Project Abstract

We know that life of technology is developing every day, many things related to our daily life are going to get digitalized. There is one of scenarios which got my interest to work on it and that is the medical system around the world. The system available for patients in developed countries have facilitated the patients with ease of use and they can't get easily to any health organization they want.

Furthermore, the presence of some international websites which provide information or guidance for patients in Afghanistan is very limited. This online medical system will make it easy, informative and simple for patients. The patients will be given the ease of using and visiting all the genuine medical places preferable to them. Besides; the patients, the government of Afghanistan will be easily registering all the doctors, hospitals and medical stores all those have passed the rules and regulations.

The system will be facilitating Afghani patients with many facilities they need in medical field inside the country and even outside the country in neighboring countries.

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1   CHAPTER 1 – INTRODUCTION

This chapter gives a detailed analysis of the Introduction of our proposed system. It also provides an incontrovertible description about the proposed system, its objectives, constraints, scope, assumptions and constraints. The introduction section explains the reason for the development of the proposed system. It clearly defines what is expected from the proposed system and what is not. This description helps the stakeholders of this system to understand important aspects and clarify their thoughts about the system.

1.1   Introduction:

Afghanistan is a country which is in development term since few years, as for the past decades of war happening in Afghanistan. This country has been faced with many difficult issues which need to be solved; one of these issues is the medical system available for patients inside Afghanistan. The people are suffering from many different problems in the above mentioned problem; they cannot find a preferable specialist of their problems, they are facing problems with the medical houses weather they are registered or not and most of all the medicines; it is very tough job to differ the genuine or non-genuine medicines from each other. The next scenario happening nowadays with Afghan patients is that, they are visiting neighboring countries for their medical problems but they are facing many different problems such as; booking an appointment, searching for a preferable specialist, transporting system and etc.

Our idea will be described now, as per the look we had on Afghanistan medical system, we get know that Afghans are suffering from many problems inside and outside Afghanistan for their medical issues and for solving these issues we have been taught of a web biased application and android application. The work and functionalities of these apps will be described late but we would love to introduce it in two dimensions now:

1.1.1   TWO MAIN DIMENSIONS OF PROJECT:

- The apps will be having a database system 1; this database will be a composition of records related to registered clinics, hospitals, doctors and medical stores available inside Afghanistan.
- The apps will be having a database system 2; this database will be concluding all the records of hospitals, doctor and other materials related to medical system outside Afghanistan in the neighboring countries.
- The doctors in the neighboring countries; if they want to give the online service and want to register their selves in our system they must submit the documents to the super admin for the inquiry that weather they are approved or not, super admin can find it our by asking the doctor's PMDC number.

With these dimensions, if we work on a good way; many problems of Afghan patients will be solved. Problems like there will be no unregistered hospitals, clinics, doctors, and medicines. As all these will be registered in our application in saved in database, and if there is any unregistered doctor, clinic, hospital or medicine stores anyone can have a report on it and submit it to the government. The next problem to be solved will be by the second database which will store all the information of doctors, hospitals and clinics located in the neighboring countries, so all the Afghans who wants to have their treatment in the neighboring countries like Pakistan they can book an appointment and also see the location of the doctor, clinic or hospitals from our application which will make their job easier.

The system will be functioning under direct control of Ministry of Public Health-Afghanistan. As we have talked to our health Ministry to take our project because I will also help them a lot in many ways like now they don't have the list or data of hospitals, clinics or doctors in our country that how many are there or how many are registered and how many are illegal and fake, so by the system the first advantage they will have is that they will have the ordered and correct data of total hospitals, doctors and clinics and medicines stores located in Afghanistan. The second main advantage is that they will have the control on fake and illegal hospitals, clinics and doctors as they will know that which hospital or clinic or doctors are registered and which are not, with this control the death rate in Afghanistan will become decreased almost by half because every year hundreds and thousands of Afghans face death due to fake medicines and hospitals and doctors.

1.2 OBJECTIVES AND FUNCTIONALITIES:

We have been tried to focus the object to guide the people of Afghanistan in term of their health problems and facilitate them online while they are sitting in their own houses. Throughout this system we can clearly book an appointment of any Doctor in any hospital or clinic inside the country and also in the neighbouring countries for the patients according to their respective health problems and also can suggest the best medical store near to them.

1.2.1 Main Objectives:
- Ministry of Health and Public will be facilitated with a central system which will contain records off all the doctors, medical clinics, hospitals and medical stores which have been registered with them, all the rest can be ban or limited.
- Patients will be facilitated with an ease of finding preferable specialists, together with their locations.

- Patients can book online appointment through the system and by using the Address system patient can go directly to the desired location where they booked an appointment; they will be saving a huge amount of time.
- Patients will also be facilitated outside Afghanistan in the neighboring countries through the system with an ease of finding preferable specialists, hospitals and medical stores. With this activity a patient will save a huge amount of time for their selves as well as economically it will help the patient in a good way.
- Our main goal and objective are to do something useful, beneficial and long lasting for the people of the Afghanistan

1.2.2 Main Functionalities:

Here are some of the main functionalities which can be done through our system:

- By using this app there will be very friendly user interface available for all the users such as patients, doctors and central database controller to Ministry of Public Health – Afghanistan.
- All the doctors, clinics or medical stores can be registered through their own accounts with the approval from Ministry of Public Health, once their accounts are approved as per the rules and regulations of MOPH than they can freely work in the market.

- All the unregistered doctors, clinics or medical stores must register their selves in the system, in case any is missing than the MOPH can take the serious action on them through the complaints collected by the patients to the system or a survey done by MOPH.
- Patients can book appointments from far distance provinces of Afghanistan with a preferable specialist, they want to visit; all the details of the doctors and clinical hospitals must be shown to the patients.
- Patients can book appointments for the specialists they want to visit outside Afghanistan in neighboring countries; all the details of the doctors and clinical hospitals must be shown to the patients.
- Patients will be facilitated with the online appointment booking system; they will be having direct access to the locations of any doctor, clinic or medical store they want to visit through Address system available in the System.

1.3   PROBLEM STATEMENT:

There are actually 3 core problems facing by people in Afghanistan regard to their health guide and medical issues which will be surely solved by our proposed system.

1. There are many online platforms available across the world, where patients can have a health guide online like they can book an appointment for their preferable doctors in anywhere in any hospital or clinic etc. while, there is no such a platform available for those patients who live in Afghanistan. By this system they will have an online system for their health guide.

2. It's a huge problem for the people of Afghanistan to book appointment of their preferable Doctor easily in the country specially when they visit neighboring countries to visit the preferable specialist they stuck in a problem to find the doctor's place to visit as they have no idea about the clinics or hospitals location and when they finally find the location after a lot of struggle and wasting huge amount of time and money on transporting then they book an appointment. Therefore, our group has tried to make such a system where any patient in Afghanistan can book an appointment for their preferable specialists inside the country or in the neighboring countries very easily and they can easily visit to the doctor's place through location service provided by the system.

3. Another big issue in Afghanistan is that there are many illegal Doctors, hospitals, clinics and medical stores which causes a very huge amount of innocent's death. Therefore our system will also facilitate and provide information about the Doctors, hospital, clinics and medical stores that whether they are legal, registered or approved from Ministry of Public Health – Afghanistan or not.

1.4   ASSUMPTIONS AND CONSTRAINTS:

Assumptions of our project are:

- We assume that this web-based platform will provide ease to the users in the guidance of their health problem and will facilitate them to find them their preferable Doctors, hospitals, clinics and medical stores.
- The website shall be up within 5 months of design and development.
- The budget to our project will be available at the time of need.
- The Patients will appreciate our work as it is for their facility that will help them saving their time and effort.
- The platform should be bug free and shouldn't crash.

The following constraints are deemed to be possible in the development of our proposed system:

- Since no such system is already working in Afghanistan so it will be very challenging to make people use to it.
- The user must have a valid net connection.
- Frequent advancement in tools and technologies forces us to follow latest versioning to keep our project up to date.
- The user must know what he wants to search.
- The environment should be controlled.

1.5 PROJECT SCOPE:

Nowadays, technology is part of our daily life. It affects us positively or negatively. It could be simple or very complex. We are trying to facilitate an online medical system of Afghanistan to make it more interesting, demanding, healthier, supportive and informative for the patients in Afghanistan.

Our proposed online system will help the government of Afghanistan to have a database of medical interns such as doctors, medical clinics, hospitals and medical stores sites in one place, and will also help the patients in Afghanistan to book an appointment for their preferable specialists from their living areas without visiting Doctor's place and will help them to get to their clinics and hospitals location using the location service in the system, which does not exist right now.

We started this project because of an incident happened to one of our friend, that was that they had a serious patient and went to the doctor's clinic when they reached clinic there was a big line for the doctor's appointment which takes him to wait for very long to take the appointment but even he take the appointment they have to wait for their turn to come but their patient was in very critical condition then they have to beg to the management to let them in, to the doctor's cabin for the checkup. This might have been proven very fatal for any person. Therefore, a system must be there which overcome this type of problem. Not only this but many problems of the patients and Afghan Government will surely be solved though this system.

2 CHAPTER 2- REQUIREMENTS ANALYSIS:

This chapter provides a non-equivocal description for the developers, users and stakeholders of our proposed system. It also notifies and explains the requirements of the system, whether they be functional or non-functional. The requirements stated in this chapter are helpful for the developers in organizing, designing and developing the system entirely in accordance with the customer requirements.

2.1 Literature Review:

There are so many platforms currently available online. These platforms guide people on how to find the preferable doctor and help them to book their appointments and also guide them to get to the Doctor's location, and some other activities such as:

2.1.1 MARHAM.PK [1]:

Online web platform, this platform is available in Pakistan which facilitates the people to find the doctor, hospitals and help them to book the appointment of their preferable specialists. This platform has a data of many hospitals and doctors around the Pakistan and in top cities of Pakistan so their user can easily get the appointments of doctors near them.

2.1.2 BOOK MY DOCTOR [2]:

Book My Doctor is a multi-functional online doctor appointment scheduling software for doctors, clinics and large hospitals. By using Book My Doc make a start to provide digital healthcare. Customer can find the nearest Doctor and book an appointment instantly.

2.1.3 OLADOC.COM [3]:

Online web platform, this platform too is available in Pakistan which facilitates the people to book doctors' appointments online and creates and view the patients record from anywhere and customer can manage their schedule efficiently.

2.1.4 PRACTO.COM [4]:

Practo.com is also an online web platform, this platform facilitate their users to book the doctors' appointments, chat with doctors online, order medicines and user can also book tests and check-ups and similarly PRACTO provides many more facilities to their users in order to guide them in their healthcare.

2.1.5 ZOCDOC.COM [5]:

Online web platform, tis platform is available in New York which provides the services to their users in terms of healthcare and guide their user to take care of their health. This platform makes the user to find nearby doctors in their network and book the appointment in just a single tap and in this platform the user can also browser the doctors reviews by real patients.

As mentioned above, still now there is not a comprehensive platform available in Afghanistan to facilitate and guide the people in their health problems and let them book appointments online and prefer those doctors according to their needs and requirements.

NOTE: The numbers given in the brackets with the names of similar existing systems are their references numbers given in the chapter-6.

2.2 STAKEHOLDERS LIST (ACTORS):

Stake Holders of this system are those who have an interest or concern in this system. They are those people who have to directly or indirectly interact with it. The stakeholders of our system can be as follows:

2.2.1 OWNER:

This system is an online health guide system, we are trying to keep this registered with the government of Afghanistan, and the only owner of the system will be the Ministry of Public Health of Afghanistan.

2.2.2 OPERATOR:

The operators of the above system will be the system's development team, who will be responsible for the maintenance of the system. As the operator the development team will be responsible for the bugs and errors in the system which will come after the deployment of the system. The development team will also be responsible for the upcoming new features in the system that in case the owner wants some new features or the other users like general public who want some new features in the system then it is the responsibility of the development team to update the system.

2.2.3 ADMINISTRATOR (MOPH-AFGHANISTAN):

Administrator of the system will be an employee of MOPH-AFGHANISTAN or Admin of the system who will be selected by MOPH-AFGHANISTAN, who will manage the system. He will have the authority to grant privileges to the other users of the system i.e. Operators. He will be able to edit the database of the system. He will also be responsible for the management of the system.

2.2.4 GENERAL PUBLIC (DOCTORS AND VISITORS):

The general public for the above system are all those people who have any health problems and want to take care of their health which can be patient itself or the relative of the patients. A system will have all the data of doctors, hospital, clinics and medical stores so the user will book an appointment for their preferable specialists easily and efficiently. And also the Doctors who will use the system by joining the system as a Doctor are in general public stakeholders of the system as they also have the direct interest in the system.

2.3 Requirement Elicitation

2.3.1 Functional Requirements

FR01: Functional Requirements for MOPH-Afghanistan employee

Reg. No.	Functional Requirements
FR01-01	The system shall enable the MOHA employee to log in to his account.
FR01-02	The system shall enable the MOHA employee to register an approved doctor.
FR01-03	The system shall enable the MOHA employee to register an approved hospital.
FR01-04	The system shall enable the MOHA employee to register an approved clinic.
FR01-05	The system shall enable the MOHA employee to register an approved medical stores.
FR01-06	The system shall enable the MOHA employee to register an approved medicine industries.
FR01-07	The system shall enable the MOHA employee to delete a doctor.
FR01-08	The system shall enable the MOHA employee to delete a hospital.
FR01-09	The system shall enable the MOHA employee to delete a clinic.
FR01-10	The system shall enable the MOHA employee to delete a medical stores.
FR01-11	The system shall enable the MOHA employee to delete a medicine industries.
FR01-12	The system shall enable the MOHA employee to view all records of doctors.
FR01-13	The system shall enable the MOHA employee to view all records of hospitals.
FR01-14	The system shall enable the MOHA employee to view all records of clinics.
FR01-15	The system shall enable the MOHA employee to view all records of medical stores.
FR01-16	The system shall enable the MOHA employee to view all records of medicine industries.
FR01-17	The system shall enable the MOHA employee to update a doctor record.
FR01-18	The system shall enable the MOHA employee to update a hospital record.
FR01-19	The system shall enable the MOHA employee to update a clinic record.
FR01-20	The system shall enable the MOHA employee to update a medical store record.
FR01-21	The system shall enable the MOHA employee to update a medicine industry.

Table 1 MOPH-Afg employee_FR

FR02: Functional Requirements for Patient

Req. No.	Functional Requirement
FR02-01	The system shall enable the patient to create an online account.
FR02-02	The system shall enable the patient to log in to his account.
FR02-03	The system shall enable the patient to search for the doctors based on specialization, gender and approved status.
FR02-04	The system shall enable the patient to search for the outside doctors based on specialization, gender and country.
FR02-05	The system shall enable the patient to search for the hospitals based on location and name.
FR02-06	The system shall enable the patient to search for the clinics based on location and name.
FR02-07	The system shall enable the patient to search for the medical stores based on location and name.
FR02-08	The system shall enable the patient to search for the medicine industries.
FR02-09	The system shall enable the patient to see/check a doctor profile.
FR02-10	The system shall enable the patient to see/check the services of a hospital.
FR02-11	The system shall enable the patient to see/check the services of a clinic.
FR02-12	The system shall enable the patient to see the appointment information online.
FR02-13	The system shall enable the patient to make an appointment.
FR02-14	The system shall enable the patient to cancel his appointment.
FR02-15	The system shall enable the patient to reschedule his appointment.
FR02-16	The system shall enable the patient to confirm an appointment online.
FR02-17	The system shall enable the patient to add a doctor to an appointment.
FR02-18	The system shall enable the patient to change his personal data.
FR02-19	The system shall enable the patient to see his personal data (personal data includes information about medication).
FR02-20	The system shall enable the patient to delete values in his personal data.
FR02-21	The system shall enable the patient to log out from the account.
FR02-22	The system shall enable the patient to delete his account.

Table 2 Functional Requirements for Patient

FR03: Functional Requirement for Doctor

Req. No.	Functional Requirement
FR03-01	The system shall enable the doctor to register his account.
FR03-02	The system shall enable the doctor to log in to his account.
FR03-03	The system shall enable the doctor to see his appointments.
FR03-04	The system shall enable the doctor to see the medical file or prescriptions of his patient.
FR03-05	The system shall enable the doctor to delete his/her appointment after attending the patient.
FR03-06	The system shall enable the doctor to see his today appointments.
FR03-07	The system shall enable the doctor to add schedule.
	The system shall enable the doctor to change slots to available/not available.
FR03-08	The system shall enable the doctor to update his personal data.
FR03-09	The system shall enable the doctor to log out from his account.
FR03-10	The system shall enable the doctor to delete his account.

Table 3 Doctor-FR

FR04: Functional Requirement for Guest/Visitor

Those are the users that are not registered but accessing our website and android application.

Req. No.	Functional Requirements
FR04-01	The system shall enable the Guest/Visitor to search for the doctors based on specialization, location and gender.
FR04-02	The system shall enable the Guest/Visitor to search for the outside doctors based on specialization, gender and country.
FR04-03	The system shall enable the Guest/Visitor to search for the hospitals based on location and name.
FR04-04	The system shall enable the Guest/Visitor to search for the clinics based on location and name.
FR04-05	The system shall enable the Guest/Visitor to search for the medical stores based on location and name.
FR04-06	The system shall enable the Guest/Visitor to search for the medicine industries.
FR04-07	The system shall enable the Guest/Visitor to see/check a doctor profile.
FR04-08	The system shall enable the Guest/Visitor to see/check the services of a hospital.
FR04-09	The system shall enable the Guest/Visitor to see/check the services of a clinic.
FR04-10	The system shall enable the Guest/Visitor to fill the form for an appointment.

