American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

Spring 22-23

Section: J

Software Quality Testing

Hospital Management System

A Report Submitted By

SN	Student Name	Student ID
1	MD. SHAYED AHMED SHAMS	20-43513-1
2	MD. MONZURUL KABIR ZHANDA	20-43495-1
3	FAHIM MUNTASIR RUBY	20-43557-1
4	MD. SHOHAIBUR RAHMAN	20-42424-1

Under the supervision of

FARZANA BENTE ALAM

Lecturer, Computer Science

American International University Bangladesh

Software Test Plan

for

<Hospital Management System>

Version 1.0 approved.

Prepared by

MD. SHAYED AHMED SHAMS,

MD. MONZURUL KABIR ZHANDA

FAHIM MUNTASIR RUBY

MD. SHOHAIBUR RAHMAN

American International University – Bangladesh

Date: 28-04-23

Checked By Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

Table of Contents

Revision History

Revision	Date	Updated by	Update Comments
0.1	16.04.23	MD. MONZURUL KABIR ZHANDA	First Draft
0.2	17.04.23	MD. SHAYED AHMED SHAMS	Second Draft
0.3	20.04.23	MD. SHOHAIBUR RAHMAN	Third Draft
0.4	24.04.23	FAHIM MUNTASIR RUBY	Fourth Draft
0.5	26.04.23	MD. MONZURUL KABIR ZHANDA	Fifth Draft

1. TEST PLAN IDENTIFIER: RS-MTP01.3

2. REFERENCES

1. Software Requirement Specification (SRS) Document**:** **https://docs.google.com/document/d/1QYvdHei3q3_D-WpnywO8RSgoPmboJXG7/edit?usp=share_link&ouid=108436384430021449338&rtpof=true&sd=true**

2. Git Reference: https://github.com/lumenSpes/hms-final

3. INTRODUCTION

Background to the Problem

The healthcare industry faces numerous challenges in managing patient data and providing timely and efficient healthcare services. As the industry continues to evolve and adapt to changing patient needs, healthcare providers are turning to technology solutions such as healthcare management systems to streamline processes and improve patient outcomes. A healthcare management system is a software application that helps healthcare providers manage patient data, appointments, medical records, billing, and other administrative tasks. These systems help healthcare providers to provide better patient care by enabling them to access patient data quickly and accurately, track patient progress, and automate many time-consuming administrative tasks. The goal of a healthcare management system is to improve the quality of care that patients receive while reducing costs and increasing efficiency for healthcare providers. However, the development and implementation of a healthcare management system requires a team of skilled professionals to ensure that the system meets the needs of both healthcare providers and patients. The team must have a deep understanding of the healthcare industry, technology, and

software development to design and implement a system that is user-friendly, secure, and effective in managing patient data and providing healthcare services.

The Solution to the Problem

A Healthcare Management System is a web application designed to simplify and improve healthcare processes for patients and healthcare providers. The system allows patients to register online, book appointments, and receive medical advice from qualified healthcare professionals. With a user-friendly interface and automated features, patients can easily manage their health and well-being from the comfort of their own homes.

The Healthcare Management System is built using the latest technologies and programming languages to ensure fast and reliable performance. The system utilizes Laravel and core PHP, with a clean and expressive syntax to create a seamless experience for users. The user interface is designed with a modern, responsive design, making it accessible from any device, whether desktop, laptop, tablet, or smartphone.

Patients can easily register online and create a profile that includes their personal information, medical history, and insurance details. This information is securely stored in the system and can be updated as needed. The system allows patients to book appointments with their preferred healthcare providers, including doctors, nurses, and specialists. Patients can view their upcoming appointments, receive reminders, and reschedule or cancel appointments as needed.

The Healthcare Management System also includes features for healthcare providers, such as patient management, medical record keeping, and appointment scheduling. Providers can access patient information, update medical records, and communicate with patients through the system. The system also includes a feedback feature, allowing patients to provide feedback on their experience with healthcare providers.

Overall, the Healthcare Management System is designed to improve healthcare processes and simplify healthcare management for patients and healthcare providers alike. By providing a user-friendly interface, automated features, and modern design, the system helps to streamline healthcare delivery and improve patient outcomes.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

List down the system functional requirements that describe the system's functionalities.
System Login
Functional Requirements

1.1 The system shall allow users to login with their given username and password.

1.2 If the user forgets their password, the system shall allow them to reset their password through the **"Forget Password" feature.**

1.3 If the user enters incorrect login credentials e times, the system shall prompt a specific message to try again.

User Registration

Functional Requirements

2.1 The system shall allow users to register for an account by providing their personal details such as name, email, and contact information.

