

American International University-Bangladesh (AIUB)  
Department of Computer Science  
Faculty of Science &Technology (FST)  
Summer 21 22

Section: E  
Software Quality Assurance and Testing

Modern Medical Services

A Report submitted

By

|  |  |  |
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Software Test Plan

for

<Modern Medical Services >

Version 1.0 approved

Prepared by <Md Touhiduzzaman sagor

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<American International University-Bangladesh>

<5 August 2022>

**Checked By Industry Personnel**

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Designation:

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Date:

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# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Revision | Date | Updated by | Update Comments |
| 0.1 | 2022.08.04 | Md Touhiduzzaman Sagor | First Draft |
| 0.2 | 2022.08.04 | Sujoy Chandra Das | Second Draft |
| 0.3 | 2022.08.05 | Md Touhiduzzaman Sagor | Third Draft |
| 0.4 | 2022.08.05 | Imon Faysal | Fourth Draft |
| 0.5 | 2022.08.06 | Sujoy Chandra Das | Sixth Draft |
| 0.6 | 2022.08.06 | Md Touhiduzzaman Sagor | Seven Draft |
| 0.7 | 2022.08.07 | Sujoy Chandra Das | Eight Draft |
| 0.8 | 2022.08.07 | Imon Faysal | Nine Draft |
| 0.9 | 2022.08.13 | Imon Faysal | Tenth Draft |
| 1.0 | 2022.08.14 | Sujoy Chandra Das | Eleventh Draft |
| 1.1 | 2022.08.14 | Md Touhiduzzaman Sagor | Twelfth Draft |
| 1.2 | 2022.08.15 | Imon Faysal | Thirteenth Draft |
| 1.3 | 2022.08.15 | Sujoy Chandra Das | Fourteenth Draft |
| 1.4 | 2022.08.15 | Md Touhiduzzaman Sagor | Fifteenth Draft |

# TEST PLAN IDENTIFIER:RS-MTP01.3

# REFERENCES

* [https://www.javatpoint.com/selenium-maven](https://www.javatpoint.com/selenium-maven%20)

# INTRODUCTION

## Background to the Problem

The project was developed during the COVID-19 situation in Bangladesh. People were bound to stay at because of the uprising spread of COVID-19. The of idea about the modern medical services were developed watching the sufferings that was posted everyday in the social media and news channels. The project was developed to reduce the suffering of the people because the patient was admitted in wrong hospitals where there was deficiency of resources that required for the affected person. In our project we have tried to include the resources, seats and cabin that was available in the hospital. The project also includes the doctor appointment process and people can also reserve appointment using our software.

## Solution to the Problem

The purpose of developing modern medical services was to habituate people with the online platform through which people could know the details of a physician and then by analyzing their problem (for example, what kind of problem they are suffering from and which specialist physician can provide the consultancy) they could get the expected solution. Moreover, we have also included the services of the medicals where the resources and other facilities are comprehended. By the way the project that we have developed is a web-based application and with the browsing limit by users the project will become the income source of the developers and the related employee who will be hired for the support.

The main goal to develop the project was to reduce the high spreading COVID-19 situation. Because all the COVID-19 affected patient and other disease affected person seat together or have close contact for which the COVID-19 was spreading drastically in Bangladesh. And mainly in our project the idea was to connect all the medicals, hospital, doctors and diagnostics together so that people could find out their suitable destination using our application.

In the same time, many kinds of web application were built in that situation but the application was related with some organizations or only could provide some information in a small area.

# REQUEIREMNT SPECIFICATION

## System Features

1. System Registration  
Functional Requirements

* 1. The Users need to open an account by doing registration.
  2. The user needs to provide some information (Name, username, address, email, DOB, Phone number, Password, gender) during registration.
  3. Verifying password, email and phone number.
  4. Click the submit button to confirm registration.

Priority Level: High.  
Precondition: Verifying all the information.

2. System Login  
Functional Requirements

* 1. The system will only allow the valid users with valid username and password.
  2. The user will be able to enter into the system with correct username and password.
  3. If the user fails to enter the correct password the user can reset the password by sending the OTP that will be provided into their email or phone number.

Priority Level: High.  
Precondition: user must have valid user id and password.

3. System Login  
Functional Requirements

3.1 The admin could register a doctor or could add a hospital into the system.

* 1. Verification of email, phone number and doctor gov id or hospital gov id required.
  2. After the verification click the submit button to confirm the registration.

Priority Level: Medium.  
Precondition: Verify Login.

4. Reserve Appointment  
Functional Requirements

* 1. The user needs to search a doctor by doctor name or user could search doctor according to their category.
  2. The user needs to provide the sickness reason and then write a short description for the sickness.
  3. After that the user will be able to reserve the appointment watching the schedule of the doctor.

Priority Level: Medium.  
Precondition: Verify Login as dashboard.

5. Change password  
Functional Requirements

* 1. The user needs to provide the previous password.
  2. After that the user need provide a new password with at least 8 character containing values (special character, number and string values).
  3. Next, the user needs to provide the same password (new password) again.
  4. Then, click the submit button to change the password.

Priority Level: High.  
Precondition: Verify Login as dashboard and matching new and confirm password.

