Priority Level:** High
- **Precondition:**
 - i. User must log in (with a valid email or phone and a password) into the system.
 - ii. User must have test report.

6. Doctor Search

- **Requirements:**
 - i. The system shall enable users to search for doctors by specialty, location, availability, and rating.
 - ii. The system shall provide detailed profiles for doctors including their qualifications, experience, and reviews.
- **Priority:** High
- **Precondition:** The user must log in to the system

7. Multi-Lingual Support

- **Requirements:**
 - i. The UI and all system messages shall be available in multiple languages.
 - ii. The system shall provide a language selection option for users.
- **Priority Level:** Low
- **Precondition:** N/A

8. Payment Method Using Mobile Banking

- **Requirements:**

- i. The system shall allow users to make payments through various mobile banking options.
- ii. The system shall integrate with popular mobile banking services for seamless transactions.
- iii. The system shall provide secure payment gateways to ensure the safety of financial transactions.
- iv. The system shall send confirmation receipts to users upon successful transactions.

- **Priority:** High

- **Precondition:** User must log in to the system and have valid mobile banking account.

9. Insurance Integration

- **Requirements:**

- i. The system shall allow users to input and verify their insurance details.
- ii. The system shall display coverage information for consultations and treatments.
- iii. The system shall process payments covered by insurance policies.

- **Priority:** High

- **Precondition:**

1. User must log in to the system
2. Has proper Insurance documents.

10. Discounts and Offers

- **Requirements:**

- i. The system shall display available discounts and promotional offers.
- ii. The system shall apply discounts automatically during the payment process.
- iii. The system shall allow users to enter promotional codes for additional discounts.

- **Priority:** Low

- **Precondition:** N/A

11. Lab Test Booking and Sample Collection

- **Requirements:**
 - i. The system shall allow users to book lab tests online.
 - ii. The system shall coordinate with labs for home sample collection services.
 - iii. The system shall notify users of sample collection schedules and results.
- **Priority:** High
- **Precondition:**
 1. User must log in to the system
 2. User has a valid address

12. Online Medicine Ordering

- **Requirements:**
 - i. The system shall allow users to upload prescriptions and order medicines.
 - ii. The system shall integrate with pharmacies for processing and delivery of orders.
 - iii. The system shall track order status and notify users upon delivery.
- **Priority:** High
- **Precondition:**
 1. User must log in to the system

4.2 SYSTEM QUALITY ATTRIBUTES

1. Performance

- **Requirements:**
 - The system shall handle up to 10,000 concurrent users without performance degradation.
 - The system shall have a response time of less than 2 seconds for user inputs.
- **Priority:** High
- **Measure:** Response time, system uptime
- **Description:** The system should perform efficiently under expected loads.

2. Scalability

- **Requirements:**
 - The system architecture shall support horizontal scaling.
 - The system shall maintain performance levels when scaling up to 100,000 users.
- **Priority:** High
- **Measure:** Number of users, data throughput
- **Description:** The system should be scalable to accommodate increasing users.

3. Usability

- **Requirements:**
 - The system shall have an intuitive user interface.
 - The system shall provide help documentation and user support.
- **Priority:** Medium
- **Measure:** User satisfaction, error rate
- **Description:** The system should be easy to use for all user groups.

4. Reliability


- **Requirements:**
 - The system shall have an uptime of 99.9%.
 - The system shall recover from failures within 5 minutes.
- **Priority:** High
- **Measure:** System uptime, mean time between failures (MTBF)
- **Description:** The system should be reliable and available.

5. Security

- **Requirements:**
 - The system shall implement multi-factor authentication (MFA) for user login.
 - The system shall log all access and actions for auditing purposes.
- **Priority:** High
- **Measure:** Number of security incidents
- **Description:** The system should be secure against unauthorized access.

4.3 SYSTEM INTERFACE

MAIN DASHBOARD FORM



WELCOME

Analyze Symptoms

Image Diagnosis

Consultation


Lab Test

Order Medicine

User Profile

Settings

Log Out

AI HEALTH NAVIGATOR

Daily Health Tips

-Featured Article 1
[Read More]

-Featured Article 2
[Read More]

User's Recent Activity

- Symptom Analysis: [Date]

-Uploaded Image: [Date]

-Consultation: [Doctor Name], [Date]

Personalized Recommendations

- Health Tip: Drink more water!

