

MediBooki Healthcare and Pneumonia Detection System

Requirement Analysis

Team Members:

- 1 • **Mohamed Ali GadElhak**
• **20201871**
- 2 • **Assem Mohamed Ahmed**
• **20201836**
- 3 • **Pola Osama Aziz**
• **20201823**
- 4 • **Ahmed Salah Mohammed**
• **20201803**
- 5 • **Ahmed Waleed Abdullah**
• **20201815**
- 6 • **Eslam Sabry Hassan**
• **20201849**

Table of Contents

Chapter 1: Identification of key stakeholders and End-Users:	5
a. Internal-Operational:	5
b. External-Operational:	7
c. Internal-Executive:	7
Chapter 2: Requirement Elicitation:	7
❖ Modules:	7
1. Administrator:	7
2. Hospital Manager:	8
3. Doctor:	8
4. Pharmacist:	9
5. Analytics specialist:	9
6. Radiology doctor:	9
7. Accountant:	9
8. Patient:	9
❖ Advantages required from the system:	10
Chapter 3: Requirement Specification:	10
a. Functional Requirements:	10
➤ Login Function: -	11
➤ View Profile: -	11
➤ Edit Profile: -	12
➤ Add Doctor: -	12
➤ View Doctor: -	13
➤ Delete Doctor: -	14
➤ Add Patient: -	15
➤ View Patient: -	15
➤ Delete Patient: -	16
➤ Add Analytics Specialist: -	17
➤ View Analytics Specialists: -	17
➤ Delete Analytics Specialist: -	18
➤ Add Pharmacist: -	19
➤ View Pharmacist: -	19
➤ Delete Pharmacist: -	20

➤ Add Radiology Doctor: -	21
➤ View Radiology Doctor: -	22
➤ Delete Radiology Doctor: -	22
➤ Add Accountant: -	23
➤ View Accountant: -	24
➤ Delete Accountant: -	24
➤ Accept Join Requests: -	25
➤ Reject Join Requests: -	26
➤ Add Specialization: -	27
➤ View Specialization	27
➤ Update Specialization	28
➤ Delete Specialization	28
➤ Add Ambulance: -	29
➤ View Ambulance	30
➤ Update Ambulance	30
➤ Delete Ambulance	31
➤ Add Insurance: -	31
➤ View Insurance	32
➤ Update Insurance	32
➤ Delete Insurance	33
➤ View medical Analysis	34
➤ View X-rays	34
➤ View Invoices	35
➤ Add Medicine: -	35
➤ Update Medicine: -	36
➤ Delete Medicine: -	37
➤ Upload Medical Analysis: -	37
➤ Upload X-Rays: -	38
➤ Add Admin: -	38
➤ View Admin: -	39
➤ Update Admin: -	39
➤ Delete Admin: -	40
➤ Add Role: -	41

➤ View Role: -	41
➤ Update Role: -	42
➤ Delete Role: -	42
➤ Add Invoice: -	43
➤ Request to join hospital: -	44
➤ Diagnose Patient: -	44
➤ Create Patient Prescription: -	45
➤ Add Service: -	45
➤ Update Service: -	46
➤ Delete Services: -	47
➤ View Services: -	47
➤ Add Appointments:	48
➤ Update Appointments:	48
➤ View Appointments:	49
➤ Delete Appointments:	50
➤ View Patient History: -	50
➤ Pneumonia Detection: -	51
➤ Register function:	51
➤ Book a doctor:	52
➤ View Doctors	52
➤ View medicines	53
➤ Buy medicines	54
➤ View Specialization:	54
➤ Call Emergency:	55
➤ Use medical Insurance:	55
➤ Talk to chatbot:	56
➤ View medical Analysis	56
➤ View X-rays	57
➤ View Invoices:-	57
b. Non- Functional Requirements:	58
➤ Usability & Humanity	58
➤ Performance.	58
➤ Maintainability & Support.	58

➤ Security	59
➤ Availability	59
➤ Software Quality	59
➤ Reusability	59

Chapter 1: Identification of key stakeholders and End-Users:

In this chapter we identify all persons who have an interest in the successful implementation of the system either they are inside or outside the organization. Stakeholders are consisting of 3 types: -

a. **Internal-Operational:**

persons within the organization and regularly interact with the system.

- **Doctor** is the person who examines and diagnoses the patient's condition, determines the optimal treatment, and follows up on his condition and treatment results. He also performs first aid for patients and injured people. He also trains and directs instructions to the nursing staff.
- **Analytics specialist** is the person who receives various samples of blood and other body fluids, marking and sorting and classifying blood samples. he also organizes and stores all chemicals, liquids and compressed gases in accordance with safety instructions. Designs and implements laboratory tests according to standard procedures and takes explanatory notes on the results. He also presents the results of tests and medical examinations to patients and providing specialized doctors with the necessary knowledge for treatment, taking into account the confidentiality of medical laboratory information related to patients.

- **Radiology doctor** is the person who makes sure that the x-ray examination is requested from the treating doctor and determines what part to be photographed and what conditions are required. He also informs patients or department nurses of all the necessary instructions for any examination, such as attending the patient without breakfast or taking a specific tablet. He also adjusts the x-ray tube and determines the x-ray package and the necessary imaging factors. For each patient's required situation, he chooses the appropriate film size and quality for each examination, puts the patient's letter and identification number on the clipboard, and prints the patient's name and examination date on the film, if possible, and his technical number, or write that on the x-ray film. He also develops the films from him or from other radiology assistants according to the order of the work schedule in the radiology department, prepares the chemicals for acidification and daily and periodic cleaning of the acidifying device, and then delivers the x-rays to the patient.
- **Accountant** is the person who Follow up the financial procedures of patients, whether cash payment patients or receivable patients, collecting them, settling the fund, and following up on closing outstanding bills. He also restricts cash payment patients' bills on the system, collects cash from cash payment patients, restricts health insurance patients' bills on the system, follows up on cash payment patients' bills, and follows up pending bills with doctors and administration. Also, organizes the patient's file upon discharge from the hospital and completes financial exit procedures. Also send invoices to public accounting and accounting insurance companies. Also participate in the annual or periodic inventory work in the hospital.
- **Pharmacist** is the person who Dispensing the patient's medication via the doctor's prescription only, as well as dispensing the medication through the health insurance. Educating the patient about the side effects of the drug, writing insurance forms, and communicating with insurance companies to verify that patients get the drugs they want. Also answer patients' inquiries about prescriptions for medicines. Also, organize the pharmacy and its medications in an effective and organized manner, and continuously monitor the expiration dates of the medications. Also, follow-up invoices for purchases and sales of medicines and medical supplies as well. Follow the correct means of storing medicines and try as much as possible to prevent problems of poor storage.
- **Administrator** He is the person responsible for the administrative things in the hospital such as organizing departments, appointing employees, adding departments and things like that.

b. External-Operational:

persons outside the organization and regularly interact with the system.