## System Quality Attributes

### Usability: The usability of this technology is given a lot of attention. wherein any user may quickly locate their desired hospital, hospital facilities, and the hospital's resources in 2 to 5 minutes. In addition, any user can identify and schedule a consultation with any selected doctor depending on their illness in under 5 minutes. Therefore, it might not take more than 15 minutes for any user to operate the entire system. The overall design of this system is quite user-friendly because it is intended for those with only a basic understanding of technology.

### Maintainability: This system has excellent maintainability. A lot of thought was put into modularity throughout development here. And a clear coding structure and sufficient documentation were used in the creation of each module. As a result, this system's maintainability improved significantly. Additionally, due to the software's excellent maintainability, any developer can create any new feature by simply and quickly absorbing the fundamentals of the program if any updates or modifications are required.

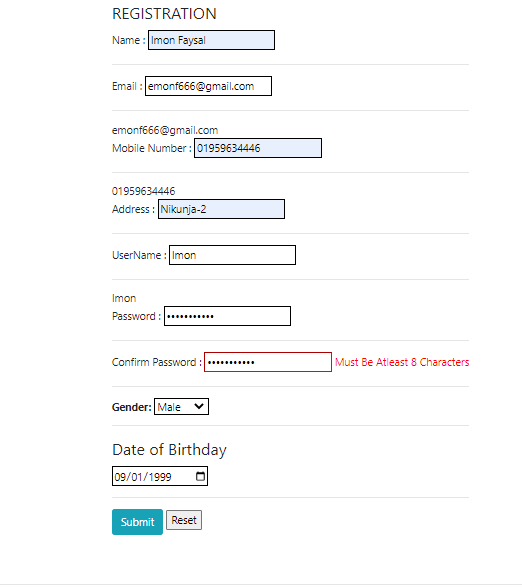
### Correctness: A higher attention was placed on the system's correctness when it was being developed. The computations and functionality were all carefully created. And as a result, every request is running smoothly and providing us with accurate calculations. This technique lowers the overall quantity of these services whenever scheduling a consultation, a seat, or any other facility. Because of this, any user can utilize this system to obtain an accurate and effective outcome. which is a fantastic achievement for this system.

### Security: One of the most important things to keep in mind while development was system security. We concentrated on some procedures for developing a solid secure system, such as identifying authorized and unauthorized users and granting access to just the authorized users. We have paid close attention to a valid login and username, password because of this. Nobody is granted access to the system without a valid username and password. Additionally, this system requires the valid, unique registration number of each doctor in order to obtain valid doctors. Without this, no user can register to become a doctor.

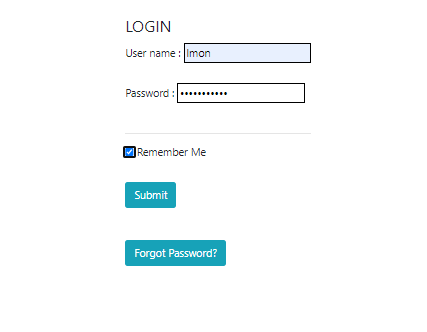
### Reusability: Reusing existing software can reduce development costs and save time. And it is for this reason that we have placed a strong emphasis on modularity and building code according to a set structure. The documentation and layout for all the code and functionality are excellent. It will be very simple and effective to use any modules or code that needs to be reused for future development. This allows for the subsequent development to be carried out quickly and cheaply.

### Testability: Testing is one of the most crucial factors in obtaining an error-free and reliable system. This is why, we have given a lot of attention to the modularity of the system and a consistent coding structure. It will assist in dividing all required modules according to a standard format. When testing is being done, these factors will make it easier to identify errors and resolve flaws quickly and affordably. Additionally, because modularity is done correctly, dependencies between different modules will also be reduced. It will make testing simple to do and will aid in error correction.

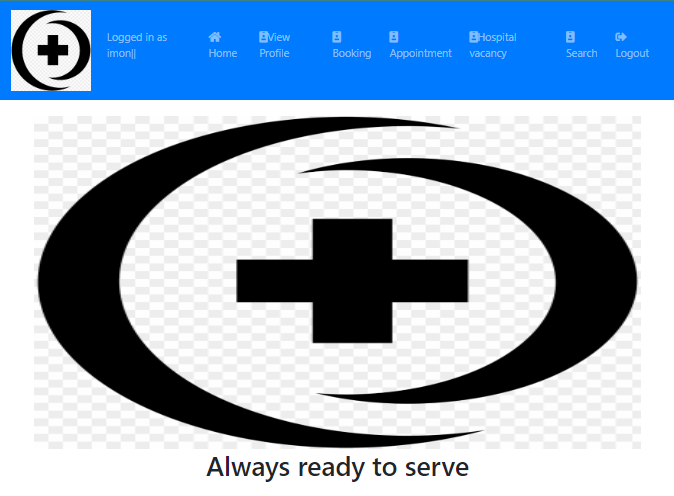
## System Interface



***Fig 1: Performing Registration with required information***

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***Fig 2: Login with valid username and password***

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***Fig 3: User Dashboard after completing successful Login***

