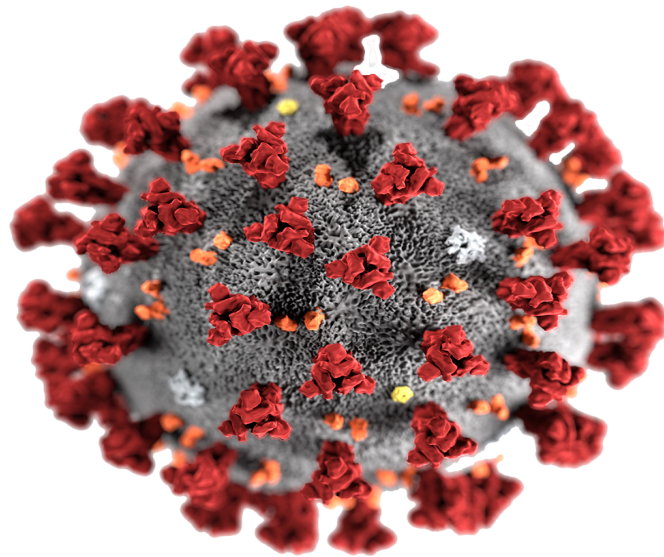




COVID-19 Healthcare



Software Quality and Testing

Section: C

American International University-Bangladesh

Problem domain:

Category A: The coronavirus COVID-19 pandemic is the defining global health crisis of our time and the greatest challenge we have faced since World War Two. Since its emergence in Asia late last year, the virus has spread to every continent except Antarctica. Cases are rising daily in Africa, the Americas, and Europe.

Technology:

Option C: Mobile Phones/Handheld Devices

Test plan identifier: TP_COVID-19 HEALTHCARE_1.01

Purpose: This pandemic, COVID-19 has engulfed most of the countries of the world. Now, countries are hustling to slow the spread of the infection by testing and treating patients, completing contact following, restricting travel, isolating residents, and dropping huge social affairs, for example, games, shows, and schools. The pandemic is moving like a wave - one that may yet crash on those least ready to adapt. Yet, COVID-19 is considerably more than a wellbeing emergency. By focusing on all of the countries it contacts, it can possibly make decimating social, monetary, and political emergencies that will leave profound scars. We are in a strange area. A large number of our networks are currently unrecognizable. Many of the world's most noteworthy urban communities are abandoned as individuals stay inside, either by decision or by government request. Over the world, shops, theaters, cafés, and shopping centers are shutting. Consistently, people are losing occupations and salary, with no chance to get off knowing when typicality will return. Little island countries, vigorously reliant on the travel industry, have void inns and abandoned seashores. The International Labor Organization appraises that 195 million employment opportunities could be lost.

Proposal: To handle this problem, we come up with this, that an online information with care based system will be the best supporter. It will serve people with efficiency. Also, it will develop public awareness. People can get any information about COVID-19 from this system. Also can get a medical emergency number and contact for help. The more important thing is people can take medication from this for COVID-19. This system will contain many important features according to its user like a person can see what are the symptoms, where to test COVID-19 and how to keep him/herself safe from COVID-19. Or individuals that are suspected to have the COVID-19 infection or are laboratory confirmed and do not require a hospital stay, should be isolated at home. At the onset of home-based isolation, they can know precautions and take medication from a doctor. He/She doesn't need to go to hospitals for primary treatment. He/She can choose a doctor and apply for his or her own treatment. Also can give a review of his or her doctor. After connection they can chat or make calls with doctors. The system will give an update about new ways of treatment that are discovered or applied anywhere in the world. A doctor can supervise the maximum number of 40 patients through this system. And a doctor will be able to mark a patient healthy from COVID-19. Also, there will be an admin part who will provide a daily Corona update so that a user can easily get to know the update. Also can add a patient or doctor if needed. Admin can see the report of the system that how many patients are infected or healthy. Our goal is to control this pandemic from spreading and also serve people to get proper treatment.