Table 4 Guest/Visitor-FR

FR05: Functional Requirement for Super Admin

Req. No.	Functional Requirement
FR05-01	The system shall enable the super admin to log in to his account.
FR05-02	The system shall enable the super admin to approve doctor registration account.
FR05-03	The system shall enable the super admin to register the outside (Foreign countries) doctors.
FR05-04	The system shall enable the super admin to register the MOHA employee account.
FR05-05	The system shall enable the super admin to delete a doctor.
FR05-06	The system shall enable the super admin to delete an outside doctor.
FR05-07	The system shall enable the super admin to delete a patient.
FR05-08	The system shall enable the super admin to delete a MOPH-Afg employee.

Table 5 Super Admin-FR

FR06: Functional Requirement for Outside Doctor

Those are the doctors which are outside of the country (Neighbour Country).

Reg. No.	Functional Requirements
FR06-01	The system shall enable the outside doctor to log in to his account.
FR06-02	The system shall enable the outside doctor to see his appointments.
FR06-03	The system shall enable the outside doctor to see the medical file or prescriptions of his patient.
FR06-04	The system shall enable the outside doctor to delete his/her appointment after attending the patient.
FR06-05	The system shall enable the outside doctor to see his today appointments.
	The system shall enable the outside doctor to add schedule.
	The system shall enable the outside doctor to change slots to available/not available.
FR06-06	The system shall enable the outside doctor to update his personal data.
FR06-07	The system shall enable the outside doctor to log out from his account.

Table 6 Outside Doctor-FR

2.3.2 Non-Functional Requirements

NFR01: Performance

Reg. No.	Non-Functional Requirements
NFR01-01	Average load time of the starting page of the system must be less than 2 second.
NFR01-02	System Mean Time to Failure should not be more than 60seconds within 24 hours of use.
NFR01-03	Average system response time should not be greater than 5 seconds.
NFR01-04	The system has to support 100 concurrent users.

Table 7 Performance-NFR

NFR02: Security

Reg. No.	Non-Functional Requirements
NFR02-01	System must provide access to authorized users only that enter through the login module.
NFR02-02	System must not provide access to ANY user EXCEPT the designated user to update the database.
NFR02-03	No user can view data of any other user through any report or views provided by the system.
NFR02-04	The password should be at least 8 characters including one uppercase, lowercase and number.
NFR02-05	Website and android application should use different techniques in order to have secure transfer of data into database.

Table 8 Security-NFR

NFR03: Portability

Reg. No.	Non-Functional Requirements
NFR03-01	A website has to compatible with different famous web browsers (Google Chrome, Mozilla Firefox, Safari and Internet Explorer).
NFR03-02	An android application has to compatible with those mobile phones which supports Android Operating System.

Table 9 Portability-NFR

NFR04: Reliability

Reg. No.	Non-Functional Requirements
NFR04-01	The probability of failure should be less than 0.01%.
NFR04-02	Uptime should be at least 99%.
NFR04-03	Less than 40 minutes needed to recover from system failure.

Table 10 Reliability-NFR

NFR05: Usability

Reg. No.	Non-Functional Requirements
NFR05-01	Web Interface elements should be easy to understand.
NFR05-02	An Android application interfaces elements should be easy to understand.
NFR05-03	The user should be able to learn to use a system in less than 25 minutes.
NFR05-04	Time required for registration should be less than 5 minutes.
NFR05-05	Error messages should explain how to recover from the error.
NFR05-06	Both web and android application design should be implemented.

Table 11 Usability-NFR

NFR06: Interoperability

Reg. No.	Non-Functional Requirements
NFR06-01	The system should properly interoperate with the database (MySQL).

Table 12 Interoperability -NFR

NFR07: Scalability

Reg. No.	Non-Functional Requirements
NFR07-01	The customer data should be backed up once a month to prevent the loss of data.
NFR07-02	The system should be sufficiently secured to prevent the leak of user's data.

Table 13 Scalability-NFR

NFR08: Availability

Reg. No.	Non-Functional Requirements
NFR08-01	The software application should be available for download from Google Store.

Table 14 Availability-NFR

NFR09: Maintainability

Reg. No.	Non-Functional Requirements
NFR09-01	The system shall be documented and follow good design practices to facilitate ease of maintainability.
NFR09-02	The system code shall follow standard programming practices for code comments.
NFR09-03	The system shall be implemented in a commonly used programming languages that is suitable for the Android platform.

Table 15 Maintainability-NFR

2.3.3 Requirement Traceability Matrix (RTM)

Req. No.	Req. Description	Test case ID	Status
Functional Requirements			
001	Login/Logout	-	In Progress
002	Registration of doctor, outside doctor, hospital, clinic, medical store and medicine industry.	-	In Progress
003	Deletion of doctor, outside doctor, hospital, clinic, medical store, medicine industry, patient and visitor record, account and appointment.	-	In Progress
004	Updating of doctor, outside doctor, hospital, clinic, medical store, medicine industry, patient and visitor record and account.	-	In Progress
005	Searching for doctor, hospital, clinic, medical store and medicine industry and available appointments.	-	In Progress
006	User Account Registration	-	In Progress
007	Super admin should be able to approve user accounts.	-	In Progress
008	Patient/Visitor should be able to make an appointment.	-	In Progress
009	Patient should be able to modify an appointment.	-	In Progress
010	Patient/Doctor/Outside Doctor should be able to view all appointments.	-	In Progress
011	Doctor/Outside doctor should be able to change slots to available/not available.	-	In Progress
012	Doctor/Outside Doctor should be able to trace patient record.	-	In Progress
Non-Functional Requirements			
013	Performance	-	In Progress
014	Security	-	In Progress
015	Portability	-	In Progress
016	Reliability	-	In Progress
017	Usability	-	In Progress
018	Interoperability	-	In Progress
019	Scalability	-	In Progress

| 020 | Availability | - | In Progress |
| 021 | Maintainability | - | In Progress |

Table 16 Requirement Traceability Matrix

2.4 Use Case Description

Use case ID 001	Use case Name: Account Registration	
Priority **High**		
Actors: Patient, Doctor, Outside		
Use Case Summary	Account Registration allows the patient and doctor to create their account in the system.	
Pre-condition:	The patient and the doctor will have to provide all the necessary details present in the user registration form of the application.	
Normal Flow of Events	**Alternative Path**	
1. This use case starts when the User accesses the system feature that enables him/her to create an account by entering information that is maintained in the User's account.	**1a:** At any time, the User may choose to cancel the account creation. At which point, the processing is discontinued, the user account remains unchanged, and the user is notified that the account management request has been cancelled.	
2. The User enters the required User Account information values and requests that the system saves the entered values.	2a:	
3. The system validates the entered User Account information.		

4. The system validates the entered information, making sure that the entered username and password are valid for one user account in the system, and that the required password is entered for the entered username.	**4a:** If during Create Account, the system determines that the User entered invalid User Account information, the following occurs: 1. The system describes which entered data was invalid and presents the User with suggestions for entering valid data. 2. The system prompts the User to re-enter the invalid information. 3. The User re-enters the information and the system re-validates it. 4. If valid information is entered, the User Account Information is stored. 5. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.
5. The User is signed in. The system displays a message indicating that the user is signed in.	
6. This use case ends.	

Exceptions / Alerts

1. The system will not allow a patient to book an appointment with a doctor/hospital/clinic.
2. The system will not allow a doctor to attempt patient records and appointments.

Post Conditions

Step#	Description
	The User entered data is stored in the user account. Confirmation is sent to the appropriate email address.
	The User entered invalid data or chose to cancel the account creation request. In either case, no account will be created.

Table 17 Account Registration-UCD

Use case ID 002	Use case Name: Login/Logout	
Priority **High**		
Actors:	MOHA Employee, Super Admin, Doctor, Outside Doctor, Patient	
Use Case Summary	Login/Logout allows the users logs into an application, with the username and password and logs out after the work is done.	
Pre-condition:	The users have an account and aren't logged in, in the case of login.	
Normal Flow of Events	**Alternative Path**	

1. This use case starts when the users accesses the sign in feature of the system.	**1a:** If the Users don't have an account, the System will give an opportunity to create an account. Once the account is created, the User is considered signed in.
2. The system prompts the users for his/her username and password.	2a:
3. The users enters his/her username and password.	
4. The system validates the entered information, making sure that the entered username and password are valid for one user account in the system and display a profile of the entered username and password.	**4a:** If a user entered an invalid username and/or password, the following conditions can be occur: 1. The system describes the reasons why the User failed authentication. 2. The system presents the user with suggestions for changes necessary to allow the User to pass the authentication. The system prompts the user to re-enter the valid username and password.
5. The user logs out his/her account when he/she completed her/his work.	
6. This use case ends.	

Exceptions / Alerts
1. The system will not allow a user to log in without username and password.

Post Conditions	
Step#	**Description**

	The user has logged in to the system.
	The user has access to the functions of the system.

Table 18 Login/Logout-UCD
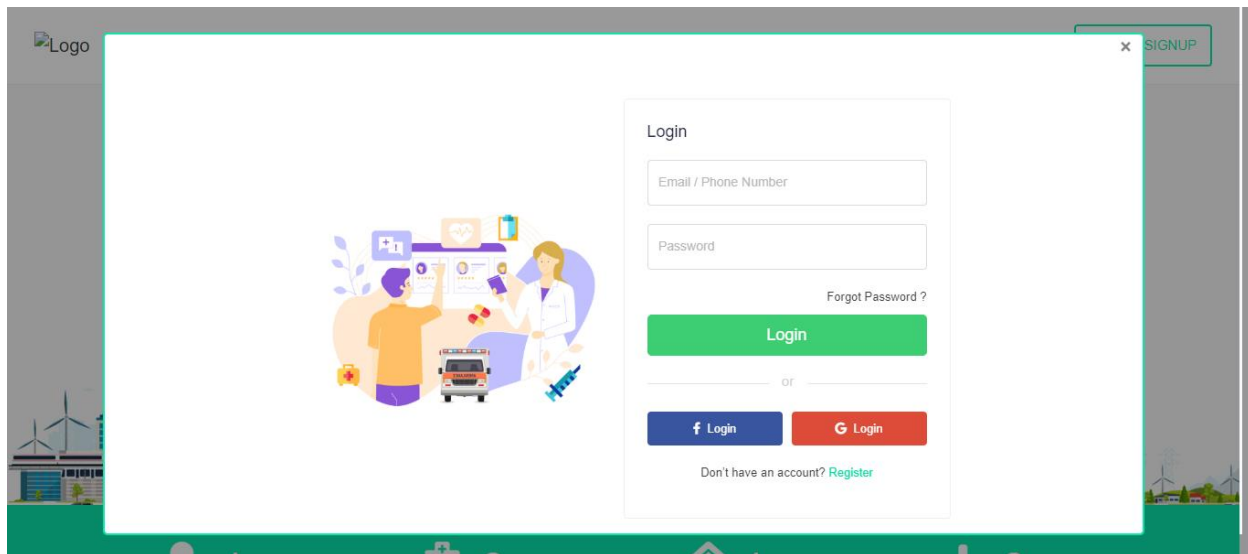
Use case ID 003	Use case Name: Update Profile
Priority **High**	
Actors: Doctor, Outside Doctor, Patient	
Use Case Summary	Update Profile allows the users to update their profile in the system.
Pre-condition:	The users have an account and logged in to his account.
Normal Flow of Events	**Alternative Path**

1. This use case starts when the User accesses the system feature that enables him/her to update an account that is maintained in the User's Account.	**1a:** At any time, the User may cancel the account update. At this point, the processing is discontinued, the user account remains unchanged, and the user is notified that the account updating request has been cancelled.
2. The system displays the User Account information currently stored for the User.	2a:
3. The users enters his/her username and password.	
4. The User enters the desired user profile information values and requests that the system updates the entered values.	
5. The system validates the entered user profile information, making sure that the entered user profile information's are valid for one user account in the system.	**4a:** If during updating profile, the system determines that the User entered invalid User account information, the following occurs: 1. The system describes which entered data was invalid and presents the User with suggestions for entering valid data. 2. The system prompts the User to re-enter the invalid information. 3. The User re-enters the information and the system re-validates it. 4. If valid information is entered, the User Account Information is stored. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again, it continues until the User enters valid information, or choose Cancel.

6. The values for the user profile information are stored in the User's account. The system notifies a user with a message that "Profile has been updated".	
7. This use case ends.	

Exceptions / Alerts

1. The system will not allow a user to update his profile without log in.

Post Conditions

Step#	**Description**
	The User entered updated data is stored in the user account. Confirmation is sent to the appropriate email address.
	The User entered invalid data or choose to cancel the account update request. In either case, no account will be updated.

Table 19 Update Profile-UCD

Use case ID 004	Use case Name: Registration	
Priority **High**		
Actors: MOHA Employee		
Use Case Summary	This use case allows the MOHA employee to register the doctors, hospitals, clinics, medical stores and medicine industries records into a system.	
Pre-condition:	- The MOHA employee has logged in to his account. - The MOHA employee will have to provide all the necessary details present in the registration form of the application.	
Normal Flow of Events	**Alternative Path**	
1. This use case starts when the MOHA employee accesses the system feature that enables him/her to register (doctors …) by entering necessary information that is maintained in the account.	**1a:** At any time, the MOHA employee may cancel the registration, at this point, the registration process will be cancelled, and the MOHA employee is notified that the registration request has been cancelled.	
2. The MOHA employee enters the required registration information values and requests that the system saves the entered values.	2a:	

3. The system validates the entered registration information's, making sure that the entered registration information's are valid and will be stored in the system.	**3a:** During registration, if the system determines that the MOHA employee entered invalid registration information, the following occurs: 1. The system describes which entered data was invalid and presents the MOHA employee with suggestions for entering valid data. 2. The system prompts the MOHA employee to re-enter the invalid information. 3. The MOHA employee re-enters the information and the system re-validates it. 4. If valid information is entered, the registration information is stored. 5. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.
4. If the system validated the registration information and stores it, then the system displays a message indicating that the registration has been stored.	
7. This use case ends.	

Exceptions / Alerts
1. The system will not allow a MOHA employee to perform registration without log in.

Post Conditions	
Step#	**Description**
	The MOHA employee entered registration data is stored in the registration account. Confirmation is sent to the appropriate email address.

	The MOHA employee entered invalid data or choose to cancel the registration request. In either case, no registration will be done.

Table 20 Registration-UCD

Use case ID 005	Use case Name: Deletion	
Priority	**High**	
Actors:	MOHA Employee	
Use Case Summary	This use case allows the MOHA employee to delete the doctors, hospitals, clinics, medical stores and medicine industries records from a system.	
Pre-condition:	- The MOHA employee has logged in to his account. - The MOHA employee will have to provide all the	

	necessary details present in the delete form of the application.
Normal Flow of Events	**Alternative Path**
1. This use case starts when the MOHA employee accesses the system feature that enables him/her to delete (doctors …) by entering necessary information that is maintained in the account.	**1a:** At any time, the MOHA employee may cancel the deletion, at this point, the deletion process will be cancelled, and the MOHA employee is notified that the deletion request has been cancelled.
2. The MOHA employee enters the required deletion information values and requests that the system delete the entered values.	2a:
3. The system validates the entered delete information's, making sure that the entered delete information's are valid and will be deleted from the system.	**3a:** During deletion, if the system determines that the MOHA employee entered invalid registration information, the following occurs: 6. The system describes which entered data was invalid and presents the MOHA employee with suggestions for entering valid data. 7. The system prompts the MOHA employee to re-enter the invalid information. 8. The MOHA employee re-enters the information and the system re-validates it. 9. If valid information is entered, the information will be deleted from the system. 10. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.

4. If the system delete the validated information, then the system displays a message indicating that the deletion has been completed.	
7. This use case ends.	

Exceptions / Alerts	
1. The system will not allow a MOHA employee to perform deletion without log in.	

Post Conditions	
Step#	**Description**
	The MOHA employee entered deletion data is deleted from the specific account. Confirmation is sent to the appropriate email address.
	The MOHA employee entered invalid data or choose to cancel the delete request. In either case, no deletion will be done.

Table 21 Deletion-UCD

Use case ID 006	Use case Name: Update
Priority **High**	
Actors: MOHA Employee	
Use Case Summary	This use case allows the MOHA employee to update the doctors, hospitals, clinics, medical stores and medicine industries records/accounts in the system.
Pre-condition:	- The MOHA employee has logged in to his account. - The MOHA employee will have to provide all the necessary details present in the update form of the application.

Normal Flow of Events	Alternative Path
1. This use case starts when the MOHA employee accesses the system feature that enables him/her to update an account that is maintained in the user's account.	**1a:** At any time, the MOHA employee may cancel the updating, at this point, the processing is discontinued, the user account remains unchanged, and the user is notified that the account updating request has been cancelled.
2. The system displays the entered account information currently stored for the specific account.	2a:
3. The MOHA employee enters the desired information values and requests that the system updates the entered values.	

4. The system validates the entered information, making sure that the entered information's are valid for one specific account in the system.	**4a:** During updating request, if the system determines that the MOHA employee entered invalid account information, the following occurs: 1. The system describes which entered data was invalid and presents the MOHA employee with suggestions for entering valid data. 2. The system prompts the MOHA employee to re-enter the invalid information. 3. The MOHA employee re-enters the information and the system re-validates it. 4. If valid information is entered, the account information is updated. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again, it continues until the User enters valid information, or choose Cancel.
5. The values for entered account information's are stored in the specified account. The system notifies a MOHA employee with a message that "Specified Account has been updated".	
6. This use case ends.	

Exceptions / Alerts
1. The system will not allow a MOHA employee to update without log in.

Post Conditions	
Step#	**Description**
	The MOHA employee entered updated data is stored in the specified account. Confirmation is sent to the appropriate email address.

	The MOHA employee entered invalid data or choose to cancel the account update request. In either case, no account will be updated.