***Graphical user interface, text, application, email

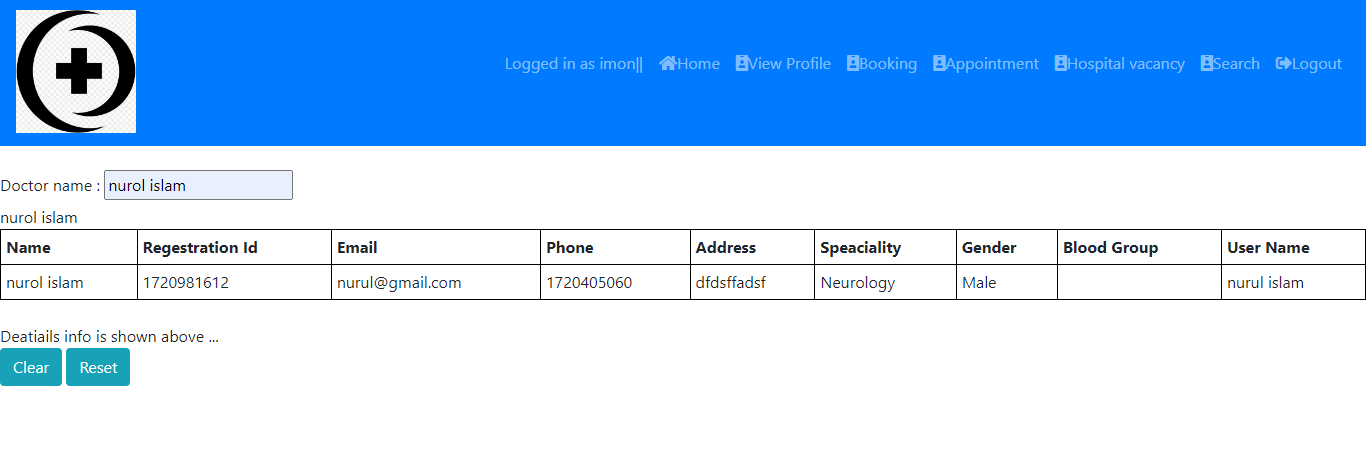
Description automatically generated***

***Fig 4: Doctor appointment taking with proper information***

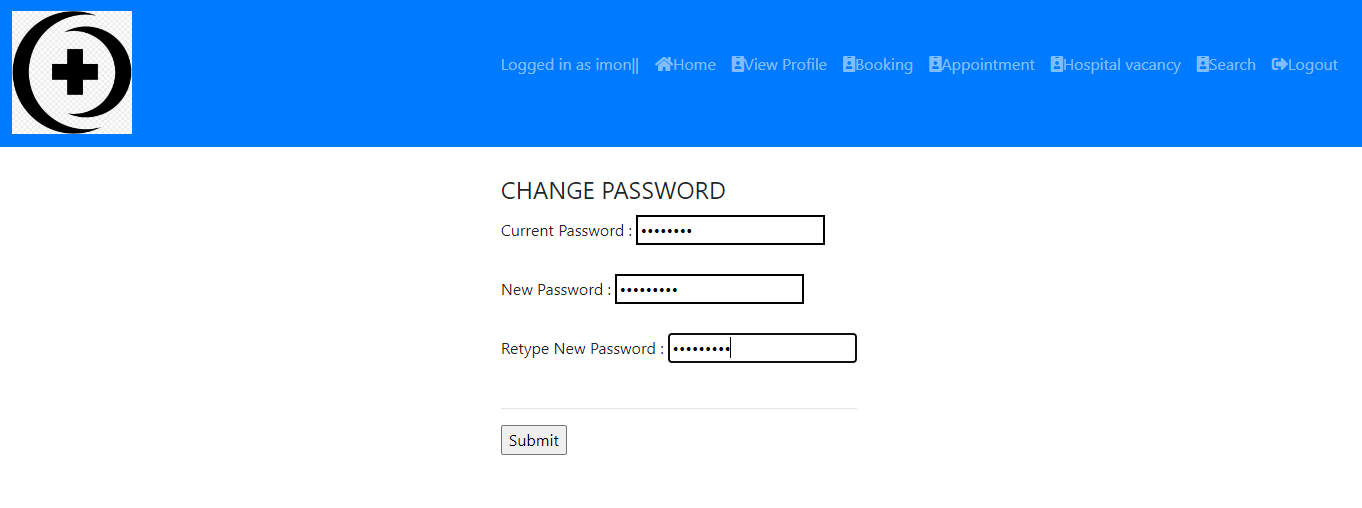
***Graphical user interface, application, email

Description automatically generated***

***Fig 5: Hospital sit booking with proper information***

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***Fig 6: Search doctor by his/her name***

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***Fig 7: Change password by providing current password and new password***

## Project Requirements

The Constructive Cost Model (COCOMO) is an algorithmic software cost estimation model. The software project type that we will be using is organic. It is a software project that must be developed within a strongly coupled to hardware environment.

· Effort = PM (person-months needed for project (labor working hours))

=Coefficient<Effort Factor>\*(SLOC/1000)^P

=2.4\* (10000/1000)^1.05 [here SLOC = 10000, organic co- efficient

effort factor is 2.4 and P(project complexity which is 1.05)]

= 26.928 labor working hours

· Development Time, DM= 2.50\*(PM)^T

· =2.50\*(26.928)^0.38 [here T for organic is 0.38] =8.73 months

· Required Number of People, ST (average staffing necessary)

= PM/DM

=26.928/8.73

=3.08

# FEATURES NOT TO BE TESTED

The following is the list of the features which is not required to test:

* Welcome and logout of the accounts.
* List of the of hospital and doctors.
* List of the confirmed appointment and reserved bookings.
* List of the pending appointments and bookings.
* Request for appointments and bookings.

