American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

Fall 22 23

Section: B

Software Quality Assurance and Testing

Digital Health Care

A Report submitted
By

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Under the supervision of

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Checked By Industry Personnel

Name: Md. Shakhawat Hossain

Designation: SQA Engineer

Company: SYNESIS IT

Sign:

Date:

Software Test Plan

for

<Digital Health Care>

Version 1.0 approved

Prepared by Debnath, Anik
Singh, Oishi

<American International University-Bangladesh>

<11-Decmber-2022>

Checked By Industry Personnel

Name: Md. Shakhawat Hossain

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Revision History

Revision	Date	Updated by	Update Comments
0.1	2022.12.09	Debnath, Anik	First Draft
0.2	2022.12.09	Singh, Oishi	Second Draft
0.3	2022.12.10	Debnath, Anik	Third Draft
0.4	2022.12.11	Singh, Oishi	Final Draft

1. TEST PLAN IDENTIFIER:RS-MTP01.3

2. REFERENCES

Viswanadham, N. (2021). Ecosystem model for healthcare platform. Sādhanā, 46(4), 1-13.

Knop, M., Mueller, M., & Niehaves, B. (2021). Investigating the use of telemedicine for digitally mediated delegation in team-based primary care: Mixed methods study. Journal of medical Internet research, 23(8), e28151.

3. INTRODUCTION

Background to the Problem

Digital technologies that act as a communication bridge between providers and consumers now have the potential to transform "digital health care" by allowing consumers to receive care and support when and where they need it. The goal of this project is to automate or make online the process of daily operations such as finding an available hospital, patient admission, assigning a doctor or nurse, etc. This initiative will automate medicine and ambulance services all the time. We've done our best to make the complex process of a health service as simple as possible by employing a structured and modular approach as well as a menu-oriented interface. We attempted to create the software in such a way that the user would have no difficulty using it and that additional growth would be achievable with little effort. Our software's major goal is to automate each task so that it may be completed quickly and easily rather than having to do it manually, which takes time.

Health issues are very important for every human. Every day, we face many problems related to health issues. For example, when someone suddenly becomes ill, we may need doctors, medicine, nurses, ambulances, and many more. But managing that moment becomes tough. especially in rural areas. Hospitals and doctors, in particular, are in short supply. Many times, the necessary medicine is not available. Patients are often alone at home or have no one around them, so having a home delivery system is very important. Sometimes the patient is in such a critical condition that he cannot be moved, in which case the doctor or nurse has to be brought home. The reason for wasting a little time may be that the patient's physical condition worsens or that he often dies. For him, time management is much more important. Ambulance management has also been given much priority in our software. This is because an ambulance is needed quickly to move a patient. Ambulance service might be difficult to come by at times, and as a result, many people have suffered significant losses. There is no software in our country that brings all of the help of the health relay together. Most of them are demo-type software because there are not all kinds of updates in the database.

Solution to the Problem

As we discussed in the previous section, our primary goal is to reduce the time spent in health care and the death ratio, and we can offer some solutions to this problem. So, the first and unique system of our software application is an emergency phone call system, which a patient can use to get connected with hospitals and doctors immediately. Because in most cases, patients do not have any idea about suitable hospitals or doctors for their primary treatment, It will help them minimize their time and start their primary treatment quickly. Another feature we are going to implement in our software application is an emergency ambulance. They can gain easy access to the vehicles based on their location. Because many patients are unable to obtain available vehicles at that time, their situation becomes critical. The last feature we are going to add is an online medicine delivery system. This is due to the fact that some aging people find it difficult to go to the pharmacy for their medications. They can order their essential medicines from home.

Our main goal of the software application is to provide health services based on the Internet, save valuable time, and bring patients under primary treatment. Many jobless people will get some work by providing home services like delivering medicines or nursing. Overall, Bangladesh will see a new era in its health care system.

As per our analysis, there is some software available in our area, but they are only providing the medicines. They have not been updated for quite some time, and they are not usable right now. Even so, no software has yet been developed to help a patient in a critical situation when he or she falls ill in a hurry.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

1. System Registration

Functional Requirements

1.1 Need to choose an account type between admin, user and deliveryman and others.
1.2 System requires a password and user id or Email-ID for logged in.
1.3 System also requires password which is 8 character long with must to follow a Capital Letter, small letter, numerical number and special character.
1.4 Anyone can registration by entering their user id, password, phone number, Email address, address for users.

Priority Level: High

Precondition: user have to fill up all the mandatory information

2.System login

Functional Requirements

2.1 The software shall allow users to log in with their given valid Email-ID and password.
2.2 If the email and/or password have been inserted wrong more than three times, the random verification code will be generated by the system to retry the login.
2.3 If the number of login attempt exceed its limit (multiple-times), the system shall block the user account login for one hour. Then again try with authentic username and password.

