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Department of Computer Science

Faculty of Science & Technology (FST)

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Section: B

Software Quality and Testing

Hospital Management System

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Associate Professor, Faculty, Department of Computer Science

Software Test Plan

Hospital Management System

Version 3.17.2 approved

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Table of Contents

Revision History	4
1. TEST PLAN IDENTIFIER: HMS-MTP01.1	4
2. REFERENCES.....	4
3. INTRODUCTION.....	4
Background of the problem:	4
Solution to the Problem:	4
4. REQUEIREMNT SPECIFICATION	5
4.1 System Features	5
4.2 System Quality Attributes.....	6
4.3 System Interface.....	7
4.3.1 Home Page:	7
4.3.2 Sign Up:	7
4.3.3 Login Page:	8
4.3.4 Login Page:	8
4.3.5 Dashboard:	9
4.3.6 Dashboard:	9
4.3.7 Inventory:	10
4.3.8 Vendor:	10
5. TESTING APPROACH.....	11
5.1 Testing Levels	11
5.2 Test Tools.....	11
6. SOME INTERFACES TESTING WITH SELENIUM.....	12
6.1 Home page:	12
6.2 Sign Up:	12
6.3 Login page:	13
6.4 Login page:	13
6.5 Dashboard:	14
6.6 Dashboard:	14
6.7 Inventory:	15
6.8 Vendor:	15
7. TEST CASES:.....	16
7.1 Home Page:	16
7.2 Sign up:	17
7.3 Admin Login:	18
7.4 Doctor Login:	19
7.5 Admin Dashboard:	20
7.6 Doctor's Dashboard:	21
7.7 Inventory:	22
7.8 Vendor:	23
8. ITEM PASS/FAIL CRITERIA	24
9. APROVALS:	24

Revision History

Revision	Date	Updated by	Update Comments
0.1	25-11-2023	Riaz Sarker	Checked all draft
0.2	25-11-2023	Md Saimun Islam Rahat	Checked all draft
0.3	25-11-2023	Jahidul Islam	Checked all draft

1. TEST PLAN IDENTIFIER: HMS-MTP01.1

2. REFERENCES

- Software Quality and Testing Course PowerPoint Slides
- Software Requirements Specification (SRS) Document
- Software Requirement documentation
- <https://www.w3schools.com/>

3. INTRODUCTION

Background to the Problem:

Problem Statement Since Hospital is associated with the lives of common people and their day-to-day routines so I decided to work on this project. The manual handling of the record is time consuming and highly prone to error. The purpose of this project is to automate or make online, the process of day to-day activities like Room activities; Admission of New Patient, Discharge of Patient, Assign a Doctor, and finally compute the bill etc. I have tried my best to make the complicated process Hospital Management System as simple as possible.

Solution to the Problem:

Hospital Management System provides the benefits of streamlined operations, enhanced administration, control, superior patient care, strict cost control and improved profitability. HMS is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. More importantly it is backed by reliable and dependable support. The project 'Hospital Management System' is based on the database, object oriented and networking techniques. As there are many areas where we keep the records in database for which we are using my SQL software which is one of the best and the easiest software to keep our information. This project uses java as the front-end software which is an Object Oriented Programming and has connectivity with my SQL. Hospital Management System is custom built to meet the specific requirement of the mid and large size hospitals across the globe. All the required modules and features have been particularly built to just fit in to people requirement.

4. REQUIREMENT SPECIFICATION

4.1 System Features

1. Admin:

- 1.1. Login: Admin can login to the system (The password and username will be given)
- 1.2. Logout: Admin can log out from the system when they needed
- 1.3. See User Profile: Admin can see user profile to verify they are valid or fake
- 1.4. See Feedback: Admin can view the feedback
- 1.5. Add Patient Details: Admin can add Patient Details
- 1.6. Discharge Patient: Admin can remove any discharge patient data.
- 1.7. Add new Patient/Doctor: Admin can add new Doctor or new Patient in their data table.
- 1.8. View All Recent patient: Admin can view all Recent Patient
- 1.9. Remove/Add Vendors: Admin can Remove/Add any Vendors.

Priority Level: High

Precondition: Admin must have valid email and password

2. Doctor:

- 2.1. Sign Up: Doctor's can create their account.
- 2.2. Login: After creating account, Doctor's can log in the system.
- 2.3. Log Out: Doctor's can logout from the system.
- 2.4. Add Instrument Details: Doctor's can add his Instrument for his work.
- 2.5. Edit Instrument Details: Doctor's can edit product details.
- 2.6. Delete: Doctor's can delete their instrument details from data table.
- 2.7. Delete Account: Doctor's can delete their products.
- 2.8. Contact Admin: Doctor's can contact with the admin.

Priority Level: High

Precondition: Doctor's must have valid email and password

3. Vendor:

- 3.1. Register: Vendors can register their account to the system
- 3.2. Sell: Vendors can sell their medicine follow with Doctors prescriptions.
- 3.3. Update: Vendors can update their medicine products.
- 3.4. View Product: Vendors can view product on system (HMS).
- 3.5. Delete from the Cart: Vendors can delete product from the system or cart.
- 3.6. Received Money: Vendors can received money from patient.

Priority Level: High

Precondition: Vendors must contact with admin for entry their pharmacy name on their system (HMS).

4.2 System Quality Attributes

USABILITY:

This website is user-friendly because it will be accessed by many individuals. The software ought to be easy to use. The system's simple features and navigation mean that new or infrequent users don't need to learn anything new in order to utilize this website. This website is easy for doctors and admin to use.

