Contents

1. Introduction 2
1.1 Purpose 2
1.2 Intended Audience and Reading Suggestions 2
1.3 Product Scope 2
1.4 Architecture Diagram 2
2. Overall Description 3
2.1 Product Perspective 3
2.2 Product Functions 3
2.3 Design and Implementation Constraints 4
3. System Features 5
3.1 Front Desk Staff Management 5
3.1.1 Description 5
3.1.2 Use Case – Front Desk User 6
3.2 Medical Staff 6
3.2.1 Description 6
3.2.2 Use Case – Medical Staff 7
3.3 Pharmacist 8
3.3.1 Description 8
3.3.2 Use Case – Pharmacist 8
3.4 Laboratory 9
3.4.1 Description 9
3.4.2 Use Case – Lab Technician 9
3.5 Authentication 9
4. ER-Diagram 10
5. User Interface 11
5.1 Front Desk UI 11
5.2 Medical Staff UI 12
5.3 Pharmacist Screen 14
5.4 Lab Technician Screen 15

1. Introduction

1.1 Purpose

The Software System is going to be used as a Healthcare Management Automated System which will help the staff of an organization to effectively maintain the appointments, patient details, doctor details at the initial level. It also adds other extended functionalities like pharmacy management.

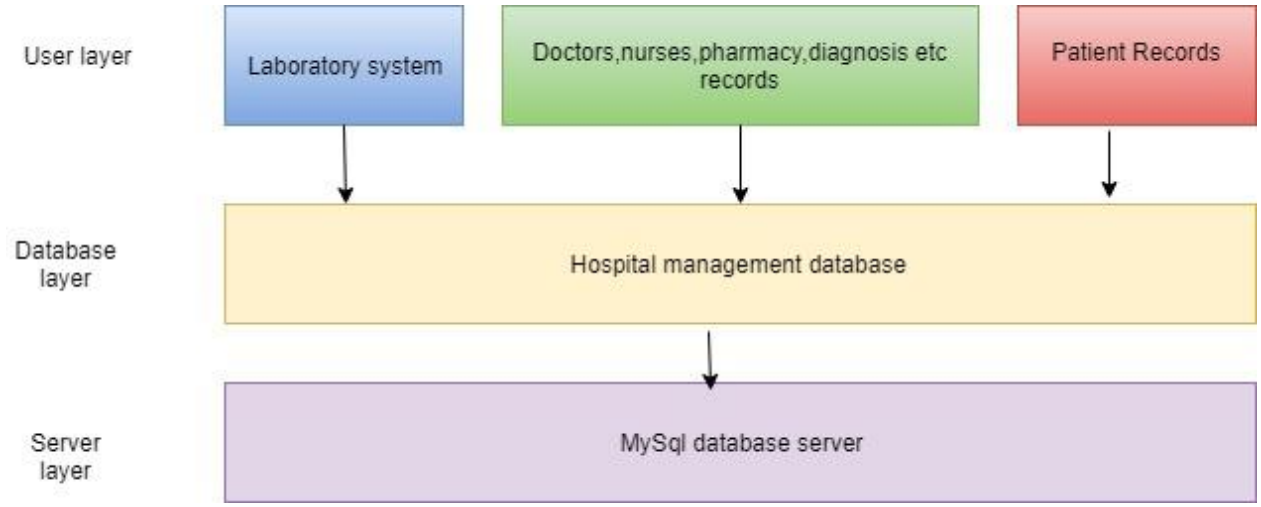
1.2 Intended Audience and Reading Suggestions

The document serves as the baseline for Developers who will develop the application.

1.3 Product Scope

The scope of the Product is limited to 'management' of Patient Records, Pharmaceutical supplies and bed availability for the clinic. The data will be stored for future usage for disease diagnosis as well as better patient treatments.