Priority Level: High
Precondition: user has valid user id and password

3.Profile

Functional Requirements

3.1 After login into the ID user can set his/her age gender location.
3.2 If the user has previously experienced a medical problem, he or she can enter it.
3.3 User can set multiple contact number in case some kind of network issue.
3.4 System will verify if the number is correct or not and send a message if invalid number.

Priority level: Medium
Precondition: User must register with Email-ID and Password.

4.Update Personal Information

Functional Requirements

4.1 The user will be able to update their personal information in the profile section.
4.2 User can edit their email, mobile no, profile picture and the password.
4.3 The system will ask the user to enter password if the user chooses to delete existing information in their profile.

Priority Level: Medium.
Precondition: User has logged in to the system, with valid password.

5. Emergency Call:

Functional Requirements

5.1 The software should provide an emergency call button for users.
5.2 This emergency call button will work as an emergency phone call from where the users can get access to the hospitals easily
5.3 User can provide any location to search for the number for the required service.

Priority level: High.
Precondition: User need to be a registered member first.

6. Emergency vehicle:

Functional Requirements

6.1 User can call emergency vehicle for health service
6.2 This will allow user to choose different kind of vehicle like ambulance, air ambulance etc.
6.3 This system will also work under a certain location chosen by user
6.4System will send a message to both consumer and provider when the vehicle is confirmed for the service.

Priority level: High
Precondition: User need to be registered and within the service location and valid phone number.

7.Medicine Delivery:

Functional Requirements

7.1 User can directly search for medicine writing the name of it.
7.2 All the shop list containing the desired medicine will be shown as list.
7.3 Users can select medicine for order.
7.4 System will send a message if the medicine is not available in the shop.

Priority level: High.
Precondition: User need to be registered and within the service location and valid phone number.

8.Health tips:

Functional Requirements

8.1 User can select health tips depending on his health condition.
8.2 There will be audio and video options user can select between them.
8.3 Also user will get some contact number of doctors for free advice and also provide doctors availability on a specific time.

Priority level: Medium
Precondition: N/A

9. Payment Option:

Functional Requirements

9.1 Users can payment their payment using the application.
9.2 There will several payment methods options like bKash, DBBL, visa card and other options.

Priority level: High
Precondition: User should have valid username or phone number, password or pin, and any type of available payment method account.

10. Deactivate account:

10.1 The user will be able to deactivate their account if they want.
10.2 To deactivate the account, the system will request a password and then send a verification code to the registered email address.
10.3 According to policy, if a user is not available at a specific time, the system will deactivate his or her account.

Priority Level: High
Precondition: User have registered Email-ID, password and verification code.

6.1 System Quality Attributes

Non-Functional Requirements:

There are two types of perspective of quality attributes
First one is user perspective. There are 8 important primarily quality attributes to user perspective.

1. Availability: The system shall be at least 98.5 percent available on every seven days a week between 12.00 am to 11.59 pm at local time.

Priority level: High
Precondition: Must have maintainability attribute

2. Efficiency: There are at least 3.5 percent of the processor capacity, disk space 1.7 MB/S, memory 120MB and communication bandwidth 512kbps shall be available to properly run this system.

Priority level: High
Precondition: Every Functional Requirement must be met.

3. Flexibility: A maintenance programmer who has at least 8 months of experience shall be able to add new feature and function including code, modifications and testing into the system with no more than three hours.

Priority level: Medium
Precondition: It will be adaptable enough to meet any demands.

4. Integrity: When user try to login into the system, there shall have to two step verification. One step is while user try to login into the system, the system will send a verification code to the user via mail and user shall have to use that verification code to login and the second step is user shall have to use their own password while they create the password to sign up this system.

Priority level: High
Precondition: N/A

5. Interoperability: When a user sign-up to the system the user has to give some their general information like user name, phone no., email. So, system need to justify the information whether the user given information. For that reason, the system shall be able to import valid information which shall have matched to the user given information. The system shall import the information from local election commission office.

Priority level: High
Precondition: N/A

6. Reliability: The system shall no more than three experimental runs out of 800 can be lost.
Priority level: High
Precondition: N/A

7. Robustness: In the system, there are two kinds of users. One is an applicant, and another is recruitment. If the recruitment fails to edit their post before the applicant saves the post, the recruitment shall be able to recover all changes made in the post being edited and shall be able to publish that edited post within 20 seconds.

Priority level: High
Precondition: N/A

8. Usability: When the recruitment is posted, the system will be able to upload that post within 15 seconds. applicant sees the recruitment post and if the applicant wants to comment on the post. Within 2 seconds, the system should be able to display that comment to the recruitment.

Priority level: High
Precondition: N/A

And the last one is developer perspective. There are important primarily quality attributes to developer perspective:

i) **Maintainability**: Suppose there is a problem arise in the system that user can't upload their post. A maintenance programmer who has at least 8 months of experience can solve this problem within 3hour without any extra helping hand.

Priority level: High
Precondition: Must have Availability, Efficiency, Flexibility, Reliability attribute.

ii) **Portability**: The system must shall able to run any platform or any operating system. Like Windows, Linux, Android, Apple, Unix, Ubuntu, Haiku, Rhapsody etc.