-Event: Free Health Check-Up Camp

Health Dashboard

- Steps Walked: [Value]

- Calories Burned: [Value]

- Goals: [Goal Title], [Status]

Promotions and Offers

- Discount on Medicines: [Details]

- Partner Services: [Details]

Community and Support

- Forum: [Recent Post Title] [Read More]

- Live Chat Support

BOOK APPOINTMENT LAB TEST AND RADIOLOGY FORM

AI Health Navigator

Set location
Bangladesh

Lab Tests, Scans & Full body Checkups

Offers

Akid Mahmud

Family Body Checkup package

Now at 5000tk

Full body checkup with cancer From Home sample pickup

Book Now


Book Lab Tests

Popular Health Checkups

X-Ray Scans & MRI

Featured Health Check-up packages

All testsHeartDiabetesKidneyCancerVitaminLiver




Full Heart Check-up

12 Tests

12000 tk

Add




Partial kidney Check-up

8 Tests

8000 tk

Add



Full Stomach Check-up

15 Tests

15000 tk

Add

FEATURED DOCTORS FORM

AI Health Navigator

Set location
Bangladesh

Lab Tests, Scans & Full body Checkups

Offers


Ahmed Mahmud

Consult With
Doctor Now
Starting at 1000tk


Full body checkup with cancer

From Home sample pick up


Book Now




Book an appointment



Telemedicine services



AI Consultancy



Featured Doctors

All Doctors

Heart


Diabetes

Kidney


Cancer

Vitamin


Liver



Full Heart Check-up
12 Tests
12000 tk
Add



Partial kidney Check-up
8 Tests
8000 tk
Add



Full Stomach Check-up
15 Tests
15000 tk
Add

SYMPTOMS ANALYSIS AND FEEDBACK FORM

Symptoms Analysis and Feedback

BASIC INFO


DETAILS

SYMPTOM DETAILS

DIAGNOSIS

TREATEMENT PLAN

BOOK DOCTORS



iStock
Credit: comotion_design

Describe your Symptoms

Type your problems

Feeling pain in the head for last 2 days
also recurrent vomiting.


Your Symptoms

- ☒ Nausea
- ☒ Headache

Back

Skip


Next



Diagnosis Result

Possible Causes:

Migraines, Infection,
Hypertension, Tumor



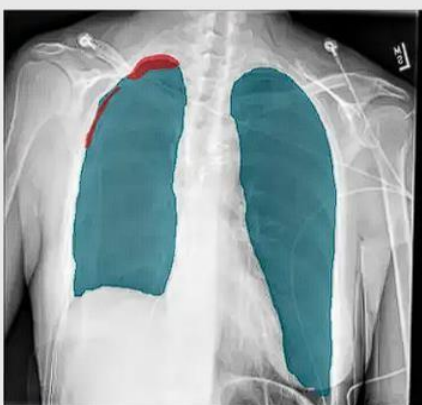
Suggested Doctors

Dr. Sandip Kumar
Dash. MBBS(DMC) [BOOK](#)

Dr. Shahpar Nahrir.
MBBS (DU) [BOOK](#)

IMAGE DIAGNOSIS FORM

IMAGE DIAGNOSIS



Pneumothorax

Probability level : 30%

Show in the image ☒

Fibrosis

Probability level : 40%

Show in the image ☒


Pneumonia

Probability level : 70%


Show in the image ☒

Lung Segments

Show in the image ☒



Upload an Image (CT scan, MRI, X-ray)



[EXPORT RESULTLS](#)

LOGIN FORM



Login

Doesn't have an account yet ? [Sign up](#)

Email Address or Phone Number

your@example.com

Password

[Forgot Password?](#)

Enter your password

☐ Remember me

Login

FORGOT PASSWORD FORM



Forgot Password?

No worries, We'll send you **reset instructions**

eg.example@gmail.com

Cancel

Reset Password

Need Help? 

SIGN UP FORM



Customer Signup

Enter your Name

Enter Phone or Email

Create Password


Re-Type Password


☐ Show Password


Signup


Already have an account ? [Login](#)


MEDICINE ORDER FORM

 July 30, 2024

Ishtiak 





Upload Prescription 



Antibiotics ▾



Antipyretics ▾

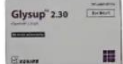

Antacids ▾



Antivirals ▾



Diuretics ▾



Nebanol Plus
Add to Cart 



Famotack 50ml
Add to Cart 


Glysup 2.30
Add to Cart 


Seclo 20 mg
Add to Cart 


Brofe syrup
Add to Cart 

 Select Your Nearest Pharmacy





PROFILE

NAME :

Shahriar Shajid

EMAIL :

shuvo09sa@gmail.com

CONTACT :

01952398633

ADDRESS :

Cantonment

ABOUT :

N/A





First Name

Shahriar

Last Name

Shajid

Password

[Change Password](#)

Email

shuvo09sa@gmail.com

Phone

01952398633

Address

Cantonment

Gender

Male

Language

English

Date of Birth

20

August

2002

Notification

Enable

Facebook

<https://www.facebook.com/shuvo09sa>

Payment Method



Change Payment Method

[Add Payment Method](#)

[Save changes](#)

4.4 PROJECT REQUIREMENTS:

4.4.1 Budget Constraints

The estimated total budget for the project is **4,50,000 BDT**, covering development, infrastructure, salaries, and maintenance.