- **Patients** They are the clients who come to the hospital in order to receive the services they request.
- **Pharmaceutical suppliers** They are the people who supply all medicines to the hospital pharmacy as well as all medical supplies.

c. Internal-Executive:

persons within the organization and don't directly interact, but use the information or have financial interest.

- **hospital managers** They are the people who have financial interests and who take the highest decisions in the management of the hospital and follow up on all activities in the hospital.

Chapter 2: Requirement Elicitation:

In this chapter we capture and collect all requirements of stakeholders and end-users identified in chapter1.

❖ Modules:

The system comprises of **8** major modules with their sub-modules as follows:

1. Administrator:

- Login:** Admin can login to his personal account.
- View/Edit Profile:** Admin can see and edit his profile.
- Add/View/Delete Doctor:** Admin can Add, view doctor, or delete him from system.
- Add/View/Delete Patient:** Admin can Add, view patient, or delete him from system.
- Add/View/Delete Pharmacist:** Admin can Add, view pharmacist, or delete him from system.
- Add/View/Delete Analytics Specialist:** Admin can Add, view analytics specialist, or delete him from system.

- g. **Add/View/Delete Radiology Doctor:** Admin can Add, view radiology doctor, or delete him from system.
- h. **Add/View/Delete Accountant:** Admin can Add, view accountant, or delete him from system.
- i. **Accept/Reject Join Request:** Admin can accept or reject doctor join request from database.
- j. **Add/View/Update/Delete Specialization:** Admin can Add, view specialization, or update its information, or delete it from system.
- k. **Add/View/Update/Delete Ambulance:** Admin can Add, view ambulance, or update its information, or delete it from system.
- l. **Add/View/Update/Delete Insurance:** Admin can Add, view insurance, or update its information, or delete it from system.
- m. **View Appointments:** Admin can see all appointments detail from database.
- n. **View Medicines:** Admin can see all medicines detail from database.
- o. **View Medical Analysis:** Admin can see all medical analysis detail from database.
- p. **View X-Rays:** Admin can see all X-Rays detail from database.
- q. **View Invoices:** Admin can see all invoices detail from database.

2. Hospital Manager:

- a. **Login:** Hospital Manager can login to his personal account.
- b. **View/Edit Profile:** Hospital Manager can see and edit his profile.
- c. **Add/View/Update/Delete Administrator:** Hospital Manager can add, view administrator, or update his information, or delete him from system.
- d. **Add/View/Update/Delete Role:** Hospital Manager can add, view User Role, or update user's role, or delete this role from user.

3. Doctor:

- a. **Login:** Doctor can login to his personal account.
- b. **View/Edit Profile:** Doctor can see and edit his profile.
- c. **Request to Join Hospital:** Doctor can Request to join hospital team through 'Join Us' form from UI.
- d. **Diagnose patients:** Doctor can diagnose patients or transfer patient to radiology/analysis department when needed.
- e. **Create Patient Prescription:** Doctor can create patient prescription after diagnosing him.
- f. **Add/View/Update/Delete Service:** Doctor can Add, view services he will do, or update them, or delete them from system.
- g. **View Patient history:** Doctor can view patient history from dashboard.

- h. **Add/view/update/delete Appointments:** Doctor can Add, view appointments dates he will make, or update them, or delete them from system.
- i. **Use pneumonia detection service:** Doctor can upload patient's X-Ray to predict pneumonia.

4. Pharmacist:

- a. **Login:** Pharmacist can login to his personal account.
- b. **View/Edit Profile:** Pharmacist can see and edit his profile.
- c. **Add/View/Update/Delete Medicine:** Pharmacist can Add, view medicine, or update its information, or delete it from system.

5. Analytics specialist:

- a. **Login:** Analytics Specialist can login to his personal account.
- b. **View/Edit Profile:** Analytics Specialist can see and edit his profile.
- c. **Upload medical analysis:** Analytics Specialist can upload medical analysis through dashboard.

6. Radiology doctor:

- a. **Login:** Radiology Doctor can login to his personal account.
- b. **View/Edit Profile:** Radiology Doctor can see and edit his profile.
- c. **Upload X-Rays:** Radiology Doctor can upload X-Rays through dashboard.

7. Accountant:

- a. **Login:** Accountant can login to his personal account.
- b. **View/Edit Profile:** Accountant can see and edit his profile.
- c. **Add/View Invoice:** Accountant can add new invoice, or view its details.

8. Patient:

- a. **Login:** Patient can login to his personal account.
- b. **Register:** Patient can register to the system for the first time.
- c. **View/Edit Profile:** Patient can see and edit his profile.
- d. **Book a doctor:** Patient can make an appointment with doctor based on his services.
- e. **Use Medical Insurance:** Patient can use his medical insurance when dispensing a medicine.

- f. **Talk to Chatbot:** Patient can talk to a chatbot to guide him where to go.
- g. **View Medicines:** Patient can see all medicines detail to buy them online.
- h. **Buy Medicines:** Patient can buy medicines using digital wallet or cash on delivery.
- i. **Call Emergency:** Patient can call emergency services using phone number.
- j. **View Doctors:** Patient can see all doctors detail to book an appointment.
- k. **View Specializations:** Patient can see all specializations detail to reach doctors in specific specialization.

❖ **Advantages required from the system:**

- **Validation:** usage of validation and regex when logging into the system and registering for the first time.
- **Verification:** Email verification will be sent to patient when registered.
- **Roles & Permissions:** Each user has his own permission so based on user permission he can does any modification on specified tables in the database (insert, delete, update, etc.).
- **Response Time:** The system provides a fast acknowledgment.
- **User-Interface:** The user interface acknowledges fast as we are using single page application.
- **Back-Up:** The system offers efficiency for data backup.
- **System Tracking:** The system will track every mistake as well as keep a log of it.
- **Availability:** The system is available all the time.
- **Support Multilingual:** The system supports two languages (Arabic and English).
- **Support Multitenancy:** Instead of forcing you to change how you write your code, the system by default bootstraps tenancy automatically, in the background. Database connections are switched, caches are separated, file systems are prefixed.

Chapter 3: Requirement Specification:

In this chapter, we categorize requirements and group them to avoid confusion. We divided them into **2** categories:

a. Functional Requirements:

They describe what the system/software must do; functionality or services (a function is a useful capability provided by one or more components of a system). Therefore, they specify an action that a system must be able to perform.

➤ **Login Function: -**

- **Function:**
Login
- **Actors:**
Administrator, Hospital Manager, Doctor, Pharmacist, Analytics Specialist, Radiology doctor, Accountant, Patient
- **Priority:**
High
- **Description:**
When the actor login, he can manage the system based on his roles.
- **Inputs:**
The actor should write the email and password in the right way and correct data for a successful login
- **Outputs:**
The actor can manage many functions based on roles that assign to him
- **Requirements:**
Write the right data to can login
- **Pre-condition:**
The actor already has an account
- **Post-condition:**
The actor entered his account successfully

➤ **View Profile: -**

- **Function:**
View profile
- **Actors:**
Administrator, Hospital Manager, Doctor, Pharmacist, Analytics Specialist, Radiology doctor, Accountant, Patient
- **Priority:**
Medium
- **Description:**
An actor profile is a collection of settings and information associated with a user. It contains critical information that is used to identify an individual, such as their name, age, profile picture, email, and password
- **Inputs:**
His account must be verified on the site after logging in.