Table 22 Update-UCD
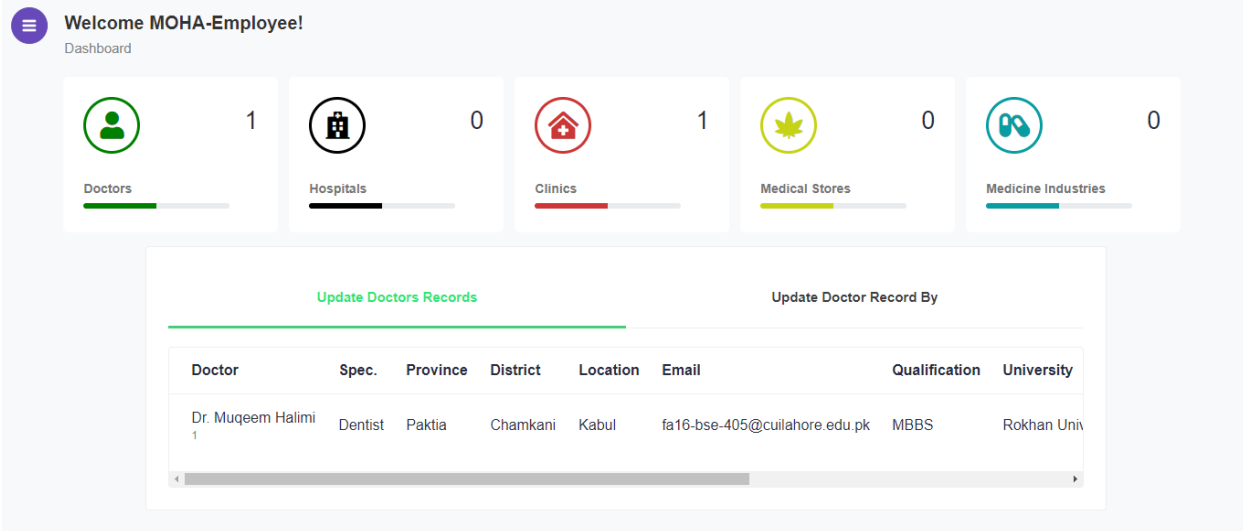
| Use case ID 007		Use case Name: View Patient Record	
Priority	**High**		
Actors:	Doctor, Outside Doctor		
Use Case Summary	This use case allows the doctor to view the patient record in the system.		
Pre-condition:	The doctor has logged in to his account.		
Normal Flow of Events		**Alternative Path**	
1. This use case starts when the doctor accesses the system feature that enables him/her to view a patient records that is maintained in the patient account.		**1a:** At any time, the doctor may cancel the view request, at this point, the processing is discontinued, and the doctor is notified that the viewing patient record request has been cancelled.	

2. The system displays the entered patient records information currently stored for the specific patient account.	2a:
3. This use case ends.	

Exceptions / Alerts
1. The system will not allow a doctor to view all patient records without log in.

Post Conditions	
Step#	**Description**
	The doctor entered choose to cancel the account viewing request. In either case, no records will be shown.

Table 23 View Patient Record-UCD

Use case ID 008	Use case Name: Check Patient Appointment
Priority **High**	
Actors: Doctor, Outside Doctor, Patient	
Use Case Summary	This use case allows the doctor to check his appointments that's made by patients.
Pre-condition:	The doctor has logged in to his account.
Normal Flow of Events	**Alternative Path**

1. This use case starts when the doctor and patient accesses the system feature that enables him/her to check appointments that is made by a patient.	**1a:** At any time, the doctor and patient may cancel the check appointment request, at this point, the processing is discontinued, and the doctor and patient is notified that the check appointment request has been cancelled.
2. The system displays the patients appointment information's currently stored for the specific appointment account.	
3. The system displays today's appointment information's which is made by patients and currently stored in the appointment account.	
4. This use case ends.	

Exceptions / Alerts

1. The system will not allow a doctor to check patient's appointments without log in.
2. The system will not allow a patient to check his appointments without log in.

Post Conditions

Step#	Description
	The doctor and patient choose to cancel the check appointments request. In either case, no appointments will be shown.

Table 24 Check Patient Appointment-UCD
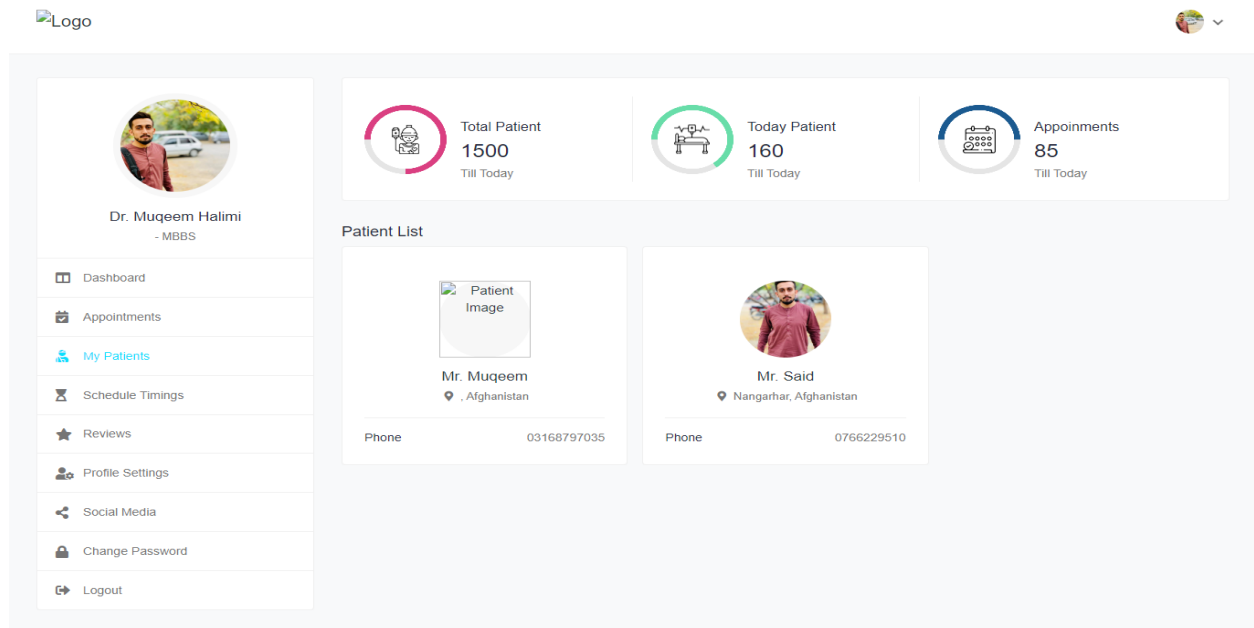
Use case ID 009	Use case Name: Delete Appointment
Priority **High**	
Actors: Doctor, Outside Doctor	
Use Case Summary	This use case allows the doctor to delete the appointment from the system.
Pre-condition:	- The doctor has logged in to his account. - The doctor will have to attempt the patient for diagnosis.
Normal Flow of Events	**Alternative Path**

1. This use case starts when the doctor accesses the system feature that enables him/her to delete an appointment that is maintained in the appointment account.	**1a:** At any time, the doctor may cancel the delete appointment request, at this point, the processing is discontinued, and the doctor is notified that the delete appointment request has been cancelled.
2. The doctor enters the required deletion appointment information values and requests that the system delete the entered appointment.	2a:
3. The system validates the entered delete appointment information's, making sure that the entered delete information's are valid and will be deleted appointment from the system.	**3a:** During deletion, if the system determines that the doctor entered invalid appointment information, the following occurs: 1. The system describes which entered data was invalid and presents the doctor with suggestions for entering valid data. 2. The system prompts doctor to re-enter the invalid information. 3. The doctor re-enters the information and the system re-validates it. 4. If valid information is entered, the information will be deleted from the system. 5. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.
4. If the system delete the appointment, then the system displays a message indicating that the appointment deletion request has been completed.	
5. This use case ends.	
Exceptions / Alerts	

1. The system will not allow a doctor to delete an appointment without log in.

Post Conditions	
Step#	**Description**
	The doctor entered deletion appointment data is deleted from the specific appointment account. Confirmation is sent to the appropriate email address.
	The doctor entered choose to cancel the delete an appointment request. In either case, no deletion of an appointment will be done.

Table 25 Delete Appointment-UCD
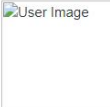
Use case ID 010	Use case Name: Search
Priority **High**	
Actors: Patient, Guest/Visitor	
Use Case Summary	This use case allows the patient and visitor to search for the doctors, hospitals, clinics, medical stores and medicine industries in the system.
Pre-condition:	The Patient is a registered patient.

Normal Flow of Events	Alternative Path
1. This use case starts when the patient and visitor accesses the system feature that enables him/her to search for doctors… by entering necessary information.	**1a:** At any time, the patient and visitor may cancel the search request, at this point, the search process will be cancelled, and the patient and visitor is notified that the search request has been cancelled.
2. The patient and visitor choose to search for a doctor, hospital, clinic, medical store and medicine industry.	
3. The patient and visitor is guided by the system to fill the required criteria's to search for a doctor, hospital, clinic, medical stores and medicine industry.	

4. The system validates the entered required criteria's for searching, making sure that the entered information's are valid and will be receives results for doctor, hospital, clinic, medical store and medicine industry.	**4a:** During searching, if the system determines that the patient and visitor entered invalid information, the following occurs: 1. The system describes which entered data was invalid and presents the patient and visitor with suggestions for entering valid data. 2. The system prompts the patient and visitor to re-enter the invalid information. 3. The patient and visitor re-enters the information and the system re-validates it. 4. If valid information is entered, the patient and visitor receives results for doctor, hospital, clinic, medical store and medicine industry. 5. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.
5. This use case ends.	

Exceptions / Alerts

1. If the system fails to search, then the system will inform the patient and visitor.

Post Conditions

Step#	Description
	The system outputs results for the search of doctor, hospital, clinic, medical store and medicine industry.

Table 26 Search-UCD

Use case ID 011	Use case Name: Make an Appointment
Priority High	
Actors: Patient	
Use Case Summary	This use case allows the patient to make an appointment with doctors in the system.
Pre-condition:	A patient will be a registered patient.

Normal Flow of Events	Alternative Path
1. This use case starts when the patient accesses the system feature that enables him/her to make an appointment with doctors… by entering necessary information.	**1a:** At any time, the patient may cancel the appointment request, at this point, the appointment will be cancelled, and the patient is notified that the appointment has been cancelled.
2. Ask the patient when the best desired time and date would be.	
3. Search the appointment schedule for the best requested date and time for the patient.	
4. Once the date and time have been chosen, fill in the requirements fields of the appointment form in the system.	
5. The system validates the entered appointment information's, making sure that the entered appointment information's are valid and the form will be submit.	**5a:** During appointment, if the system determines that the patient entered invalid appointment information, the following occurs: 1. The system describes which entered data was invalid and presents the patient with suggestions for entering valid data. 2. The system prompts the patient to re-enter the invalid information. 3. The patient re-enters the information and the system re-validates it. 4. If valid information is entered, the information form will be submitted.
6. If the system submit the validated information, then the system displays a message indicating that the appointment has been submitted.	
7. This use case ends.	

Exceptions / Alerts
1. The system will not allow the patient to make an appointment without log in.
2. If the system fails to submit the appointment form, then the system will inform the patient.

Post Conditions	
Step#	**Description**
	The patient entered appointment data is stored in the appointment account.
	The patient entered invalid data or chose to cancel the appointment creation request. In either case, no appointment will be created.

Table 27 Make an Appointment-UCD

Appointment Booking

Dr. Muqeem Halimi
✓ approve by MOHA
📍 , , Afghanistan

SAT	SUN	MON	TUE	WED	THU	FRI
01 AUG 2020	02 AUG 2020	03 AUG 2020	04 AUG 2020	05 AUG 2020	30 JUL 2020	31 JUL 2020
03:00 PM -08:00 PM	01:00 PM -04:00 PM	05:00 PM -09:00 PM	11:00 AM -07:00 PM	09:00 AM -07:00 PM	02:00 PM -09:00 PM	Closed

Book appointments with approved doctors and Specialists such as Gynecologists, Skin Specialists, Child Specialists,etc in Afghanistan conveniently.

Find approved doctors, hospitals, clinics, medical stores and medicine industries in Afghanistan. Read more...

For Patients
» Search for Doctors
» Login
» Register
» Booking Appointment
» Patient Dashboard

For Doctors
» Check Appointments
» Login
» Register
» Doctor Dashboard

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📞 0093-766 242362
✉ saidmuqeemhashimi@gmail.com

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Use case ID 012	Use case Name: Manage an Appointment
Priority **High**	
Actors: Patient	
Use Case Summary	This use case allows the patient to manage an appointment with doctors in the system.
Pre-condition:	A patient will be a registered patient.
Normal Flow of Events	**Alternative Path**

1. This use case starts when the patient accesses the system feature that enables him/her to manage an appointment with doctors, hospitals, clinics, medical stores and medicine industries.	**1a:** At any time, the patient may cancel the request, at this point, the manage appointment will be cancelled, and the patient is notified that the request has been cancelled.
2. The system will show all the appointments that's created by a patient.	
3. The system prompts the patient whether to cancel or change an appointment.	
4. The patient enters whether to cancel and change an appointment.	4a: If a patient enters to cancel an appointment, the following conditions can be occur: 1. The system prompts the patient for the reasons. 2. The system will cancelled the specified appointment from the system. 4b: If a patient enters to change an appointment, the following conditions can be occur: 1. The system displays the appointment information's currently stored for the specified patient. 2. The patient enters desired information and requests that the system change the entered information. 3. The system validates the entered information and making sure that the entered information's are valid for the appointment. 4. The entered information's are stored in the specified appointment account.
6. If the system submit the manage appointment information, then the system displays a message indicating that the appointment has been cancelled or changed.	

7. This use case ends.	

Exceptions / Alerts

3. The system will not allow the patient to manage an appointment without log in.
4. If the system fails to cancel/change the appointment, then the system will inform the patient.

Post Conditions

Step#	Description
	The patient entered an appointment data for changes will be stored in the appointment account.
	The patient entered invalid data for changes or chose to cancel the manage appointment request. In either case, no appointment will be cancel/change.

Table 28 Manage an Appointment-UCD
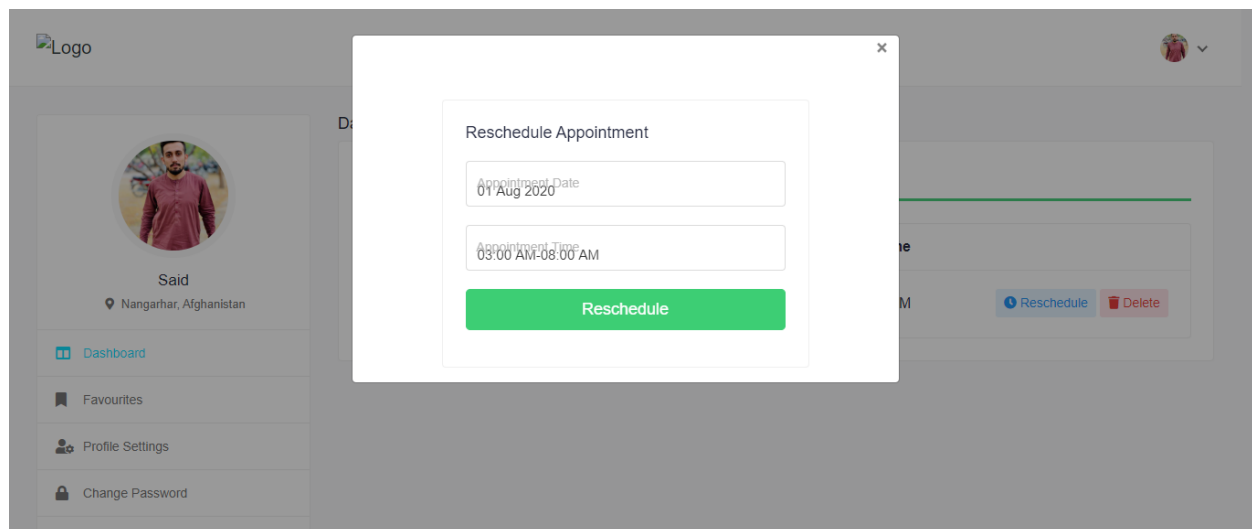
Use case ID 013	Use case Name: Make Appointment Request
Priority **High**	
Actors: Guest/Visitor	
Use Case Summary	This use case allows the visitor to make an appointment request with doctors in the system.
Pre-condition:	The visitor will have to provide all the necessary details present in the appointment request form (Personal information, Appointment time and Appointment date) of the application.

Normal Flow of Events	Alternative Path
1. This use case starts when the visitor accesses the system feature that enables him/her to make an appointment request with doctors… by entering necessary information.	**1a:** At any time, the visitor may cancel the appointment request, at this point, the appointment request will be cancelled, and the visitor is notified that the appointment request has been cancelled.
2. Ask the visitor when the best desired time and date would be.	
3. Search the appointment schedule for the best requested date and time for the patient.	
4. Once the date and time have been chosen, fill in the requirements fields of the appointment form in the system.	

5. The system validates the entered appointment information's, making sure that the entered appointment information's are valid and the form will be submit.	**5a:** During appointment, if the system determines that the visitor entered invalid appointment request information, the following occurs: 5. The system describes which entered data was invalid and presents the visitor with suggestions for entering valid data. 6. The system prompts the visitor to re-enter the invalid information. 7. The visitor re-enters the information and the system re-validates it. 8. If valid information is entered, the information form will be submitted.
6. If the system submit the validated request information, then the system displays a message indicating that the appointment request has been submitted.	
7. This use case ends.	

Exceptions / Alerts

5. If the system fails to submit the appointment request form, then the system will inform the visitor.

Post Conditions

Step#	Description
	The visitor entered appointment request data is stored in the appointment account.
	The visitor entered invalid data or chose to cancel the appointment request. In either case, no appointment request will be created.