Operating Environment :

This is an Android base application. So, users can access the system on the mobile or tablet of the restaurant.

- OS: Android, Web
 - Version: Up to 5.0 7
- Develop Tool:
 - Language: JAVA, XML, Php
 - Database: MySql

Authentication: API – IDE: Android Studio, Visual Studio

Functional Requirements

Admin:

1. Admin shall be able to Sign up and log in.
2. Admin shall be able to update all the features.
3. Admin shall be able to verify profiles of patients.
4. Admin shall be able to verify doctor's profiles.
5. Admin shall be able to update daily reports.
6. Admin shall be able to update the new treatment techniques.
7. Admin shall be able to register patients.
8. Admin shall be able to register doctors.
9. Admin shall be able to see the patients review.

Patient:

1. Patients shall be able to Sign up and log in.
2. Patients shall be able to update their profile.
3. Patients shall be able to see the places of testing.
4. Patients shall be able to apply to a doctor.
5. Patients shall be able to chat with a doctor.
6. Patients shall be able to call a doctor.
7. Patients shall be able to see the daily reports.

8. Patients shall be able to learn about awareness.
9. Patients shall be able to give a review of a doctor.

Doctor:

1. Doctors shall be able to Sign up and log in.
2. Doctors shall be able to update their profile.
3. Doctors shall be able to confirm patients' applications.
4. Doctors shall be able to chat with patients.
5. Doctors shall be able to call patients.
6. Doctors shall be able to see the list of patients.
7. Doctors shall be able to mark healthy patients.
8. Doctors shall be able to know about new ways of treatment.
9. Doctors shall be able to see the daily reports

Unregistered User:

1. Shall be able to see the daily reports of COVID-19.
2. Shall be able to see the public awareness.

Non-Functional Requirements

1. The front page of the system takes 2 second for loading.
2. The user's password is hashed. No one can't see the password during log in or further use in the account.
3. At a time 500 to 600 hits of the users can be handled smoothly.
4. Notification of an application for a doctor sent to the doctor account in 2 second.
5. Only the owner can see all the information of his/her account.

Test Case :

Admin:

Feature_1: Admin shall be able to Sign up and log in

Project Name: COVID-19 Healthcare Test Case Id: CH_01 Test Priority:High Module Name:Log in session Test Title:verify log in with valid username &password Description:Test the login page Precondition:user has valid username & password				Test Designed by:Md. Afid Test Designed date:10.5.2020 Test Execute by:Md. Akif Test Execute date:01.06.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Open the app	username:CH			
2.Enter username	Password:12345	user should login		
3.Enter password				
4.Clicklogin				
Post Condition:This session should be matched with database information and successfully log in to account.				

Table 1: A_Feature_1 test case

Feature_2: Admin shall be able to verify profiles of patients

Project Name: COVID-19 Healthcare Test Case Id:CH_02 Test Priority:High Module Name:Update feature Test Title:To do update feature Description: Admin can update all the features Precondition:Admin have to login to account				Test Designed by:Md. Afid Test Designed date:14.5.2020 Test Execute by:Md. Akif Test Execute date:01.06.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Open the app 2.Login to account 3.select feature 4.Click update	availability updateble feature	admin should update		
Post Condition:Should be stored the update in database				

Table 2: A_Feature_2 test case

Feature_3: Admin shall be able to Sign up and log in

Project Name: COVID-19 Healthcare Test Case Id:CH_03 Test Priority:High Module Name:verify patients profile Test Title:To do verify patients Description: Admin can verify patients profile Precondition:Patients should provide proper info				Test Designed by:Md. Afid Test Designed date:14.5.2020 Test Execute by:Md. Akif Test Execute date:02.06.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Open the app 2.Login to account 3.select patients 4.Click verify	availability proper patient info	admin should do verfiy		
Post Condition:Admin should be successfully veified patient				