Priority level: High
Precondition: N/A

iii) **Reusability**: The system functions shall have to be designed in such way that can be reasonable for different any other system.

Priority level: Low
Precondition: N/A

iv) **Testability**: If users want to upload a post, the system should be able to do so within 15 seconds. If a user comments on a post, the system must display the comment within 2 seconds. If one user communicates with another via audio or video, the system must connect the users within 5 seconds. If the user refreshes the page, the system will refresh that page within 3 seconds.

Priority level: Medium
Precondition: N/A

Besides these two perspectives, there are also some quality attributes. Like:

I. **Performance**: If recruitment upload a file, the applicant shall able to download the file in 20 second or less over a 1MBps bandwidth connection. Here a condition that file size must be within 18 MB.

II. **Learnability**: The system user interface should be clearly and simply structured and free of all dead weight. It should explain to the user what the software system should do.

III. **Readability**: When a programmer will build the system with code. The code shall have to be well structured should be use comment, should be maintain the code alignment. This is that for reason when another programmer will see the system code that the programmer shall able to understand the codes very easily without any hassle.

IV. **Scalability:** The system shall able to handle load increases without decreasing performance or the possibility to rapidly increase the load.

6.2 System Interface:

Figure:1 Welcome page

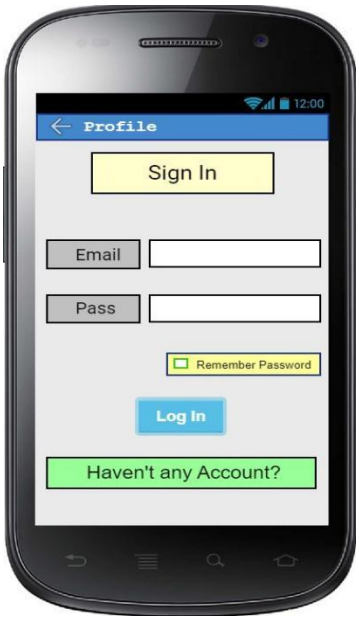


Figure:2 Sign in page

Figure:3 Registration page

Figure:4 Home page

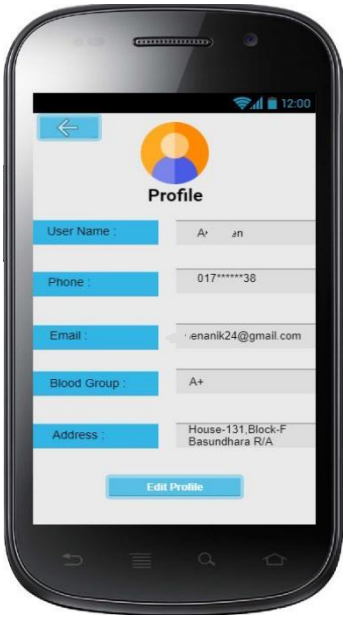


Figure:5 Profile page

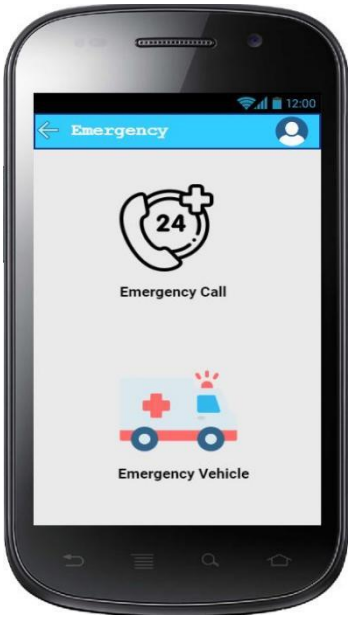


Figure:6 Emergency page

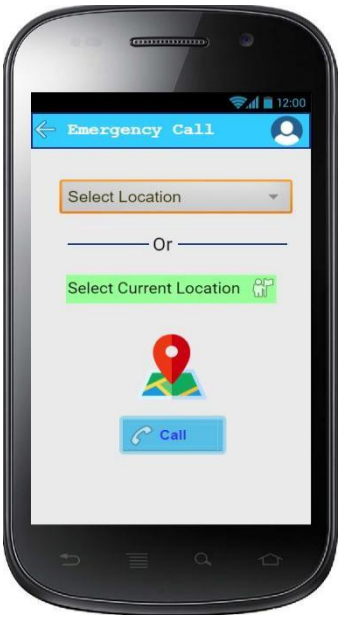


Figure:7 Emergency call page

Figure:8 Emergency vehicle page

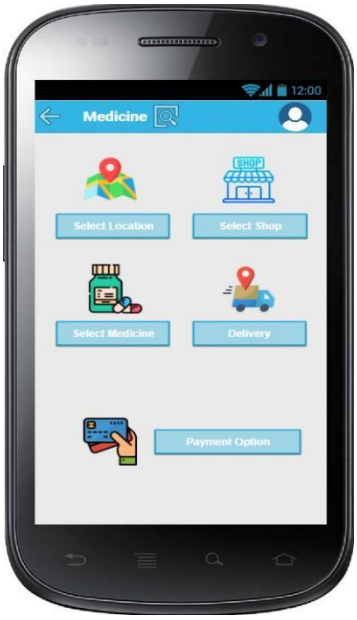


Figure:9 Medicine Page

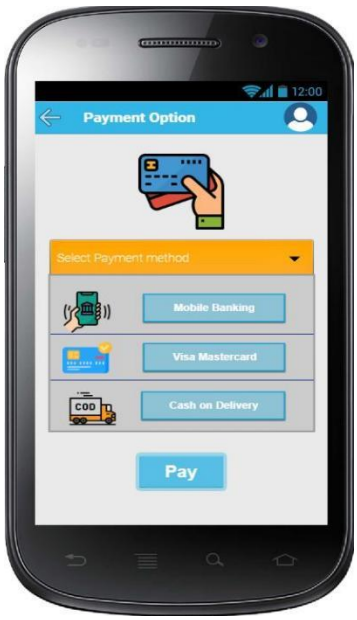


Figure:10 Payment Option page

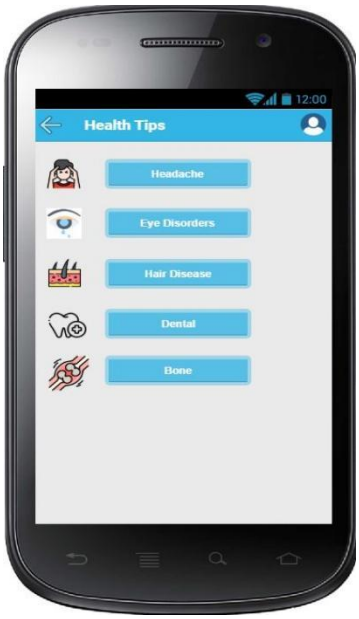


Figure:11 Health Tips Page

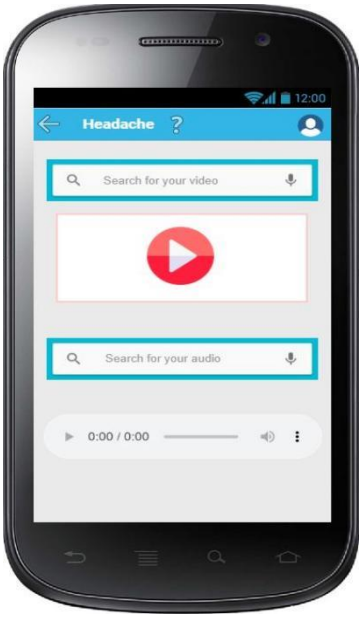


Figure:12 Details of Health tips page

6.3 Project Requirements