Table 29 Make Appointment Request-UCD

Use case ID 014	Use case Name: Approve Doctor Account
Priority **High**	
Actors: Super Admin	
Use Case Summary	This use case allows the super admin to approve the doctor's account in the system.
Pre-condition:	The super admin has logged in to his account.

Normal Flow of Events	Alternative Path
1. This use case starts when the super admin accesses the system feature that enables him/her to approve doctor account which is made by a doctor/outside doctor.	**1a:** At any time, the super admin may cancel the approve request, at this point, the processing is discontinued, and the super admin is notified that the approve request has been cancelled.
2. The system displays doctors accounts information's currently stored in the user account.	

3. The super admin validates the account from the doctor account which is registered by MOHA-Afg employee.	3a: During validation, if the super admin determines that the doctor account is invalid, then the specified account will be deleted from the system.
4. If the doctor account is approved by super admin, then the system notifies a doctor with a message that "Specified Account is approved" via email.	
5. This use case ends.	

Exceptions / Alerts

1. The system will not allow a super admin to approve doctor account without log in.

Post Conditions

Step#	Description
	If the super admin approve the doctor account, then the status will be change for the specified account in the system.
	After account approval, the system will allow a doctor to log in to his account.
	The super admin choose to cancel approve doctor account request, no approve doctor account will be done.

Table 30 Approve Doctor Account-UCD
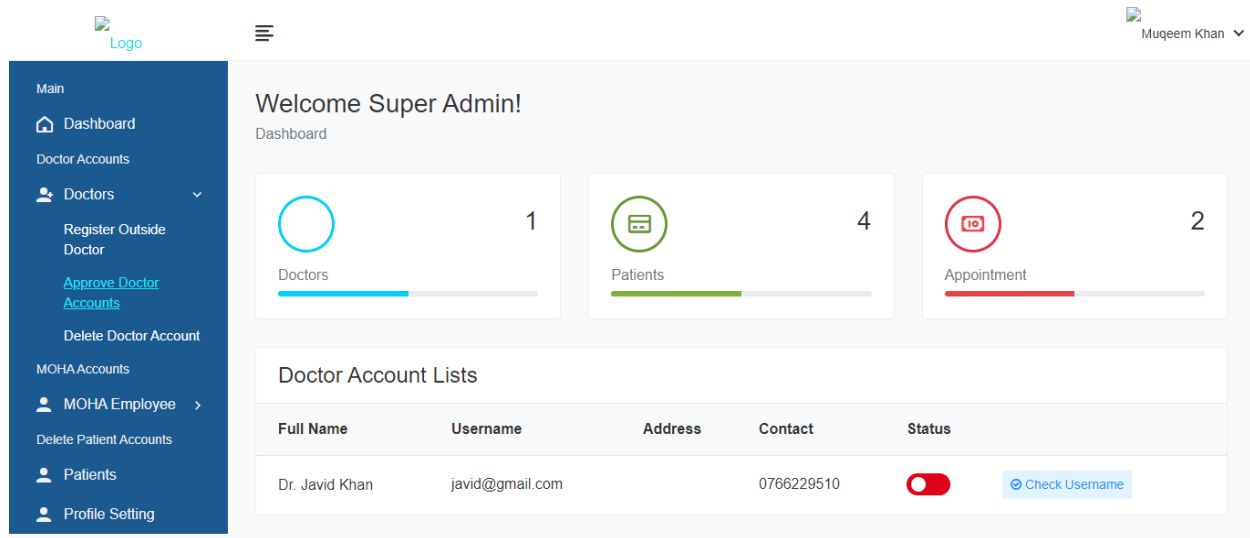
Use case ID 015	Use case Name: Register Outside Doctor
Priority **High**	
Actors: super admin	
Use Case Summary	This use case allows the super admin to register the outside doctor into a system.
Pre-condition:	- The super admin has logged in to his account. - The super admin will have to provide all the necessary details present in the registration form of the application.

Normal Flow of Events	Alternative Path
1. This use case starts when the super admin accesses the system feature that enables him/her to register outside doctor by entering necessary information that is maintained in the account.	**1a:** At any time, the super admin may cancel the registration outside doctor request, at this point, the registration process will be cancelled, and the super admin is notified that the registration request has been cancelled.

2. The super admin enters the required registration outside doctor information and requests to the system saves the entered information.	2a:
3. The system validates the entered registration outside doctor information's, making sure that the entered registration information's are valid and will be stored in the system.	**3a:** During registration, if the system determines that the super admin entered invalid registration outside doctor information, the following occurs: 11. The system describes which entered data was invalid and presents the super admin with suggestions for entering valid data. 12. The system prompts super admin to re-enter the invalid information. 13. The super admin re-enters the information and the system re-validates it. 14. If valid information is entered, the registration outside doctor information is stored. 15. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.
4. If the system validated the registration outside doctor information and stores it, then the system displays a message indicating that the registration outside doctor has been stored.	
7. This use case ends.	

Exceptions / Alerts

1. The system will not allow a super admin to perform registration outside doctor without log in.

Post Conditions

Step#	Description
	The super admin entered registration outside doctor data will be stored in the outside doctor account.
	The super admin entered invalid data or choose to cancel the registration outside doctor request. In either case, no registration will be done.

Table 31 Register Outside Doctor-UCD

Use case ID 016	Use case Name: Register MOHA-Employee	
Priority	**High**	
Actors:	super admin	
Use Case Summary	This use case allows the super admin to register the MOHA-employee into a system.	

Pre-condition:	- The super admin has logged in to his account. - The super admin will have to provide all the necessary details present in the registration form of the application.
Normal Flow of Events	**Alternative Path**
1. This use case starts when the super admin accesses the system feature that enables him/her to register MOHA-Afg employee by entering necessary information that is maintained in the account.	**1a:** At any time, the super admin may cancel the registration outside doctor request, at this point, the registration process will be cancelled, and the super admin is notified that the registration request has been cancelled.
2. The super admin enters the required registration MOHA-Afg employee information and requests to the system saves the entered information.	2a:
3. The system validates the entered registration MOHA-Afg employee information's, making sure that the entered registration information's are valid and will be stored in the system.	**3a:** During registration, if the system determines that the super admin entered invalid registration MOHA-Afg employee information, the following occurs: 16. The system describes which entered data was invalid and presents the super admin with suggestions for entering valid data. 17. The system prompts super admin to re-enter the invalid information. 18. The super admin re-enters the information and the system re-validates it. 19. If valid information is entered, the registration outside doctor information is stored. 20. If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.

4. If the system validated the registration outside doctor information and stores it, then the system displays a message indicating that the registration MOHA-Afg employee has been stored.	
7. This use case ends.	

Exceptions / Alerts

1. The system will not allow a super admin to perform registration MOHA-Afg employee without log in.

Post Conditions

Step#	Description
	The super admin entered registration outside doctor data will be stored in the registration account.
	The super admin entered invalid data or choose to cancel the registration MOHA-Afg employee request. In either case, no registration will be done.

Table 32 Register MOHA-Afg Employee -UCD

Use case ID 017	Use case Name: Delete Account
Priority	**High**
Actors:	Super Admin
Use Case Summary	This use case allows the super admin to delete the doctors, patients and MOHA-employee's account in the system.
Pre-condition:	The super admin has logged in to the system.

Normal Flow of Events	Alternative Path
1. This use case starts when the super admin accesses the system feature that enables him/her to delete a doctor, outside doctor, patient and MOHA-Afg employee account.	**1a:** At any time, the super admin may cancel the delete account request, at this point, the processing is discontinued, and the super admin is notified that the delete account request has been cancelled.

2. The system displays doctors, outside doctor, patients and MOHA-Afg employee's accounts information's currently stored in the user account.	
3. The super admin selects one user from the list, and then choose an option to delete that user account.	
4. If the user account has been deleted, the system notifies the super admin with a message that the "Account has been deleted".	
5. This use case ends.	

Exceptions / Alerts

    1. The system will not allow a super admin to delete an account without log in.

Post Conditions

Step#	Description
	If the super admin delete a doctor, patient and MOHA-Afg employee account, then the account will be delete from the database.

Table 33 Delete Account-UCD
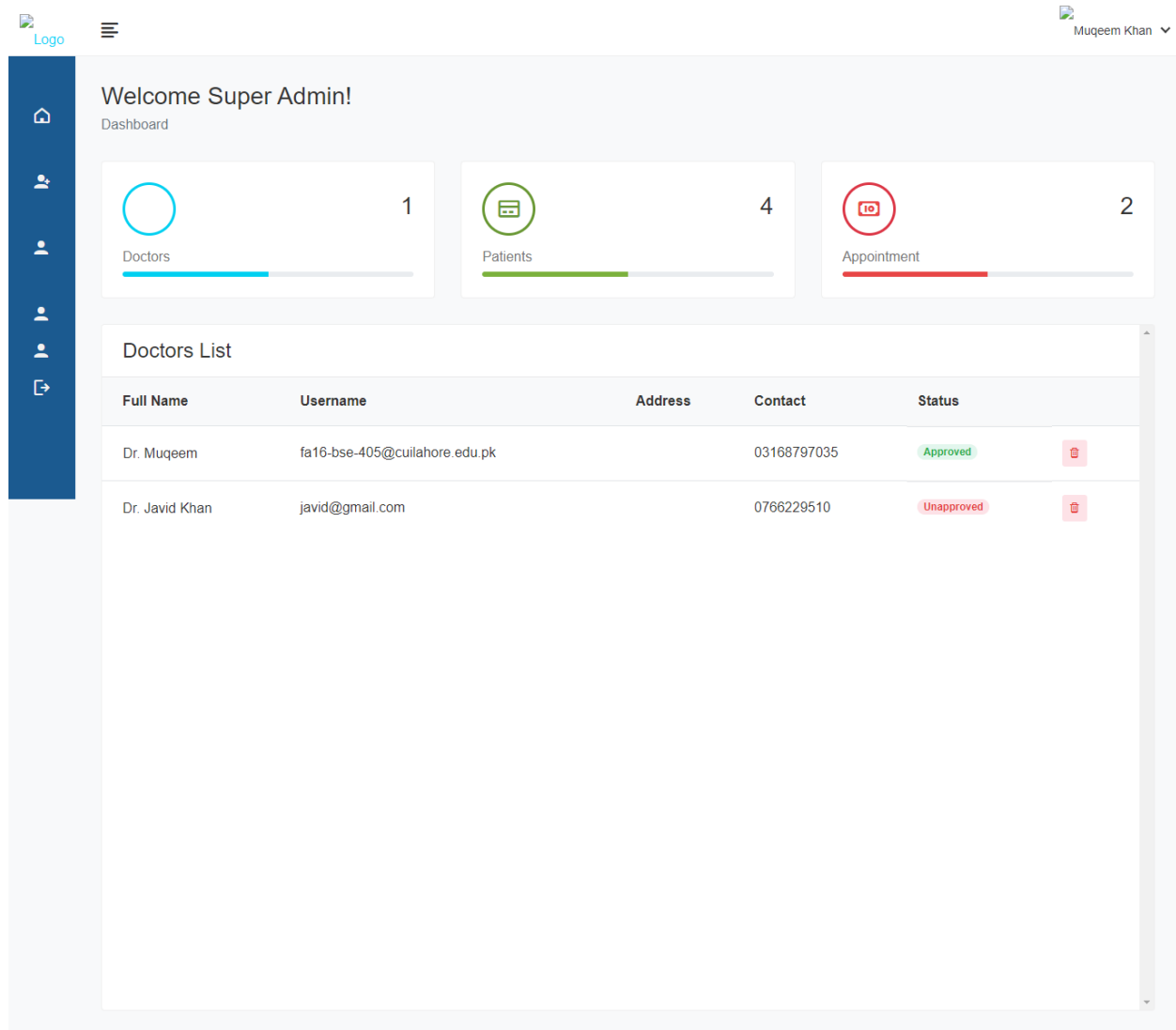
Use case ID 018	Use case Name: Delete Account	
Priority **High**		
Actors:	Doctor, Outside Doctor, Patient	
Use Case Summary	This use case allows the doctor, outside doctor and patient to delete their accounts from the system.	
Pre-condition:	The doctor, outside doctor and patient has logged in to the system.	
Normal Flow of Events	**Alternative Path**	

1. This use case starts when the doctor, outside doctor and patient accesses the system feature that enables him/her to delete an account from the system.	**1a:** At any time, the doctor, outside doctor and patient may cancel the delete account request, at this point, the processing is discontinued, and the doctor, outside doctor and patient is notified that the delete account request has been cancelled.
2. The system displays accounts information's that's currently stored in the user account.	
3. The doctor, outside doctor and patient choose an option to delete the account.	
4. If the account has been deleted, the system notifies the super admin with a message that the "specified Account has been deleted".	
5. This use case ends.	

Exceptions / Alerts

1. The system will not allow a doctor, outside doctor and patient to delete an account without log in.

Post Conditions	
Step#	**Description**
	If the doctor, outside doctor and patient delete an account, then the account will be delete from the database.

Table 34 Delete Account-UCD

2.5 Use Case Diagram
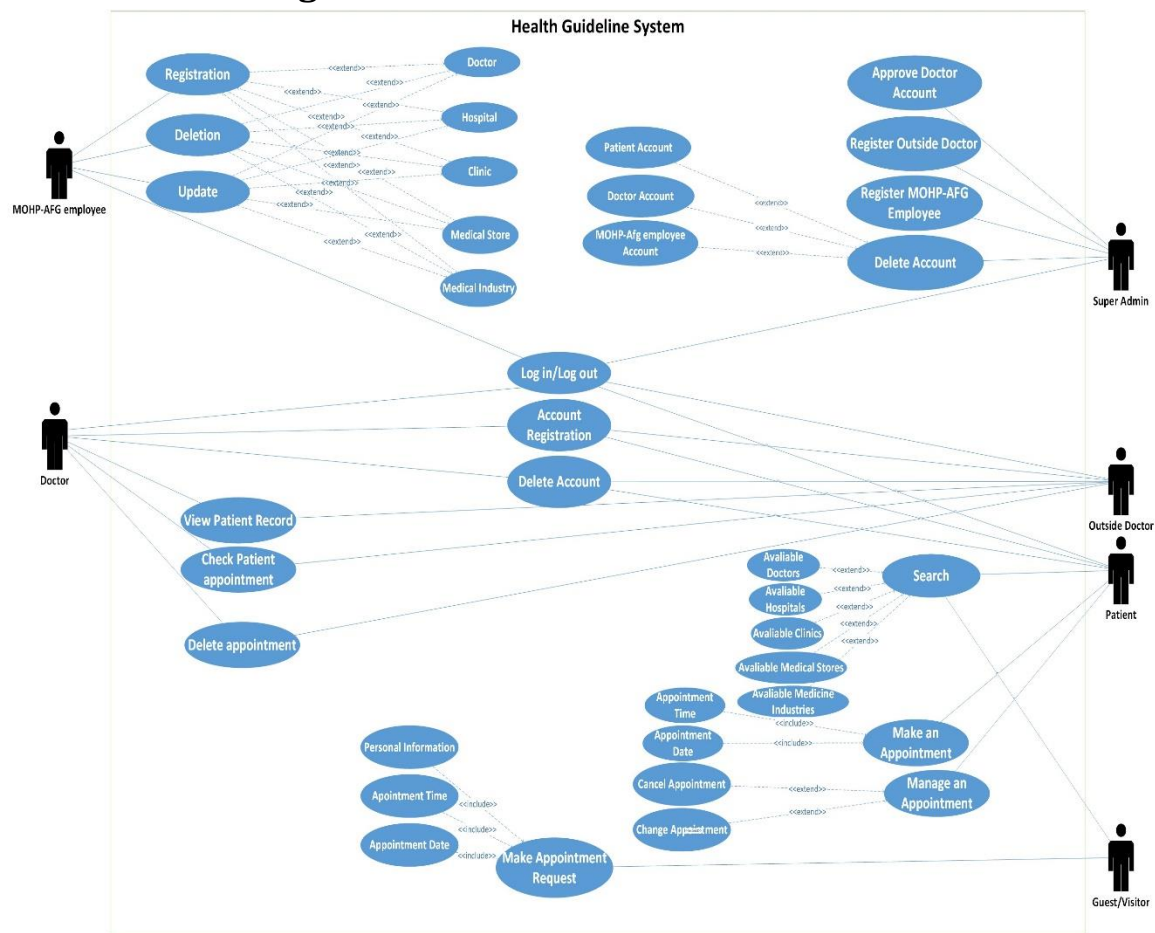
Figure 1 Use Case Diagram

2.6 SOFTWARE DEVELOPMENT LIFECYCLE

2.6.1 AGILE MODEL:

Agile model because it promotes continuous iteration of development and testing simultaneously throughout the software development lifecycle of the project.
Both development and testing activities are concurrent unlike the Waterfall model.

An incremental approach is used in Agile model that helps to discuss a sample with the customer or in our case with the Supervisor. The idea and main targets are to maintain product's quality in the entire phase of development and develop a product which completely satisfies the customers.

2.6.2 WHY AGILE MODEL?

- Agile Model is flexible, fast, lean, responsive, and consistent. Unlike traditional waterfall model, it overcomes issues like no flexibility and no going back.
- Communication-oriented approach of Agile model focuses more on people whether they are satisfied or not
- The frequent changes happening in the business is challenging and therefore Agile methods are tested in a dynamic environment. They proved to be very flexible and effective in adapting these frequent changes.
- Regular inspection is included in a disciplined manner, which consequently improves the leadership qualities to boost the teamwork.
- Agile method follows best practices that help in getting high-quality and satisfactory software very quickly.