RELIABILITY:

Our software ensures precision and furnishes the user with the precise data or therapeutic expertise they seek. Users can get the desired outcome from this website. The website is safe to use. It will also gradually enhance. And it undergoes multiple tests.

EFFICIENCY:

Important aspect of system quality measured in terms of the amount of time needed for whatever task the system is given to finish. The program will be highly effective on a wide scale. We have tried to make this application have a large scale in efficiency because end users will widely use this. As the maximum stakeholders are patients, efficiency was the main priority.

MAINTAINABILITY:

This part refers to how quickly the maintenance crew can do their duty. It is the system framework's capacity. Maintainability enables the establishment of the framework following a failure. This task is to solve found bugs, add new or make changes to the old feature.

FLEXIBILITY:

The effort needed to alter an operational program is referred to as flexibility. We have no trouble or hesitation adding any module to our system. To make it easy to add modules, we have always maintained a pretty simple module design.

4.3 System Interface

4.3.1 Home Page:

This is the Homepage, when someone first open the website, they will find this page.

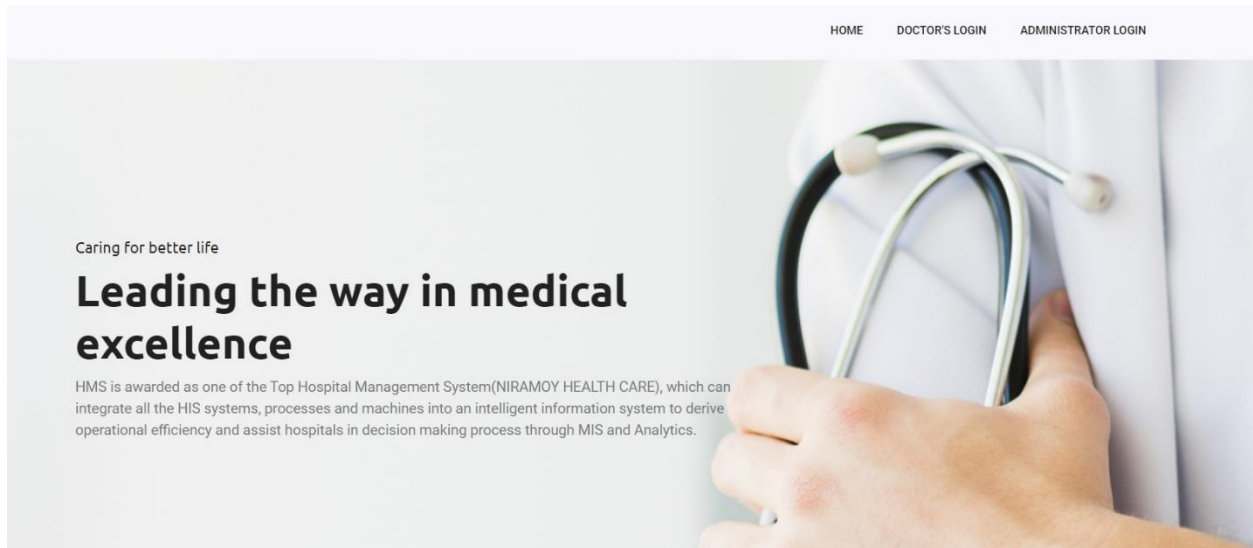


Figure 1: Home page

4.3.2 Sign Up:

This is the registration page. Where employee can create an account with email and password.

The screenshot displays the 'Add Employee Details' page within the Niramoy Health Care system. The top navigation bar includes a menu icon, 'Create New' with a dropdown arrow, a search bar with the placeholder 'Search...', and a user profile for 'System Administrator' with a dropdown arrow. The main heading is 'Add Employee Details', and the breadcrumb trail shows 'Dashboard > Employee > Add Employee'. The form area is titled 'Fill all fields' and contains four input fields: 'First Name' (with the value 'Dr. Riaz'), 'Last Name' (with the value 'Sarker'), 'Email' (with the value 'sarker@gmail.com'), and 'Password' (with masked characters '*****'). A green 'Add Employee' button is positioned at the bottom of the form. The footer of the page indicates the copyright '2023 - 2023 © Niramoy Health Care.'

Figure 2: Sign Up Page

4.3.3 Login Page:

This is the Login page. Where admin can login the website.