Delivering the product on schedule, within budget, and with the required level of quality is our main objective in project management activities.

Time, Cost, Scope, Resources, and Environment are the key obstacles.

We must complete our work by the deadline, on schedule, and within our allocated budget. We must also add the necessary functionality to the system. We must maintain and effectively manage the necessary resources. If we appropriately manage each constraint, a nice result will be obtained.

- By 14 weeks, a practical answer ought to be available.
- The program shouldn't consume more than 100 mb of storage after installation.
- Although developers prefer Visual Studio code, they can also use alternative editors.
- Git will be the de facto code management and version control system.
- The source code will be kept on GitHub, where many developers will work together.
- Unit testing will be done with Selenium.
- Unit testing will be done with Selenium. Interactive prototyping will be performed using a Figma.
- The estimated cost of the project is 3,50,000 BDT.

Time Estimation:
For creating prototype hours needed:100 hours. For Developing Hours needed: 880 hours.
For revision hours needed: 80 hours
For testing & debugging hours needed:220 hours Total working hour :1220 hours
Daily working hour: 12 hours
Total days need:1220/12=101 days or 3.5 months or 14 weeks.

Resources:
3 app developers, 3 software testers, 5 Custom Built PCs, 6 Android mobile smartphones, 2 LAN Connection.

Language & Database:
Programming Language: Java, C++, Dart. Mobile UI Framework: Flutter, Database: MySQL.

Environment: We need an environment to build this software. So, we create an office space ram.

Budget: Total budget 3,50,000 BDT
Total Development Time **3.5** Months Or 14 Weeks.

7. FEATURES NOT TO BE TESTED

All the Features in this software need to be tested.

8. TESTING APPROACH

8.1 Testing Levels

Our system testing phase will be partitioned into several steps. It starts with the Unit testing and ends with the Acceptance testing. There will be at least one full-time independent test person for system/integration testing. Most testing will be done by the test manager with the development teams' participation.

- **UNIT Testing:** Will be done by the developer 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. All unit test information will also be provided to the test person.