3 Chapter 3: System Design

3.1 Work Breakdown Structure (WBS)
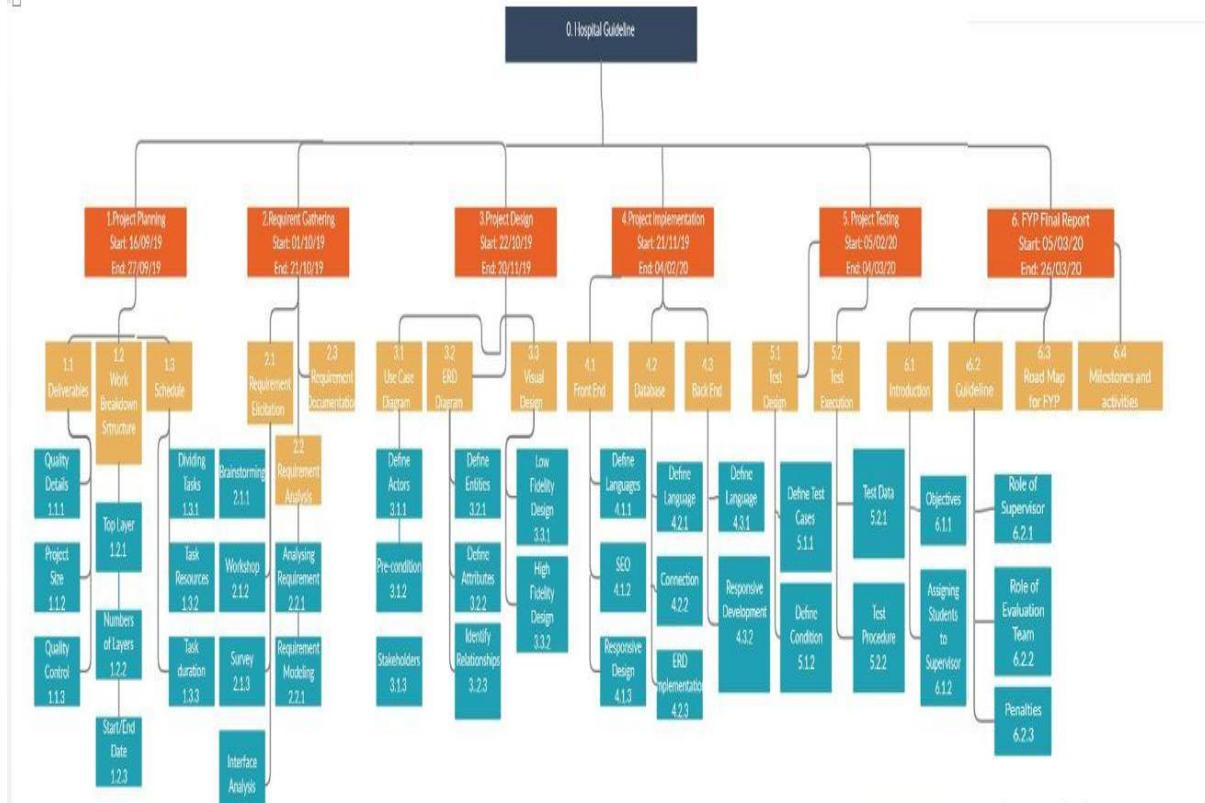
Figure 2 WBS Diagram

3.2 Activity Diagram

AD01: Account Registration
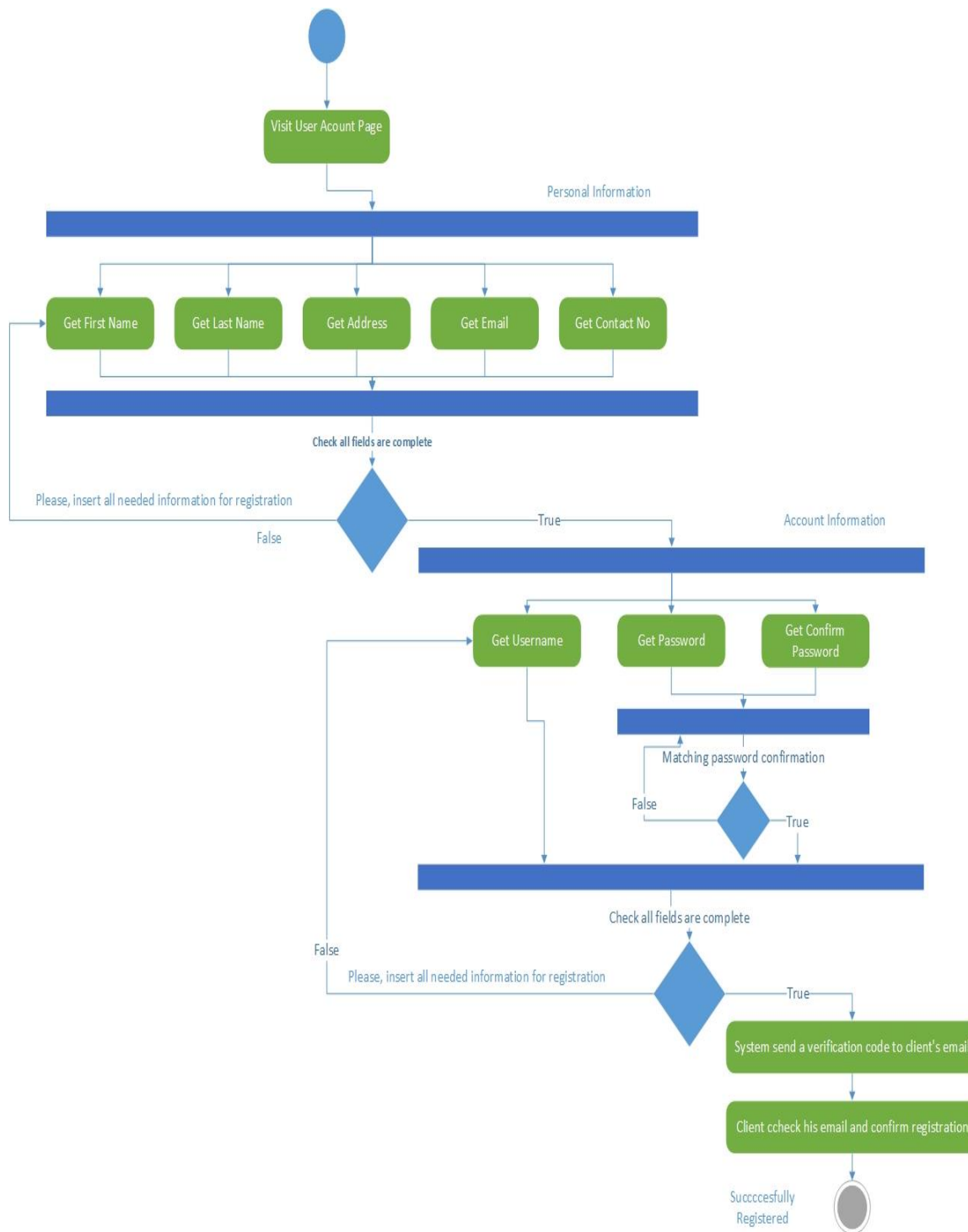
Figure 3 Account Registration-AD

AC02: Delete Account
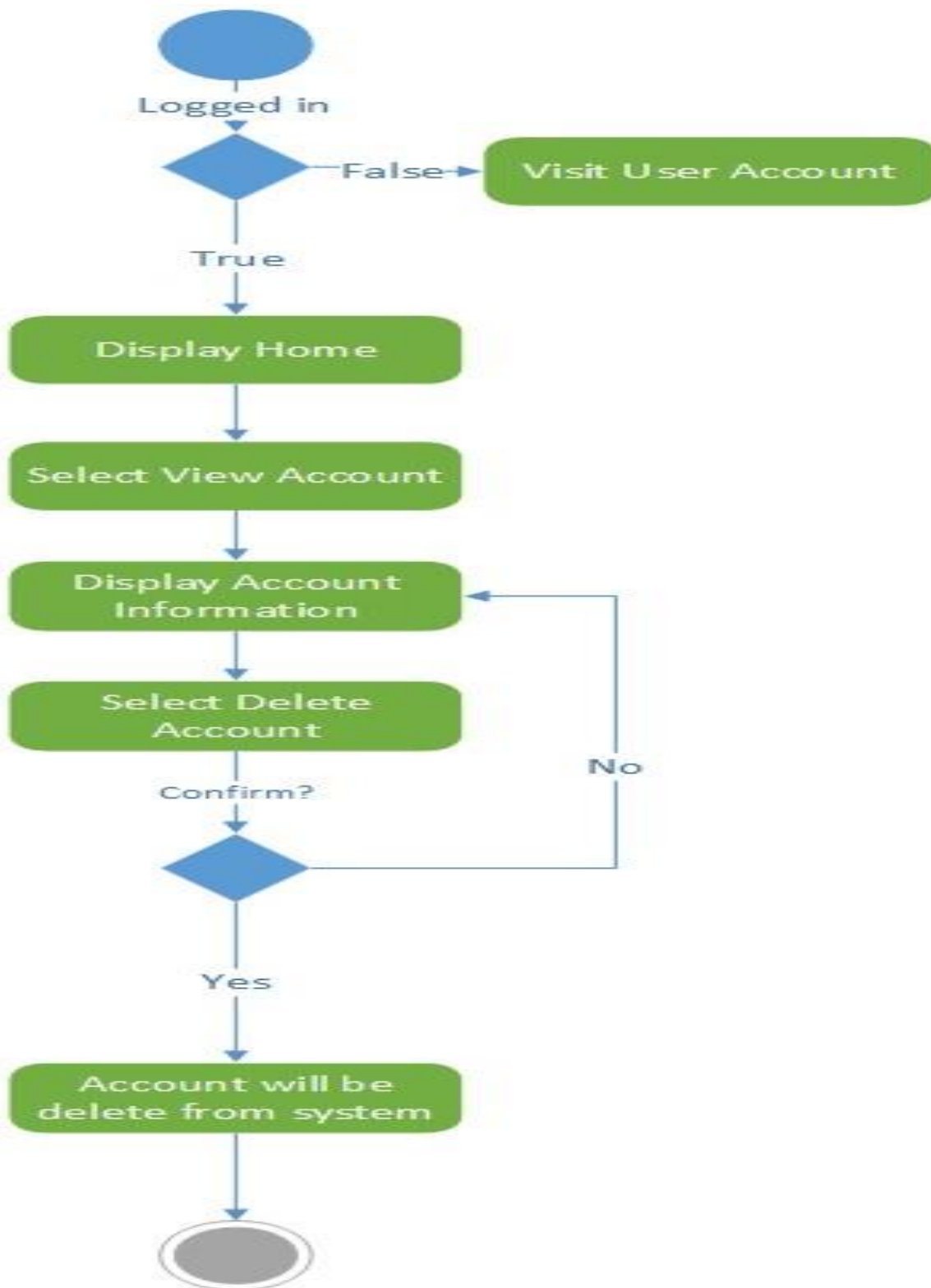
Figure 4 Delete Account-AD

AC03: Login/Logout
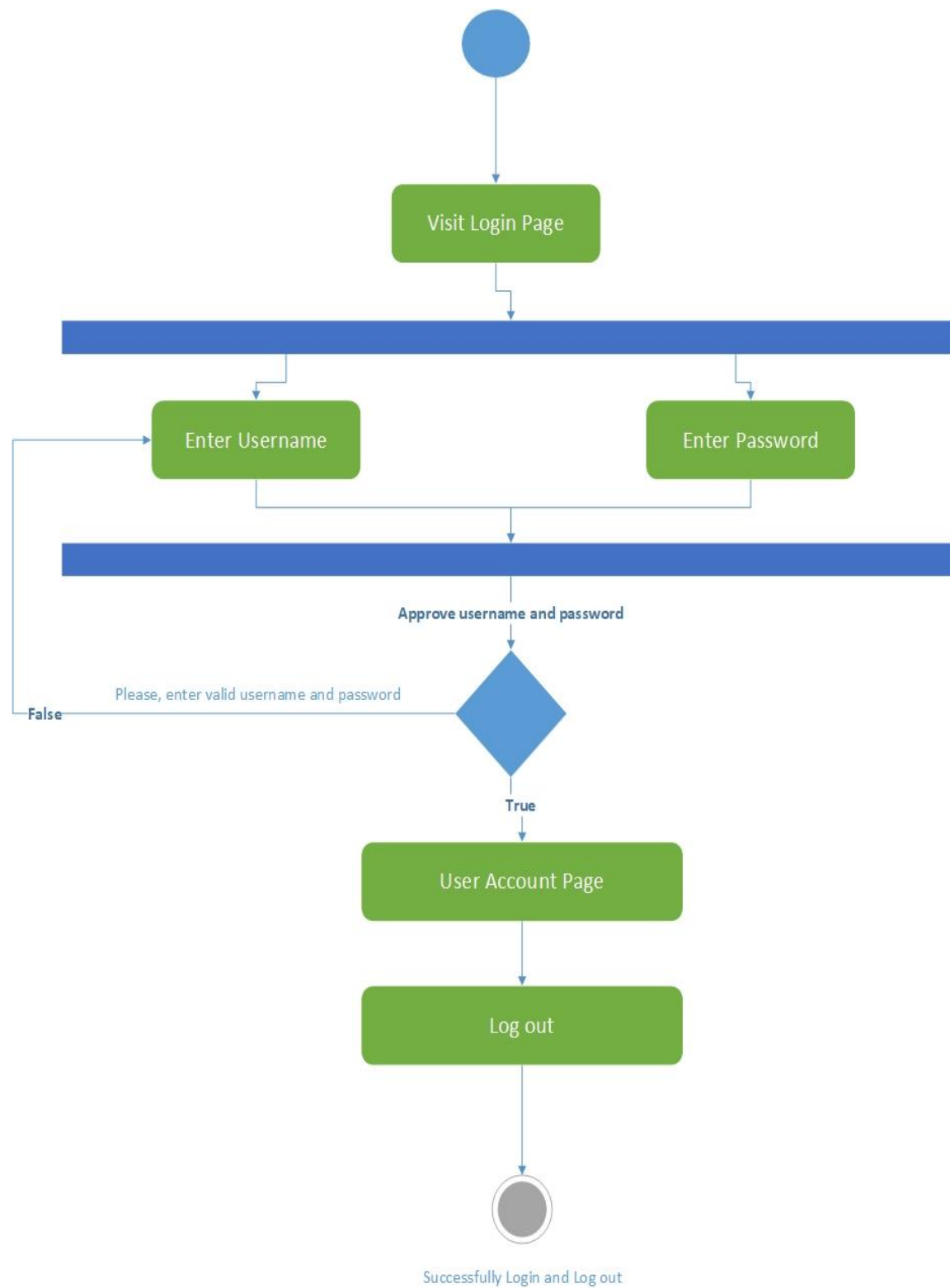
Figure 5 Login/Logout-AD