2.2 The system shall verify the user's email address to ensure it is valid and unique.

2.3 The system shall generate a unique username for each registered user.

Forget Password

Functional Requirements

3.1 The system shall prompt the user to enter a new password and confirm the new password.

Change Password

Functional Requirements

4.1 Same functionalities as Forget Password.

Profile Management

Functional Requirements

5.1 The system shall allow users to view and update their personal details such as name, email, and contact information.

5.2 The system shall allow users to view their appointment history.

Logout

Functional Requirements

6.1 The system shall allow users to log out of their account and terminate their current session.

User Management

Functional Requirements

7.1 The system shall allow authorized users to create, view, update, and delete user accounts.

7.2 The system shall ensure that user account details are stored securely and confidentially.

Appointment Management

Functional Requirements

8.1 The system shall allow users to view all appointments and their details such as appointment date and time, and doctor name.

8.2 The system shall allow users to cancel appointments.

Medicine Management

Functional Requirements

10.1 The system shall allow authorized users to create, view, update, and delete medicine records.

10.2 The system shall allow users to view the availability of medicines.

4.2 System Quality Attributes

List down the quality attributes that describe how well the system should perform.

1. Usability: The ease of use and learnability of the system for users, including patients, healthcare professionals, and administrative staff. For example, a user should be able to submit a complete request for a selected doctor from a catalog in an average of four and a maximum of six minutes.

2. Reliability: The ability of the system to perform its functions accurately and consistently, without errors or unexpected downtime. For example, the system should reliably store and retrieve patient records, appointments, and other data.

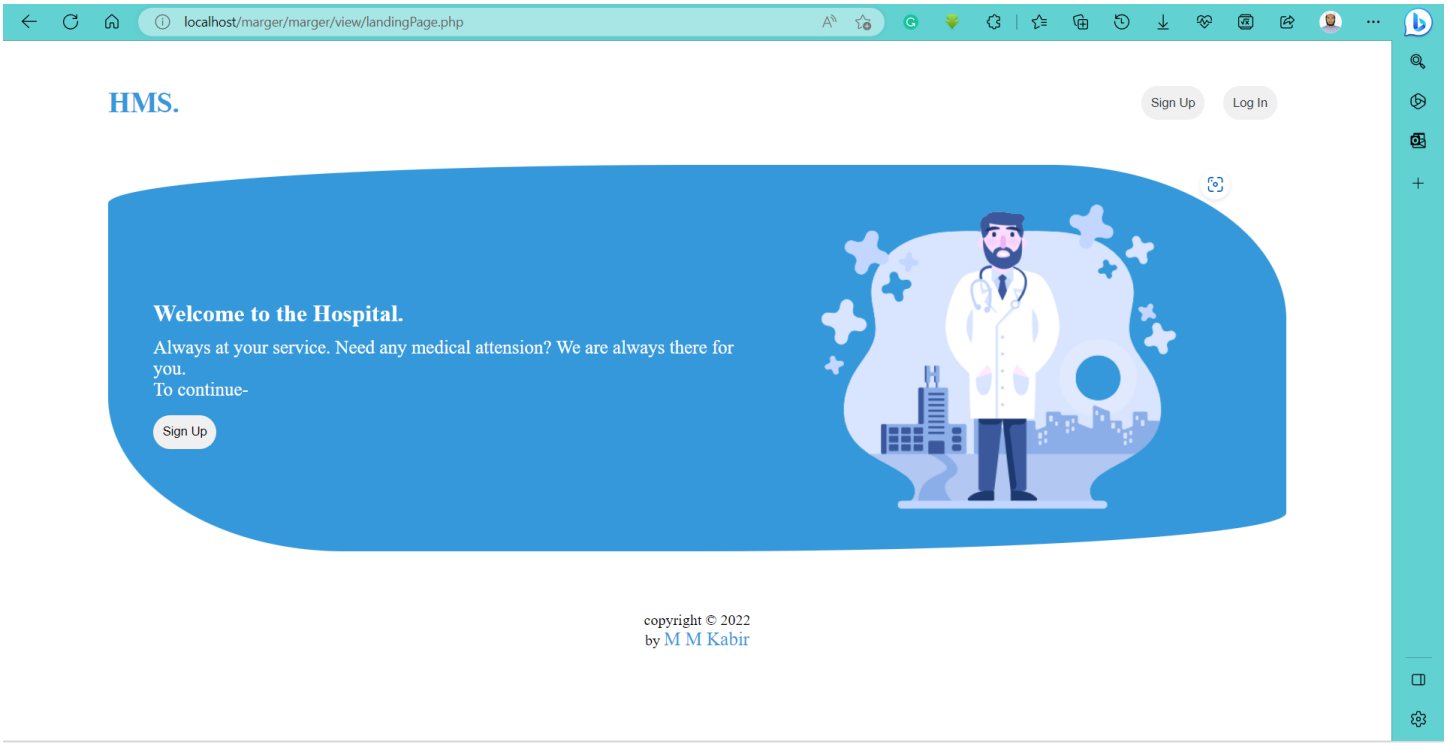
3. Security: The protection of sensitive patients and organizational data from unauthorized access, use, or disclosure. For example, the system should have robust authentication and access control mechanisms and comply with data privacy regulations such as HIPAA.