- **SYSTEM/INTEGRATION Testing:** Will be performed by the test manager and development team leader with assistance from the individual developers as required. No specific test tools are available for this project. Programs will enter into System/Integration test after all critical defects have been corrected. A program may have up to two Major defects as long as they do not impede testing of the program

- **ACCEPTANCE Testing:** Will be performed by the actual end users with the assistance of the test manager and development team leader. The acceptance test will be done in parallel with the existing manual ZIP/FAX process for a period of one month after completion of the System/Integration test process.

8.2 Test Tools

The system can be tested using IBM's iSeries, a midrange server series originally known as AS/400:
This testing service is assessing:

- Testing metrics analysis and decision making
- Tracking
- Communicates
- Quality compliance
- Analyzing defects

It can be combined with TestBench software for test data management and certified IBM iSeries or AS/400 solution.

8.3 Meetings

The test team will meet once a week to assess work to date and to identify trends and issues with errors as soon as feasible. Every two weeks, the project manager and the head of the test team will also meet. The dates for these two meetings will be separate weeks. In the event of an emergency, extra meetings may be called.

9. TEST CASES/TEST ITEMS

Table 1: Test Case for **Registration**

Project Name: Digital Health Care			Test Designed by: Anik Debnath	
Test Case ID: DHC_1			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Oishi Singh	
Module Name: Registration			Test Execution date: 12/12/22	
Test Title: User signup process				
Description: Test the app's registration page to see if the user can successfully register their information.				
Precondition (If any): User must give proper information. Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click on Signup button 3. Fill up the form 4. Click submit	User id: anik_01 Password: Anik@905 Email: anik@gmail.com Phone number: 01787616314 Address: Dhaka	User should sign up to the application	As expected,	Pass
Post Condition: User is validated with database and successfully signup with account. The account session details are added in the database.				

Table 2: Test case for **Login**

<table>
<tr><td colspan="3">Project Name: Digital Health Care</td><td colspan="2">Test Designed By: Oishi Singh</td></tr>
<tr><td colspan="3">Test Case ID: DHC_2</td><td colspan="2">Test Designed Data: 11/12.22</td></tr>
<tr><td colspan="3">Test Priority (Low, Medium, High): Medium</td><td colspan="2">Test Executed By: Anik Debnath</td></tr>
<tr><td colspan="3">Module Name: Login Session</td><td colspan="2">Test Execution Date: 12/12/22</td></tr>
<tr><td colspan="3">Test Title: Verify login module with valid email and password.</td><td colspan="2"></td></tr>
<tr><td colspan="3">Description: Test the app login page to see whether the user can successfully log in to the application.</td><td colspan="2"></td></tr>
<tr><td colspan="5">Precondition (If Any): User must have valid email and password.</td></tr>
<tr><td>Test Steps</td><td>Test Data</td><td>Expected Results</td><td>Actual Results</td><td>Status (Pass/Fail)</td></tr>
<tr><td>1. Go to the app login page
2. Enter email id
3. Enter password
4. Click on Login</td><td>Email id: anik@gmail.com
Password: Anik%304</td><td>User should properly login to their account.</td><td>As expected,</td><td>Fail.</td></tr>
<tr><td colspan="5">Post Condition: User is validated with database and successfully registered into the application. The account session details are logged in the database.</td></tr>
</table>

Table 3: Test case for **Reset Password**

Project Name: Digital Health Care		Test Designed By: Anik Debnath		
Test Case ID: DHC_3		Test Designed Data: 11/12/22		
Test Priority (Low, Medium, High): Medium		Test Executed By: Oishi Singh		
Module Name: Reset Password		Test Execution Date: 12/12/22		
Test Title: Verify getting warning and receiving the new password				
Description: Test app login page whether user gets warning when they input wrong password and gets new password when they click forget password button.				
Precondition (If Any): User must have an account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app login page. 2. Type wrong email and password. 3. Click on Login. 4. Click Forget Password button.	Email id: anik@gmail.com Password: SqaT$103	User should get waring and get the new password by email.	As expected,	pass
Post Condition: N/A				

Table 4: Test case for **Profile**

Project Name: Digital Health Care		Test Designed By: Oishi Singh		
Test Case ID: DHC_4		Test Designed Data:11/12/22		
Test Priority (Low, Medium, High): Medium		Test Executed By: Anik Debnath		
Module Name: Profile page		Test Execution Date: 12/12/22		
Test Title: Verify the accessibility in all the option.				
Description: Test all the option is functional which are in profile page.				
Precondition (If Any): User should have valid username and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app Login page. 2. Put email and password and click on Login. 3. Click on Emergency option. 4. Click on Emergency call option. 5. Click on Emergency vehicle option. 6. Click on Medicine option. 7. Click on Payment option. 8. Click on Health Tips option.	Email id: anik@gmail.com Password: Anik@905	User should properly access all the page by clicking on them.	As Expected,	Pass
Post Condition: User log activity should be tracked properly.				