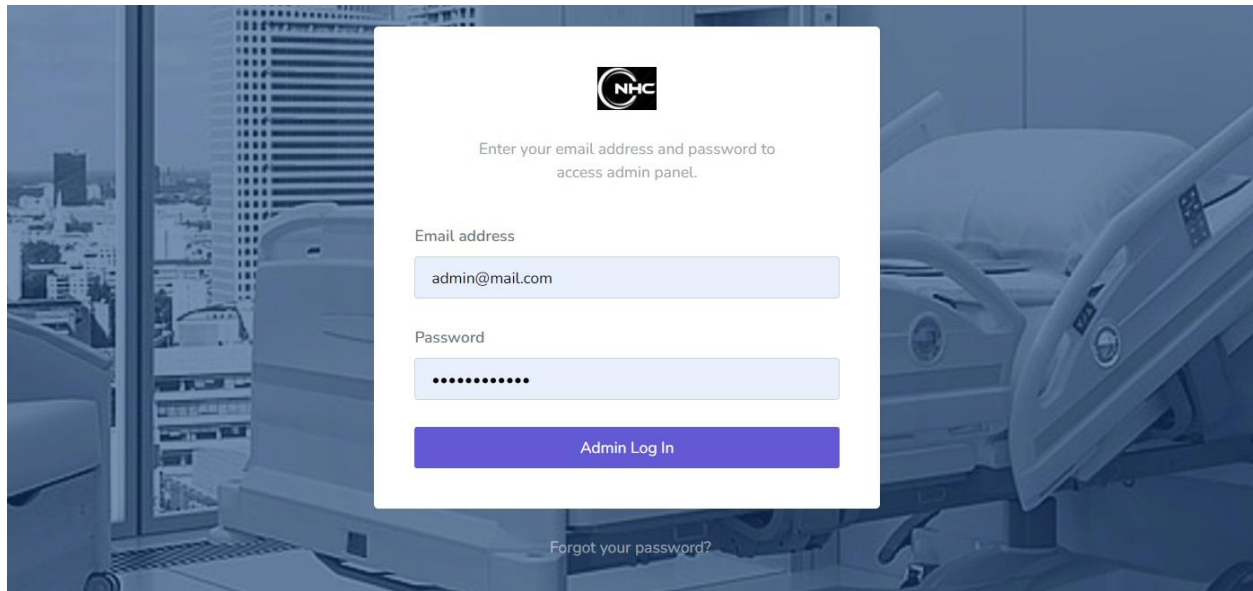


Figure 3: Admin Login page

4.3.4 Login Page:

This is the another login page. Where only Doctor's can login who have the valid Doctor number and password.

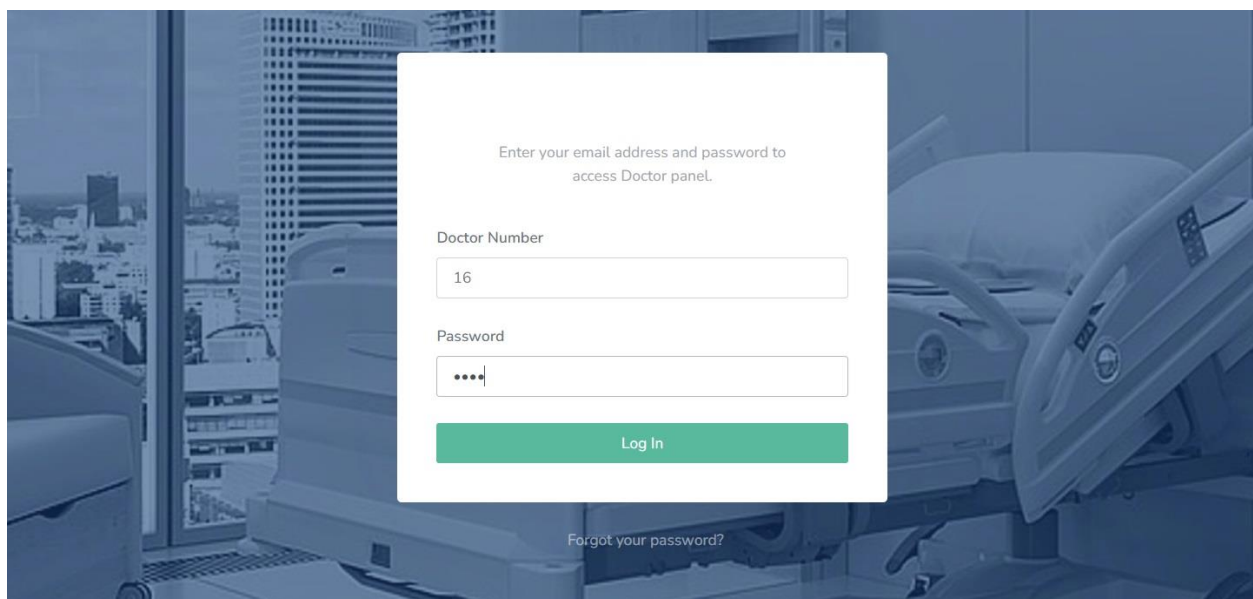


Figure 4: Doctor's Login page

4.3.5 Dashboard:

This is the dashboard of our website where only Administrator can see all the functions.