Category	Estimated Cost (BDT)
AI Model Development & Training	4,50,00
Software Development (Frontend & Backend)	90,000 — more
Cloud Services (Hosting, Storage, Database)	60,000
Third-Party API & Licensing (Telemedicine, Payment Gateway)	40,000
Security & Compliance Implementation	30,000
Testing & Quality Assurance (QA)	30,000
Post-Launch Maintenance & Support	30,000
Total Budget	4,50,000 BDT

4.4.2. Time Constraints

The total estimated development time for the project is **6 months**, divided into the following phases:

Phase	Duration
Requirement Analysis & Planning	1 month
UI/UX Design & System Architecture	1 month
AI Model Development	1.5 months
Backend Development & Database Setup	1 month
Frontend Development	1 month
Integration, Testing & Deployment	0.5 months
Total Time	6 months

4.4.3 Resource Constraints

The project requires specific human and technological resources to achieve efficiency.

Human Resources

- **Project Manager (1)** – Manages project execution and team coordination.
- **AI/ML Engineers (2)** – Develop and train AI models for diagnosis.

- **Backend Developers (2)** – Build the system’s API, database, and server logic.
- **Frontend Developers (2)** – Implement the UI with mobile responsiveness.
- **QA Engineers (2)** – Perform security, functional, and performance testing.
- **Security Expert (1)** – Ensures compliance with healthcare regulations.

Technology Resources

- **Development:** React.js (Frontend), Node.js/Express.js (Backend)
- **AI/ML Libraries:** TensorFlow, PyTorch, OpenCV
- **Database:** MongoDB, PostgreSQL
- **Cloud Services:** AWS/Azure for hosting and storage
- **Security:** End-to-end encryption, multi-factor authentication (MFA)

4.4.4 Environmental Constraints

- The platform must be **cloud-based** for global accessibility.
- It should support **multi-device compatibility** (desktop & mobile).
- The system must function with **low-latency AI processing**.
- **Internet dependency** may be a limitation in remote areas.

5. FEATURES NOT TO BE TESTED:

Patient-Managed Data Export & Analysis

Users may export their health data for personal use or external analysis. While the system ensures proper data formatting and export functionality, testing the accuracy and usability of the exported data within third-party applications will not be covered in this project.

6. TESTING APPROACH

6.1 Testing Levels

- **Unit Testing**
 - Developers will perform unit testing for individual modules such as doctor appointment booking, medicine ordering, and ambulance requests.
 - Each unit test must be documented with test cases, sample outputs, and defect logs before moving to the next phase.
 - The development team leader will approve unit testing before proceeding.
- **System/Integration Testing**
 - Conducted by a dedicated test team with support from developers.
 - Testing will focus on interactions between modules (e.g., a patient booking an appointment and receiving a confirmation via email/SMS).
 - APIs and third-party integrations (e.g., payment gateways, pharmacy databases) will also be tested.
 - Critical defects must be resolved before moving to acceptance testing.
- **User Acceptance Testing (UAT)**
 - Real end users, such as doctors, pharmacists, and patients, will test the system with actual workflows.
 - Parallel testing with existing manual processes will be conducted for a specific period.
 - Feedback will be collected and addressed before final deployment.

6.2 Test Tools

The testing for this application will be conducted using modern testing tools and frameworks.

Automated Testing Tools

- **Eclipse IDE:**
 - Purpose: Primary development environment for writing and running Selenium WebDriver test scripts in Java.
 - Usage: Automate functional, regression, and end-to-end tests for features like user registration, doctor appointment booking, medicine ordering, and ambulance booking.
- **Selenium WebDriver:**
 - Purpose: Automate browser interactions to simulate real user scenarios.
 - Usage: Verify UI functionality, navigation, and data flow across the application.

Bug Tracking & Reporting

- **Jira:**
 - Purpose: Track bugs, manage testing workflows, and generate detailed test reports.
 - Usage: Document, prioritize, and resolve issues identified during testing.

Performance Testing Tools

- **JMeter:**
 - Purpose: Test application performance under load.
 - Usage: Simulate high traffic for features like appointment booking and medicine ordering.

6.3 Meetings

- Weekly test team meetings to review progress, identify trends, and resolve issues.
- Bi-weekly meetings between the test team leader, developers, and project manager for overall project alignment.
- Emergency meetings can be called as needed to address critical issue.