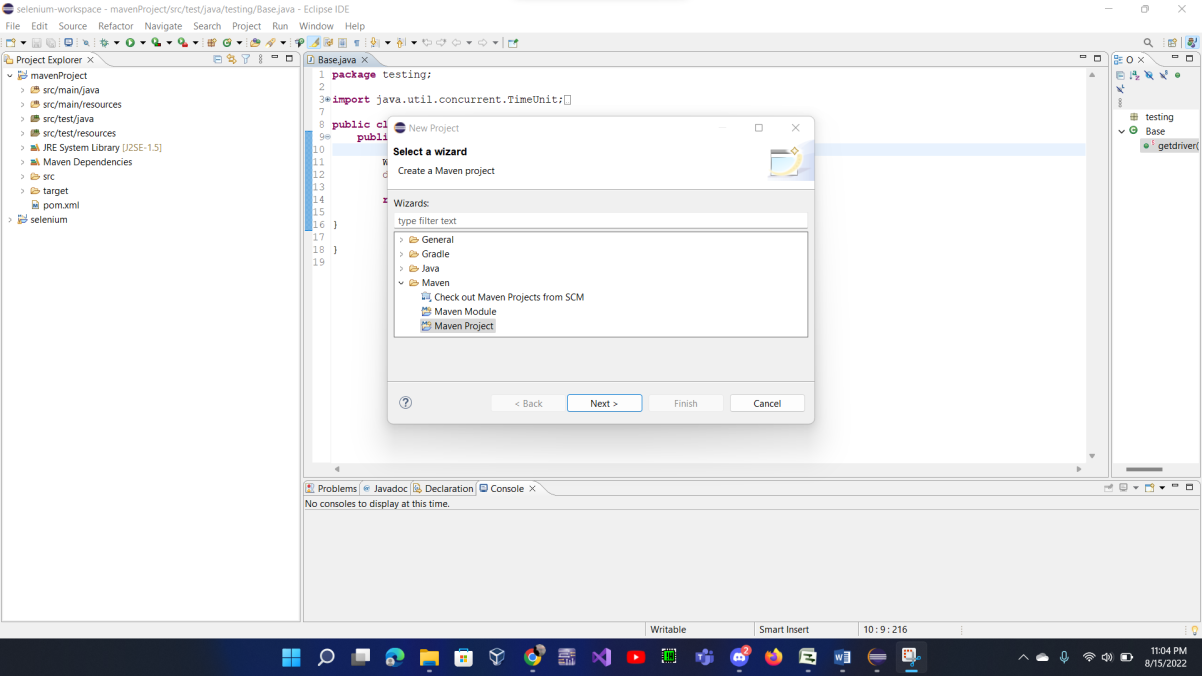
# TESTING APPROACH

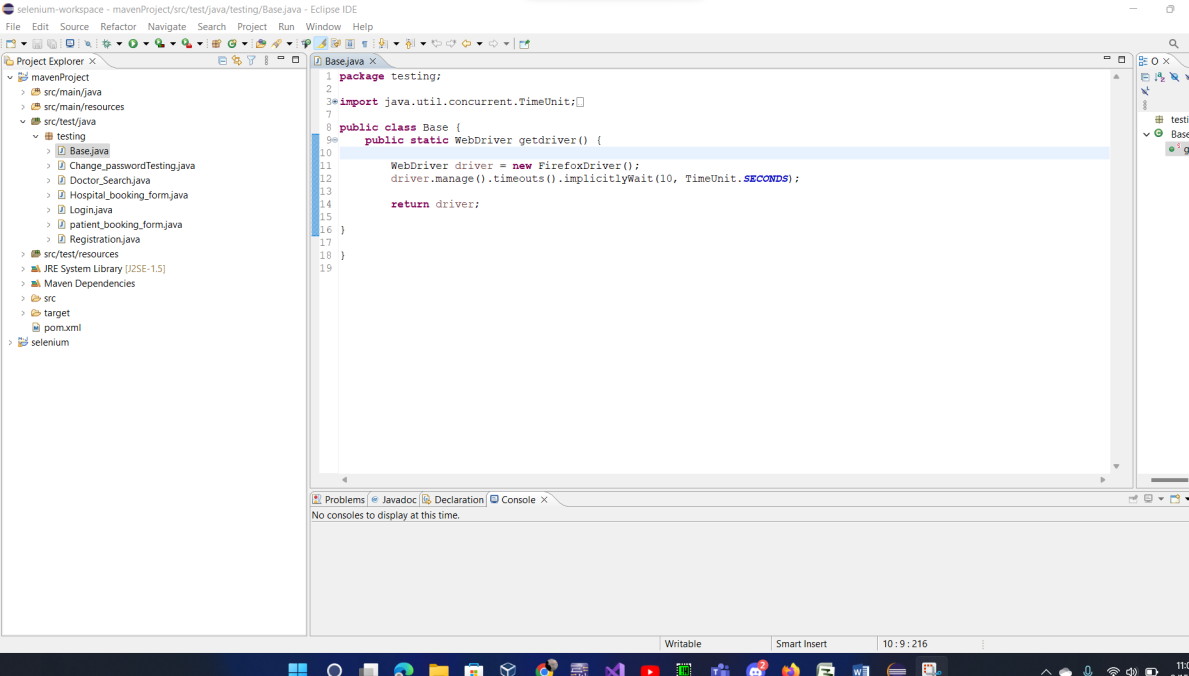
## Testing Levels

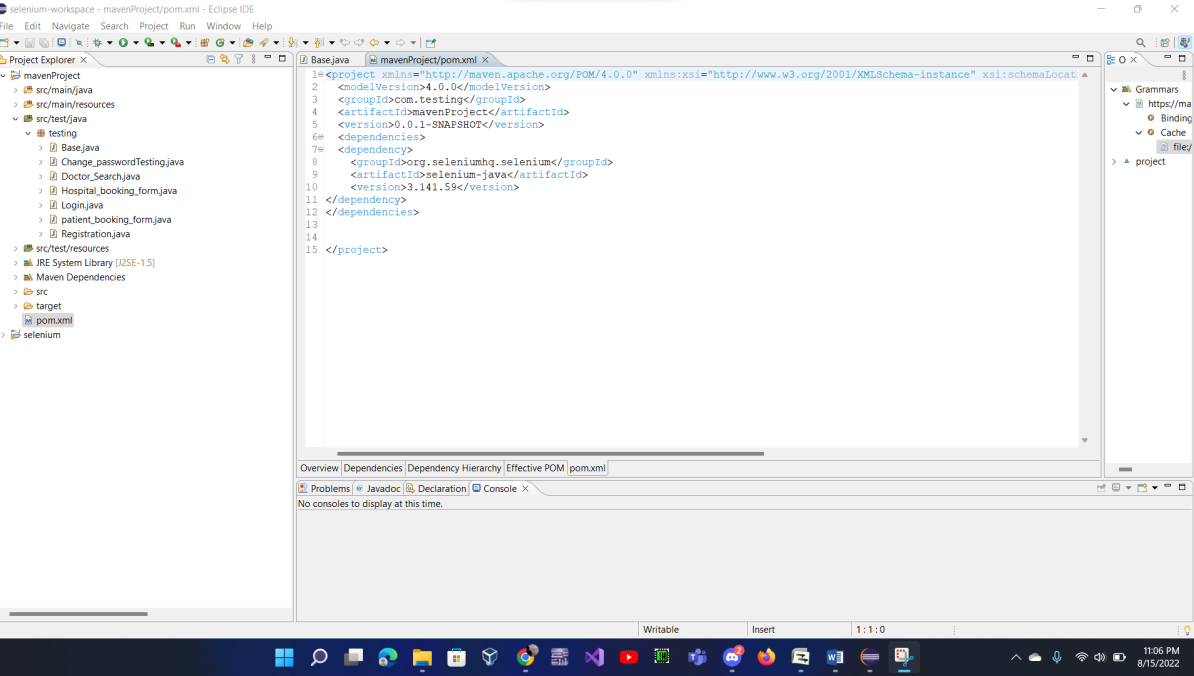
* + UNIT TESTING**,** INTEGRATION TESTING, and SYSTEM TESTING will be the three types of testing used for the Digital Medical services. We will all work as a group to do all the testing since this is a project of our Web Technologies course.
  + UNITTESTING**:** Each group member of our Web technologies course group will do their own UNIT testing. Three distinct modules, including Admin, Doctor, and Patient, make up the digital medical service project. Our groupmate in web technologies worked alone to design each module. As a result, each group member will conduct their own unit testing independently.
  + INTEGRATION TESTING: We will begin integrating each individual module once the unit testing has been completed for each one. And at this stage, we'll do integration testing to see if there are any flaws after integration or not. If there are any flaws, we'll work quickly to remedy them.
  + SYSTEM TESTING: Integration testing will be finished before we move on to system testing. To determine whether or not all of the modules are interoperable, we will test the entire system during system testing. This time, if we discover any flaws, we'll work as quickly as we can to solve them. Additionally, our projects will be prepared for deployment after system testing.

## Test Tools

We are going to use selenium maven dependencies and Firefox web driver tool for automated testing. We use this tool to detect error or defect and ensure the systems high-quality, responsive, progressive or regular.







## Meetings

Distributing the proper task to the right individual is one of the most important parts of becoming a successful testing team. So, in order to be a successful team, it is critical to hold regular team meetings. As a result, the test team will meet once a week to review each member's progress and determine whether or not they have completed their allocated tasks. And see if they're experiencing any issues with testing if they are, the entire team will help him and attempt to resolve the issue as soon as possible. Once every two weeks, the testing team leaders will meet with the development and project manager. If there is an emergency, an urgent meeting will be scheduled.