Table 5: Test case for **Update Information**

Project Name: Digital Health Care			Test Designed by: Oishi Singh	
Test Case ID: DHC_5			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Anik Debnath	
Module Name: Update Information			Test Execution date:12/12/22	
Test Title: Test the procedure of user account information Update				
Description: update: Verify user information update process				
Precondition (If any): User must have registered DHC Email-ID& Password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the software 2.Select Information Update from menu section. 3. User need to provide the Email-ID verification code, and other necessary Information. 4.Then DHC will check those data and confirm the information update.	Email-ID: anik@gmail.com Password: Anik@905	DHC will successfully update user's information.	As expected,	Pass
Post Condition: User successfully updated his/her account information.				

Table 6: Test case for **Search**

Project Name: Digital Health Care			Test Designed by: Anik Debnath	
Test Case ID: DHC_6			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): Medium			Test Executed by: Oishi Singh	
Module Name: search			Test Execution date:12/12/22	
Test Title: Test webpage Search Functionality				
Description: Verify search option working properly or not				
Precondition (If any): Write proper page name of Search in search box Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
5. Go to the website 6. Click Search on Emergency 7. Search for the page 8. Select and click that	Email-ID: anik@gmail.com Password: Anik@905	As search for the item with using of search functionality got the page.	As expected,	Pass
Post Condition: Validation that matching suggestions should be shown when the search page does not match any of the relevant records.				

Table 7: Test Case for **Emergency Call**

Project Name: Digital Health Care System			Test Designed by: Oishi Singh	
Test Case ID: DHC_7			Test Designed date: 11//12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Anik Debnath	
Module Name: Emergency Call			Test Execution date: 12/12/22	
Test Title: Test website Emergency call page				
Description: after Complete Calling to hospitals by providing user location.				
Precondition (If any): User must have registered into the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
5. Go to the website 6. Click "Emergency" button 7. Click "Emergency Call" 8. Select location or, provide location 9. Click "Call" button	Location: Bashundhara R/A Call: Ever Care Hospital, Bashundhara	User should be able to call Ever Care hospital of Bashundhara	As expected,	Pass
Post Condition: The phone number and location will be updated anytime in the database when user select his current location or changes his contact number.				

Table 8: Test Case for **Medicine**

Project Name: Digital Health Care System			Test Designed by: Anik Debnath	
Test Case ID: DHC_8			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Oishi Singh	
Module Name: Medicine			Test Execution date :12/12/22	
Test Title: Test website medicine page				
Description: Asking for medicine providing location, shop, medicine name with payment information.				
Precondition (If any): User must be registered with valid information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the website 2.Click "Medicine" button 3.Select location 4.Select shop name. 5.Select medicine 6.Click "Payment" button 7.Provide payment details.	Location: Bashundhara R/A Shop Name: Laz Pharma Medicine name: Max pro - 20 Payment option: Cash on	User should be able to order Maxpro-20 medicine in Bashundhara R/A.	As Expected,	Pass
Post Condition: The medicine shop and payment will be updated anytime in the database when user select his current location.				

Table 9: Test Case for **Health Tips**

Project Name: Digital Health Care System			Test Designed by: Anik Debnath	
Test Case ID: DHC_8			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Oishi Singh	
Module Name: Health Tips Session			Test Execution date: 12/12/22	
Test Title: Test website Health Tips page				
Description: Getting health tips by providing specific disease				
Precondition (If any): User must have registered into the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click on heath tips button 3. Select "Headache" option.	Options: "Headache"	User should be able to get some video and audio related to "Headache"	As Expected,	Pass
Post Condition: The videos and audios for health tips will be updated continuously after a certain time from better resources.				

Table 10: Test Case for **Emergency Vehicle**

Project Name: Digital Health Care System			Test Designed by: Oishi Singh	
Test Case ID: DHC_10			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Anik Debnath	
Module Name: Emergency Vehicle			Test Execution date: 12/12/22	
Test Title: Test website Emergency Vehicle page				
Description: Complete Calling for vehicle by providing user location and vehicle name				
Precondition (If any): User must have registered into the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click "Emergency" button 3. Click "Emergency Vehicle" 4. Select location or, provide location 5. Select Vehicle name. 6. Click "Call" button	Location: Bashundhara R/A Vehicle: Ambulance	User should be able to call Ever Care hospital of Bashundhara for their ambulance.	As Expected,	Pass
Post Condition: The phone number and location will be updated anytime in the database when user select his current location or changes his contact number.				

Table 11: Test Case for **Payment Option**

Project Name: Digital Health Care System			Test Designed by: Anik Debnath	
Test Case ID: DHC_11			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Oishi Singh	
Module Name: Payment Option			Test Execution date: 12/12/22	
Test Title: Test website Payment Option page.				
Description: Complete payment with valid account number.				
Precondition (If any): User must have valid mobile banking account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Click on "Medicine" 3. Select medicine and related information. 4. Click on "Payment Option" 5. Select Mobile Banking (bKash) 6. Insert account number. 7. Insert amount 8. Click on "Pay" button.	Account number: 01796986151 Amount: 500	User should be able to pay properly.	As Expected,	Pass
Post Condition: Available payment option will be updated in the database by changing location.				