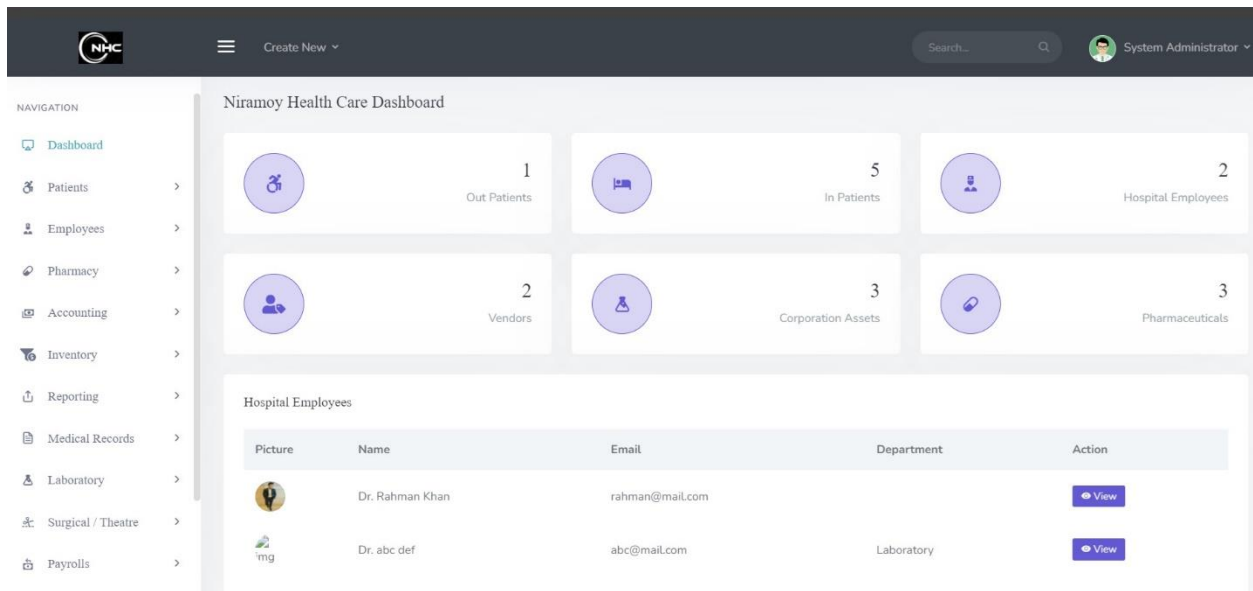


Figure 5: Dashboard Page for Admin

4.3.6 Dashboard:

This is our another dashboard of our website where Doctor's can see all the functions.

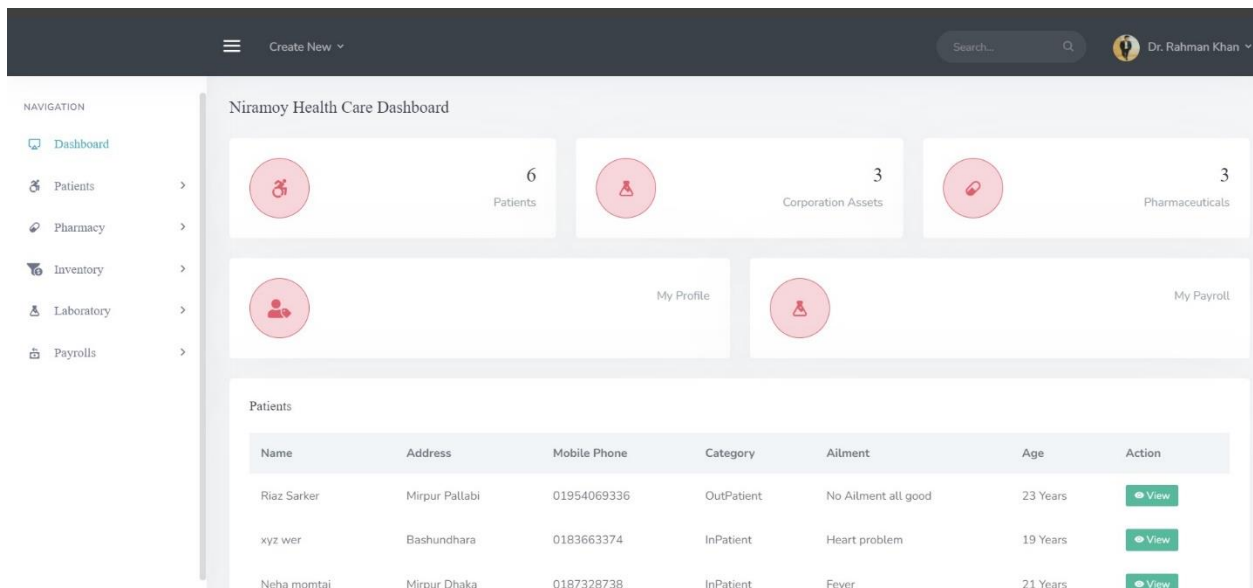


Figure 6: Dashboard Page for Doctor's

4.3.7 Inventory:

This is the Inventory page. Where we can see the Equipment that Doctors use for treatment.

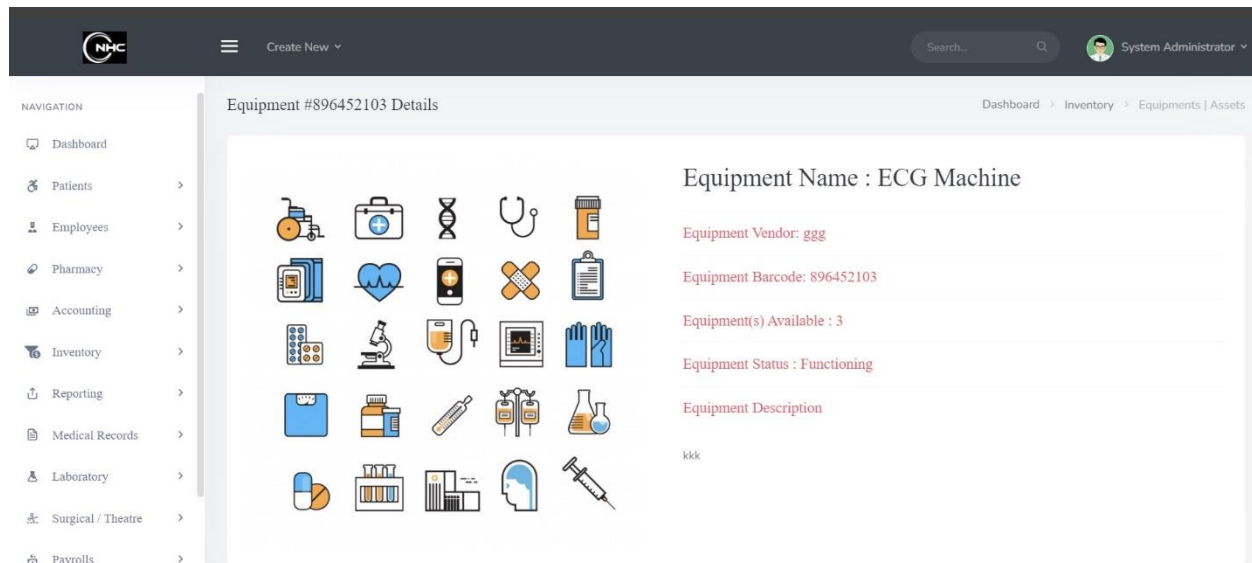


Figure 7: Inventory Page

4.3.8 Vendor:

This is the page for Vendors. Where we can see the Vendors details.