# TEST CASES/TEST ITEMS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Md Touhiduzzaman Sagor | | |
| Test Case ID: FR\_1 | | | Test Designed date: 5/8/2022 | | |
| Test Priority (Low, Medium, High): High | | | Test Executed by: Md Touhiduzzaman Sagor | | |
| Module Name: Registration session | | | Test Execution date: 6/8/2022 | | |
| Test Title: Verification of input data in the registration page | | |  | | |
| Description: Testing website registration page | | |  | | |
| Precondition: User must have valid email and phone number | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Select the type 3. Click submit 4. Enter into the registration page 5. Enter name 6. Enter username 7. Enter email 8. Enter the phone number 9. Enter the Password 10. Enter confirm password 11. Enter the address 12. Select the gender 13. Choose date of birth (should be 18 +) 14. Click submit | Name: Imon faysal  Username: Imon faysal  Email: Imon23@gmail.com  Phone Number: 01908462117  Password: @123456789  Confirm Password: @123456789  Gender: Male  Date of birth: 1992-8-12 | After clicking the submit button a massage will be shown that Registration is confirmed | | As expected, | Pass |
| Post Condition: The Input data are store in the database. | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Md Touhiduzzaman Sagor | | |
| Test Case ID: FR\_2 | | | Test Designed date: 6/8/2022 | | |
| Test Priority (Low, Medium, High): Medium | | | Test Executed by: Md Touhiduzzaman Sagor | | |
| Module Name: Login session | | | Test Execution date: 6/8/2022 | | |
| Test Title: Verification of login with valid username and password | | |  | | |
| Description: Testing website login page | | |  | | |
| Precondition: User must have valid username and password | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Select the type 3. Click confirm 4. Enter valid username 5. Enter valid password 6. Click submit | Username: Sujoy Das  Password: @12345678 | User should login into the application | | As expected, | Pass |
| Post Condition: User is validated with database and successfully login to account. | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Sujoy Chandra Das | | |
| Test Case ID: FR\_3 | | | Test Designed date: 6/8/2022 | | |
| Test Priority (Low, Medium, High): High | | | Test Executed by: Sujoy Chandra Das | | |
| Module Name: Change Password session | | | Test Execution date: 6/8/2022 | | |
| Test Title: Verification of changing password | | |  | | |
| Description: Testing website change password page | | |  | | |
| Precondition: User must be logged in and should have a previous password | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Select the type 3. Click confirm 4. Enter the valid username and valid password to login 5. Enter into the view profile page. 6. Click into the change password link 7. Enter the previous password 8. Enter the new password 9. Enter the new password again to confirm password. 10. Click the submit button to confirm | Username: Sujoy Das  Password: @12345678  Previous Password: @12345678  New Password: @1234567855  Confirm Password: @1234567855 | User should login into the application  While changing the password a message will be shown password is changed | | As expected, | Pass |
| Post Condition: User is validated with database and successfully login to account. User should enter the valid previous password which is stored in the database for that user. The new password should not match with previous password and should be at least 8 characters with special character. | | | | | |

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| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Sujoy Chandra Das | | |
| Test Case ID: FR\_4 | | | Test Designed date: 7/8/2022 | | |
| Test Priority (Low, Medium, High): Medium | | | Test Executed by: Sujoy Chandra Das | | |
| Module Name: Hospital seat booking session | | | Test Execution date: 7/8/2022 | | |
| Test Title: Verification of hospital seat booking. | | |  | | |
| Description: Testing website hospital seat booking form | | |  | | |
| Precondition: User must be logged in and user must select a hospital | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Enter valid username and valid password to login. 3. Click the booking in the navbar to enter into the booking page. 4. Enter the name 5. Enter the phone number 6. Enter the username 7. Enter the password 8. Enter the password again 9. Choose the gender 10. Select the date of birth 11. Select the booking date. 12. Click save to database to confirm booking | Username: Sujoy das  Password: @12345678  Name: Tushar  Phone number: 01680221295  Username: Tushar boss  Password: 12345  Confirm password: 12345  Gender: Male  Date of birth: 17/05/2022 | A request message will be shown | | A request message was shown after entering the data. But password was not verified. The selection of date of birth and booking date was malfunctioning because previous date can be chosen during booking date selection. Date of birth was also not verified. | Fail |
| Post Condition: User is validated with database and should be logged into the account. | | | | | |

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| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Imon Faysal | | |
| Test Case ID: FR\_5 | | | Test Designed date:07/08/2022 | | |
| Test Priority (Low, Medium, High): Medium | | | Test Executed by: Imon Faysal | | |
| Module Name: Doctor search session | | | Test Execution date: 07/08/2022 | | |
| Test Title: Verifying the doctor search according to doctor name | | |  | | |
| Description: Test website search page | | |  | | |
| Precondition: User must be logged into the account. | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Select the type 3. Click confirm 4. Enter valid username and valid password to login. 5. Enter into the search page 6. Enter the name of the doctor. 7. Click reset to search again | Username: Sujoy Das  Password: @12345678  Doctor name: nurol islam | User will be able to see the doctor information except the confidential information. | | As expected, | Pass |
| Post Condition: User is validated with database and successfully login to account. | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Modern Medical Services | | | Test Designed by: Imon Faysal | | |
| Test Case ID: FR\_6 | | | Test Designed date: 07/08/2022 | | |
| Test Priority (Low, Medium, High): Medium | | | Test Executed by: Imon Faysal | | |
| Module Name: Appointment session | | | Test Execution date:07/08/2022 | | |
| Test Title: Verifying appointment reservation | | |  | | |
| Description: Testing website appointment page | | |  | | |
| Precondition: User must be logged into the account. | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to the website 2. Select the type 3. Click submit 4. Enter valid username and valid password to login. 5. Click the appointment in the navbar to enter into the appointment page. 6. Enter the name 7. Enter the phone number 8. Enter the doctor name 9. Enter the username 10. Enter the password 11. Enter the password to confirm the password. 12. Select the gender 13. Choose the date of birth 14. Choose the visiting date 15. Choose the visiting time 16. Enter the name of the hospital 17. Click submit | Username: Sujoy das  Password: @12345678  Name: Mahzarul Islam  Phone number: 0153713943  Doctor name: sojoy boss  Username:  sojoy sagor  Password: 1234  Confirm password: 1234  Gender: Male  Date of birth: 2021-12-28  Visiting date: 2022-01-05  Visiting time: 03:15  Visiting name hospital: Dhaka hospital | A request message will be shown. | | A request message was shown after entering the data. But password was not verified. The selection of date of birth and visiting date was malfunctioning because previous date can be chosen during appointment date selection. Date of birth was also not verified. | Fail |
| Post Condition: User is validated with database and should be logged into the account. | | | | | |