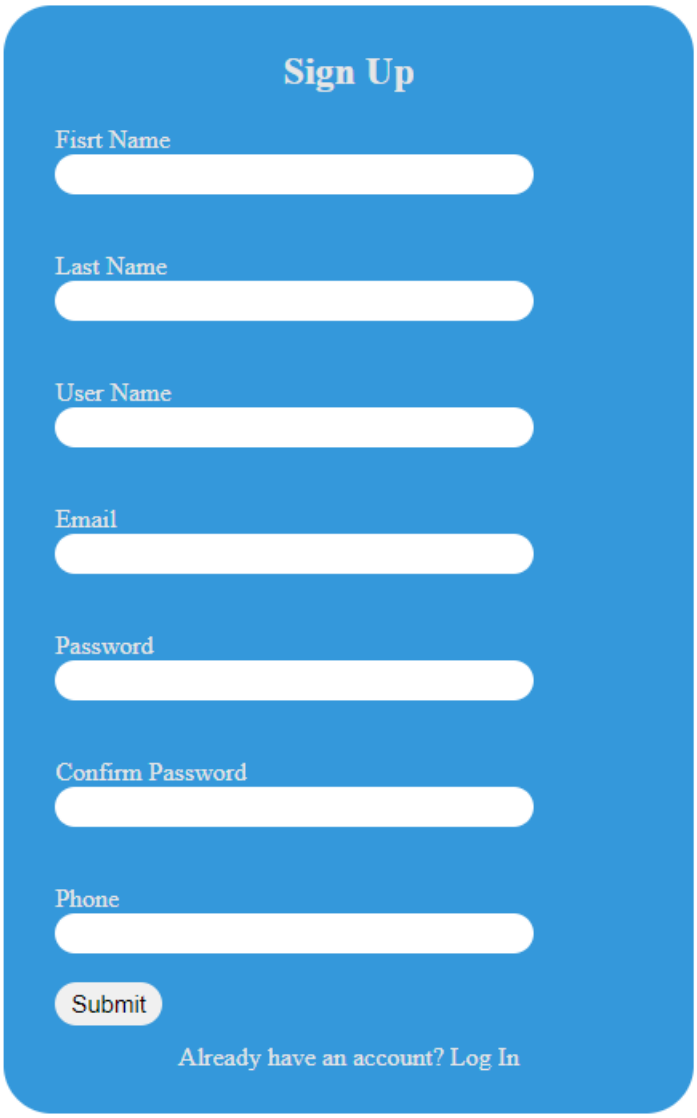
4. Performance: The speed, responsiveness, and scalability of the system under different load conditions. For example, the system should be able to handle many simultaneous requests without slowing down or crashing.

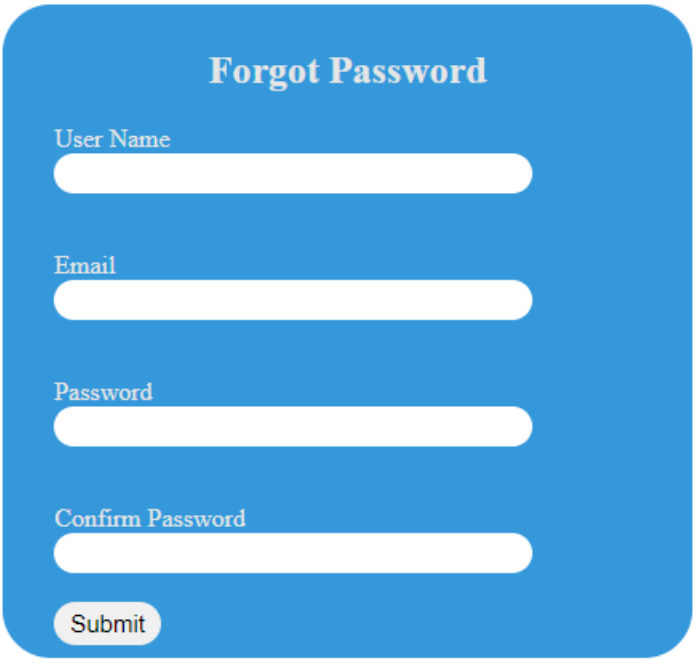
5. Maintainability: The ease with which the system can be modified, updated, and repaired over its lifetime. For example, the system should have a modular architecture and clean documentation designed for easy debugging and testing.