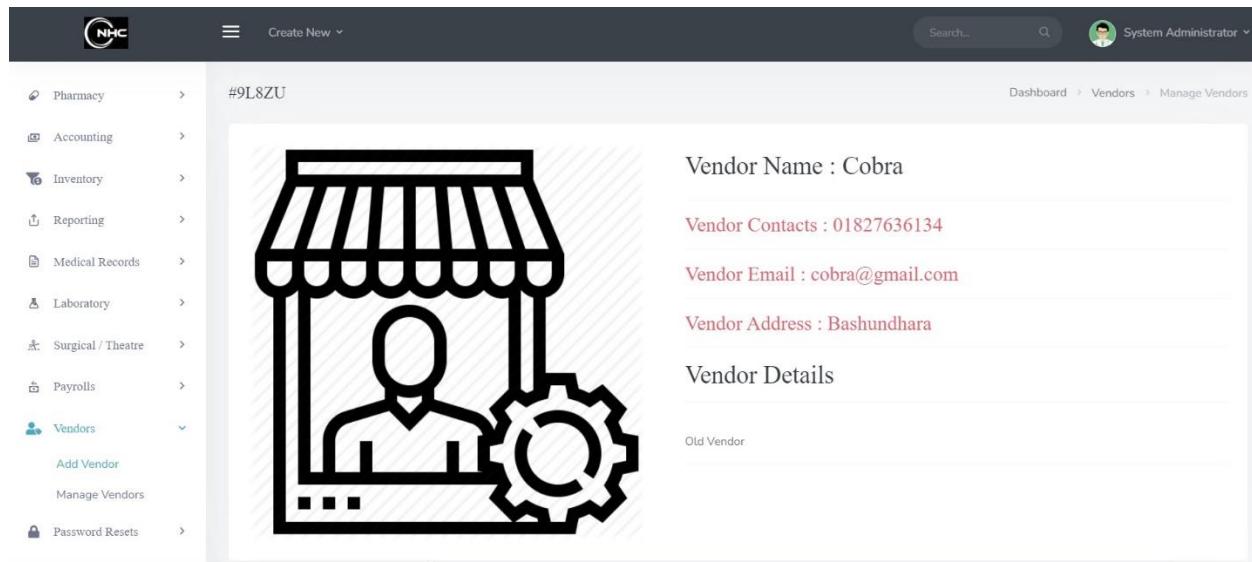


Figure 8: Vendor Page

5. TESTING APPROACH

5.1 Testing Levels

The testing for the Recycle will consist of Unit, Integration, System and Acceptance test levels.

- **Unit Testing:** Unit testing is one of the basic steps that is performed in the early stages. The testers will see if a particular cord unit is working or not. This helps to eliminate basic and simple bugs. The testing will be done by the developers and will be approved by the development team leader. Proof of unit testing (test case list, sample output, data printouts, defect information) must be provided by the programmer to the team leader before unit testing will be accepted and passed on to the test person.
- **Integration Testing:** Integration testing is mostly used to examine how various modules interact with one another when integrated into a larger system. The procedure is carried out following unit testing and will be repeated each time a new module is introduced to the system. The interface between the system's components is the main focus of system/integration testing. The test cases will be performed by our test manager and development team leader with assistance from the individual developers.
- **System Testing:** The white-box testing tests the systems internal architecture. In order to verify that internal operations are carried out in accordance with specifications and that all internal modules are correctly implemented, white-box testing necessitates a tester to step through the code line by line.
- **Acceptance Testing:** Acceptance testing will be performed by the actual end users with the assistance of our test manager and development team leader. They will determine whether or whether our system satisfies all user needs.

5.2 Test Tools

We used **SELENIUM** for testing, an open-source, automated testing tool for web applications that is used to test them across many browsers. Selenium is only capable of testing web apps.

6.3 Login page:

Here we tested the Admin Login Page with SELENIUM and attached the testing result through screenshot.

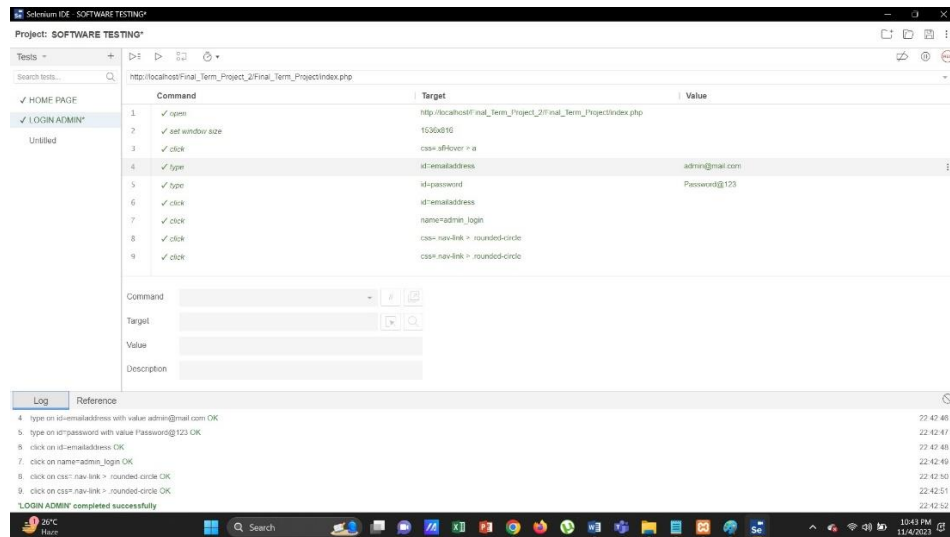


Figure 3: Admin Login Page

6.4 Login page:

Here we tested the Doctor's Login Page with SELENIUM and attached the testing result through screenshot.