1.4 Architecture Diagram

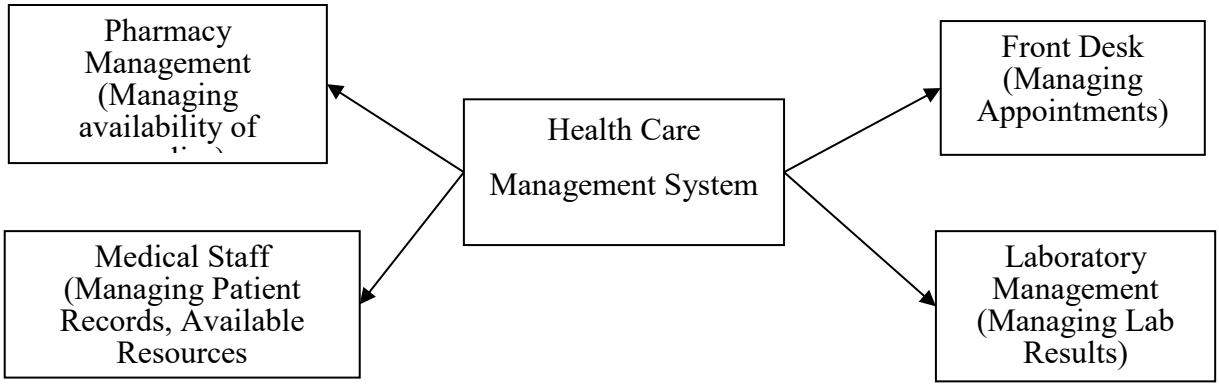


2. Overall Description

2.1 Product Perspective

The HealthCare Management System manages the staff, Patients and pharmaceutical details. It basically removes day to day efforts of maintaining appointments. It also reduces risks by managing patient medical history as well as managing pharmacy supplies.

Basically, the system handles all the modules shown in the diagram below.



2.2 Product Functions

The Product can be used by 4 different Users:

1. Front End Staff
2. Medical Staff
3. Pharmacist
4. Lab Technician

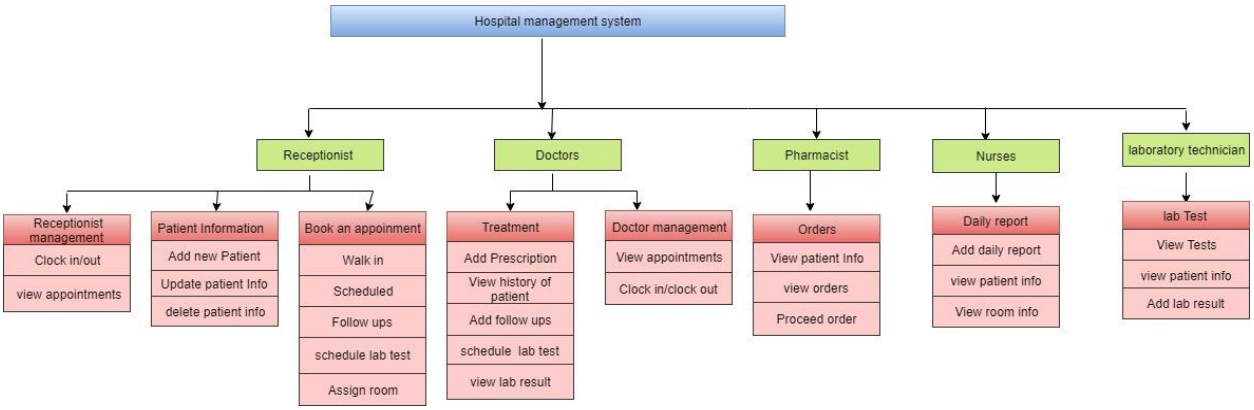
The detailed diagram and description is as shown in the below figure

The Front-Desk Staff will manage the Appointments that come in each day, as well as future appointments.

The Pharmacist will be responsible for managing the pharmacy supplies, preorder supplies in case the pharmacy is low on supplies, manage patient data and previously prescribed medications and allocated doctors.

The Medical Staff can be as two basic classes:

1. Nurses
2. Doctors



The main responsibility for nurses will be to check bed availabilities, patient drug schedules. They can view appointments and can assign available doctors for walk in patients. They can also view patient's medical history and drugs prescribed.

The Doctors will be able to see the medical History and prescribe drugs based on patient's requirements. They can also mark a patient for follow up in case he requires one, and the front desk can assign a follow up date and time while making a follow up appointment.

The Lab Technician takes care of patient lab tests and results.

2.3 Design and Implementation Constraints

Database System Used: MySQL
Frameworks Used: Django Framework 2.0
Implementation Language: Python 3.6

3. System Features

As illustrated in the section 2.1 the system has 4 major modules and 1 general module:

1. Medical Staff Management
2. Pharmacy Management
3. Front Desk Staff Management
4. Authentication
5. Laboratory

3.1 Front Desk Staff Management

3.1.1 Description

This module will maintain the patient appointment records. The Patient appointments are categorized into 3 different sections.