7. TEST CASES/TEST ITEMS

Sign Up Page

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Sign up module
Test Priority:	High
Test Designed By:	Ishtiak Billah Emon
Test Designed Date:	26 January 2025
Test Executed By:	Ishtiak Billah Emon
Test Execution Date:	27 January 2025
Test Description:	Test the functionality that allows users to successfully signup with valid information.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-001	Signup in	1.Go to the website 2. Enter the name 3. Enter email address or phone number 4. Enter a valid minimum 6 digit password 5. Re-type the password 6. Click the Signup button	Name: Emon Email: ishtiak@gmail.com Password: Emon1234!@ Re-type Password: Emon1234!@	User should successfully create an account and log in	Pass

Forget Password

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Forgot password module
Test Priority:	High
Test Designed By:	Ishtiak Billah Emon
Test Designed Date:	26 January 2025
Test Executed By:	Ishtiak Billah Emon
Test Execution Date:	27 January 2025
Test Description:	Test the functionality that allows users to reset their password

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-002	Password reset	1.Go to the website 2. Click 'Forgot password' link 3. Enter a valid phone number or email address 4. Click 'Reset Password' button	Email: ishtiak@gmail.com	User should receive a password reset email / message with instruction.	Fail
TC-003	Cancel the password reset action	1. Navigate to the password reset page 2. Click the 'Cancel' button	Click on 'Cancel' button	Process is canceled and user is redirected to the login page.	Pass
TC-004	Use assistance	1. Navigate to the password reset page 2. Click the 'help' icon in the bottom right corner.	Click 'Help' icon	Help window should appear with available assistance options	Pass

Medicine Order Form

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Medicine Order from the website
Test Priority:	High
Test Designed By:	Ishtiak Billah Emon
Test Designed Date:	26 January 2025
Test Executed By:	Ishtiak Billah Emon
Test Execution Date:	27 January 2025
Test Description:	Test the functionality that allows users to successfully search and order medicine from the pharmacy.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-005	Search the Medicine to check the availability and order.	1.Navigate to the medicine order page. 2. Click the search bar. 3. Start typing the medicine name	Search bar: Napa	The expected medicine appeared or a text of unavailability appeared	Pass
TC-006	Add medicine to the cart	1. Navigate to the add to cart button 2. Select quantity 3. Click Add to cart	Quantity: 2 units	Medicine should be added to the cart successfully	Pass

TC-007	Select a category (e.g., Antibiotics)	1. Navigate to the category short list section 2. Click on a category	Category: Antibiotics	Medicines related to the selected category should be displayed	Pass
TC-008	Uploading the prescription	1. Click the upload prescription button 2. Select the prescription from the folder 3. Click upload button	Upload: Prescription.pdf	Prescription should be uploaded successfully	Fail
TC-009	User profile update or view	1. Navigate to the user icon 2. Click the icon	Click the user icon	User profile should open, displaying user details (name, email, order history, etc.)	Pass

Payment method

Project Name:		MediSphere-360: Your Complete Health Companion			
Module Name:		Payment Method			
Test Priority:		High			
Test Designed By:		M Shahriar Alam Shajid			
Test Designed Date:		26 January 2025			
Test Executed By:		M Shahriar Alam Shajid			
Test Execution Date:		27 January 2025			
Test Description:		Tests adding, updating, and processing payments securely while handling errors for invalid transactions.			
Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-10	Verify adding a new payment method	1. Log in. 2. Navigate to 'Payment Methods'. 3. Click 'Add Payment'. 4. Enter card details. 5. Save changes.	Card Number: 4578 2216 1873 2454 Expiry: 12/26	Payment method should be added successfully.	Pass
TC-11	Verify successful payment transaction	1. Log in. 2. Add items to cart. 3. Proceed to checkout. 4. Select payment method. 5. Complete transaction.	Card: Visa Amount: 500 BDT	Payment should be processed successfully with confirmation.	Pass
TC-12	Verify failed payment transaction	1. Log in. 2. Add items to cart. 3. Checkout with an invalid card. 4. Attempt payment.	Card: 0000 0000 0000 0000 Expiry: 01/20	Payment should fail with an error message.	Pass

Doctor Appointment Booking

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Doctor Appointment Booking
Test Priority:	High
Test Designed By:	Rafsan Mahmud
Test Designed Date:	26 January 2025
Test Executed By:	Rafsan Mahmud
Test Execution Date:	27 January 2025
Test Description:	Test the functionality that allows users to successfully book a doctor's appointment by selecting the doctor, date, and time, and submitting the request with valid information.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-13	Schedule an appointment with a doctor	1. Navigate to the appointment booking page. 2. Select a doctor, date, and time. 3. Click "Confirm Appointment."	Doctor: Dr. Smith Date: 2025-02-05 Time: 10:00 AM	Appointment is successfully booked, and a confirmation email/SMS is sent.	Pass
TC-14	Cancel an appointment	1. Navigate to the "My Appointments" section. 2. Select an upcoming appointment. 3. Click "Cancel" and confirm.	Appointment ID: 12345	Appointment is cancelled, and a cancellation email/SMS is sent.	Pass