- **Outputs:**
View personal information successfully.
- **Requirements:**
Actor information must be added by logging in to the site before viewing his profile.
- **Pre-condition:**
The actor must be logged in to the system and has permission.
- **Post-condition:**
The actor can view this profile.

➤ **Edit Profile: -**

- **Function:**
Edit profile
- **Actors:**
Administrator, Hospital Manager, Doctor, Pharmacist, Analytics Specialist, Radiology doctor, Accountant, Patient
- **Priority:**
High
- **Description:**
An actor profile is a collection of settings and information associated with a user. It contains critical information that is used to identify an individual, such as their name, age, profile picture, email, and password, and can edit this information based on this role
- **Inputs:**
His account must be verified on the site after logging in.
- **Outputs:**
edit personal information successfully.
- **Requirements:**
Actor information must be added by logging in to the site before viewing his profile.
- **Pre-condition:**
The actor must be logged in to the system and has permission.
- **Post-condition:**
The actor can edit this profile.

➤ **Add Doctor: -**

- **Function:**
Add Doctor

- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the Doctor to the website database and give him an account to make the doctor can do many functions
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully;
- **Outputs:**
The administrator adds doctors to the system and makes accounts for the doctors and gives them some permeations.
- **Requirements:**
The data about a required doctor will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the doctor give his data to the administrator
- **Post-condition:**
The doctor is added and has an account.

➤ **View Doctor: -**

- **Function:**
View Doctor
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the administrator login, he can add the Doctor to the website database and give him an account to make the doctor can do many functions, and he can view doctor details like "see his appointments, personal information, and the number of patients who have examined him."
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking "view info".
- **Outputs:**

The administrator adds doctors to the system and makes accounts for the doctors and gives them some permissions, views doctors' details from the system.

- **Requirements:**

The data about a required doctor will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permission and the doctor give his data to the administrator

- **Post-condition:**

The administrator views details about all the doctors.

➤ **Delete Doctor: -**

- **Function:**

Delete Doctor

- **Actors:**

Administrator

- **Priority:**

High

- **Description:**

When the administrator login, he can add the Doctor to the website database and give him an account to make the doctor can do many functions, and he can delete the doctor.

- **Inputs:**

Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the doctor by clicking "delete doctor"

- **Outputs:**

The administrator adds doctors to the system and makes accounts for the doctors and gives them some permissions, and can delete doctors' details from the system

- **Requirements:**

The data about a required doctor will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permission and the doctor give his data to the administrator

- **Post-condition:**

The administrator deletes all the doctors.

➤ **Add Patient: -**

- **Function:**
Add Patient
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the patient to the website database and give him an account to make the patient can do many functions.
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully;
- **Outputs:**
The administrator adds patients to the system and makes accounts for the patients and gives them some permeations.
- **Requirements:**
The data about a required patient will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the patient give his data to the administrator
- **Post-condition:**
The patient is added and has an account.

➤ **View Patient: -**

- **Function:**
View Patient
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the administrator login, he can add the patient to the website database and give him an account to make the patient can do many functions, and he can view patient details like " Viewing the dates he booked, personal information".

- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking “view info”.
- **Outputs:**
The administrator adds patients to the system and makes accounts for the patients and gives them some permissions, views patients’ details from the system.
- **Requirements:**
The data about a required patient will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permission and the patient give his data to the administrator
- **Post-condition:**
The administrator views details about all the patients.

➤ **Delete Patient: -**

- **Function:**
Delete Patient
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the patient to the website database and give him an account to make the patient can do many functions, and he can delete the patient.
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the patient by clicking “delete patient”
- **Outputs:**
The administrator adds patients to the system and makes accounts for the patients and gives them some permissions, and deletes patients’ details from the system
- **Requirements:**
The data about a required patient will be added.
- **Pre-condition:**

The administrator had signed in to his profile (system), has permeation and the patient give his data to the administrator.

- **Post-condition:**

The administrator deletes all the patients.

➤ **Add Analytics Specialist: -**

- **Function:**

Add Analytics Specialist

- **Actors:**

Administrator

- **Priority:**

High

- **Description:**

When the administrator login, he can add the analytics specialist to the website database and give him an account to make the analytics specialist can do many functions.

- **Inputs:**

Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully;

- **Outputs:**

The administrator adds analytics specialists to the system and makes accounts for the analytics specialists and gives them some permeations.

- **Requirements:**

The data about a required analytics specialist will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permeation and the analytics specialists give his data to the administrator

- **Post-condition:**

The analytics specialist is added and has an account.

➤ **View Analytics Specialists: -**

- **Function:**

View analytics specialists

- **Actors:**

Administrator

- **Priority:**

Medium

- **Description:**
When the administrator login, he can add the analytics specialist to the website database and give him an account to make the analytics specialist can do many functions, and he can view analytics specialist details like " Viewing the personal information".
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking "view info".
- **Outputs:**
The administrator adds an analytics specialist to the system and makes accounts for the analytics specialists and gives them some permissions, views analytics specialist details from the system.
- **Requirements:**
The data about a required analytics specialist will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permission and the analytics specialist give his data to the administrator
- **Post-condition:**
The administrator views details about all the analytics specialists.

➤ **Delete Analytics Specialist: -**

- **Function:**
Delete analytics specialist
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the analytics specialist to the website database and give him an account to make the analytics specialist can do many functions, and he can delete the analytics specialist.
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the analytics specialist by clicking "delete pharmacist"
- **Outputs:**

The administrator adds analytics specialists to the system and makes accounts for the analytics specialists and gives them some permissions, and deletes the analytics specialist's details from the system

- **Requirements:**

The data about a required analytics specialist will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permission and the analytics specialist give his data to the administrator

- **Post-condition:**

The administrator deletes all the analytics specialists.

➤ **Add Pharmacist: -**

- **Function:**

Add Pharmacist

- **Actors:**

Administrator

- **Priority:**

High

- **Description:**

When the administrator login, he can add the Pharmacist to the website database and give him an account to make the Pharmacist can do many functions.

- **Inputs:**

Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully.

- **Outputs:**

The administrator adds Pharmacists to the system and makes accounts for the Pharmacists and gives them some permissions.

- **Requirements:**

The data about a required pharmacist will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permission and the Pharmacist give his data to the administrator.

- **Post-condition:**

The Pharmacist is added and has an account.