AC04: Patient
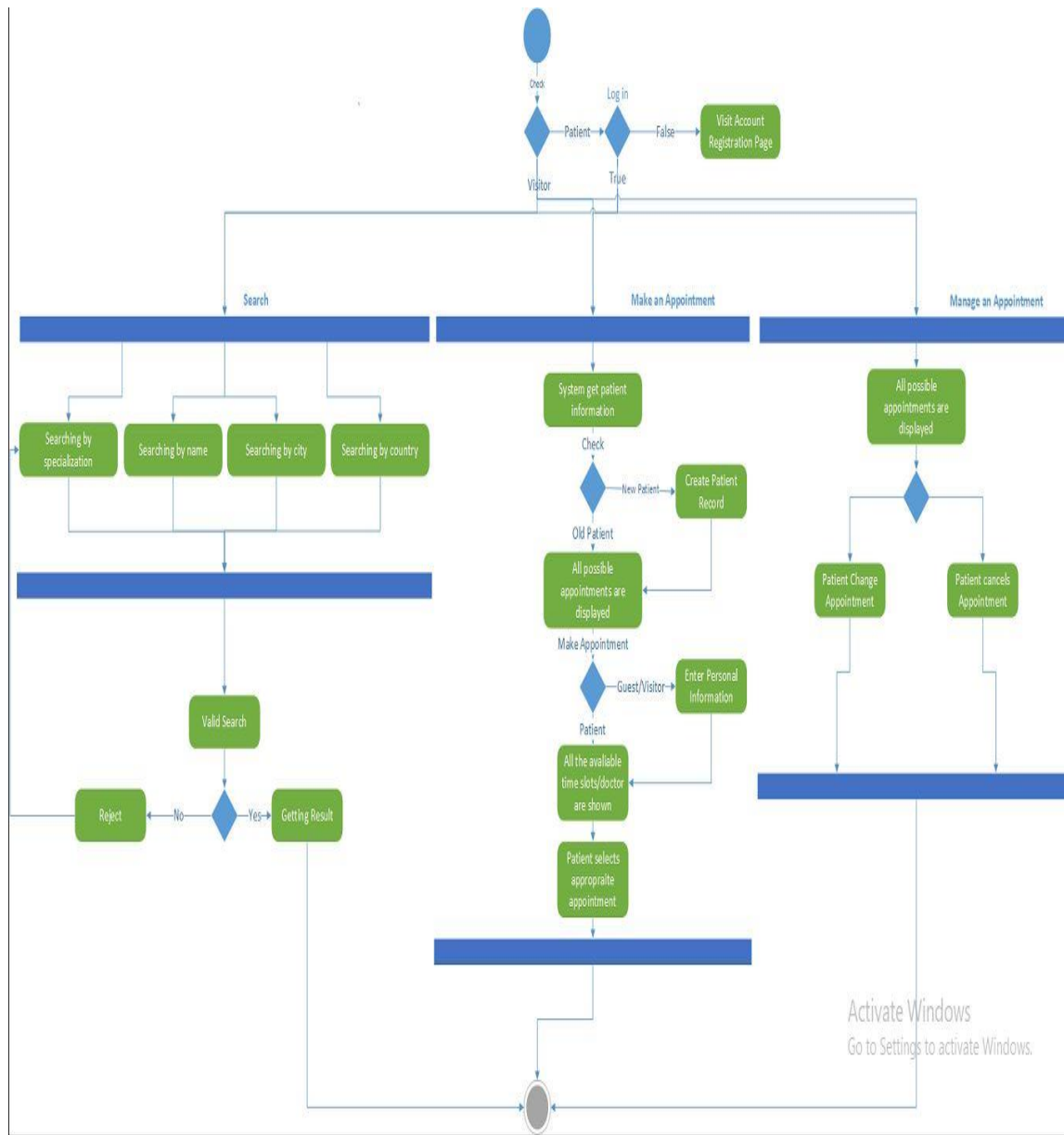
Figure 6 Patient-AD

AC05: Doctor
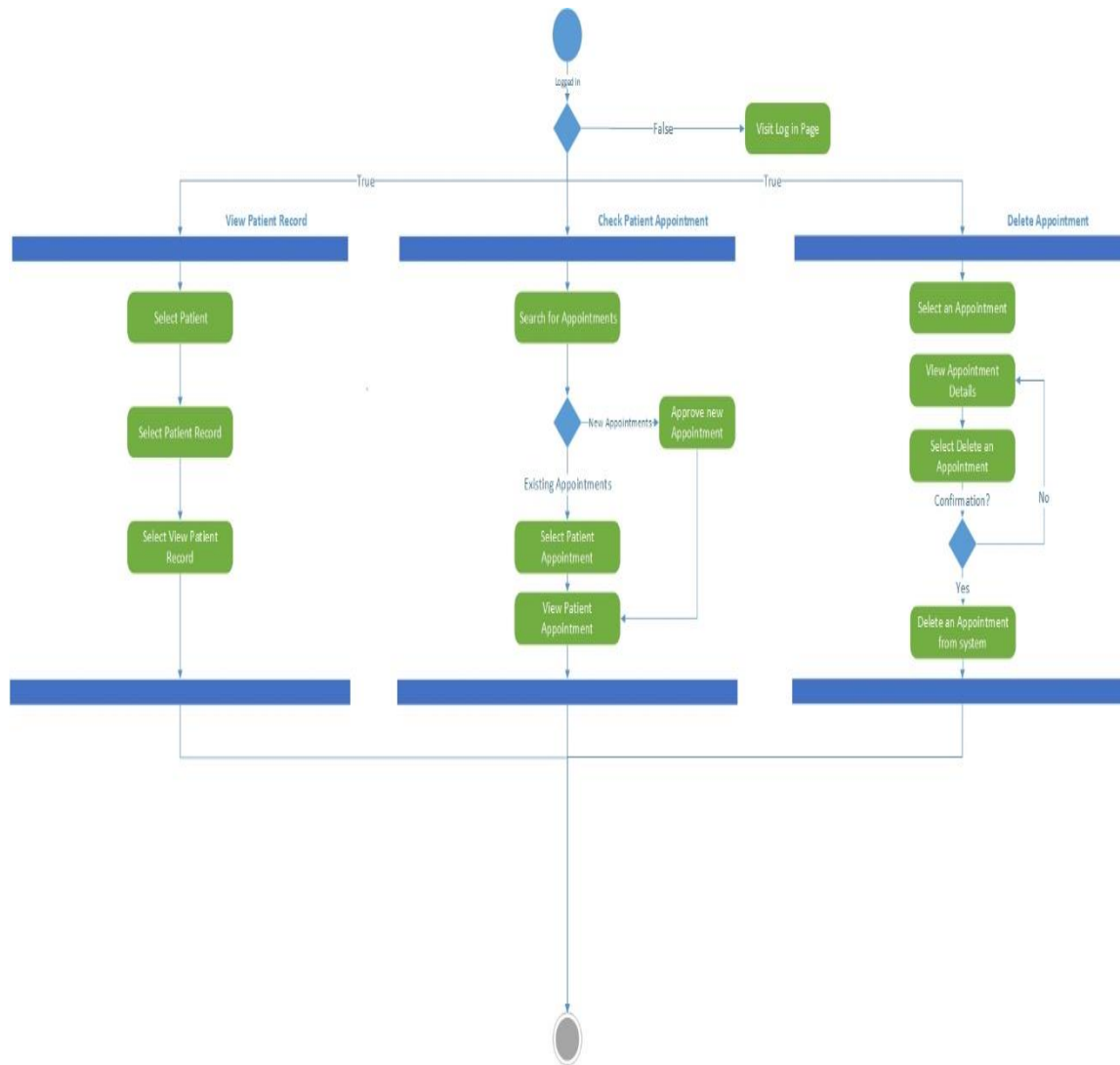
Figure 7 Doctor-AD

AC06: MOPH-Afg Employee
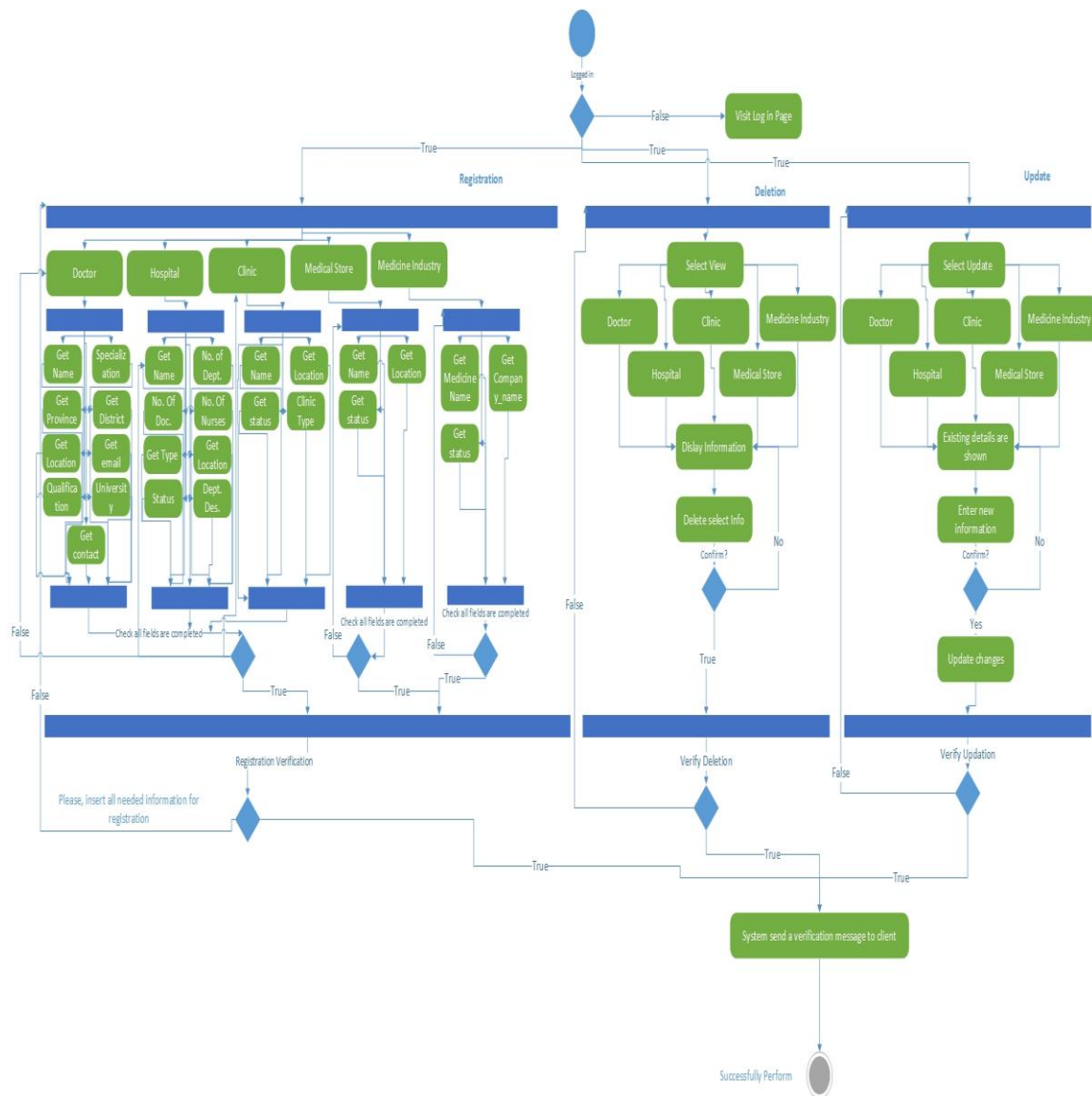
Figure 8 MOPH-Afg employee-AD

AC07: Super Admin
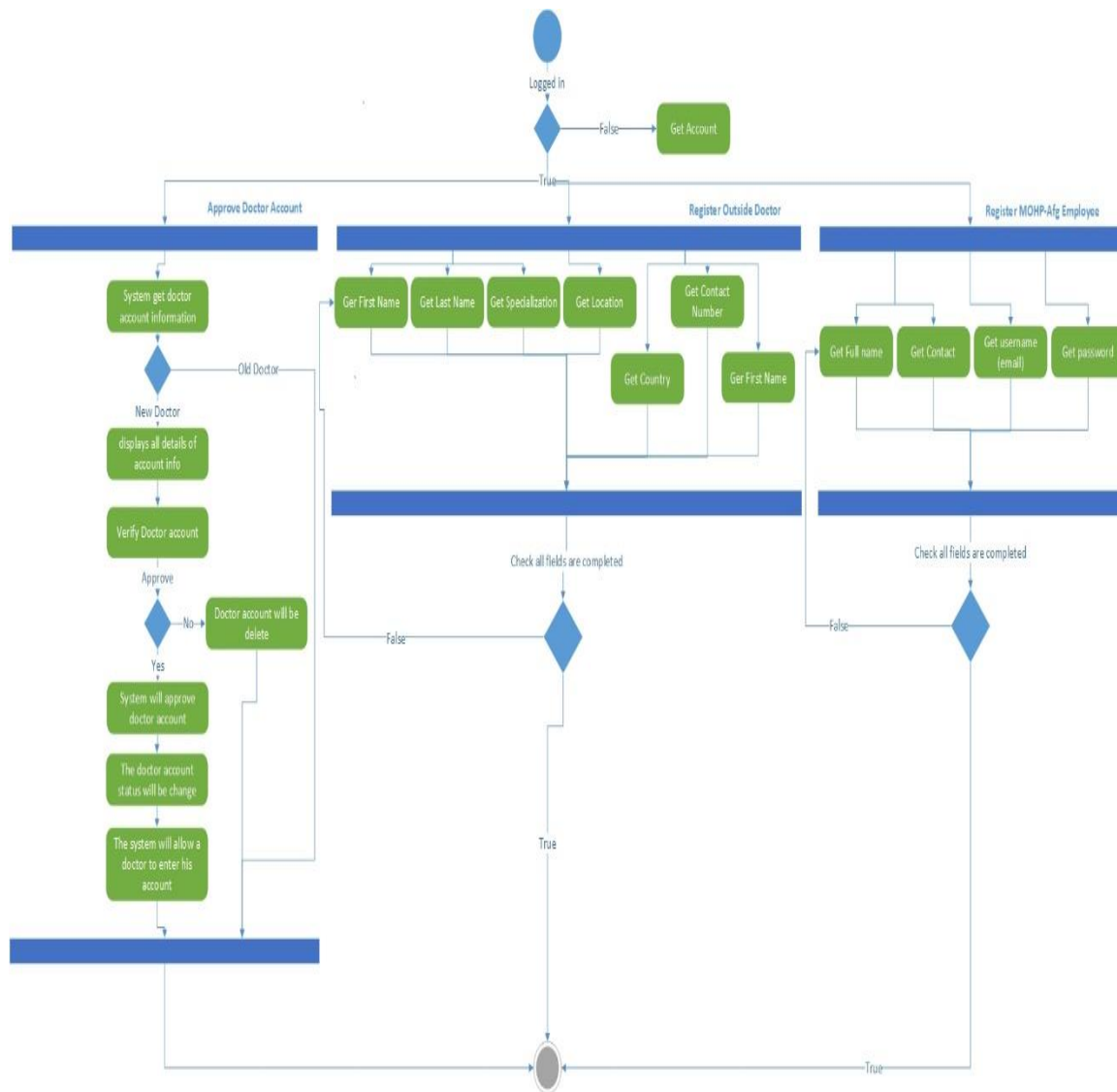
Figure 9 Super Admin-AD