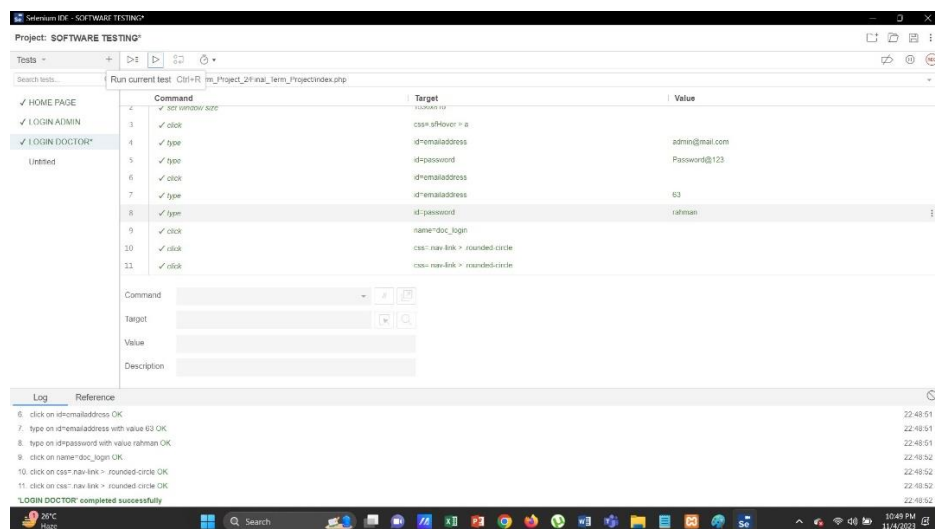


Figure 4: Doctor's Login Page

6.5 Dashboard:

Here we tested the Admin Dashboard Page with SELENIUM and attached the testing result through screenshot.

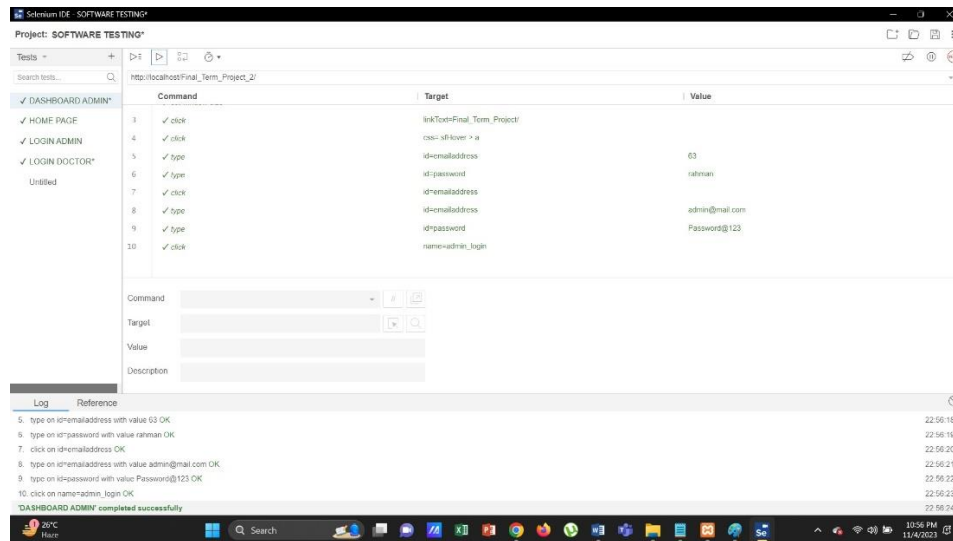


Figure 5: Dashboard Page for Admin

6.6 Dashboard:

Here we tested the Doctor's Dashboard Page with SELENIUM and attached the testing result through screenshot.