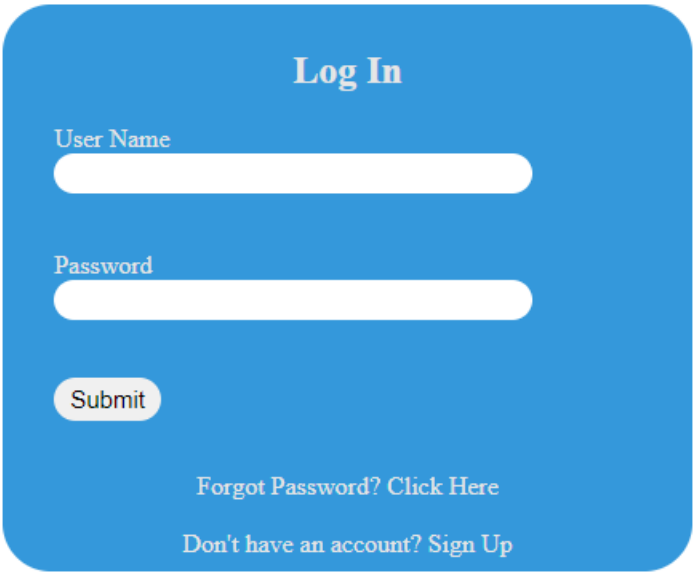
6. Portability: The ability of the system to run on different hardware and software platforms without significant modification. For example, the system should be able to run on different operating systems and web browsers and be easily deployable in different healthcare settings.

4.3 System Interface




Sign Up
Fisrt Name
Last Name
User Name
Email
Password
Confirm Password
Phone
Submit
Already have an account? Log In


Forgot Password
User Name
Email
Password
Confirm Password
Submit


Log In
User Name
Password
Submit
Forgot Password? Click Here
Don't have an account? Sign Up

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Change Password

New Password

Confirm Password

Submit

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Welcome. mKabir

Fisrt Name
Monzurul Kabir

Last Name
Zhanda

User Name
mKabir

Email
monzurul@gmail.com

Phone
01478523678

Update

copyright © 2022

by M M Kabir

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Patient ID
P2201 Search

First Name	Last Name	Age	Disease	Last Diagnosed	History	Action
Babul	Akhter	45	Heart Disease	2 months ago	high bp, has diabetes	Prescribe

copyright © 2022

by M M Kabir

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Patient ID

Meeting Link

Instruction

Submit

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Change Payment Option

Select Bank

Dhaka Bank

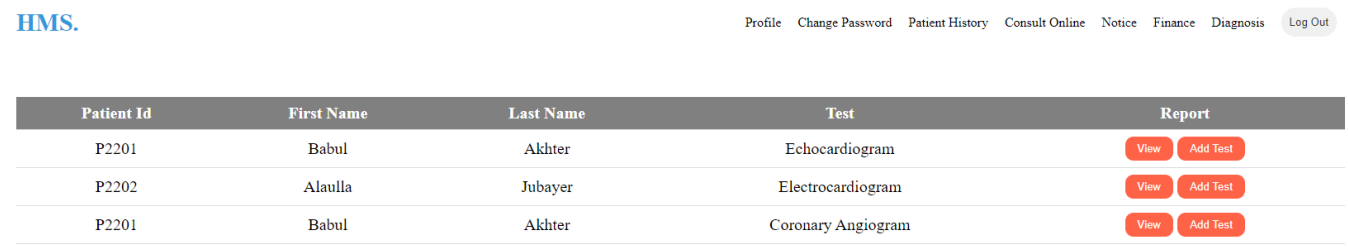
Account No.

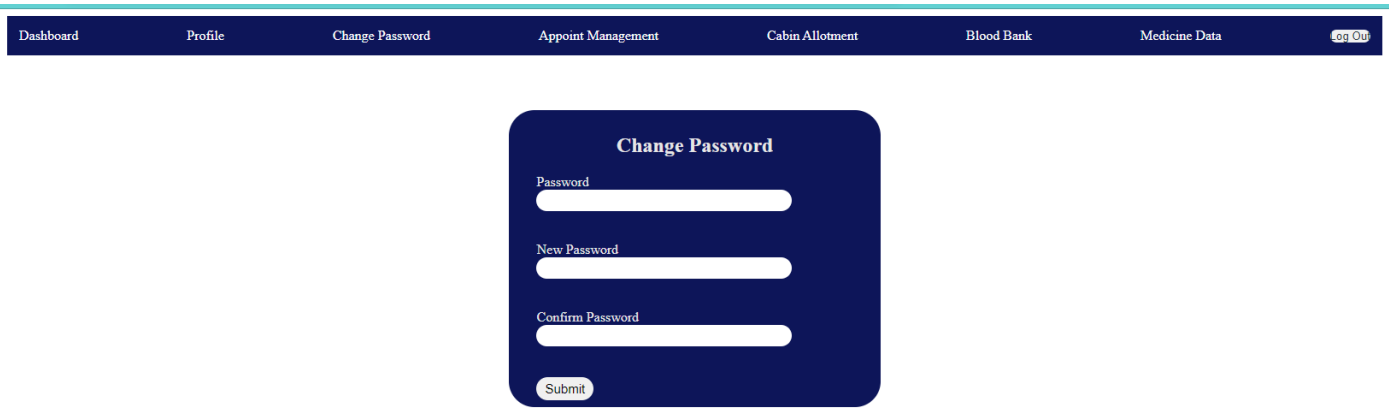
Update

HMS.