➤ **View Pharmacist: -**

- **Function:**

View Pharmacists

- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the administrator login, he can add the Pharmacist to the website database and give him an account to make the Pharmacist can do many functions, and he can view Pharmacist details like " Viewing the personal information".
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking "view info".
- **Outputs:**
The administrator adds Pharmacists to the system and makes accounts for the Pharmacists and gives them some permissions, views Pharmacist details from the system.
- **Requirements:**
The data about a required Pharmacist will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permission and the Pharmacist give his data to the administrator.
- **Post-condition:**
The administrator views details about all the pharmacists.

➤ **Delete Pharmacist: -**

- **Function:**
Delete Pharmacist
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the Pharmacist to the website database and give him an account to make the Pharmacist can do many functions, and he can delete the pharmacist.

- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the pharmacist by clicking “delete pharmacist”
- **Outputs:**
The administrator adds pharmacists to the system and makes accounts for the pharmacists and gives them some permissions, and deletes the pharmacist’s details from the system
- **Requirements:**
The data about a required Pharmacist will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permission and the pharmacist give his data to the administrator
- **Post-condition:**
The administrator deletes all the pharmacists.

➤ **Add Radiology Doctor: -**

- **Function:**
Add Radiology Doctor
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the Radiology Doctor to the website database and give him an account to make the Radiology Doctor can do many functions.
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully.
- **Outputs:**
The administrator adds Radiology Doctors to the system and makes accounts for the Radiology Doctors and gives them some permissions.
- **Requirements:**
The data about a required Radiology Doctor will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permission and the Radiology Doctor give his data to the administrator.

- **Post-condition:**
The Radiology Doctor is added and has an account.

➤ **View Radiology Doctor: -**

- **Function:**
View Radiology Doctor
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the administrator login, he can add the Radiology Doctor to the website database and give him an account to make the Radiology Doctor can do many functions, and he can view Radiology Doctor details like " Viewing the personal information".
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking "view info".
- **Outputs:**
The administrator adds Radiology Doctors to the system and makes accounts for the Radiology Doctors and gives them some permeations, views Radiology Doctors' details from the system.
- **Requirements:**
The data about a required Radiology Doctor will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the Radiology Doctor give his data to the administrator
- **Post-condition:**
The administrator views details about all the Radiology Doctors.

➤ **Delete Radiology Doctor: -**

- **Function:**
Delete Radiology Doctor
- **Actors:**
Administrator
- **Priority:**

High

- **Description:**

When the administrator login, he can add the Radiology Doctor to the website database and give him an account to make the Radiology Doctor can do many functions, and he can delete the Radiology Doctor.

- **Inputs:**

Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the radiology doctor by clicking “delete radiology doctor”

- **Outputs:**

The administrator adds radiology doctors to the system and makes accounts for the radiology doctors and gives them some permissions, and deletes the radiology doctor's details from the system

- **Requirements:**

The data about a required Radiology Doctor will be added.

- **Pre-condition:**

The administrator had signed in to his profile (system), has permission and the radiology doctor give his data to the administrator.

- **Post-condition:**

The administrator deletes all the radiology doctors.

➤ **Add Accountant: -**

- **Function:**

Add Accountant

- **Actors:**

Administrator

- **Priority:**

High

- **Description:**

When the administrator login, he can add the Accountant to the website database and give him an account to make the Accountant can do many functions.

- **Inputs:**

Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully.

- **Outputs:**

The administrator adds Accountants to the system and makes accounts for the Accountants and gives them some permissions.

- **Requirements:**
The data about a required Accountant will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the Accountant give his data to the administrator
- **Post-condition:**
The Accountant is added and has an account.

➤ **View Accountant: -**

- **Function:**
View Accountant
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the administrator login, he can add the Accountant to the website database and give him an account to make the Accountant can do many functions, and he can view Accountant details like " Viewing the personal information".
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully; can view the details by clicking "view info".
- **Outputs:**
The administrator adds Accountants to the system and makes accounts for the Accountants and gives them some permeations, views the Accountant' details from the system.
- **Requirements:**
The data about a required Accountant will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the Accountant give his data to the administrator
- **Post-condition:**
The administrator views details about all the Accountants.

➤ **Delete Accountant: -**

- **Function:**

Delete Accountant

- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the administrator login, he can add the Accountant to the website database and give him an account to make the Accountant can do many functions, and he can delete the Accountant.
- **Inputs:**
Admin should write first name, last name, age, id, username, and password in the right way and correct data to add successfully, and can delete the Accountant by clicking “delete Accountant”
- **Outputs:**
The administrator adds Accountants to the system and makes accounts for the Accountants and gives them some permeations, and deletes the Accountant’ details from the system
- **Requirements:**
The data about a required Accountant will be added.
- **Pre-condition:**
The administrator had signed in to his profile (system), has permeation and the radiology doctor give his data to the administrator.
- **Post-condition:**
The administrator deletes all the Accountants.

➤ **Accept Join Requests: -**

- **Function:**
admin accepts Join requests.
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
The system is available to accept 'doctors requests by the admin, and requests for the doctor to join the site to work on it.
- **Input:**
Click on the “accept” button on the requested doctor

- **Output:**
Admin accepts doctor join request.
- **Requirements:**
Central database to store all doctor join request information.
- **Pre-condition:**
The system is allowed to accept doctor join request.
The admin must be log in system.
The admin has permission to do this.
- **Post-condition:**
Admin accepts doctor join request.

➤ **Reject Join Requests: -**

- **Function:**
admin rejects Join requests.
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
The system is available to reject 'doctors requests by the admin, and requests for the doctor to join the site to work on it.
- **Input:**
Click on the “Reject” button on the requested doctor
- **Output:**
Admin rejects doctor join request
- **Requirements:**
Central database to store all doctor join request information.
- **Pre-condition:**
The system is allowed to reject doctor join request.
The admin must be log in system.
The admin has permission to do this.
- **Post-condition:**
Admin rejects doctor join request.

➤ **Add Specialization: -**

- **Function:**
Add Specialization
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the admin login, he can add a specialization to the website database, and make patient can access to view it
- **Inputs:**
Admin should write name, id, and some information about the specialization in the right way and correct data to add successfully
- **Outputs:**
Admin adds specializations to system and patient can access to view it
- **Requirements:**
The data about a required specialization will be added
- **Pre-condition:**
Admin had signed into his profile (system) and has a permeation
- **Post-condition:**
specialization is added.

➤ **View Specialization**

- **Function:**
View specialization
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the System User login, he can view specialization details like “name and some other info”
- **Inputs:**
System User should write the id or specialization name in the right way and correct data to be able to view the details and click “view info”
- **Outputs:**
System User views specializations details from the system

- **Requirements:**
The data about a required specialization that System User wants to view
- **Pre-condition:**
The system user had signed into his profile (system) and has a permeation
- **Post-condition:**
System User view details about all the specializations.