TC-15	Reschedule an appointment	1. Navigate to the "My Appointments" section. 2. Select an upcoming appointment. 3. Choose a new date and time. 4. Click "Reschedule."	Old Date: 2025-02-05 New Date: 2025-02-07 Time: 2:00 PM	Appointment is successfully rescheduled, and an updated confirmation email/SMS is sent.	Pass
TC-16	Appointment confirmation via email/SMS	1. Book an appointment following TC-004. 2. Check the registered email and phone number.	Email: user@example.com Phone: +1234567890	Confirmation email/SMS is received with appointment details.	Fail

Ambulance Booking

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Ambulance Booking
Test Priority:	High
Test Designed By:	Rafsan Mahmud
Test Designed Date:	27 January 2025
Test Executed By:	Rafsan Mahmud
Test Execution Date:	29 January 2025
Test Description:	Enables users to request, track, and cancel ambulance services instantly based on location and urgency.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-17	Book an ambulance	1. Navigate to the ambulance booking page. 2. Enter pickup location. 3. Select ambulance type. 4. Confirm booking.	Pickup location: "123 Main St", Type: "Emergency"	Ambulance is booked successfully, and confirmation details are displayed.	Pass
TC-18	Track ambulance arrival	1. Navigate to "My Bookings." 2. Select an active ambulance booking. 3. Click "Track Ambulance."	Booking ID: "AMB67890"	Live tracking of the ambulance location is displayed.	Pass

TC-19	Cancel an ambulance booking	<p>1. Navigate to "My Bookings."</p> <p>2. Select an active ambulance booking.</p> <p>3. Click "Cancel Booking."</p>	Booking ID: "AMB12345"	Booking is cancelled successfully, and a confirmation message is shown.	Pass
--------------	-----------------------------	--	----------------------------------	---	------

Lab Test Booking

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	Lab Test Booking
Test Priority:	High
Test Designed By:	Rafsan Mahmud
Test Designed Date:	27 January 2025
Test Executed By:	Rafsan Mahmud
Test Execution Date:	28 January 2025
Test Description:	Allows users to search, select, and schedule lab tests with the option to cancel and download reports.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-20	Search Lab Test by Name	1. Navigate to the lab test booking page. 2. Enter test name in the search bar. 3. Click "Search."	Test Name: "Blood Test"	Relevant lab tests matching the search query are displayed.	Pass
TC-21	Select Test Package	1. Navigate to the lab test booking page. 2. Select a test package from the available options. 3. Click "Proceed."	Package: "Full Body Checkup"	Selected package is confirmed, and the user proceeds to appointment scheduling.	Pass

TC-22	Schedule Lab Test Appointment	<p>1. Navigate to the lab test booking page.</p> <p>2. Select a test and choose a date/time.</p> <p>3. Click "Confirm Appointment."</p>	<p>Test: "Liver Function Test",</p> <p>Date: "2025-02-05",</p> <p>Time: "10:00 AM"</p>	Appointment is scheduled successfully with confirmation details displayed.	Pass
TC-23	Cancel Lab Test Appointment	<p>1. Navigate to "My Appointments."</p> <p>2. Select an upcoming lab test appointment.</p> <p>3. Click "Cancel."</p>	Appointment ID: "LAB12345"	Appointment is cancelled, and confirmation is displayed.	Pass
TC-24	View Lab Test Reports	<p>1. Navigate to "My Reports."</p> <p>2. Select a completed lab test.</p> <p>3. Click "View Report."</p>	Report ID: "REP98765"	Lab test report is displayed with detailed results.	Pass

TC-25	Download Lab Test Report	1. Navigate to "My Reports." 2. Select a completed lab test report. 3. Click "Download."	Report ID: "REP98765"	The report is downloaded successfully in PDF format.	Fail
--------------	--------------------------	--	---------------------------------	--	------