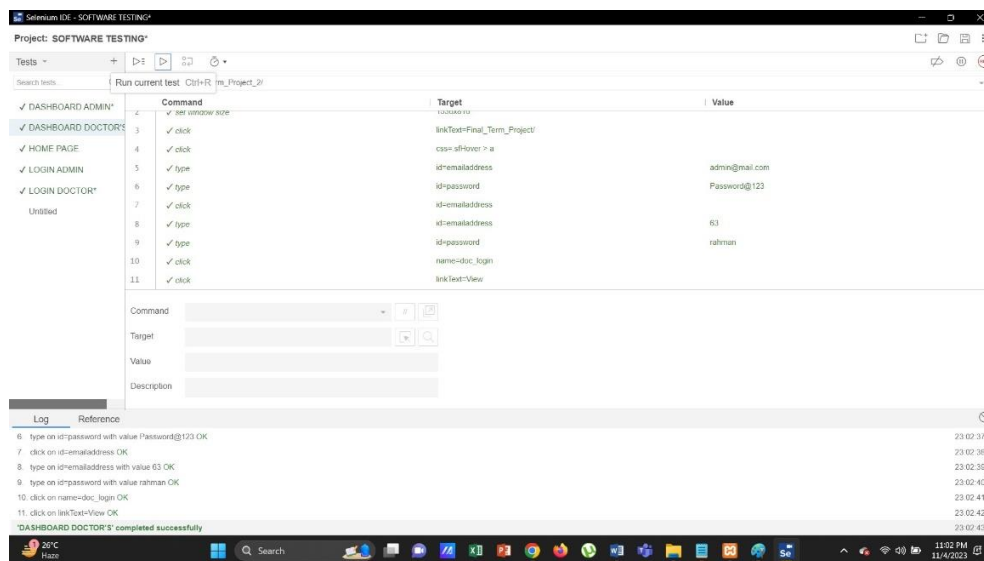


Figure 6: Dashboard Page for Doctor's

6.7 Inventory:

Here we tested the Inventory Page with SELENIUM and attached the testing result through screenshot.

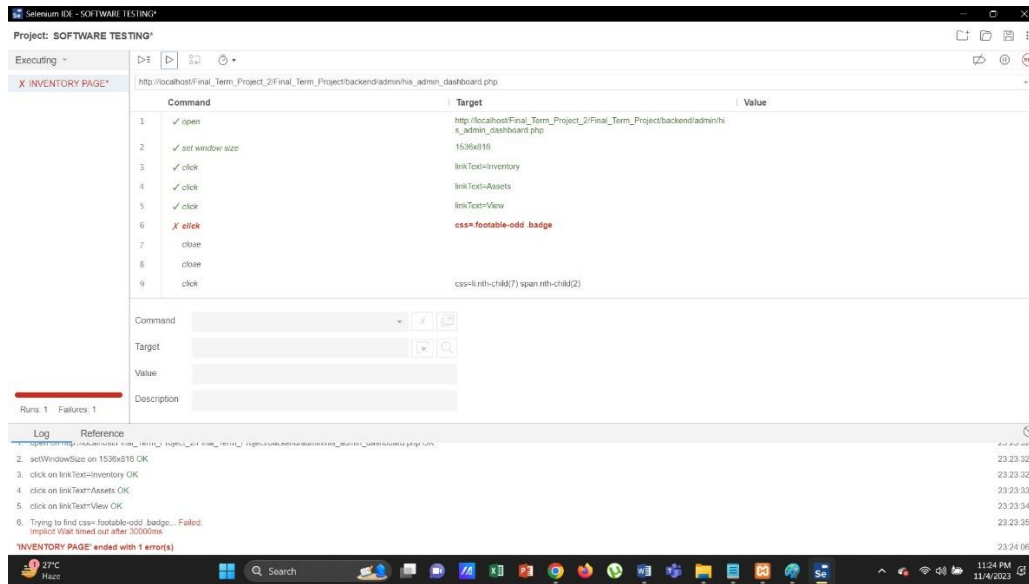


Figure 7: Inventory Page

6.8 Vendor:

Here we tested the Vendor Page with SELENIUM and attached the testing result through screenshot.

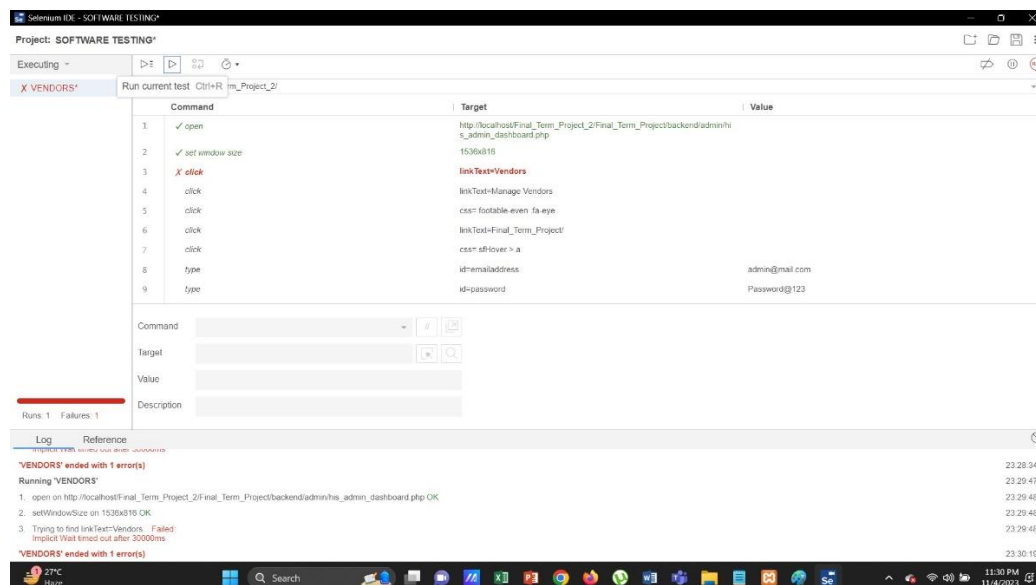


Figure 8: Vendor Page

7. TEST CASES:

7.1 Home Page:

Project Name: Hospital Management System		Test Designed by: Riaz Sarker		
Test Case ID: HMS Home_01		Test Designed date: 25/11/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md Saimun Islam Rahat		
Module Name: Home		Test Execution date: 25/11/2023		
Test Title: Testing the Home page validation				
Description: Test the website Home page				
Precondition: Start the XAMPP (Apache, MySQL) connection.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Click “HOME” to go to Home Page.	No data needed	After logout user can back to the Homepage.	As expected,	Pass
Post Condition: Users should be able to back to the homepage after logout.				