➤ **Update Specialization**

- **Function:**
Update specialization
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
Updating Specialization is a behavior done by an Administrator. When the Administrator updates a specialization, the old information of the specialization will be changed to new information.
- **Inputs:**
The Administrator chooses specialization to make updates on him.
- **Outputs:**
The specialization will be successfully updated.
- **Requirements:**
Only the administrator can update the specialization that exists in the system.
- **Pre-condition:**
The administrator must log in system and verified to update the specialization is existing in the system
- **Post-condition:**
The specialization will be updated in the database.

➤ **Delete Specialization**

- **Function:**
Delete specialization
- **Actors:**
Administrator
- **Priority:**
Medium

- **Description:**
The admin is available to delete a Specialization with his information
- **Inputs:**
The admin must enter the information about the Specialization system with everything the Specialization contains and with more accurate details.
- **Outputs:**
The specialization will be deleted successfully.
- **Requirements:**
Only the administrator can delete this existing specialization from the system.
- **Pre-condition:**
The administrator must log in system and verify to delete the specialization is existing in the system
- **Post-condition:**
The specialization will be deleted from the database.

➤ **Add Ambulance: -**

- **Function:**
Add Ambulance
- **Actors:**
Administrator
- **Priority:**
High
- **Description:**
When the admin login, he can add an Ambulance to the website database, and make patient can access to view it
- **Inputs:**
Admin should write name, id, and some information about the Ambulance in the right way and correct data to add successfully
- **Outputs:**
Admin adds Ambulances to the system and patients can access to view it
- **Requirements:**
The data about a required Ambulance will be added
- **Pre-condition:**
Admin had signed into his profile (system) and has a permeation
- **Post-condition:**
Ambulance is added.

➤ **View Ambulance**

- **Function:**
View Ambulance
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the System User login, he can view Ambulance details
- **Inputs:**
System User should write the id or Ambulance name in the right way and correct data to be able to view the details and click “view info”
- **Outputs:**
user views ambulances detail from the system
- **Requirements:**
The data about a required Ambulance that System wants to view
- **Pre-condition:**
The system user had signed into his profile (system) and has a permeation
- **Post-condition:**
System User view details about all the Ambulances.

➤ **Update Ambulance**

- **Function:**
Update ambulance
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
Updating an ambulance is a behavior done by an Administrator. When the Administrator updates an ambulance, the old information about the ambulance will be changed to new information.
- **Inputs:**
The Administrator chooses an ambulance to make updates on him.
- **Outputs:**
The specialization will be successfully updated.
- **Requirements:**

Only the administrator can update the ambulance that exists in the system.

- **Pre-condition:**

The administrator must log in system and verified to update the ambulance is existing in the system

- **Post-condition:**

The ambulance will be updated in the database.

➤ **Delete Ambulance**

- **Function:**

Delete ambulance

- **Actors:**

Administrator

- **Priority:**

Medium

- **Description:**

The admin is available to delete an ambulance with his information

- **Inputs:**

The admin must enter the information about the ambulance system with everything the ambulance contains and with more accurate details.

- **Outputs:**

The ambulance will be deleted successfully.

- **Requirements:**

Only the administrator can delete this existing ambulance from the system.

- **Pre-condition:**

The administrator must log in system and verify to delete the ambulance is existing in the system

- **Post-condition:**

The ambulance will be deleted from the database.

➤ **Add Insurance: -**

- **Function:**

Add Insurance

- **Actors:**

Administrator

- **Priority:**

High

- **Description:**

When the admin login, he can add Insurance to the website database, and make patient can access to view it

- **Inputs:**
Admin should write name, id, and some information about the Insurance in the right way and correct data to add successfully
- **Outputs:**
Admin adds Insurance to the system and patients can access to view it
- **Requirements:**
The data about a required Ambulance will be added
- **Pre-condition:**
Admin had signed into his profile (system) and has a permeation
- **Post-condition:**
Insurance is added.

➤ View Insurance

- **Function:**
View Insurance
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the System User login, he can view Insurance details
- **Inputs:**
System User should write the id of Insurance in the right way and correct data to be able to view the details and click “view info”
- **Outputs:**
user views Insurance detail from the system
- **Requirements:**
The data about required Insurance that System wants to view
- **Pre-condition:**
The system user had signed into his profile (system) and has a permeation
- **Post-condition:**
System User view details about all the Insurance.

➤ Update Insurance

- **Function:**

Update Insurance

- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
Updating Insurance is a behavior done by an Administrator. When the Administrator Update Insurance, the old information about the Insurance will be changed to new information.
- **Inputs:**
The Administrator chooses an Insurance to make updates on him.
- **Outputs:**
The Insurance will be successfully updated.
- **Requirements:**
Only the administrator can update the Insurance that exists in the system.
- **Pre-condition:**
The administrator must log in system and verify to update the Insurance is existing in the system
- **Post-condition:**
The Insurance will be updated in the database.

➤ **Delete Insurance**

- **Function:**
Delete Insurance
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
The admin is available to delete an Insurance with his information
- **Inputs:**
The admin must enter the information about the Insurance system with everything the Insurance contains and with more accurate details.
- **Outputs:**
The Insurance will be deleted successfully.
- **Requirements:**
Only the administrator can delete this existing Insurance from the system.

- **Pre-condition:**
The administrator must log in system and verify to delete the Insurance is existing in the system
- **Post-condition:**
The Insurance will be deleted from the database.

➤ **View medical Analysis**

- **Function:**
View medical analysis
- **Actors:**
Administrator
- **Priority:**
medium
- **Description:**
When the User login, he can view medical analysis details
- **Inputs:**
Users should write medical analysis in the right way and correct data to be able to view the details and click “view info”
- **Outputs:**
The user views medical analysis details from the system
- **Requirements:**
The data about required medical analysis that the user wants to view
- **Pre-condition:**
The user had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the medical analysis.

➤ **View X-rays**

- **Function:**
View x-rays
- **Actors:**
Administrator
- **Priority:**
medium
- **Description:**
When the User login, he can view the details of the x-ray
- **Inputs:**
User should write x-rays in the right way and correct data to be able to view the details and click “view info”

- **Outputs:**
The user views x-ray details from the system
- **Requirements:**
The data about required x-rays that the user wants to view
- **Pre-condition:**
The user had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the x-rays.

➤ **View Invoices**

- **Function:**
View invoices
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When the User login, he can view invoices details
- **Inputs:**
Users should write invoices in the right way and correct data to be able to view the details and click “view info”
- **Outputs:**
The user views invoices details from the system
- **Requirements:**
The data about required invoices that the user wants to view
- **Pre-condition:**
The user had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the invoices.

➤ **Add Medicine: -**

- **Function:**
Add Medicine
- **Actors:**
Pharmacist.
- **Priority:**
High

- **Description:**
Adding Medicine is behavior done by a pharmacist. When the pharmacist adds a medicine, He'll add details for the medicine such as the name and image etc.
- **Input:**
The pharmacist chooses category he wants to put the medicine in.
- **Output:**
The medicine will be successfully added.
- **Requirements:**
Only the pharmacist can add the medicine.
- **Pre-condition:**
The pharmacist must log in system and verified to add pharmacist.
- **Post-condition:**
The medicine will be saved to database.