3.3 Software Architecture
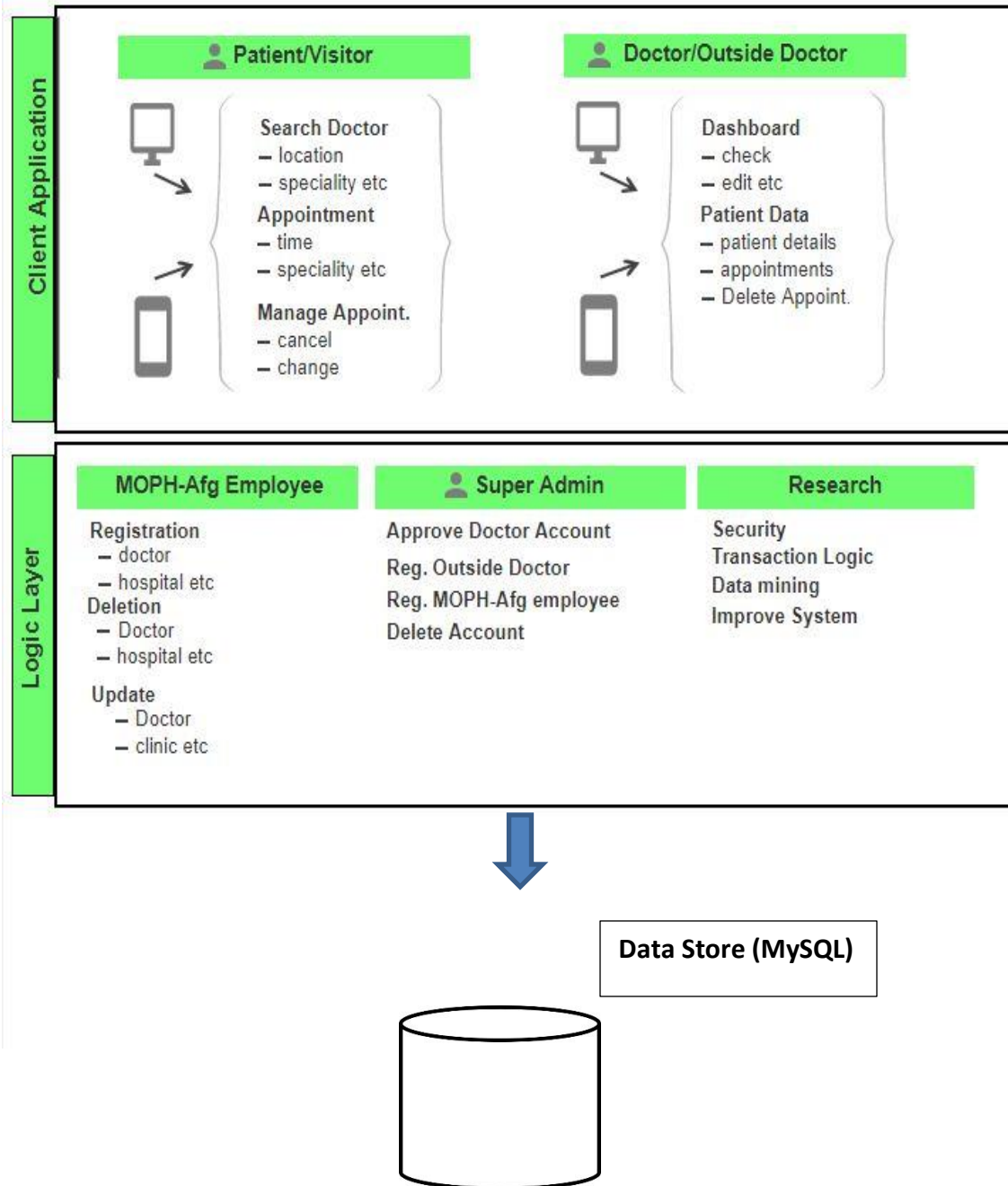
Figure 10 Software Architecture Diagram

3.4 Database Diagram
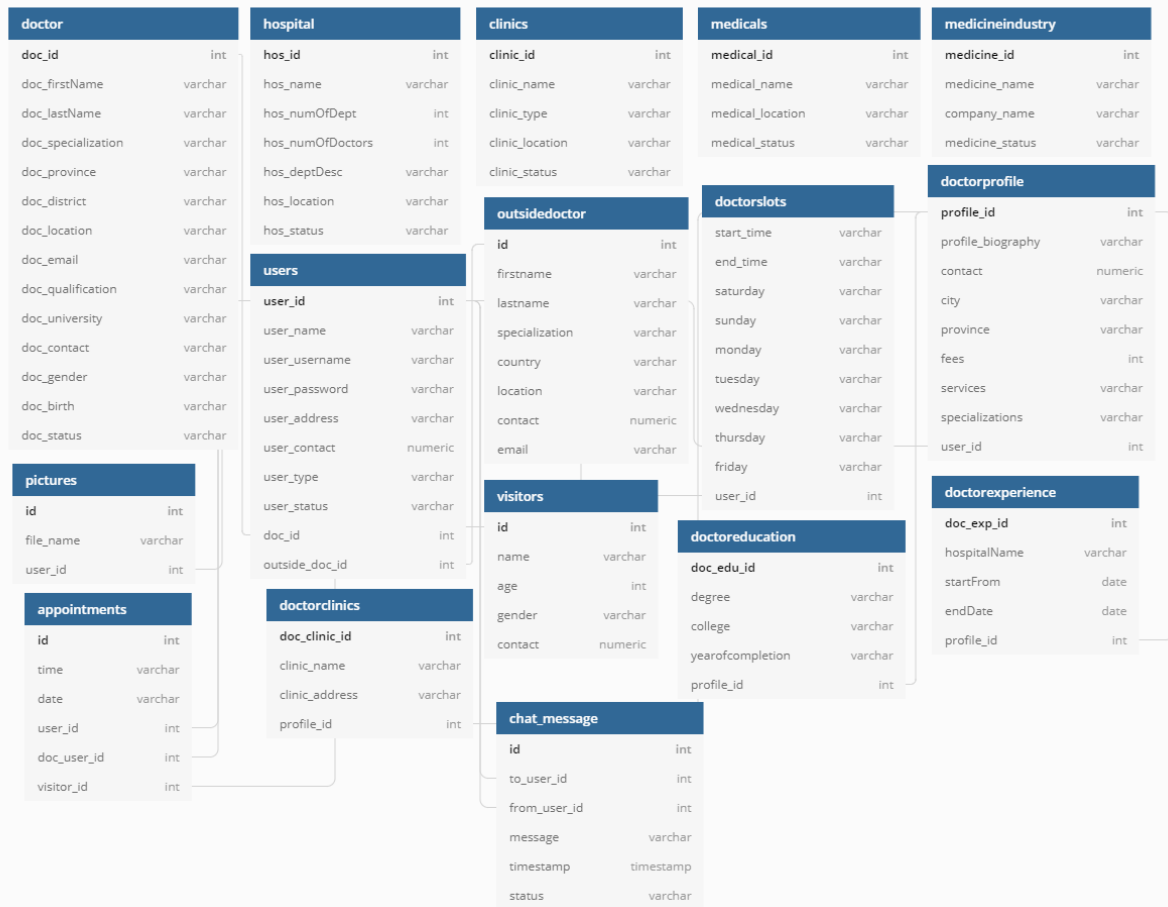
Figure 11 Database Diagram

3.5 Network Diagram (Gantt chart)

	Project Implementation	Testing	Deployment
Starting date	01-Dec-19	01-May-20	01-Jun-20
Ending Date	30-Apr-20	30-May-20	15-Jun-20
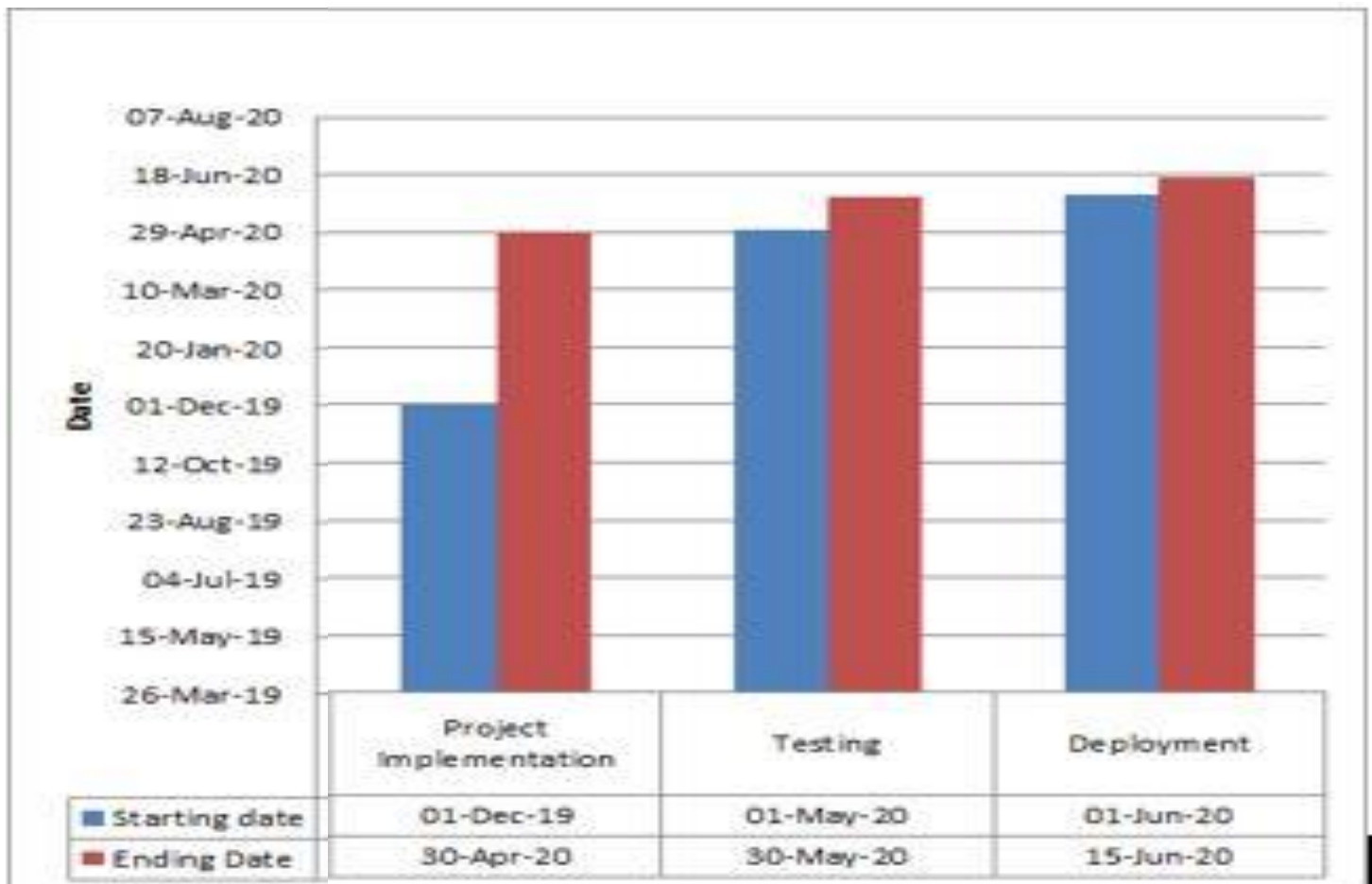
Figure 12 Network Diagram

4 CHAPTER 4 – SYSTEM TESTING

4.1 TEST CASES:

Following test cases were carried out during the testing of our system.

Test Case #: TC001				Test Case Name: Create Account			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				Design Date:12/05/2019			
Executed by: Said Muqeemullah				Execution Date: 12/05/2019			
Test Case Description: An unregistered user should be able to successfully create an account on the system.							
Pre-condition:		The user must not have an account on the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment	
1	Click on the Login/Sign Up link on the system.		Login form modal is displayed to the user by the system.		Pass		
2	Click on the Register link on the login modal.		Register form modal is displayed to the user by the system.		Pass		
3	Enter full name to the register form.	Muqeem	System lets user enter the information.				
4	Enter mobile number to the register form.	0766229510	System lets user enter the information.				
5	Enter Email/Phone Number to the register form.	said@gmail.com or 0799229510	System lets user enter the information.				
6	Enter password to the register form.	Muqeem123	System lets user enter the information.				

7	Enter address to the register form.	Kabul	System lets user enter the information.			
8	Click the Signup button on the register form.		If user account already exist in the system, message is displayed 'User Already Exist!' to the user by the system.		Pass	
			If user account doesn't exist in the system, the user is redirected to the login form modal with a message 'Registered Successfully'		Pass	
Post-condition:	The user has created an account on the system.					

Test Case #: TC002	**Test Case Name:** Login
System: Health Guide (Medical Guidance Online System)	
Designed by: Said Muqeemullah	**Design Date:**12/11/2019
Executed by: Said Muqeemullah	**Execution Date:**
10/02/2020	

Test Case Description: A registered user should be able to login/enter to their account on the system.

Pre-condition:	The user must have an account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on the Login/SignUp button on the system.		Login form modal is displayed to the user by the system.		Pass	

2	Enter Email/Phone Number to the login form.	said@gmail.com	System lets user enter the username.			
3	Enter password to the login form.	Muqeem123	System lets user enter the password.			
4	Click the Login button on the login form.		If username and password not validated, a message is displayed 'invalid username and password' to the user by the system.		Pass	
			If username and password is validated, the user is redirected to their account dashboard.		Pass	
Post-condition:	The user is logged into the system.					

Test Case #: TC003	**Test Case Name:** Logout
System: Health Guide (Medical Guidance Online System)	
Designed by: Said Muqeemullah	**Design Date:** 12/11/2019
Executed by: Said Muqeemullah	**Execution Date:**
10/02/2020	
Test Case Description: A registered user should be able to successfully logout from their account on the system.	
Pre-condition:	The user must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on the upper right corner dropdown menu		Drop down menu is displayed to the user by the system.		Pass	
2	Click on the logout button from the drop down menu or click on the logout button on the sidebar of the user dashboard.		System redirects user to the home page.		Pass	

Post-condition:	The user must logged out from the system.

Test Case #: TC004				Test Case Name: Delete Account		
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah				Design Date:12/11/2019		
Executed by: Said Muqeemullah				Execution Date: 10/02/2020		
Test Case Description: A registered user should be able to delete their account on the system.						
Pre-condition:	The user must have an account on the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on the upper right corner drop down menu.		Drop down menu is displayed to the user by the system.		Pass	
2	Click on the dashboard button.		System redirects to the user dashboard.		Pass	
3	Click on the delete button from the sidebar menu.		System redirects the user to the delete account page.		Pass	

4	Enter some reasons for deleting account.		System lets the user to enter some reasons.			
5	Click on the Delete Account button.		System deletes the user account with all their associated records and a pop up message 'Account has been deleted' is displayed to the user by the system.		Pass	

Post-condition:	The user account must be deleted on the system.

Test Case #: TC005				**Test Case Name:**		
Registration						
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah				**Design Date:**12/11/2019		
Executed by: Said Muqeemullah				**Execution Date:**		
10/02/2020						
Test Case Description: A registered MOHA-Emp should be able to register doctors, hospitals, clinics, medical stores and medicine industries in the system.						
Pre-condition:	The MOHA-EMP must be logged into their account on the system.					
Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**
1	Click on Registration drop down menu on the sidebar.		Registration drop down menu is displayed to the MOHA-Emp by the system.		Pass	

2	Click on any registration, like doctor registration, hospital registration, clinic registration … from the drop down menu.		System redirects to the specified registration page.		Pass	
3	Enter the information required for registration form for any sub-modules like, required information for doctor, hospital …		System lets the MOHA-Emp to enter registration information.			
4	Click on Registration button.		System redirects to the registration successfully page with a message 'Registered Successfully' to the MOHA-Emp.		Pass	
Post-condition:		The system must register/save specified registration information into database.				

Test Case #: TC006	**Test Case Name:** Deletion
System: Health Guide (Medical Guidance Online System)	
Designed by: Said Muqeemullah	**Design Date:**12/11/2019
Executed by: Said Muqeemullah	**Execution Date:**
10/02/2020	
Test Case Description: A registered MOHA-Emp should be able to delete doctors, hospitals, clinics, medical stores and medicine industries records in the system.	
Pre-condition:	The MOHA-EMP must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on Deletion drop down menu on the sidebar.		Deletion drop down menu is displayed to the MOHA-Emp by the system.		Pass	
2	Click on any Deletion, like Doctor Deletion, Hospital Deletion, Clinic Deletion …, from the drop down menu.		System redirects to the specified deletion page.		Pass	
3	Search for any doctor, hospital, clinic, medical stores and medicine industry records by their ids.		System lets the MOHA-Emp for searching.		Pass	
4	Click on Delete button or delete trash icon.		If the specified record is deleted from the database, system redirects to the specified delete page with a message 'Record Deleted Successfully' to the MOHA-Emp.		Pass	

			If the specified record isn't deleted from the database, system redirects to the specified delete page with a message 'Record not Deleted!' to the MOHA-Emp.		Pass	
Post-condition:	The system must delete specified record from the database.					

Test Case #: TC007				Test Case Name: Updating			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				**Design Date:** 12/11/2019			
Executed by: Said Muqeemullah				**Execution Date:**			
10/02/2020							
Test Case Description: A registered MOHA-Emp should be able to update doctors, hospitals, clinics, medical stores and medicine industries records in the system.							
Pre-condition:	The MOHA-EMP must be logged into their account on the system.						
Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**	
1	Click on Update Records drop down menu on the sidebar.		Update Record drop down menu is displayed to the MOHA-Emp by the system.		Pass		
2	Click on any Update Record, like Doctor Record, Hospital Record, Clinic Record …, from the drop down menu.		System redirects to the specified update page.		Pass		
3	Update for any doctor, hospital, clinic, medical stores and medicine industry records by their ids.		System lets the MOHA-Emp for updating records by entering the ids.		Pass		

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/Fail	Comment
4	Click on Update button or update icon.		If the specified record is updated in the database, system redirects to the specified update page with a message 'Record Updated Successfully' to the MOHA-Emp.		Pass	
			If the specified record isn't updated in the database, system redirects to the specified update page with a message 'Record not updated!' to the MOHA-Emp.		Pass	
Post-condition:	The system must update the specified record in the database.					

Test Case #: TC008	**Test Case Name:** View Records
System: Health Guide (Medical Guidance Online System)	
Designed by: Said Muqeemullah	**Design Date:** 12/11/2019
Executed by: Said Muqeemullah	**Execution Date:** 10/02/2020
Test Case Description: A registered MOHA-Emp should be able to view doctors, hospitals, clinics, medical stores and medicine industries records in the system.	
Pre-condition:	The MOHA-EMP must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/Fail	Comment
1	Click on View Records drop down menu on the sidebar.		View Record drop down menu is displayed to the MOHA-Emp by the system.		Pass	

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/Fail	Comment
2	Click on any View Record, like Doctor Record, Hospital Record, Clinic Record …, from the drop down menu.		System redirects to the specified view page.		Pass	
3	View for any doctor, hospital, clinic, medical stores and medicine industry records by their ids.		System lets the MOHA-Emp for viewing records by entering the ids.		Pass	

Post-condition:	The system must view all or specified record from the database.

Test Case #: TC009	**Test Case Name:** Register Outside Doctor

System: Health Guide (Medical Guidance Online System)

Designed by: Said Muqeemullah	**Design Date:**12/11/2019
Executed by: Said Muqeemullah	**Execution Date:**

10/02/2020

Test Case Description: A super admin should be able to register outside doctor in the system.

Pre-condition:	The super admin must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/Fail	Comment
1	Click on Doctors drop down menu on the sidebar.		Dotor drop down menu is displayed to the super admin by the system.		Pass	
2	Click on Register outside doctor in the drop down menu.		System redirects to the register outside doctor page.		Pass	

3	Enter first and last name to the registration form		System lets the super admin to enter first and last name.			
4	Enter specialization to the register form.		System lets the super admin to enter the specialization			
5	Enter country name to the register form.		System lets the super admin to enter the country name			
6	Enter Location to the register form.		System lets the super admin to enter location			
7	Enter email to the registration form		System lets the super admin to enter email			
8	Enter contact number to the registration form		System lets the super admin to enter contact number			
9	Click on Register Doctor button		If the specified doctor record register into database, the system redirects to the specified page with a message 'Register Successfully' to the super admin		Pass	

| | | | If the specified doctor record not register into database, the system redirects to the specified page with a message 'Not Register' to the super admin | | Pass | |

Post-condition:	The system must register/save specified doctor record into database.

Test Case #: TC010   **Test Case Name:** Approve Doctor Account

System: Health Guide (Medical Guidance Online System)

Designed by: Said Muqeemullah   **Design Date:**12/11/2019

Executed by: Said Muqeemullah   **Execution Date:** 10/02/2020

Test Case Description: A super admin should be able to approve doctor account in the system.

Pre-condition:	The super admin must be logged into their account on the system.

Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**
1	Click on Doctors drop down menu on the sidebar.		Dotor drop down menu is displayed to the super admin by the system.		Pass	
2	Click on Approve Doctor Accounts in the drop down menu.		System redirects to the approve doctor account page.		Pass	
3	Enter first and last name to the registration form		System lets the super admin to enter first and last name.			

4	Click on check username button of any unapproved doctor account		If the username is available in the system, the system redirects to the same page with a Send Email button for a specified doctor account		Pass	
			If the username is not available in the system, the system redirects to the same page with a Delete Account button for a specified doctor account.		Pass	
5	Click on Send Email button		If an email send to the specified doctor email, the system redirects to the same page with a message 'Email Send'		Pass	
			If an email not send to the specified doctor email account, the system redirects to the same page with a message 'Email Not Send'		Pass	

| 6 | Click on Delete Account button | | If the specified doctor account deleted from the database, the system redirects to the same page with a message 'Deleted Successfully!' | | Pass | |

| Post-condition: | The super admin must approve/delete doctor account in the system. |

Test Case #: TC011				**Test Case Name:** Register MOHA Emp
System: Health Guide (Medical Guidance Online System)				
Designed by: Said Muqeemullah			**Design Date:** 12/11/2019	
Executed by: Said Muqeemullah			**Execution Date:** 10/02/2020	
Test Case Description: A super admin should be able to register MOHA Employee in the system.				

| Pre-condition: | The super admin must be logged into their account on the system. |

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on MOHA Employee drop down menu on the sidebar.		MOHA Employee drop down menu is displayed to the super admin by the system.		Pass	
2	Click on Register MOHA in the drop down menu.		System redirects to the register moha page.		Pass	

3	Enter employee name to the register form		System lets the super admin to employee name			
4	Enter username to the register form		System lets the super admin to enter the username			
5	Enter password to the register form.		System lets the super admin to enter the password			
6	Enter Address to the register form.		System lets the super admin to enter address			
7	Enter contact to the registration form		System lets the super admin to enter contact			
8	Click on Register button		If record is registered into database, the system redirects to the same page with a message 'Registered Successfully'		Pass	
			If record is not registered into database, the system redirects to the same page with a message 'Not Registered'		Pass	
Post-condition:		The system must register/save MOHA employee record into database.				