Table 3: A_Feature_3 test case

Feature_5: Admin shall be able to update daily reports

Project Name: COVID-19 Healthcare Test Case Id:CH_04 Test Priority: Medium Module Name: update daily report Test Title:To do update report Description: Admin can update daily report of COVID-19 Precondition: Daily report should be available				Test Designed by:Md. Afid Test Designed date:14.5.2020 Test Execute by:Md. Akif Test Execute date:02.06.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Open the app 2.Login to account 3.select update report 4.Click update	availability of daily report	admin should be successful to update report		
Post Condition: Daily report should be stored in Database				

Table 4: A_Feature_5 test case

Feature_7: Admin shall be able to register patients

Project Name: COVID-19 Healthcare Test Case Id:CH_05 Test Priority: Medium Module Name:register patient Test Title:To do register patient Description: Admin can register patient Precondition:required info of the patient				Test Designed by:Md. Afid Test Designed date:14.5.2020 Test Execute by:Md. Akif Test Execute date:04.06.2020
	Test Data	Expected Results	Actual Results	Status
1.Open the app 2.Login to account 3.selectregister patient 4.Click register	availability ofrequired info of a patient	admin should do register patient		
Post Condition: Rgistered patient should be available in database				

Table 5: A_Feature_7 test case

Feature_9: Admin shall be able to see the patients review

Project Name: COVID-19 Healthcare Test Case Id:CH_06 Test Priority: Low Module Name:patients review Test Title:To see the patients review Description: Admin can to see the patients review Precondition:required review of patients				Test Designed by:Md. Afid Test Designed date:15.5.2020 Test Execute by:Md. Akif Test Execute date:04.06.2020
	Test Data	Expected Results	Actual Results	Status
1.Open the app 2.Login to account 3.select review of patients	availability of review of a patient	admin should to see the patient review		
Post Condition:Admin login time should be stored in database				

Table 6: A_Feature_9 test case

Patient:

Feature_2:Patients shall be able to update their profile

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_7				Test Designed date:15.5.2020
Test Priority:High				Test Execute by:Md. Afid
Module Name:Profile update				Test Execute date:04.06.2020
Test Title: Update profile of patients				
Description:Patients can update profile				
Precndition:Patients must have necessary information				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2.Click Update profile 3.Click Update	updatable info	Update profile successfully		
Postcondition: Patients can update their profile later				

Table 7: P_Feature_2 test case

Feature_3: Patients shall be able to see the places of testing

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_8				Test Designed date:16.5.2020
Test Priority: High				Test Execute by:Md. Afid
Module Name: The places of testing				Test Execute date:06.06.2020
Test Title: To see the places of testing				
Description:Patients can see the places of testing				
Precndition:Patients must login to account				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2.Click test places	available places	find places successfully		
Postcondition: Patients can see places of testing later				

Table 8: P_Feature_3 test case

Feature_4: Patients shall be able to apply to a doctor

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_9				Test Designed date:16.5.2020
Test Priority:High				Test Execute by:Md. Afid
Module Name: Apply to a doctor				Test Execute date:05.6.2020
Test Title: To choose a doctor				
Description:Patients can apply to a doctor				
Precndition:Patients must login to account				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Search doctor 3. Click On apply	available doctor	apply successfully		
Postcondition: An application should be available in database				

Table 9: P_Feature_4 test case

Feature_5: Patients shall be able to chat with a doctor

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_10				Test Designed date:16.5.2020
Test Priority: High				Test Execute by:Md. Afid
Module Name: Chat with a doctor				Test Execute date:06.06.2020
Test Title: To chat with a doctor				
Description:Patients can chat with doctor				
Precndition:Patients must be enrolled in a doctor list				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Go to doctor's profile 3. Click inbox	available doctor	can chat successfully		
Postcondition: The chat info should be stored in database				

Table 10: P_Feature_5 test case

Feature_6: Patients shall be able to call a doctor

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_11				Test Designed date:16.5.2020
Test Priority:High				Test Execute by:Md. Afid
Module Name: Call a doctor				Test Execute date:06.06.2020
Test Title: To call a doctor				
Description:Patients can call a doctor				
Precndition:Patients must be enrolled in a doctor list				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Search doctor 3. Click On apply	available doctor	can make call successfully		
Postcondition: Call duration should be stored in database				