1. Walk-ins
2. Scheduled
3. Follow-ups

3.1.1.1 Walk-ins

This type of patients are ad-hoc patients who did not book an appointment (For instance accidents, emergencies etc.). The appointment for these types of patients requires the system to assign a doctor of a specific specialization to the patient. The priority of these patients in most cases is high. Insurance field is mandatory for this type of appointments.

3.1.1.2 Scheduled

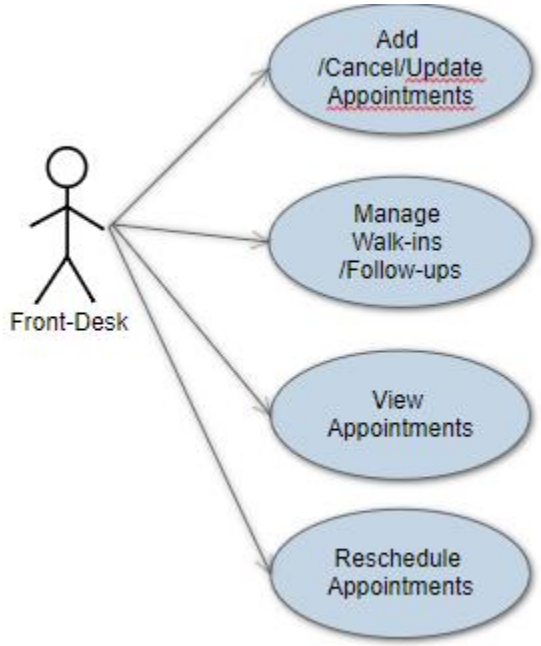
The doctors assigned to these appointments should be assigned according to specialization and availability. Insurance field is mandatory for this type of appointments.

3.1.1.3 Follow-ups

Whenever a doctor calls for a follow-up appointment, the doctor should be able to mark the patient as a follow-up patient. The front desk assistant should then schedule a follow-up appointment for the patient. Insurance Details are not mandatory for this type of appointment.

For a scheduled/follow-up appointment, if a doctor is not available, then the system should search for a doctor with the similar specialization and assign it to the patient. If no doctors are available, the patient should be informed about the cancellation of the appointment.

3.1.2 Use Case – Front Desk User



3.2 Medical Staff

3.2.1 Description

This module consists of the two types of users:

1. Doctors
2. Nurses

Whenever an appointment is scheduled, the appointment details are visible to these two users. Depending on their role, part of the module is visible or editable to the users.

3.2.1.1 Doctors

Upon login doctors will be able to view all the appointments that are available to them on that day. There will also be a section where he can see the future appointments he has.
On clicking of the appointment, he can check the patient history, previous diagnosis and previous prescriptions, if he is an existing patient. If not, there will be no such details.
On completion of the appointment,

1. he can mark whether the patients should have a follow-up appointment or not.
2. He should mark as appointment completed.
3. He should enter the prescribed
4. He should be able to add lab tests required and save it to patients History

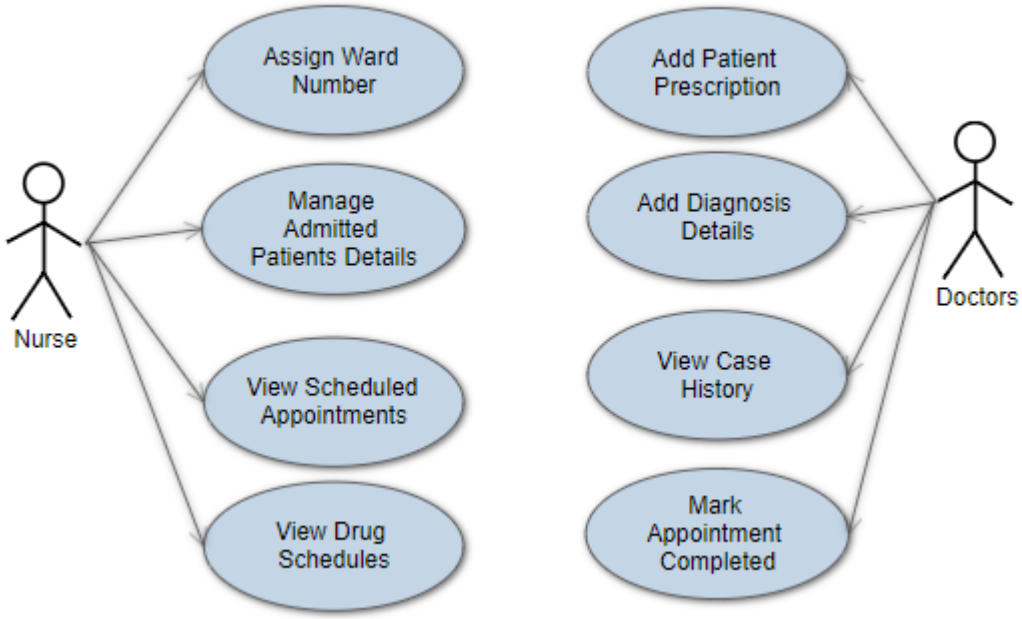
3.2.1.2 Nurses

Upon login, the nurses can view 2 things:

1. All the scheduled appointments
2. All the available beds and occupied bed Details

Nurses should not be allowed to edit patient's prescriptions. They will have a read-only view of patient's details.
Nurses can allocate beds to the patients. They can add new patients and the bed number they have occupied, they can update and delete those details.
Nurses can also view the drugs schedule of admitted patients.

3.2.2 Use Case – Medical Staff



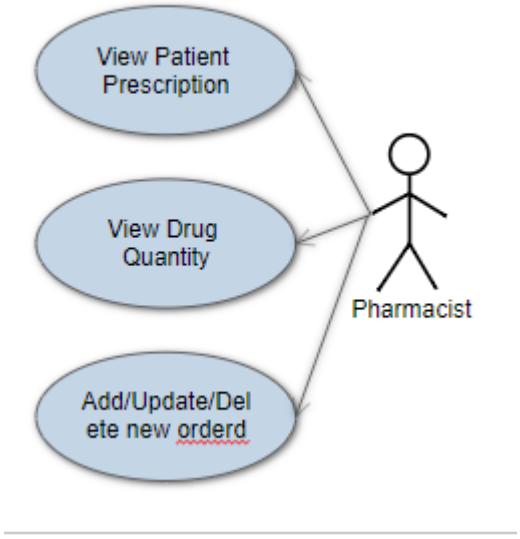
3.3 Pharmacist

3.3.1 Description

The prescription is forwarded to the Pharmacist. Upon login, he will view the completed appointments list and the prescription if required. Once the prescribed drugs are sold to the patient, he can delete that patient from his list of completed appointments.

He can also view available medicines in the pharmacy and its details. Whenever the count of a medication reaches to 50, the pharmacist should get an alert to order more of the medications. Upon ordering, the system adds the ordered quantity to existing, and the alerts are removed.

3.3.2 Use Case – Pharmacist

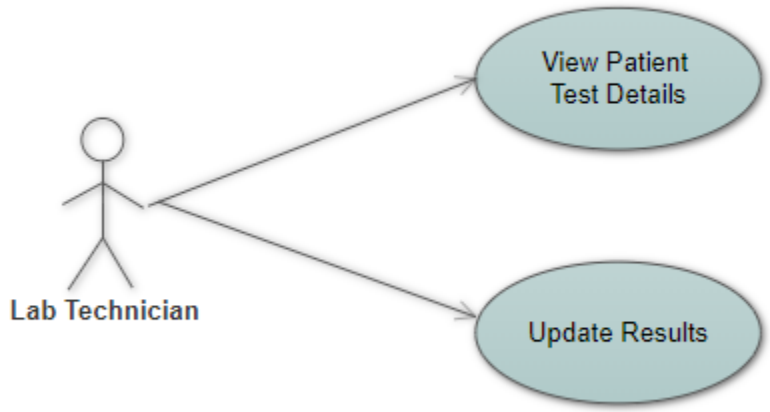


3.4 Laboratory

3.4.1 Description

The Lab technician can view all the patients that require lab tests and appointments have been made for the same. The results field can be **Completed, Pending, Started**. Whenever a patient comes for an appointment, the results field is changed to started.
If tests are completed and results are there, we can change to completed. If the value for results is completed, we can remove the patient record from the list.
If the results are not there, he can change the status of results to Pending.Record is not deleted until results are in Completed State.