# 

# ITEM PASS/FAIL CRITERIA

Testing team will be a group of -

* Unit Test Manager
* Test Analyst
* Project Sponsor
* Developer

The team will be doing the following tasks-

* There will be error free codes and in time compilation
* The test will pass only if there is 100% passing rate.
* If any error found or passing rate remains below 100% it will be resolved in time.
* All the possible tests will be documented

Here we have implemented 6 test cases. 67% of the test cases were passed successfully when we applied the test case and 33% were fail. Because of some code implementation problem related issues on the on the application, the test cases were failed.

# TEST DELIVERABLES

* Test specification document: The summary of the scenarios that are going to be tested.
* Test strategy: The high-level document defines the testing approach.
* Test scenario: We have to make sure that every process flow is tested in detail.
* Test data: the data or input provide to the application with intent of fetching results.
* Defect reports: Bug report of a feature.
* Test design: ensure formal way to design of test.
* Test status report: Way the development of application.
* Summary of all reports: Summary of testing, overall opinions and test pass/fail.

# STAFFING AND TRAINING NEEDS

● Use certification to document expertise and encourage learning new skills.

● Encourage training in software and computing as a continuing physics activity.

● Use workbooks and wikis as evolving, interactive software documentation.

● Use online media to share training.

● Marketable for non-academic jobs.

We require a large number of skilled personnel to complete our project, "Online Medical Services." Skilled workers can complete a project more efficiently and within budget. Skilled workers will complete a high-quality assignment on schedule. Five full-time testers with extensive understanding of various levels of testing and testing technologies will be required. The tester must be familiar with Web-based application with database knowledge and should receive training on the system.