Profile Change Password Patient History Consult Online Notice Finance Diagnosis Log Out

Notice	Date
Vecation: Wednesday 30-11-2022. For special occation there will be vecation on the 30th of November	28-11-2022





4.4 Project Requirements

List the project constraints (e.g., time, budget, resources, environment, etc.) that should be followed in the project management.

Project Constraints:

a. Budget: The total budget for the project is set at $10000 including all costs associated with the development, testing, and deployment of the Hospital Management System.
b. Time: The project should be completed within 18 months, with a planned delivery date of December 31, 2024.
c. Resources: The development team will consist of 10 members, including a project manager, software developers, testers, and UX designers.
d. Environment: The Hospital Management System should be developed using the latest technologies and programming languages that are compatible with the hospital's existing IT infrastructure.
e. Members should have technical knowledge.

f. A space for collaboration.
g. Dedicated IDE for development

5. FEATURES NOT TO BE TESTED

The following is a list of the areas that will not be specifically addressed. All testing in these areas will be indirect because of other testing efforts. For example:

PC-based spreadsheet analysis applications using Reassigned Sales data. Because these applications are completely under the control of the customer and are outside the scope of this project. The necessary database format information will be provided to the customers to allow them to extract data. Testing of their applications is the responsibility of the application maintainer/developer.
Some examples of features not to be tested could include:

6. TESTING APPROACH

6.1 Testing Levels

In this project, we will implement a test plan for the Healthcare System. To ensure that the software is of high quality, we will need to go through three major stages of testing. These stages include functional testing, integration testing, and acceptance testing.
Functional Testing: We will use a combination of black-box and white-box testing techniques to ensure that the system meets all functional requirements. Black-box testing will focus on testing the system from the user's perspective, while white-box testing will focus on testing the internal structure of the system. The functional testing phase will include the following types of testing:

1. Unit Testing: We will perform unit testing on each module of the system to ensure that the modules are functioning as expected. We will create test cases for each unit, and we will run these tests after completing each module. We will use both static and dynamic unit testing techniques to ensure that all defects are identified and fixed early in the testing process.
2. Integration Testing: We will perform system integration testing to ensure that all individual modules are working together correctly when integrated into the system. We will create test cases for the interface between the system components to ensure that all interactions between modules are correct.
3. System Testing: After completing integration testing, we will move on to system testing. System testing is a type of software testing that is performed on a complete, integrated system to evaluate the system's compliance with its specified requirements. The purpose of system testing is to ensure that the system functions correctly and meets all the specified requirements. This type of testing is typically performed after integration testing and before acceptance testing. It helps to identify defects and bugs that can arise when the system components are integrated, and ensures that the system performs as intended under various conditions.
4. Acceptance Testing: The final stage of testing is acceptance testing. This will be done by the final users with the help of our development team. The goal of acceptance testing is to ensure that the system meets all the user requirements. During this phase, we will create test cases that focus on the system's usability, reliability, and performance. We will also ensure that the system meets all regulatory requirements.

Overall, this testing approach will ensure that the healthcare system is functioning as expected, is reliable, and meets all the user requirements.

6.2 Test Tools

At the industry level, there are several different test tools that can be used to test a 'Healthcare Management System' software application.

Automated testing tools: These tools can be used to automate the testing process, allowing developers to test the software quickly and efficiently.

At the industry level, there are many different software applications that can be used to test a 'Donate Money for Needy People' software application. Some common examples of testing software that may be used in this context include:

Selenium: This is an open-source automated testing tool that is commonly used for web application testing.

6.3 Meetings

A software testing meeting is a meeting where individuals involved in the testing of a software application come together to discuss the progress of the testing, any issues that have been identified, and any necessary next steps. This may include discussing the results of the testing, identifying any defects or flaws in the software, and determining how to address these issues. The goal of the meeting is to ensure that the software is functioning properly and meets all of the necessary requirements before it is released to the public. During the software testing meeting, attendees may include the project manager, senior test engineer (test lead), junior test engineer, testing manager, and database analyst, among others. These individuals may provide updates on the testing process, discuss any issues that have been identified, and provide input on how to address these issues. The meeting may also involve reviewing and discussing test results, as well as discussing any necessary changes or modifications to the software. Overall, a software testing meeting is an important part of the software development process, as it allows individuals involved in the testing to come together and collaborate on ensuring the success of the project.

7. TEST CASES/TEST ITEMS

Test Case ID: FR_1			Test Designed date: 26/04/2023	
Test Priority (Low, Medium, High): Medium			Test Executed by: Md. Monzurul Kabir Zhanda	
Module Name: Login and logout Session			Test Execution date: 26/04/2023	
Test Title: verify login with valid username and password				
Description: Test website login page				
Precondition (If any): The user must have a valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter username 3. Enter password 4. Click submit 5. Click Logout	Username: mKabir Password: 123	The user should login into the application The user should be logged out	As expected,	Pass
Post Condition: The user is validated with the database and successfully login to the account. The account session details are logged in the database.				