Medical Image Upload and AI Evaluation

Project Name:	MediSphere-360: Your Complete Health Companion				
Module Name:	Medical Image Upload & AI Evaluation				
Test Priority:	High				
Test Designed By:	Rafsan Mahmud				
Test Designed Date:	29 January 2025				
Test Executed By:	Rafsan Mahmud				
Test Execution Date:	29 January 2025				
Test Description:	Allows users to upload MRI, CT scans, or X-rays for AI-driven anomaly detection and diagnostic insights.				
Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-26	Upload MRI/CT Scan/X-Ray	1. Navigate to the medical image upload page. 2. Click "Upload" and select an MRI, CT scan, or X-ray file. 3. Click "Submit."	File: "brain_mri.jpg"	Image is uploaded successfully, and processing starts.	Pass
TC-27	Validate Supported Image Format	1. Navigate to the medical image upload page. 2. Click "Upload" and select an unsupported file type (e.g., .pdf). 3. Click "Submit."	File: "report.pdf"	Upload fails with an error: "Unsupported file format."	Pass

TC-28	AI Model Evaluates Uploaded Image	1. Upload a valid medical image. 2. Wait for processing to complete.	File: "lung_xray.png"	AI model successfully processes the image and moves to the result display step.	Pass
TC-29	Display Anomaly Detection Result	1. Upload a valid medical image. 2. Wait for AI model evaluation. 3. View the results on the screen.	File: "ct_scan.jpg"	Detected anomalies (if any) are displayed with highlighted areas.	pass
TC-30	Download AI Evaluation Report	1. Upload a valid medical image. 2. Wait for AI processing. 3. Click "Download Report."	File: "mri_scan.jpeg"	A report is generated and downloaded successfully.	pass

User Profile

Project Name:	MediSphere-360: Your Complete Health Companion
Module Name:	User Profile
Test Priority:	High
Test Designed By:	M Shahriar Alam Shajid
Test Designed Date:	26 January 2025
Test Executed By:	M Shahriar Alam Shajid
Test Execution Date:	27 January 2025
Test Description:	Tests user information updates, including name, email, phone, profile picture, and address, ensuring proper validation and saving.

Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-31	Verify user can update email address	1. Log in. 2. Go to 'User Profile'. 3. Update email. 4. Click 'Save'. 5. Check confirmation email.	New Email: shajids023@gmail.com	Email should be updated successfully and a confirmation email sent.	Pass
TC-32	Verify user can change date of birth	1. Log in. 2. Navigate to 'User Profile'. 3. Edit date of birth. 4. Click 'Save'.	DOB: 01-01-1998	Date of birth should be updated and reflected correctly.	Pass
TC-33	Verify error message for invalid email format	1. Log in. 2. Go to 'User Profile'. 3. Enter an invalid email. 4. Click 'Save'.	Email: invalid-email	System should show an error message: "Invalid email format".	Pass
TC-34	Verify phone number validation	1. Log in. 2. Edit profile. 3. Enter an invalid phone number. 4. Click 'Save'.	Phone: 019523ssd	System should show an error message: "Invalid phone number".	Pass

User profile settings

Project Name:		MediSphere-360: Your Complete Health Companion			
Module Name:		User profile settings			
Test Priority:		High			
Test Designed By:		M Shahriar Alam Shajid			
Test Designed Date:		26 January 2025			
Test Executed By:		M Shahriar Alam Shajid			
Test Execution Date:		27 January 2025			
Test Description:		Tests user preferences like password changes, language selection, notifications, 2FA, and privacy settings for customization and security.			
Test Case ID	Test Scenario	Test Steps	Test data	Expected Result	Status
TC-35	Verify enabling two-factor authentication (2FA)	1. Log in. 2. Navigate to 'Settings'. 3. Enable 2FA. 4. Enter verification code. 5. Confirm.	OTP: 67423	2FA should be enabled successfully.	Pass
TC-36	Verify user can change language preference	1. Log in. 2. Go to 'Settings'. 3. Select a different language. 4. Save changes.	Language: Bengali	Application should switch to the selected language.	Fail
TC-37	Verify privacy settings update	1. Log in. 2. Navigate to 'Settings'. 3. Enable/disable profile visibility. 4. Save settings.	Visibility: Private/Public	Privacy settings should be updated accordingly.	Pass
TC-38	Verify deleting user account	1. Log in. 2. Go to 'Settings'. 3. Click 'Delete Account'. 4. Confirm deletion.	Confirm: YES	Account should be deleted and user logged out.	Pass

8. ITEM PASS/FAIL CRITERIA

The testing process will be considered complete when the following criteria are met:

1. **Functionality Accuracy:** The application's core features (doctor appointment booking, medicine ordering, ambulance service, etc.) must function as expected, with all user interactions producing the intended results. If any functionality fails to meet its defined requirements, it will be marked as **Fail**.
2. **Data Integrity:** Data entered by users, such as appointment details, medicine orders, and ambulance requests, must be accurately stored and retrieved from the system. If there are any discrepancies in the data, such as missing or incorrect information, the item will be marked as **Fail**.
3. **Error-Free Experience:** The application should not encounter any critical errors during typical use cases. This includes smooth navigation, no crashes, and proper error handling. Any errors that cause significant disruption to the user experience will be considered **Fail**.
4. **Performance Requirements:** The app should handle the expected load of users without significant lag or performance degradation. This includes successfully processing appointments, orders, and ambulance requests under normal usage conditions. Any performance issues that impede usability will be marked as **Fail**.
5. **Compliance with User Expectations:** The app should meet the expectations set out in the user requirements, including ease of use, timely notifications, and accurate results. If the app does not fulfill these expectations, it will fail to meet the acceptance criteria.
6. **Usability & Accessibility:** The user interface should be intuitive, and the app should be accessible to users with basic digital literacy. Any usability issues or accessibility barriers will be marked as **Fail**.

Out of the 38 test cases conducted for the MediSphere-360 project, 33 have successfully passed, while 5 encountered errors. The failed test cases include critical functionalities such as downloading lab reports, appointment confirmation via email, uploading prescriptions, password reset, and verifying the ability to change language preferences. This results in a **pass rate of approximately 86.84%** and a **fail rate of 13.16%**. Despite the few errors identified, the high pass rate reflects strong system stability and performance. Addressing these key issues will further enhance the project's reliability and ensure a seamless user experience.

9. TEST DELIVERABLES

1. **Test Plan:** A document that outlines the testing strategy, objectives, scope, and schedule. It defines which features of the application (e.g., appointment booking, medicine ordering, ambulance service) will be tested, along with the methods and tools that will be used.
2. **Test Cases:** Detailed descriptions of the specific tests to be executed, including the actions to be taken, the expected outcomes, and the criteria for success or failure. For instance, verifying that the user can successfully book a doctor appointment or track an ambulance request.
3. **Test Logs:** A record of each test executed, including the test case ID, results (pass/fail), and any deviations or unexpected behaviours observed during testing. This helps in tracking progress and identifying recurring issues.
4. **Defect Reports:** A formal log documenting any defects found during testing. Each defect includes details such as the issue description, steps to reproduce, severity, and the status of its resolution. This document helps the development team address the problems.
5. **Test Summary Report:** A final report summarizing the overall testing process, including the number of tests conducted, the pass/fail rate, any major issues found, and recommendations for further improvements. It serves as the conclusion of the testing phase, indicating whether the application is ready for release.
6. **Turnover Documentation:** A handover document that provides a summary of the testing activities, test results, and any remaining open issues. It ensures that the project can smoothly transition from the testing phase to deployment or further development.

10. STAFFING AND TRAINING NEEDS

Staffing Requirements

- **1 Full-Time Tester:** Responsible for system, integration, and acceptance testing. Initially part-time, then full-time in later phases.
- **2-3 Developers:** Assist with unit testing and fix reported issues.
- **Project Manager / Test Lead:** Oversees testing, defect tracking, and ensures quality.