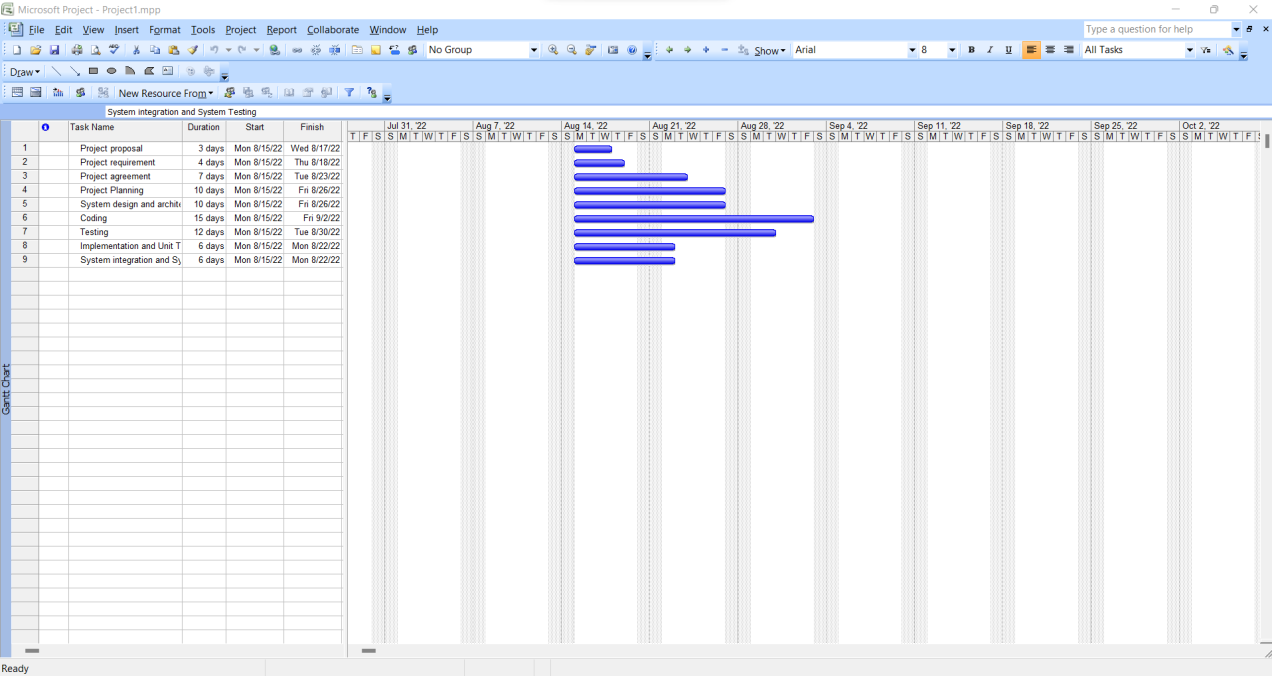
# RESPONSIBILITIES

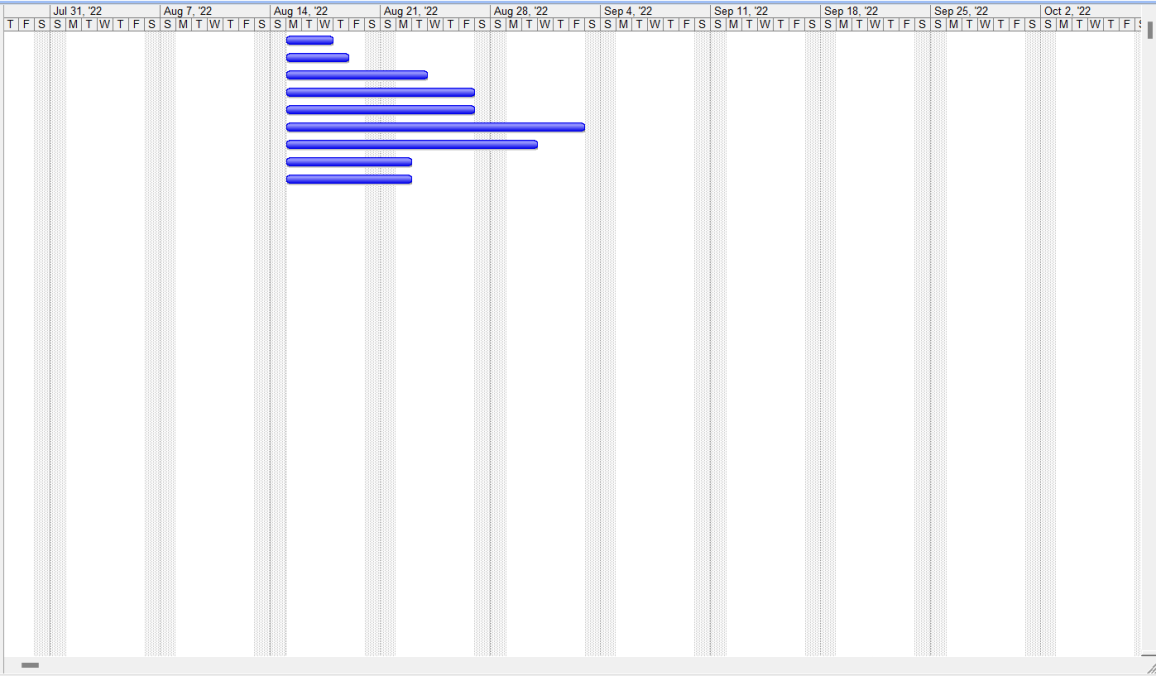
* The project team leader is responsible for verifying all test plans.
* The test lead is responsible for writing the test plan.
* The test managers are responsible for writing test cases.
* The entire project team will participate in the system review.
* The developer is responsible for fixing bugs; the tester is responsible for detecting bugs rather than fixing bugs.
* The administration is responsible for verifying the test results.

|  |  |  |  |
| --- | --- | --- | --- |
| Serial | Name | Role | Responsibilities |
| 1. | Sujoy Chandra Das | Test Lead | 1.Test plan guidance, monitoring control.  2. Determining the scope of testing for each release and each level or cycle of software testing.  3. Regularly updating the project manager on the status of testing efforts.  4. The efficient use of resources and the management of resources for software testing. |
| 2. | Md Touhiduzzaman sagor | Senior tester | 1. Creating test cases and test plans for the product.  2. To define product testing criteria, meet with the product design team.  3.Test data collection, generating test scenario.  4. For the resources, there is a direct contact lead.  5.Test case documentation, test case execution, defects reporting tracking. |
| 3. | Imon Faysal | Associate Test Engineer | 1.Test data collection, generating test scenario.  2. For the team leader, create test data and status reports.  3. Should make a modification to the code to resolve a bug, run regression testing.  4. Carry out the testing. |

# TESTING SCHEDULE

**Gantt Chart for Following Schedule:**





# PLANNING RISKS AND CONTINGENCIES

* Illness or Injury: Regular medical checkups are arranged for the employees.
* Software Failure: Failure of Main or Back-up Hardware: We will maintain a main and Back-up hardware system, printers and workstations should be serviced and maintained regularly.
* Internal Issue: Chain of command will be conducted strictly.

# APROVALS

|  |  |
| --- | --- |
| Project Sponsor | Sujoy Chandra Das |
| Development Management | Md Touhiduzzaman Sagor |
| EDI Project Manager | Imon faysal |
| RS Test Manager | Sujoy Chandra Das |
| RS Development Team Manager | Md Touhiduzzaman Sagor |
| Reassigned Sales | Imon faysal |
| Order Entry EDI Team Manager | Imon faysal |