Test Case ID: FR_2			Test Designed date: 26/04/23	
Test Priority (Low, Medium, High): Medium			Test Executed by: Fahim Muntasir Ruby	
Module Name: Patient History			Test Execution date: 26/04/23	
Test Title: Patient history check				
Description: Test Patient history by id				
Precondition (If any): Patient must be appointed letter				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter Patient ID 3. Click submit	Patient ID: P2201	Shows patient disease history and includes id name and age	As expected,	Pass
Post Condition: For showing the patient history all needed data of a patient must be stored in the database.				

Test Case ID: FR_3			Test Designed date: 26/04/23	
Test Priority (Low, Medium, High): Medium			Test Executed by: Sayed Ahamed Shams	
Module Name: Appointment management			Test Execution date: 26/04/023	
Test Title: verify delete and edit functionality in appointment module				
Description: Test website Appointment page				
Precondition (If any): Admin can add, delete appointments, and edit appointment details				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Delete an Appointment 3. Edit an Appointment 4. Click submit	Patient Name: Hasan Jahid Email: jahid@gmail.com	One appointment should be deleted and another's name and email should be updated.	As expected,	Pass
Post Condition: Appointment information should be stored in the database and should be accessible for both admin and doctor.				

Test Case ID: FR_4			Test Designed date: 26/04/23	
Test Priority (Low, Medium, High): Medium			Test Executed by: Md. Shohaibur Rahman	
Module Name: Diagnosis test			Test Execution date: 26/04/23	
Test Title: add a medical test for a specific patient.				
Description: Test website diagnosis page.				
Precondition (If any): The doctor must have a valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click add report 3. Select test 4. Click submit button	Patient ID: P2201 Test Name: Coronary Angiogram	The doctor should be redirected to the homepage.	Test criteria passed. successfully.	Pass
Post Condition: A test request should be added to the desired patient's reference.				

8. ITEM PASS/FAIL CRITERIA

The test process will be completed once the initial set of distributors have successfully sent in reassigned sales data for a period of one month and the new EDI data balances with the old ZIP/FAX data received in parallel. When the sales administration staff is satisfied that the data is correct the initial set of distributors will be set to active and all parallel stopped for those accounts.

9. TEST DELIVERABLES

- Acceptance test plan
- System/Integration test plan
- Unit test plans/turnover documentation
- Screen prototypes
- Report mock-ups
- Defect/Incident reports and summaries
- Test logs and turnover reports

10. STAFFING AND TRAINING NEEDS

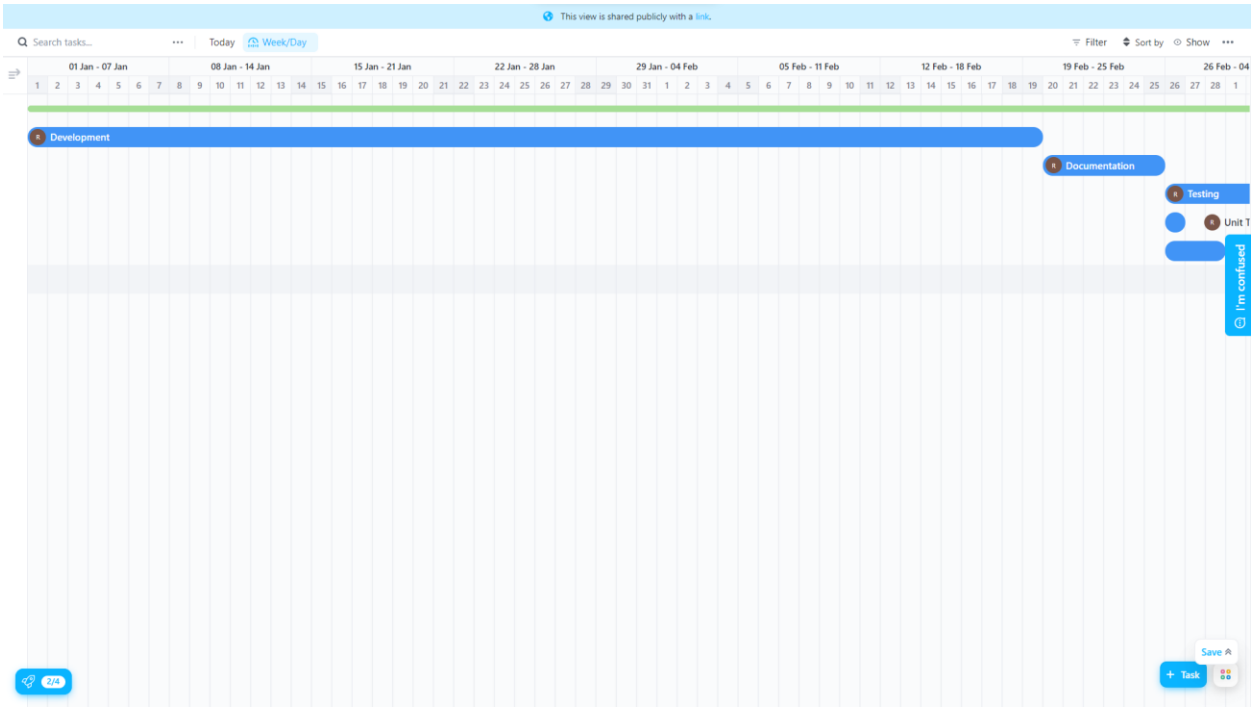
The significance of having capable personnel and teams involved in the construction and delivery of a project cannot be overstressed. Competent workers and staff are essential for the successful completion of the project on budget and on schedule. Without skilled workers, meeting project deadlines can be challenging. Therefore, it is imperative to thoroughly evaluate the qualifications of personnel and workers through testing and skill-based training sessions. The project team may consist of a project manager, senior test engineer, junior test engineer, testing manager, database analyst, and other professionals. In case a senior test engineer is not available, the project manager can take over or replace the junior engineer with someone possessing the required expertise.