➤ **Update Medicine: -**

- **Function:**
Update Medicine
- **Actors:**
Pharmacist.
- **Priority:**
medium
- **Description:**
Updating Medicine is behavior done by a pharmacist. When the pharmacist Update a medicine, the old information of medicine will be changed to new information.
- **Input:**
The pharmacist chooses medicine to make update on him.
- **Output:**
The medicine will be successfully updated.
- **Requirements:**
This medicine exists in system and only the pharmacist can update it.
- **Pre-condition:**
The pharmacist must log in system and verified to update pharmacist and medicine is exist in system.
- **Post-condition:**
The medicine will be updated in database.

➤ **Delete Medicine: -**

- **Function:**
Delete Medicine
- **Actors:**
Pharmacist.
- **Priority:**
high
- **Description:**
Delete Medicine is behavior done by a pharmacist. When the pharmacist delete a medicine, the medicine will be deleted from the medicine list.
- **Input:**
The pharmacist chooses medicine to delete.
- **Output:**
The medicine will be successfully deleted.
- **Requirements:**
This medicine exists in system and only the pharmacist can delete it.
- **Pre-condition:**
The pharmacist must log in system and verified to delete medicine and medicine is exist in system.
- **Post-condition:**
The medicine will be deleted from database.

➤ **Upload Medical Analysis: -**

- **Function:**
Upload medical analysis.
- **Actors:**
Analytics specialist.
- **Priority:**
medium
- **Description:**
After Analytics specialist finish medical analysis, he uploads result of medical analysis as file on system.
- **Input:**
The doctor must send prescription about what type of medical analysis that he does.
- **Output:**
The medical analysis result will be successfully Added.

- **Requirements:**
Only the Analytics specialist can Add the result of medical analysis.
- **Pre-condition:**
The Analytics specialist must log in system and type of medical analysis is exist.
- **Post-condition:**
The medical analysis result will be saved to database.

➤ **Upload X-Rays: -**

- **Function:**
Upload x-ray.
- **Actors:**
Radiology doctor.
- **Priority:**
medium
- **Description:**
After Radiology doctor finish x-ray, he uploads result of x-ray as file on system.
- **Input:**
The doctor must send prescription about what type of x-ray that he does.
- **Output:**
The x-ray result will be successfully Added.
- **Requirements:**
Only the Radiology doctor can Add the result of medical analysis.
- **Pre-condition:**
The Radiology doctor must log in system and type of x-ray is exist.
- **Post-condition:**
The x-ray result will be saved to database.

➤ **Add Admin: -**

- **Function:**
Add Admin.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager is available to add admin and describe his privileges.

- **Input:**
Enter Admin Information
- **Output:**
The Hospital Manager adds admin
- **Requirements:**
The Hospital Manager must add admin.
- **Pre-condition:**
The system is allowed to add admins
The Hospital Manager must be logged in the system
Admin hasn't been created yet.
- **Post-condition:**
Admin is added successfully.

➤ **View Admin: -**

- **Function:**
View Admin.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager can view the admins he created.
- **Input:**
Click on the list button.
- **Output:**
The Hospital Manager views list of admins.
- **Requirements:**
The Hospital Manager must view admins list.
- **Pre-condition:**
The system is allowed to view admins.
The Hospital Manager must be logged in the system.
Admin has been created.
- **Post-condition:**
Admin is viewed successfully.

➤ **Update Admin: -**

- **Function:**
Update Admin.

- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager can update admins he created.
- **Input:**
Admin ID
- **Output:**
The Hospital Manager updates admin.
- **Requirements:**
The Hospital Manager can update admin description and privileges.

- **Pre-condition:**
The system is allowed to update admin.
The Hospital Manager must be logged in the system.
Admin has been created.
- **Post-condition:**
Admin is updated successfully.

- **Delete Admin: -**
- **Function:**
Delete Admin.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager can delete admins he created.
- **Input:**
Admin ID.
- **Output:**
The Hospital Manager deletes admins.
- **Requirements:**
The Hospital Manager can delete admins.
- **Pre-condition:**
The system is allowed to delete roles.
The Hospital Manager must be logged in the system.
Admin have been created.

- **Post-condition:**
Admin is deleted successfully.

➤ **Add Role: -**

- **Function:**
Add Role.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager is available to add roles and describe the privilege for each user. The role is the validities that the user takes, whoever (Admin, Pharmacist, Doctor, Analytics Specialist, Radiology Doctor, Accountant or Patient) to perform certain tasks.
- **Input :**
The Hospital Manager create roles and describe privileges for each role
- **Output :**
The Hospital Manager adds the roles
- **Requirements :**
The Hospital Manager must add roles and describe their privileges
- **Pre-condition :**
The system is allowed to add roles
The Hospital Manager must be logged in the system
Role hasn't been created yet.
- **Post-condition:**
Role is created successfully.

➤ **View Role: -**

- **Function:**
View Role.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager can view roles he created.
- **Input:**

The Hospital Manager click on list button.

- **Output:**
The Hospital Manager view role page.
- **Requirements:**
The Hospital Manager can view roles and privileges.
- **Pre-condition:**
The system is allowed to view roles.
The Hospital Manager must be logged in the system.
Role has been created.
- **Post-condition:**
Role is viewed successfully.

➤ **Update Role: -**

- **Function:**
Update Role.
- **Actor:**
The Hospital Manager
- **Priority:**
Critical
- **Description:**
The Hospital Manager can update roles he created.
- **Input:**
Role name and Role ID
- **Output:**
The Hospital Manager updates role
- **Requirements:**
The Hospital Manager can update roles and privileges
- **Pre-condition:**
The system is allowed to update roles
The Hospital Manager must be logged in the system
Role has been created.
- **Post-condition:**
Role is updated successfully.

➤ **Delete Role: -**

- **Function:**
Delete Role.
- **Actor:**

The Hospital Manager

- **Priority:**
Critical
- **Description:**
The Hospital Manager can delete roles he created.
- **Input:**
Enter Role ID or Role Name
- **Output:**
The Hospital Manager deletes roles
- **Requirements:**
The Hospital Manager can delete roles
- **Pre-condition:**
The system is allowed to delete roles
The Hospital Manager must be logged in the system
Roles have been created.
- **Post-condition:**
Roles deleted successfully.

➤ **Add Invoice: -**

- **Function:**
Add Invoice.
- **Actor:**
Accountant
- **Priority:**
High
- **Description:**
Accountant must add invoices and manage the financial part of the hospital.
- **Input:**
Add Invoice details and for whom this invoice belong to.
- **Output:**
Accountant creates invoice
- **Requirements:**
Accountant should write the invoice details
- **Pre-condition:**
The system is allowed to create invoices
The Accountant must be logged in the system
Patients and Doctors have been created.
- **Post-condition:**
Invoice is added successfully.