7.2 Sign up:

Project Name: Hospital Management System		Test Designed by: Riaz Sarker		
Test Case ID: HMS SignUp_02		Test Designed date: 25/11/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Riaz Sarker		
Module Name: Sign Up Session		Test Execution date: 25/11/2023		
Test Title: Sign Up with name, email and password.				
Description: Test the website Sign Up process.				
Precondition: User must fill up all the details.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Click “Admin Login” to go to system. 3. Click “Add employee”. 4. Fill up all the details. 5. Click Submit/ADD button.	Name: Dr. Riaz Sarker Gmail: sarker@gmail.com Password: RiazSarker	Users will be signed up to the website	As expected,	Pass
Post Condition: User is validated with account details which is stored in database.				

7.3 Admin Login:

Project Name: Hospital Management System		Test Designed by: Md Saimun Islam Rahat		
Test Case ID: HMS Admin Login_03		Test Designed date: 25/11/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Riaz Sarker		
Module Name: Login Session		Test Execution date: 25/11/2023		
Test Title: Verify login with valid email and password.				
Description: Test the website Admin Login page.				
Precondition: User has valid email address and password.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter email address 3. Enter password 4. Click login button	Gmail: admin@mail.com Password: Password@123	Users should login into the application.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

7.4 Doctor Login:

Project Name: Hospital Management System			Test Designed by: Riaz Sarker	
Test Case ID: HMS Doctor Login_04			Test Designed date: 25/11/2023	
Test Priority (Low, Medium, High): High			Test Executed by: Jahidul Islam	
Module Name: Login Session			Test Execution date: 25/11/2023	
Test Title: Verify login with valid Doctor number and password.				
Description: Test the website Doctor Login page.				
Precondition: User has valid Doctor number/id and password.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter doctor number/id 3. Enter password 4. Click login button	Doctor Number: 64 Password: RiazSarker	Users should login into the application.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

7.5 Admin Dashboard:

Project Name: Hospital Management System		Test Designed by: Riaz Sarker		
Test Case ID: HMS Admin Dashboard_05		Test Designed date: 25/11/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Riaz Sarker		
Module Name: Admin Dashboard		Test Execution date: 25/11/2023		
Test Title: Testing the Dashboard validation.				
Description: Test the Admin Dashboard page that it will visible or not, when back from others pages.				
Precondition: First login with valid username and password then go to the Dashboard.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter email 3. Enter password 4. Go to the “Dashboard”	No data needed	Users should be able to go to the Dashboard.	As expected,	Pass
Post Condition: Users should be able to go to the Dashboard page from other pages.				

7.6 Doctor's Dashboard:

Project Name: Hospital Management System			Test Designed by: Jahidul Islam	
Test Case ID: HMS Doctor’s Dashboard_06			Test Designed date: 25/11/2023	
Test Priority (Low, Medium, High): Medium			Test Executed by: Riaz Sarker	
Module Name: Doctor’s Dashboard			Test Execution date: 25/11/2023	
Test Title: Testing the Dashboard validation.				
Description: Test the Doctor’s Dashboard page that it will visible or not, when back from others pages.				
Precondition: First login with valid doctor number and password then go to the Dashboard.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter doctor number 3. Enter password 4. Go to the “Dashboard”	No data needed	Users should be able to go to the Dashboard.	As expected,	Pass
Post Condition: Users should be able to go to the Dashboard page from other pages.				

7.7 Inventory:

Project Name: Hospital Management System			Test Designed by: Riaz Sarker	
Test Case ID: HMS Inventory_07			Test Designed date: 25/11/2023	
Test Priority (Low, Medium, High): Low			Test Executed by: Riaz Sarker	
Module Name: Inventory			Test Execution date: 25/11/2023	
Test Title: Testing the Inventory validation.				
Description: Test the Inventory page that it will visible all the equipment.				
Precondition: First login with valid email and password then go to the Inventory for see all equipment.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. 1. Go to the website. 2. 2. Enter admin email and password 3. 3. Go to the “Inventory” site	No data needed	Users should be able to go to the Inventory.	Unexpected,	Fail
Post Condition: Users should be able to go to the Inventory page in the website.				

7.8 Vendor:

Project Name: Hospital Management System		Test Designed by: Jahidul Islam		
Test Case ID: HMS Vendor_08		Test Designed date: 25/11/2023		
Test Priority (Low, Medium, High): Low		Test Executed by: Md Saimun Islam Rahat		
Module Name: Vendor		Test Execution date: 25/11/2023		
Test Title: Testing the Vendor validation.				
Description: Test the Vendor page that it will visible all the information.				
Precondition: First login with valid admin email and password then go to the Vendor site for see all vendor’s information.				
Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. 1. Go to the website. 2. 2. Enter admin email and password 3. 3. Go to the “Vendor” site	No data needed	Users should be able to go to the Vendor page.	Unexpected,	Fail
Post Condition: Users should be able to go to the Vendor page and see all information in the website.				

8. ITEM PASS/FAIL CRITERIA

We have conducted total number of 10 test cases. At first 90 % of the test cases were successfully passed. 20% of the test cases failed in the system. There were many codes related as well as query related issues in the system. When these issues were resolved all test cases successfully passed.

9. APPROVALS:

Project Sponsor	Approved
Developer Management	Approved
HMS Project Manager	Approved
HMS Test Manager	Approved
HMS Development Team Manager	Approved