Table 11: P_Feature_6 test case

Feature_7: Patients shall be able to see the daily reports

Project Name:COVID-19 Healthcare				Test Designed by:Md. Afid
Test Case Id:CH_12				Test Designed date:16.5.2020
Test Priority:Medium				Test Execute by:Md. Afid
Module Name: Daily reports				Test Execute date:06.06.2020
Test Title: To see daily reports				
Description:Patients can see the daily reports				
Precndition:Patients must login to account				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Click daily report	available report	can see daily reports successfully		
Postcondition: System should count a new seen				

Table 12: P_Feature_7 test case

Feature_8: Patients shall be able to learn about awareness.

Project Name:COVID-19 Healthcare Test Case Id:CH_13 Test Priority:Medium Module Name: Public Awareness Test Title: To learn about awareness Description:Patients can learn about awareness Precndition:Patients must login to account				Test Designed by:Md. Afid Test Designed date:17.5.2020 Test Execute by:Md. Akif Test Execute date:07.6.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Click awareness	available awareness	can see awareness successfully		
Postcondition: System should be count a new seen				

Table 13: P_Feature_8 test case

Feature_9: Patients shall be able to give a review of a doctor.

Project Name:COVID-19 Healthcare Test Case Id:CH_14 Test Priority: Low Module Name: Review of doctor Test Title: To give a review of a doctor Description:Patients can give a review of a doctor Precndition:Patients must complete medication from a doctor				Test Designed by:Md. Afid Test Designed date:17.5.2020 Test Execute by:Md. Akif Test Execute date:07.6.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Go to doctor profile 3. Click give review	Review	patient should be satisfied or unsatisfied		
Postcondition: Store this feedback in database				

Table 14: P_Feature_9 test case

Doctor:

Feature_3: Doctors shall be able to confirm patients' applications

Project Name:COVID-19 Healthcare Test Case Id:CH_15 Test Priority: High Module Name: confirm patients' applications Test Title: To confirm patients Description: Doctor's can confirm patient's application Precndition:Doctor's must login to account			Test Designed by:Md. Afid Test Designed date:20.5.2020 Test Execute by:Md. Akif Test Execute date:10.6.2020	
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Go to application 3. Click confirm	availability of patient application	doctor should confirm patient		
Postcondition: patient should be listed to doctor profile				

Table 15: D_Feature_3 test case

Feature_6: Doctors shall be able to see the list of patients

Project Name:COVID-19 Healthcare Test Case Id:CH_16 Test Priority: Medium Module Name: Patients list Test Title: To see the patients list Description: Doctor's can see the list of patients Precndition:Doctor's must enrolled patients			Test Designed by:Md. Afid Test Designed date:20.5.2020 Test Execute by:Md. Akif Test Execute date:10.6.2020	
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Go to patients	availability of patients	doctor should see the list properly		
Postcondition: doctors activity log should be stored in database				

Table 16: D_Feature_6 test case

Feature_7: Doctors shall be able to mark healthy patients

Project Name:COVID-19 Healthcare Test Case Id:CH_17 Test Priority: Medium Module Name: mark healthy patients Test Title: To mark healthy Description: Doctor's can mark healthy patients Precndition:Doctor's must checkup a patient				Test Designed by:Md. Afid Test Designed date:21.5.2020 Test Execute by:Md. Akif Test Execute date:11.6.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Go to patient profile 3. Click mark healthy	availability of patient details	doctor should mark healthy successfully		
Postcondition: Marked patient should be green listed in database				

Table 17: D_Feature_7 test case

Feature_8: Doctors shall be able to know about new ways of treatment

Project Name:COVID-19 Healthcare Test Case Id:CH_18 Test Priority: Low Module Name: New ways of treatment Test Title: To know about new ways of treatment Description: Doctor's can know about new ways of treatment Precndition:Doctor's must login to account				Test Designed by:Md. Afid Test Designed date:23.5.2020 Test Execute by:Md. Akif Test Execute date:12.6.2020
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to account 2. Click new treatment	availability of new treatment techniques	doctor should learn about new ways of treatment successfully		
Postcondition: System should count a seen of new treatments				

Table 18: D_Feature_8 test case

Item Pass/Fail criteria :

If the team members report that there are 30% of test cases failed, suspend testing until the development team fixes all the failed cases.