➤ **Request to join hospital: -**

- **Function:**
Join doctor.
- **Actor:**
Doctor
- **Priority:**
Medium.
- **Description:**
When doctor register by filling his information, he/she will wait until Request will be Accepted then he/she can login into the system.
- **Input:**
Add doctor`s information.
- **Output:**
The Doctor`s information saved successfully in database.
- **Requirements:**
Doctor must write the right data can register.
- **Pre-condition:**
Doctor don`t have an account.
- **Post-condition:**
Doctor register successfully and can login into the system.

➤ **Diagnose Patient: -**

- **Function:**
Diagnose Patient.
- **Actor:**
Doctor
- **Priority:**
High
- **Description:**
Doctor must add patient diagnosis and can send them to the specialist.
- **Input:**
Add patient details and his/her diagnosis.
- **Output:**
The Doctor adds patient diagnosis
- **Requirements:**
Doctor must diagnose patient and write the diagnosis details , send patient to specialist if needed

- **Pre-condition:**
The system is allowed to add diagnosis
The Doctor must be logged in the system
Patient, Radiology Doctor, Analytics Specialist and Doctors have been created.
The Doctor should view patient history.
- **Post-condition:**
Diagnosis is added successfully.

➤ **Create Patient Prescription: -**

- **Function:**
Create prescription
- **Actor:**
Doctor
- **Priority:**
High
- **Description:**
Doctor must create prescription after diagnose patient.
- **Input:**
Add patient details, date and medicines needed.
- **Output:**
The Doctor adds prescription.
- **Requirements:**
Doctor must diagnose patient and write the diagnosis first and then write the prescription
- **Pre-condition:**
The system is allowed to add prescription
The Doctor must be logged in the system
Patients and Doctors have been created.
Patient Diagnosis has been created
- **Post-condition:**
Prescription is added successfully

➤ **Add Service: -**

- **Function:**
Add service
- **Actor:**
Doctor
- **Priority:**

Medium

- **Description:**
Doctor must add service. Service is what the doctor will do when the patient books him.
- **Input:**
Add service details.
- **Output:**
The Doctor adds service.
- **Requirements:**
Doctor must add service so patient books him
- **Pre-condition:**
The system is allowed to add service.
The Doctor must be logged in the system
The Doctor has been created.
- **Post-condition:**
Service is added successfully.

➤ **Update Service: -**

- **Function:**
Update service
- **Actor:**
Doctor
- **Priority:**
Medium
- **Description:**
Doctor can update the service which were added.
- **Input:**
Write service ID. Add service details want to be updated.
- **Output:**
The Doctor updates service.
- **Requirements:**
Doctor must has created service so he could update it.
- **Pre-condition:**
The system is allowed to update service.
The Doctor must be logged in the system
The Doctor has been created.
The Service has been created
- **Post-condition:**
Service is updated successfully.

➤ **Delete Services: -**

- **Function:**
Update services
- **Actor:**
Doctor
- **Priority:**
Medium
- **Description:**
Doctor can delete the added services.
- **Input:**
Write service ID. Delete service.
- **Output:**
The Doctor deletes the service.
- **Requirements:**
Doctor must has created service so he could delete it.
- **Pre-condition:**
The system is allowed to delete service.
The Doctor must be logged in the system
The Doctor has been created.
The Service has been created.
- **Post-condition:**
Service deleted successfully.

➤ **View Services: -**

- **Function:**
View services
- **Actor:**
Doctor
- **Priority:**
Medium
- **Description:**
Doctor can view services which were added.
- **Input:**
Click on button service list
- **Output:**
The Doctor's services view.
- **Requirements:**
Doctor must has created service so he could view it.

- **Pre-condition:**
The system is allowed to view service.
The Doctor must be logged in the system
The Doctor has been created.
The Service has been created.
- **Post-condition:**
Service is viewed successfully.

➤ **Add Appointments:**

- **Function:**
Add appointments
- **Actors:**
Doctor
- **Priority:**
Medium
- **Description:**
The doctor must add appointments. Appointments are the time that the patient books with the doctor for the examination to take place.
- **Inputs:**
Add appointments details.
- **Outputs:**
The Doctor adds appointments, user views appointment details from the system
- **Requirements:**
The doctor must add appointments so the patient books him
- **Pre-condition:**
The system is allowed to add appointments.
The Doctor must be logged in to the system
The Doctor has been created.
- **Post-condition:**
Appointments are added successfully.

➤ **Update Appointments:**

- **Function:**
Update appointments
- **Actors:**
Doctor
- **Priority:**
Medium

- **Description:**
Doctor can update the appointments which were added.
- **Inputs:**
Write appointments ID. Add appointments details want to be updated.
- **Outputs:**
The Doctor updates appointments.
- **Requirements:**
Doctor must has created appointments so he could update it.
- **Pre-condition:**
The system is allowed to update appointments.
The Doctor must be logged in the system
The Doctor has been created.
The appointments have been created
- **Post-condition:**
Appointments are updated successfully.

➤ **View Appointments:**

- **Function:**
View appointments
- **Actors:**
Doctor
- **Priority:**
Medium
- **Description:**
When User login, he can view appointment details like “name, date and some another info”
- **Inputs:**
User should write appointment id or date in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views appointment details from the system
- **Requirements:**
The data about required appointment that user wants to view and has permission
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the appointment

➤ **Delete Appointments:**

- **Function:**
Delete appointments
- **Actors:**
Doctor
- **Priority:**
Medium
- **Description:**
Doctor can delete the appointments which were added.
- **Inputs:**
Write appointments ID. Delete appointment.
- **Outputs:**
The Doctor deletes appointments.
- **Requirements:**
Doctor must have created appointments so he could delete it.
- **Pre-condition:**
The system is allowed to update appointments.
The Doctor must be logged in the system
The Doctor has been created.
The appointments have been created
- **Post-condition:**
Appointments are deleted successfully.

➤ **View Patient History: -**

- **Function:**
View Patient History
- **Actor:**
Doctor
- **Priority:**
High
- **Description:**
Doctor can view patient history to help doctor in diagnoses.
- **Input:**
Write patient ID.
- **Output:**
The medical history of patient.
- **Requirements:**
Doctor must view patient history to help in diagnosis.
- **Pre-condition:**

The system is allowed to view patient history.
The Doctor must be logged in the system
The Doctor and patient have been created.

- **Post-condition:**
List of patient's history is viewed successfully.

➤ **Pneumonia Detection: -**

- **Function:**
Detect Pneumonia
- **Actor:**
Doctor
- **Priority:**
High
- **Description:**
Doctor can upload patient lung's x-ray to help doctor in pneumonia diagnoses.
- **Input:**
upload lung's x-ray.
- **Output:**
The pneumonia Positive or Negative.
- **Requirements:**
The Radiology Specialist did the X-ray to the patient so it can be uploaded.
- **Pre-condition:**
The Doctor must be logged in the system.
The X-ray is existed and uploaded.
- **Post-condition:**
pneumonia diagnoses result and diagnoses x-ray saved in database.