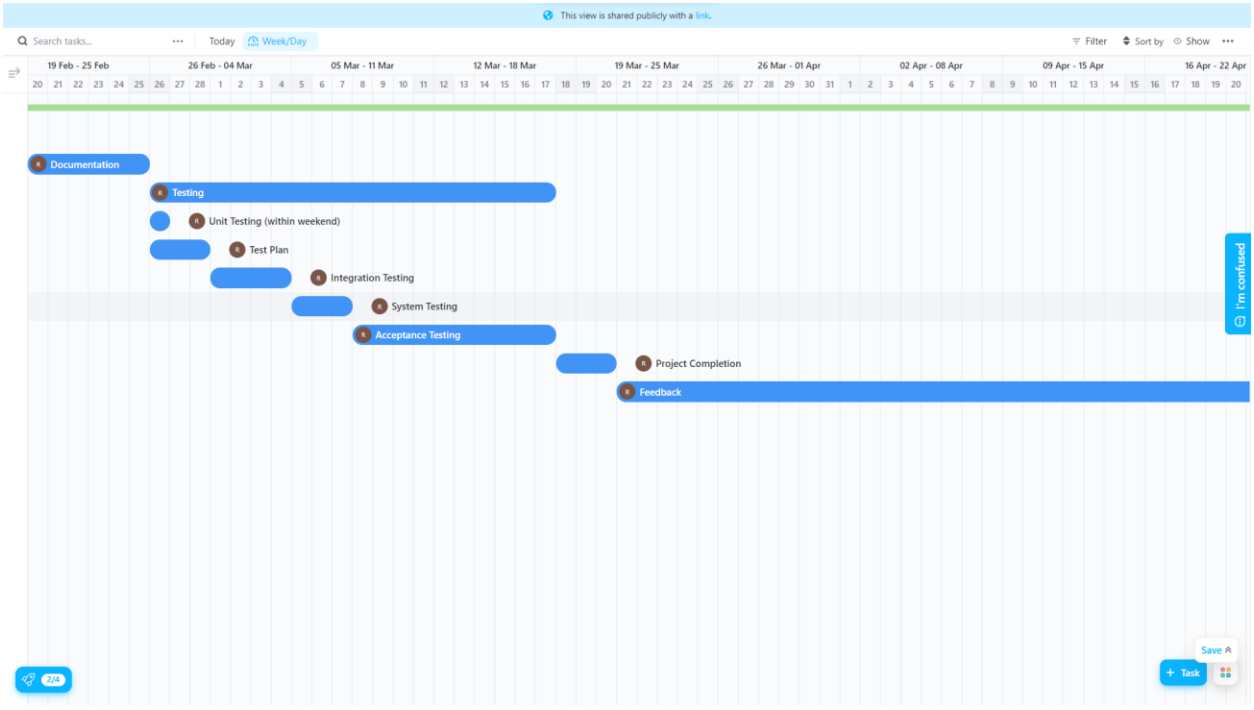
11. RESPONSIBILITIES

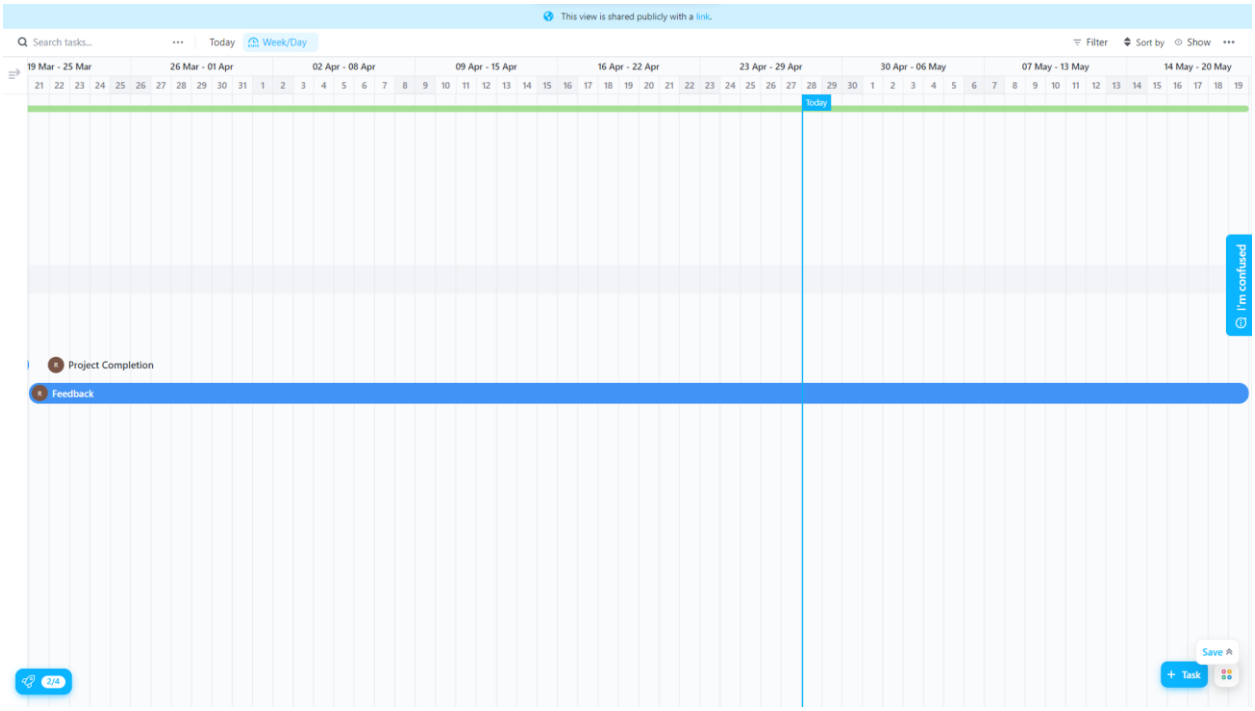
	Team Manager	Project Manager	Development Team	Test Team	Client
Acceptance of test Documentation & Execution	✓	✓		✓	✓
System/Integration test documentation and execution	✓		✓	✓	
Unit Test documentation and execution	✓		✓	✓	
System design reviews	✓	✓	✓	✓	✓
Details design reviews	✓	✓	✓	✓	
Test procedures and rules	✓	✓	✓	✓	
Screen and report prototype reviews			✓	✓	✓
Change control and regression testing	✓	✓	✓	✓	✓

12. TESTING SCHEDULE

Time has been allocated within the project plan for the following testing activities. The specific dates and times for each activity are defined in the project plan timeline. The people required for each process are detailed in the project timeline and plan as well. Coordination of the personnel required for each task, test team, development team, management, and customer will be handled by the project manager in conjunction with the development and test team leaders. Schedule must be done using any PM tool.






This view is shared publicly with a link.
Search tasks...
Today
Week/Day