Table 12: Test case for **Log out**

Project Name: Digital Health Care			Test Designed by: Oishi Singh	
Test Case ID: DHC_12			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): Medium			Test Executed by: Anik Debnath	
Module Name: Log Out			Test Execution date:12/12/22	
Test Title: Test Webpage for Log Out				
Description: Verify user can logged out properly				
Precondition (If any): user have to logged in first Dependencies: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Search page 3. Select page 4. Click Log out	User id: anik_01 Password: Anik@905	User should easily log out from the system	As expected,	Pass
Post Condition: user will logged out from system				

Table 13: Test case for **Account Deactivate**

Project Name: Digital Health Care			Test Designed by: Oishi Singh	
Test Case ID: DHC_13			Test Designed date: 11/12/22	
Test Priority (Low, Medium, High): High			Test Executed by: Anik Debnath	
Module Name: Account Deactivate			Test Execution date: 12/12/22	
Test Title: Test the deactivation process				
Description: User can deactivate his/her Digital Health Care account				
Precondition (If any): The user must provide the registered email ID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login to the software with Email-ID and password 2. Click User support from menu section 3. Provide the Email-ID verification code and other information 4. After completing all the steps, user will get a confirmation message.	Email-ID: anik@gmail.com Password: Anik@905	User account will be deactivated	As expected,	pass
Post Condition: The deactivated account's Email -ID will remove from registered user database.				

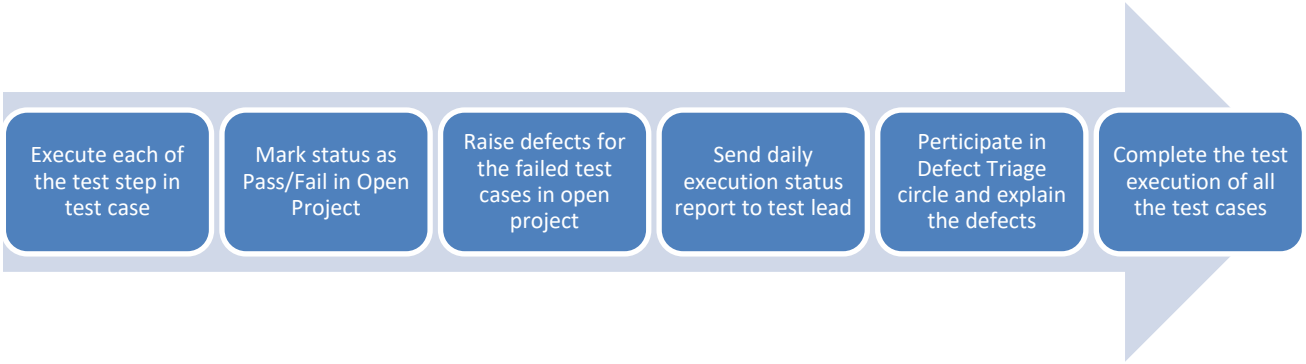
9.1 Test Bug Report:

Bug ID	
Test ID	DHC-2
Tester	Anik Debnath
Date (Submitted)	11.12.22
Title	Verify login module with valid Email and password.
Bug Overview	
URL	www.example.com/dhc/login
Summary	When my application contains one page, I am unable to add a second page via the add to application button on a DHC page
Screenshot	www.example.com/screenshot123
Environment	
Platform	Macintosh
Operating System	OS x 10.12.0
Browser	Chrome50
Bug details	
Steps to Reproduce	add one page to application>go to DHC login via the search bar>add new page to application via “add to application” button (see screenshot)>go to application
Expected Result	The application Should contain 2 Pages
Actual Result	The application contains only 1 Page
Description	/
Bug tracking	
Severity	Major
Assigned To	Oishi Singh
Priority	High
Notes	/

9.2 Validation and Defect Management

- It is expected that the testers execute all the scripts in each of the cycles. However, it is recognized that the testers could also do additional testing if they identify a possible gap in the scripts.
- The technical team will gather information from project, and request additional details from the Defect Coordinator. The technical team will work on fixes.
- It is the responsibility of the tester to find the defects, mark them to the corresponding script, assign an initial severity and status and close the defect; it is the responsibility of the Defect manager to review the severity of the defects and facilitate with the technical team the fix and its implementation, communicate with testers when the test can continue or should be halt, and modify status as the defect progresses through the cycles; it is the responsibility of the technical team to review project on a daily basis, ask for details if necessary, fix the defect, communicate to the Defect Manager the fix is done, implement the solution per the Defect Manager request.

9.3 Test Execution process



- Once all Test cases are approved and the test environment is ready for testing, tester will start exploratory test of the application to ensure the application is stable for testing.
- Each Tester is assigned Test cases directly in project.
- Testers to ensure necessary access to the testing environment, project for updating test status and raise defects. If any issues, will be escalated to the Test Lead and in turn to the Project Manager as escalation.
- If any showstopper during exploratory testing will be escalated to the respective development team member for fixes.
- Each tester performs step by step execution and updates the executions status. The tester enters Pass or Fail Status for each of the step directly in project.
- Tester will prepare a Run chart with day-wise execution details.