➤ **Register function:**

- **Function:**
Register
- **Actors:**
Patient
- **Priority:**
High
- **Description:**
When user register by filling his information, he can login into the system, use its services in system and user's information is added to the database
- **Inputs:**
User should write first name, last name, phone number, user name (E-mail) and password in right way and correct data for successfully register

- **Outputs:**
User can login into system
- **Requirements:**
Write the right data to can register
- **Pre-condition:**
User don't have an account
- **Post-condition:**
User register successfully and can login into the system

➤ **Book a doctor:**

- **Function:**
Book a doctor
- **Actors:**
Patient
- **Priority:**
High
- **Description:**
When user login, he can book a doctor and make an appointment based on specialty
- **Inputs:**
User should choose the doctor who can help him and enter the date and time which suit the user to make the appointment
- **Outputs:**
User book a doctor and make an appointment
- **Requirements:**
Write the right data (doctor, date, time)
- **Pre-condition:**
Users have an account and login into the system
- **Post-condition:**
Appointment is made

➤ **View Doctors**

- **Function:**
View doctors
- **Actors:**
Patient, Administrator
- **Priority:**
Low

- **Description:**
When User login, he can filter and view doctor details like “name, specialty and some another info”
- **Inputs:**
User should write specialty or doctor name in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views doctor details from the system
- **Requirements:**
The data about required doctor that user wants to view
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
System User view details about all filtered the doctors

➤ **View medicines**

- **Function:**
View medicines
- **Actors:**
Patient, pharmacist
- **Priority:**
Medium
- **Description:**
When User login, he can filter and view medicine details like “name, benefits and some another info” and can buy it online by adding to card
- **Inputs:**
User should write benefit or medicine name in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views doctor details from the system
- **Requirements:**
The data about required medicine that user wants to view
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the medicines

➤ **Buy medicines**

- **Function:**
Buy medicines.
- **Actors:**
Patient.
- **Priority:**
high
- **Description:**
When Patient login, he can buy medicines using digital wallet or cash on delivery.
- **Inputs:**
Patient should choose the medicines to buy.
- **Outputs:**
The patient paid for the medicine and took it.
- **Requirements:**
The required medicine and the medicine price are available.
- **Pre-condition:**
Patient logged in into his system and has permission to buy and view medicines.
- **Post-condition:**
Patient took the medicine he wanted.

➤ **View Specialization:**

- **Function:**
View specialization
- **Actors:**
Patient, Administrator
- **Priority:**
medium
- **Description:**
When user login, he can filter and view specialization details like “name”
- **Inputs:**
User should write specialization name in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views specialization details from the system
- **Requirements:**
The data about required specialization that user wants to view
- **Pre-condition:**
User had login to his profile (system) and has permission
- **Post-condition:**

User view details about all filtered the specializations

➤ **Call Emergency:**

- **Function:**
Call emergency
- **Actors:**
Patient
- **Priority:**
High
- **Description:**
When user login, he can call emergency to help him
- **Inputs:**
User should write emergency number in right way to call it
- **Outputs:**
User is helped by emergency
- **Requirements:**
The number of emergency
- **Pre-condition:**
User had login to his profile (system) and has permission
- **Post-condition:**
User view number of emergency and call it

➤ **Use medical Insurance:**

- **Function:**
Use medical insurance
- **Actors:**
Patient
- **Priority:**
Medium
- **Description:**
When user login, he can use medical insurance to have a discount on price of medicines
- **Inputs:**
User should enter your medical insurance in right way
- **Outputs:**
User dispends the medicine from the system
- **Requirements:**
The data about required medical insurance that user wants to use

- **Pre-condition:**
User had login to his profile (system) and has permission
- **Post-condition:**
User dispends the medicine from the system

➤ **Talk to chatbot:**

- **Function:**
Talk of chatbot
- **Actors:**
Patient
- **Priority:**
Medium
- **Description:**
When user login, he can use medical insurance to have a discount on price of medicines
- **Inputs:**
User should open chatbot to be guided
- **Outputs:**
User dispends the medicine from the system
- **Requirements:**
Open the chatbot in right way and has permission
- **Pre-condition:**
User had login to his profile (system) and has permission
- **Post-condition:**
User talk to chatbot and be guided by it

➤ **View medical Analysis**

- **Function:**
View medical analysis
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When User login, he can view medical analysis details
- **Inputs:**
User should write medical analysis in right way and correct data to be able to view the details and click “view info”

- **Outputs:**
User views medical analysis details from the system
- **Requirements:**
The data about required medical analysis that user wants to view
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the medical analysis

➤ **View X-rays**

- **Function:**
View x-rays
- **Actors:**
Administrator
- **Priority:**
Medium
- **Description:**
When User login, he can view x-rays details
- **Inputs:**
User should write x-rays in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views x-rays details from the system
- **Requirements:**
The data about required x-rays that user wants to view
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the x-rays

➤ **View Invoices:-**

- **Function:**
View invoices
- **Actors:**
Administrator
- **Priority:**
Medium

- **Description:**
When User login, he can view invoices details
- **Inputs:**
User should write invoices in right way and correct data to be able to view the details and click “view info”
- **Outputs:**
User views invoices details from the system
- **Requirements:**
The data about required invoices that user wants to view
- **Pre-condition:**
User had login into his profile (system) and has permission
- **Post-condition:**
User view details about all filtered the invoices

b. Non- Functional Requirements:

It specifies system/software properties (such as reliability and safety), and constraints on the services or functions offered by the system (such as timing constraints, response-time), or constraints on the development process.

➤ **Usability & Humanity.**

- The product shall be easy to use on the first attempt by a member of the public without training.
- **Intuitiveness:** the interface is easy to learn and navigate; buttons, headings, and help/error messages are simple to understand

➤ **Performance.**

- **Response Time:** The system provides a fast acknowledgment.
- **User-Interface:** The user interface acknowledges fast as we are using single page application.

➤ **Maintainability & Support.**

- Expected changes, and the time allowed to make them.
- **Back-Up:** The system offers efficiency for data backup.
- **Errors:** The system must be support error handling and will track every mistake as well as keep a log of it.

➤ **Security.**

- **Logon ID:** - Any user who uses the system shall have a Logon ID and Password (Authentication).
- **Modification:** - Any modification (insert, delete, update) for the Database shall be synchronized and only by the role that user has in the ward (Authorization).

➤ **Availability.**

- The system shall be available all the time.

➤ **Software Quality.**

- Good quality of the framework= produces robust, bug free software which contains all necessary requirements Customer satisfaction.

➤ **Reusability.**

- Is part of the code going to be used elsewhere= produces simple and independent code modules that can be reused.