- Run rate is mandatory to be 100% unless a clear major reason is given.
- Pass rate is 95%, achieving the pass rate is mandatory.

Test Deliverables:

1. Before testing phase

- Test plans document.
- Test cases documents.
- Test Design specifications.

2. During the testing

- Test Data.
- Test execution logs.

3. After the testing cycles is over

- Test Results
- Defect Report

Staffing and Training needs :

Quality assurance (QA) is the systematic process of determining whether products meet customers' expectations.

Defect-centered	QA activity
Defect prevention	-Requirement-related -Other defect prevention -Formal specification
Defect Reduction	<ul style="list-style-type: none">• Testing type<ul style="list-style-type: none">-Unit-Integration-System-Acceptance-beta
Defect Containment	-Operation -Design & implementation

QA members	Training(if needed)
1.Md Afid 2.Ruhul Amin 3.Md Rakib	Problem solving
	Analytical and research skills
	Ability to manage multiple priorities
	Teamwork
	Communication skills
	Sound judgment and decision making

Responsibilities :

No.	Member	Tasks
01	Project Manager	<ul style="list-style-type: none">• Acts as a primary contact for development and QA team.• Responsible for Project schedule and the overall success of the project.
02	Test Manager	<ul style="list-style-type: none">• Provide technical direction• Acquire appropriate resources• Management reporting
03	Tester	<ul style="list-style-type: none">• Identifying and describing appropriate test techniques/tools/automation architecture• Verify and assess the Test Approach• Execute the tests, Log results, Report the defects.
04	Test Administrator	<ul style="list-style-type: none">• Builds up and ensures Test Environment and assets are managed and maintained• Support Tester to use the test environment for test execution
05	QA members	<ul style="list-style-type: none">• Take in charge of quality assurance• Check to confirm whether the testing process is meeting specified requirements

Schedule:

Task	Members	Date
Create the test specification	Test Designer	10.05.20 - 26.05.20
Build up the test environment	Test Administrator	28.05.20 - 31.05.20
Perform Test Execution	Tester, Test Administrator	01.06.20 - 14.06.20
Test Report	Tester	20.06.20

Risks Plan:

RISK	Mitigation
Team members lack the required skills for testing	Plan training course to skill up members
The project schedule is too tight. It's hard to complete this project on time	Set Test Priority for each of the test activities

Test Manager has poor management skill	Plan leadership training for manager
A lack of cooperation negatively affects employees' productivity	Encourage each team member in his task, and inspire them to greater efforts
The testing environment may not be setup properly like real business environment	Test Administrator will ensure testing environment accuracy
Project deadline not met	All milestones will be supervised properly

Items not to be tested:

Admin:

1. Admin shall be able to verify doctor's profiles.
2. Admin shall be able to register doctors.
3. Admin shall be able to update the new treatment techniques.

Patient:

1. Patients shall be able to Sign up and log in.

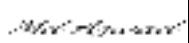

Doctor:

1. Doctors shall be able to Sign up and log in.
2. Doctors shall be able to update their profile.
3. Doctors shall be able to chat with patients.
4. Doctors shall be able to call patients.
5. Doctors shall be able to see the daily reports.

Unregistered User:

1. Shall be able to see the daily reports of COVID-19.
2. Shall be able to see the public awareness.

Approvals:

Name	Role	Signature	Date
Md Azwad	Test lead		27.052020
Afid Md Azwad	Project Manager		27.052020