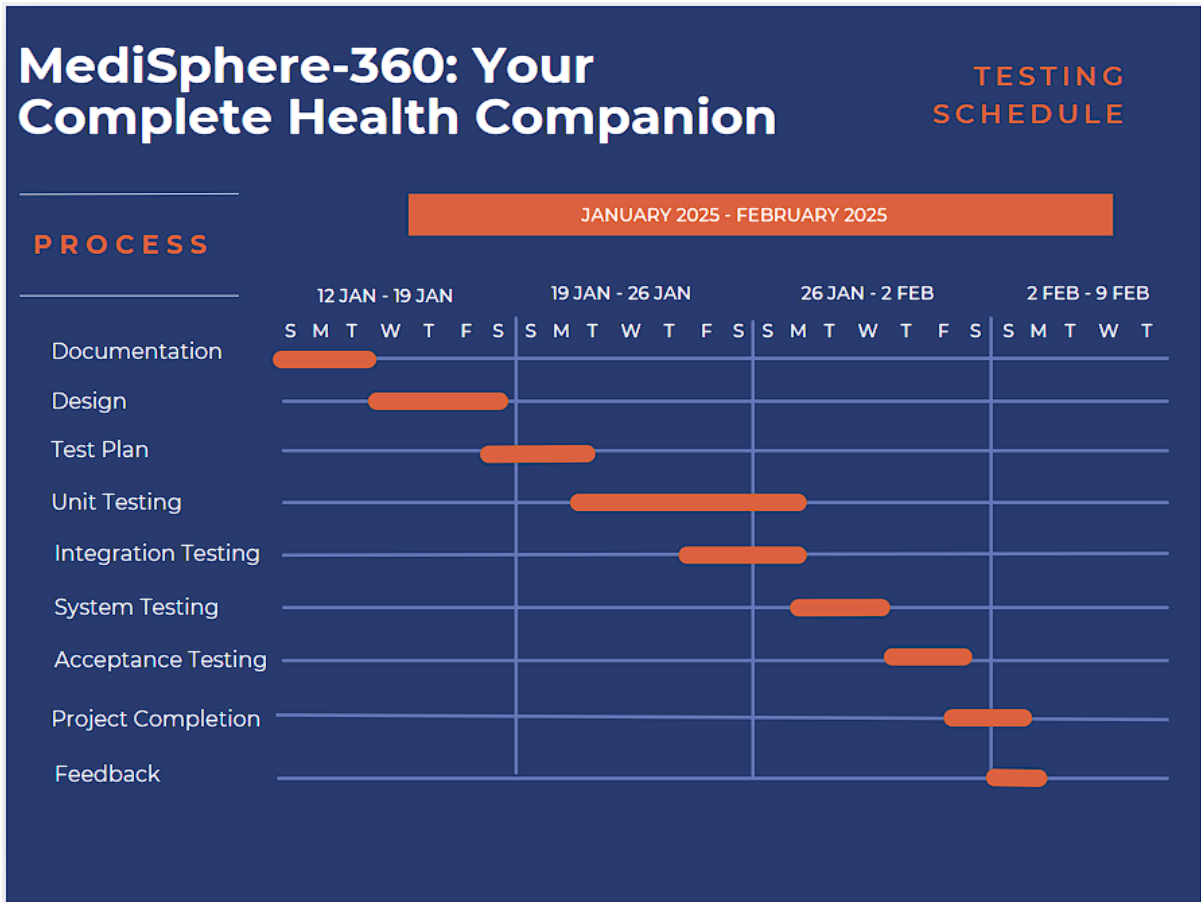
Training Requirements

- **Testers & Developers:** Training on app functionality (appointments, medicine orders, ambulance services).
- **Operations Staff:** Training on handling user data, managing appointments, and processing orders.
- **Support & Sales Teams:** Training on assisting users with issues and understanding reports.
- **Security & Compliance:** Training on data protection and secure transactions.

11. RESPONSIBILITIES:

Task	Project Manager	Dev Team	Test Team	AI Specialist	Client
Acceptance Test Documentation & Execution	X		X		X
System Integration Documentation and Execution	X	X	X		
Unit Test Documentation & Execution		X	X		
System Design Reviews	X	X		X	
Detail Design Reviews	X	X		X	
Test Procedures and Rules	X		X		
AI Model Evaluation & Validation				X	
API Integration Testing		X	X		
Change Control & Regression Testing	X	X	X		X

12. TESTING SCHEDULE



The MediSphere-360 testing schedule, spanning from January to February 2025, outlines a structured process to ensure efficient project development and completion. The schedule begins with documentation from January 12 to 15, followed by the design phase from January 15 to 19. The test plan is developed between January 18 and 22, overlapping slightly with the start of unit testing, which runs from January 20 to 28. Integration testing follows closely from January 24 to 29, ensuring smooth system compatibility. System testing is scheduled from January 29 to February 1, leading into acceptance testing from February 1 to 4. The project completion phase takes place from February 4 to 6, with the final feedback stage occurring from February 6 to 8. This well-organized timeline highlights overlapping tasks for streamlined progress, aiming for a thorough evaluation and timely project delivery.

13. PLANNING RISKS AND CONTINGENCIES

1. Limited Availability of Medical Experts: Medical professionals may have limited availability, causing delays in validating AI diagnosis and usability testing. To mitigate this, flexible schedules and backup consultants will be arranged.

2. Data Privacy and Security Concerns: Handling sensitive medical data poses security risks. To address this, data encryption, anonymized datasets, and regular security audits will be implemented.

3. Third-Party Service Integration Delays: Delays with third-party services (ambulance APIs, lab systems) may occur. Early API testing, vendor communication, and mock APIs will mitigate this risk.

4. Limited Testing Resources: Shortages of QA staff or resources could impact schedules. Cross-training team members and optimizing resource allocation will help manage this.

5. User Acceptance Testing (UAT) Delays: Delays in client feedback during UAT can affect timelines. A clear UAT schedule and regular follow-ups will ensure timely feedback.

6. Regulatory Compliance Issues: Non-compliance with healthcare regulations could halt deployment. Regular compliance reviews and legal consultations will be conducted as needed.

14. APPROVALS

Role	Name
Project Sponsor	Walton Group
QA Manager	Adnan Md. Wahidur Rahman
AI Module Tester	RAFSAN MAHMUD
API Integration Lead	Billah Emon
Security Compliance Officer	Shajid Alam