Test Case #: TC012			Test Case Name: Delete Doctor Account			
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah			Design Date:12/11/2019			
Executed by: Said Muqeemullah			Execution Date: 10/02/2020			
Test Case Description: A super admin should be able to delete doctor account in the system.						
Pre-condition:	The super admin must be logged into their account on the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on Doctors drop down menu on the sidebar.		Doctors drop down menu is displayed to the super admin by the system.		Pass	
2	Click on Delete Doctor Account in the drop down menu.		System redirects to the delete doctor account page.		Pass	
3	Click on delete trash icon button for any doctor account in the list		If the specified doctor account is deleted from the database, the system redirects to the same page with a message 'Deleted Successfully'		Pass	
			If the specified doctor account isn't deleted from the database, the system redirects to the same page with a message 'Not Deleted'		Pass	

Post-condition:	The system must delete the doctor account from the database.

Test Case #: TC013				**Test Case Name:** Delete Patient Account			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				**Design Date:**12/11/2019			
Executed by: Said Muqeemullah				**Execution Date:** 10/02/2020			
Test Case Description: A super admin should be able to delete patient account in the system.							
Pre-condition:	The super admin must be logged into their account on the system.						
Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**	
1	Click on Patients button on the sidebar.		System redirects to the delete patient account paga		Pass		
2	Click on delete trash icon button for any patient account in the list		If the specified patient account is deleted from the database, the system redirects to the same page with a message 'Deleted Successfully'		Pass		
			If the specified doctor account isn't deleted from the database, the system redirects to the same page with a message 'Not Deleted'		Pass		
Post-condition:	The system must delete the patient account from the database.						

Test Case #: TC014			Test Case Name: Delete MOHA Account			
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah				Design Date:12/11/2019		
Executed by: Said Muqeemullah				Execution Date: 10/02/2020		
Test Case Description: A super admin should be able to delete MOHA employee account in the system.						
Pre-condition:	The super admin must be logged into their account on the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on MOHA Employee drop down menu on the sidebar.		MOHA Employee drop down menu is displayed to the super admin by the system.		Pass	
2	Click on Delete MOHA in the drop down menu.		System redirects to the delete moha account page.		Pass	
3	Click on delete trash icon button for any MOHA account in the list		If the specified MOHA account is deleted from the database, the system redirects to the same page with a message 'Deleted Successfully'		Pass	
			If the specified MOHA account isn't deleted from the database, the system redirects to the same page with a message 'Not Deleted'		Pass	
Post-condition:	The system must delete the MOHA Employee account from the database.					

Test Case #: TC015				Test Case Name: Check Appointments			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				Design Date:12/11/2019			
Executed by: Said Muqeemullah				Execution Date: 10/02/2020			
Test Case Description: A doctor should be able to check appointments in the system.							
Pre-condition:	The doctor must be logged into their account on the system.						
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment	
1	Click on Appointments button on the sidebar		System redirects to the doctor appointments page by the system.		Pass		
2	List of appointments showed		System will show the list of all appointments		Pass		
Post-condition:	The system must show all appointments to the doctor.						

Test Case #: TC016				Test Case Name: View Patients			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				Design Date:12/11/2019			
Executed by: Said Muqeemullah				Execution Date: 10/02/2020			
Test Case Description: A doctor should be able to view his patients in the system.							
Pre-condition:	The doctor must be logged into their account on the system.						
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment	
1	Click on My Patients button on the sidebar		System redirects to the doctor patients page by the system.		Pass		
2	List of patients showed		System will show the list of all patients		Pass		

Post-condition:	The system must show all his patients to the doctor.

Test Case #: TC016   **Test Case Name:** Set Schedule Timings

System: Health Guide (Medical Guidance Online System)

Designed by: Said Muqeemullah   **Design Date:** 12/11/2019

Executed by: Said Muqeemullah   **Execution Date:** 10/02/2020

Test Case Description: A doctor should be able to set his schedule timings in the system.

Pre-condition:	The doctor must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on Schedule Timings button on the sidebar		System redirects to the schedule timings page by the system.		Pass	
2	Click on Add Slot button for any days		Add Time Slots Modal is displayed to the doctor by the system		Pass	
3	Select start time from the option list		System lets the doctor to select start time			
4	Select end time from the option list		System lets the doctor to select end time			

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
5	Click on Save button		If the specified slot time is saved to the database, the system redirects to the same page with a message 'Successfully added'		Pass	
			If the specified slot time is not saved to the database, the system redirects to the same page with a message 'Not added'		Pass	

Post-condition:	The system must set timing slots for the doctor.

Test Case #: TC017	**Test Case Name:** Profile Setting
System: Health Guide (Medical Guidance Online System)	
Designed by: Said Muqeemullah	**Design Date:** 12/11/2019
Executed by: Said Muqeemullah	**Execution Date:**
10/02/2020	
Test Case Description: A user should be able to set their profile setting in the system.	

Pre-condition:	The user must be logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on Profile Setting button on the sidebar		System redirects to the profile setting page by the system.		Pass	
2	Click on Add Slot button for any days		Add Time Slots Modal is displayed to the doctor by the system		Pass	

3	Upload photo		System lets the user to upload their photo			
4	Set/Configure your profile setting		System lets the user to set/configure their profile setting			

5	Click on Save Changes button		If the specified profile setting is saved to the database, the system redirects to the same page with a message 'Profile Setting Saved Successfully'		Pass	
			If the specified profile setting is not saved to the database, the system redirects to the same page with a message 'Profile Setting Not Saved'		Pass	
Post-condition:	The system must set/configure profile setting for the user.					

Test Case #: TC018				Test Case Name: Change Password			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				**Design Date:**12/11/2019			
Executed by: Said Muqeemullah				**Execution Date:**			
10/02/2020							
Test Case Description: A user should be able to change their password in the system.							
Pre-condition:	The user must be logged into their account on the system.						
Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**	
1	Click on Change Password button on the sidebar		System redirects to the change password page by the system.		Pass		

2	Enter old password to the change password form		System lets the user to enter old password			
3	Enter new password to the change password form		System lets the user to enter new password			
4	Enter confirm password to the change password form		System lets the user to enter confirm password			
5	Click on Save Changes button		If the old password is wrong, the system redirects to the same page with a message 'Wrong Old Password'		Pass	
			If the new password and confirm password doesn't match, the system redirects to the same page with a message 'password doesn't match'		Pass	

| | | | If the new password is saved to the database, the system redirects to the same page with a message 'Password Changed', otherwise with a message 'Password Not Changed' | | Pass | |

| **Post-condition:** | The system must change password for the user. |

Test Case #: TC019				**Test Case Name:** Make an Appointment for registered users			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				**Design Date:** 12/11/2019			
Executed by: Said Muqeemullah				**Execution Date:** 10/02/2020			
Test Case Description: A registered user should be able to make an appointment with a doctor in the system.							

| **Pre-condition:** | The user must be logged into their account on the system. |

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Search for a doctor in the system.		System lets the user to search for a doctor			
2	Click on Book Appointment button		System redirects to the appointment page		Pass	
3	Select any time for the appointment		System redirects to the success appointment page		Pass	

| **Post-condition:** | The system must make an appointment for the register users. |

Test Case #: TC020   **Test Case Name:** Make an
Appointment for unregistered users (Visitors)

System: Health Guide (Medical Guidance Online System)

Designed by: Said Muqeemullah   **Design Date:**12/11/2019

Executed by: Said Muqeemullah   **Execution Date:**
10/02/2020

Test Case Description: An unregistered user should be able to make an appointment with a
doctor in the system.

Pre-condition:	The user must be not logged into their account on the system.

Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Search for a doctor in the system.		System lets the user to search for a doctor			
2	Click on Book Appointment button		System redirects to the appointment page		Pass	
3	Select any time for the appointment		System redirects to the visitor page		Pass	
4	Enter name to the personal information form		System lets the user to enter a name			
5	Enter age to the personal information		System lets the user to enter an age			
6	Select gender from the option list		System lets the user to select gender			
7	Enter phone number to the personal information		System lets the user to enter a phone number			
8	Click on Confirm button		System redirects to the success appointment page		Pass	

Post-condition:	The system must make an appointment for unregister users.

Test Case #: TC021 appointment			**Test Case Name:** Delete an			
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah				**Design Date:**12/11/2019		
Executed by: Said Muqeemullah				**Execution Date:** 10/02/2020		
Test Case Description: A registered user should be able to delete an appointment with a doctor in the system.						
Pre-condition:		The user must be logged into their account on the system.				
Step	**Test Steps/Action**	**Test Data**	**Expected System Response**	**Actual System Response**	**Pass/ Fail**	**Comment**
1	Click on upper right drop down menu		Drop down menu is displayed to the user by the system			
2	Click on Dashboard link		System redirects to the dashboard page		Pass	
3	Click on Delete button for any appointment in the list		If the specified appointment is deleted, the system redirects to the same page with a message 'Deleted Successfully'		Pass	
			If the specified appointment is not deleted, the system redirects to the same page with a message 'Not Deleted'		Pass	
Post-condition:		The system must delete an appointment for the register users.				

Test Case #: TC022			Test Case Name: Reschedule an appointment			
System: Health Guide (Medical Guidance Online System)						
Designed by: Said Muqeemullah				Design Date:12/11/2019		
Executed by: Said Muqeemullah				Execution Date: 10/02/2020		
Test Case Description: A registered user should be able to reschedule an appointment with a doctor in the system.						
Pre-condition:	The user must be logged into their account on the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment
1	Click on upper right drop down menu		Drop down menu is displayed to the user by the system			
2	Click on Dashboard link		System redirects to the dashboard page		Pass	
3	Click on Reschedule button for any appointment in the list		System redirects to the same page with a Reschedule Appointment modal		Pass	
4	Enter an appointment date to the form		System lets the user to enter an appointment date			
5	Enter an appointment time to the form		System lets the user to enter an appointment time			

6	Click on Reschedule button		If the specified appointment is rescheduled, the system redirects to the same page with a message 'Appointment Rescheduled Successfully!'		Pass	
			If the specified appointment is not rescheduled, the system redirects to the same page with a message 'Appointment Not Rescheduled!'		Pass	
Post-condition:		The system must reschedule an appointment for the register users.				

Test Case #: TC023				Test Case Name: Search			
System: Health Guide (Medical Guidance Online System)							
Designed by: Said Muqeemullah				Design Date:12/11/2019			
Executed by: Said Muqeemullah				Execution Date: 10/02/2020			
Test Case Description: A user should be able to search for doctors, hospitals, clinics, medical stores and medicine industries in the system.							
Pre-condition:		The user must locate in the home page of the system.					
Step	Test Steps/Action	Test Data	Expected System Response	Actual System Response	Pass/ Fail	Comment	
1	Click on Search text field						
2	Enter specifications for which you are searching		System lets the user for suggestions list while searching		Pass		
3	Click on search icon button		System redirects the user to the search page		Pass		
Post-condition:		The system must show all specified results to the user.					

4.2 TESTING

Software testing is a formal process performed by a specialized testing team that tests a software unit, multiple integrated software units, or the whole software package through programs running on a computer. All relevant tests will be performed in accordance with approved test procedures.

4.2.1 SOFTWARE VERIFICATION

Verification is the testing process that confirms the characteristics of software implementation. (We make products, okay?)

4.2.2 SOFTWARE VALIDATION

Validation is the process of testing that the software fully meets the expectations and needs of users. And the software should do what its users really want. (Are we building the right product?)

4.3 TESTING TYPES

There are two basic types of testing.

- **Manual Testing:** This type of test is performed without any equipment and every test is done manually.
- **Automated Testing:** Automated testing is performed with the help of a specific testing tool like selenium etc.

4.4 TESTING APPROACHES

Four types of testing approaches are:
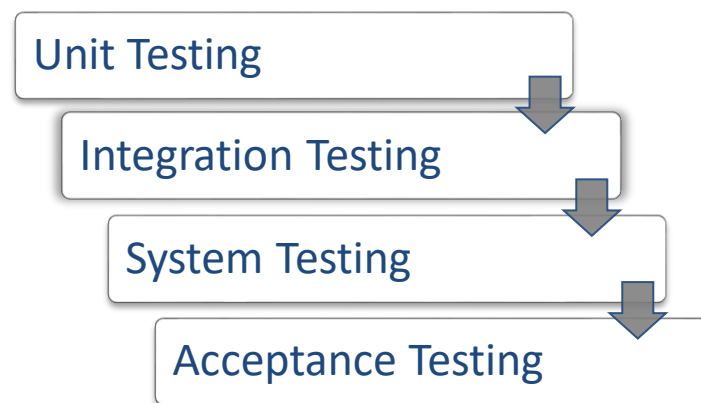
Figure 13-Testing Approaches

4.5 UNIT TESTING

Physical measurement is a software development process in which small measurements in an application, called modules, are self-evaluated and individualized to ensure that it works properly. The equipment is usually tested directly, but this can be done manually.

4.6 INTEGRATION TESTING

System measurements are the relationships between interactions with modules and other systems. It starts when two products are available. It ends when all interventions have been tried. The final form of the combination of all compounds is called the combined test.

4.7 SYSTEM TESTING

System testing is done to determine the functionality of the system as a whole. To do this, fill in the black box. Black box testing is based on receiving a user input and confirmation that the output is correct or not. Using hourly scores, the ability to use the system is also assessed, which ensures the ease of the users.

4.8 ACCEPTANCE TESTING

In acceptance testing, the system is tested with the intent to approve it. The main purpose of the approval test is to assess the system's compliance with the business requirements and to determine if the launch is approved.

5   CHAPTER 5- CONCLUSION:

This chapter crystallizes everything discussed above. It will provide a summary of all the topics covered in the report and will provide a synthesis of the key points. Different aspects like the problems faced during the development of the project, lessons learned and future work is discussed in this chapter and are made transparent to the reader.

5.1   PROBLEMS FACED AND LESSONS LEARNED:

5.1.1   Problems Faced:

- As our development team is new and it is introduced to the IT world for the first time which will help them in creating new opportunities for themselves.
- We have been faced with some slips during the data gathering, but due to that our system took more time to develop so we could not apply the integration test and we are sure about it that next time it won't happen as we have learned how to properly gather data.
- Secondly, we have faced some technological problems, as for we could not get ready to use the latest technologies as per given in our proposal.
- And the most important problems we have faced which were also small problems they were that sometimes PHPSORM not working smoothly or MYSQL get stacked but we handled it.
- As we did most of the project in our home country Afghanistan that's why the biggest problem we faced was the INTERNET ISSUE. During developing a project having a valid internet access makes a huge impact for the beginners like is in development time sometime needed help or guide from internet etc.
- One of the major problems for us was that we wanted to activate the GPS System in our system which will help the user to get the location easily but unfortunately the Google Maps have not done good work in the Afghanistan's Map and is really a mess. Like if you want to go to a place and you enter it the Google Maps guide you wrong because it has not been updated for so long as Afghanistan was in a war for the past few decades so it need to get the maps update in the Google Maps. That's why we moved on from that idea because we didn't want to waste our user's time.

5.1.2   Lessons Learned:

The following are the lessons we learned during our FYP period:

- The first thing we learned was time management. As, we worked, we learned how to prioritize our tasks and how to complete our tasks on time.
- The major lesson learned by the team was the division of the project into phases in order to save time and resources.
- We also learned about technologies and concepts related to our project domain during our project research. This helped us to gain expertise in these particular domains and helped us to learn new technologies and techniques.
- We also learned team management. We learned how to listen to the views of others and create an environment where everyone could share their ideas and work together in perfect harmony. We learned how to do the work with coordination. This helped us to achieve efficient and better results.

5.2 PROJECT SUMMARY:

There are many platforms available for the people of other well developed countries to take their health guidance online and find the best doctors and specialists near them and get their appointments as per they need. But there was no such a platform available for those patients and peoples who live in Afghanistan, that's why we have designed and developed HEALTH GUIDE for them.

- HEALTHGUIDE is an online platform, where the people who live in Afghanistan can find the best doctors near them and can also book their preferable doctors' appointment online while sitting at their own places. This platform will also help the Ministry of Public Health of Afghanistan by providing a data which will have all the information of doctors, clinics, medical stores and hospitals which are inside Afghanistan, so that no one will open the unregistered or non-approved hospitals, clinics and medical stores in Afghanistan. And if someone does it MOPH-Afghanistan will take the action on it and will ban it for the sake of people's lives and better health.
- HEALTHGUIDE is an online platform, where Afghan patient can also be facilitated in the neighboring countries to find the preferable doctor and book the appointment as they desire while they can also have the Address system there to find the doctor's clinic or hospital.
- HEALTHGUIDE is an online platform, which will help the Ministry of Public Health of Afghanistan to have an ordered and well organized data of the Registered Doctors, clinics, hospitals and medical stores.
- HEALTHGUIDE is an online platform, which will also help Afghan citizens to recognize the real and approved doctors in Afghanistan as there it is a big issue that one cannot recognize that which one is doctor for real as there many people who have very less

knowledge of medicines open their own clinic to act as a doctor which causes many innocent deaths.

5.3 FUTURE WORK:

The project can be a good source of income for the government of Afghanistan, as per our prior talks with the Ministry of Health and Public Rehabilitation they have told that, in case we make something professional then, they will give it the priority of their works to expand it. As we have added in IOS/Android app development in to our tools kit, the reason is that we are trying to deliver the IOS/Android app too within the project. In case we are not able to deliver, it will be the future expects of the project but since we are trying our best to deliver the app within the project than it will be very great.

As the project is completed we had a meeting with the officials of the Ministry of Public Health of Afghanistan they have told us that we will give it a shot and test the system and then as there are no bugs they are going to launch this system. We will have 3 benefits from this project the first one and the most important one is that through this project we are going to serve our nation and Secondly the Ministry of Public Health of Afghanistan also mentioned that if this system goes well they are going to hire us in their IT Department which is a huge achievement for us as we are the fresher and we got government jobs in such a good place to serve our nation and the last one is that they will pay us for our this project if it gets launched.

6 CHAPTER 6- REFERENCES:

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