- If any failures, defect will be raised as per severity guidelines in project tool detailing steps to simulate along with screenshots if appropriate.
- Daily Test execution status as well as Defect status will be reported to all stakeholders.
- Testing team will participate in defect triage meetings in order to ensure all test cases are executed with either pass/fail category.
- If there are any defects that are not part of steps but could be outside the test steps, such defects need to be captured in project and map it against the test case level or at the specific step that issue was encountered after confirming with Test Lead.
- This process is repeated until all test cases are executed fully with Pass/Fail status.
- During the subsequent cycle, any defects fixed applied will be tested and results will be updated in project during the cycle. As per Process, final sign-off or project completion process will be followed.

10. ITEM PASS/FAIL CRITERIA

A method will be used to determine whether a test case item passes or fails:
Recommendations will be made after all test cases have been successfully completed. The team leader will make these decisions based on the results of the trial. The software framework cannot be removed until all bugs are fixed. When the final program is released, there will always be some bugs in the system. The test leader and project manager will therefore make the decision on whether to release the program and which test numbers will pass. It is solely the responsibility of the test lead and project manager. If 98% of the test cases are successfully completed during the test session, then we will go for releasing the software.

11. TEST DELIVERABLES

After development, technical process should be followed. Delivery process should be defined in SQ Test plan.

Acceptance test plan: Acceptance testing criteria, test cases, objectives, scope, approach, resources, and schedule are documented.

System/Integration test plan: System/Integration testing criteria, test cases, objectives, scope, approach, resources, and schedule are documented.

Screen prototypes: The layout and the design of the testing approach are documented.

Transmittal Reports for Test Items: Developers' handover report.

Test Logs: These are the outcomes of the tests.

Incident Reports: Unexpected outcomes are documented.

Investigation Report Logs: Incident Report Summary.

Test Summary Report: A report that summarizes the testing.

12. STAFFING AND TRAINING NEEDS

It is advised that this project have at least one full inspector due to the structure and stages of project distribution. For the assessment, the person will need to be given some time at the beginning of the project, and then, roughly six months later, they will need to be provided full-time. The project/test manager will take over if a different tester is not available. To include a thorough and pertinent study, the following preparation-related topics should be considered. The personnel for this project have long been planned. The majority of the group will participate in particular research tasks, which are covered in greater depth in the section on responsibilities.

- The developers and testers will need to be taught Java, C++, Dart, Flutter, and MySQL.
- Automation tester should gain the proper knowledge and also have the experience to operate the tools.

13. RESPONSIBILITIES

	TM	PM	Dev Team	Test Team	Client
Acceptance test documentation & execution		X			
System/Integration test documentation & execution					X
Unit test documentation & execution					X
System Design Reviews				X	X
Detail Design Reviews	X		X	X	X
Test procedures and rules	X			X	X
Screen & Report prototype reviews	X			X	X
Change Control and regression testing	X	X	X	X	

14. TESTING SCHEDULE

The following testing activities are listed in the project plan. The project plan timetable contains a list of the exact dates and hours for each activity. A list of the people needed for each step is also included in the project schedule and plan. The project manager, in collaboration with the development and test team leaders, will organize the management, customer, test team, and development team employees required for each assignment.

Task Name / Weeks	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20
Documentation										
Design										
Test Plan										
Unit Testing										
Integration Testing										
System testing										
Usability testing										
Security testing										
Performance testing										
Acceptance testing										
Project Completion										
Feedback										

Table: Estimated Schedule for the project

15. PLANNING RISKS AND CONTINGENCIES

- **Risks Planning**

Technical, programmatic, and process risks are identified and categorized as part of software risk management, which then forms the basis of a plan that connects each to a mitigation approach. Throughout the project, the project manager keeps an eye on risk. If any do, a particular owner takes a mitigating step.

- **Lack of encrypted data:** Keep an eye on security and back up the data with highly encryption.
- **Attempt unauthorized access:** Consecutively three failed login attempts in an hour, the user will be restricted.
- **Error in Functionalities:** Regularly test the application and make a daily backup.
- **Wrong SQL Command for Sensitive Data:** Keep security scans and backups up to data.

- **Contingency Planning**

A contingency plan in project management is a defined, actionable plan that is to be enacted if an identified risk becomes a reality. It is essentially a "Plan B", to be put in place when things go differently than expected.

- **Power outages:** We can face the load shedding that's why we need to always ready a backup power source.
- **Network Failure:** We will install two fiber optics connection from the different ISP as if one will be work as back up of another.

16. APROVALS

Position	Assigned
Project Sponsor	Approved
Development Management	Approved
EDI Project Manager	Approved
RS Test Manager	Approved
RS Development Team Manager	Approved
Reassigned Sales	Approved
Order Entry EDI Team Manager	Approved