Filter
Sort by
Show
19 Mar - 25 Mar
26 Mar - 01 Apr
02 Apr - 08 Apr
09 Apr - 15 Apr
16 Apr - 22 Apr
23 Apr - 29 Apr
30 Apr - 06 May
07 May - 13 May
14 May - 20 May
Today
I'm confused
Project Completion
Feedback
2/4
Save
Task

13. PLANNING RISKS AND CONTINGENCIES

Risk	Category	Probability	Impact
1) In accurate Estimations	PS	60%	2
2) Scope Variations	PS	40%	3
3) End-user Engagement	BU	70%	2
4) Stakeholder Expectations	CU	20%	1
5) Poor Quality Code	DE	50%	3
6) Poor Productivity	PR	30%	3
7) Requirement Inflation	PS	70%	2
8) In adequate Risk Management	PS	30%	2
9) Low Stakeholder Engagement	CU	20%	1
10) In adequate Human Resources	ST	60%	3
11) Lack of Ownership	CU	20%	1
12) Specification Breakdown	PS	40%	3
13) Employee Turnover	ST	60%	2
14) In accurate Estimations	PS	55%	2
.....	.....	.....	.....
.....	.....	.....	.....

Impact values

1. Catastrophic.

2. Critical.

3. Marginal.

4. Negligible.

14. APPROVALS

Project Manager	**MD. MONZURUL KABIR ZHANDA**
Developer	**TANVIN TUSHAR**
Test Lead	**MD. SHAYED AHMED SHAMS**
Test Planner	**IMRAN HOSSEN**
Tester	**FAHIM MUNTASIR RUBY**
End User	**MD. SHOHAIBUR RAHMAN**