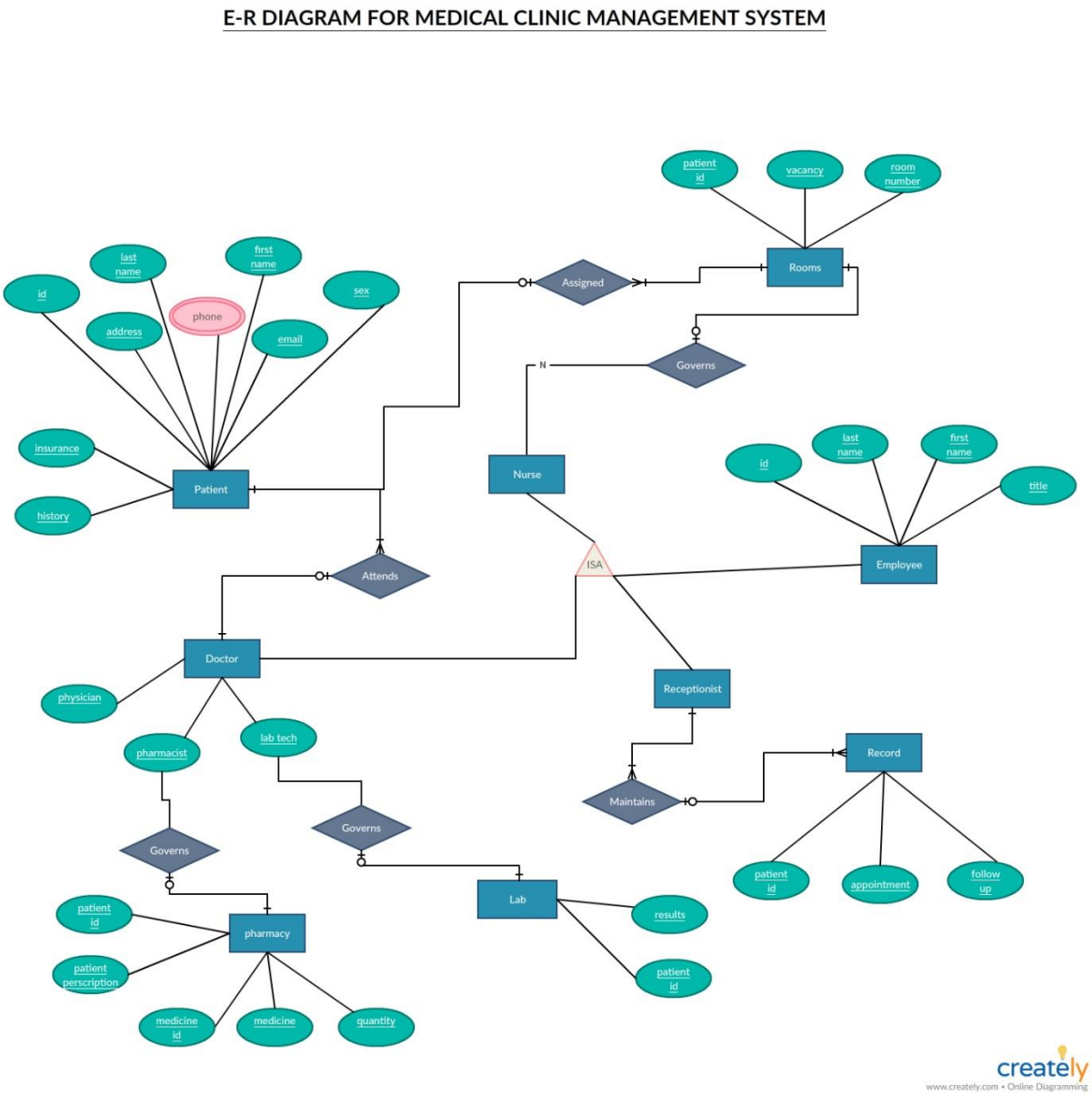
3.4.2 Use Case – Lab Technician



3.5 Authentication

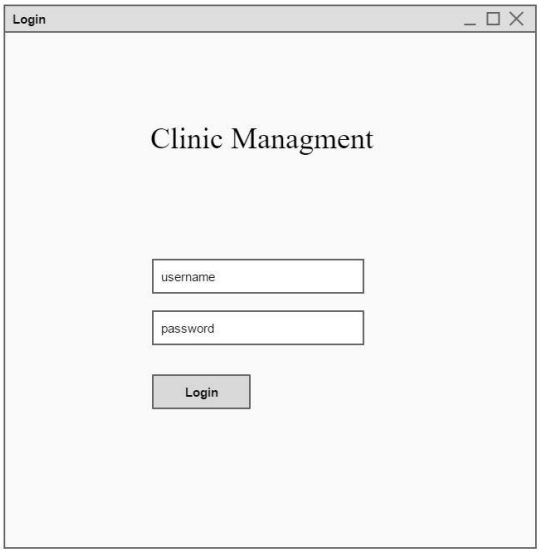
The product logins in with 3 kinds of users as mentioned in section 2.2. Each user has different views and different functionalities as explained in the previous section 3.

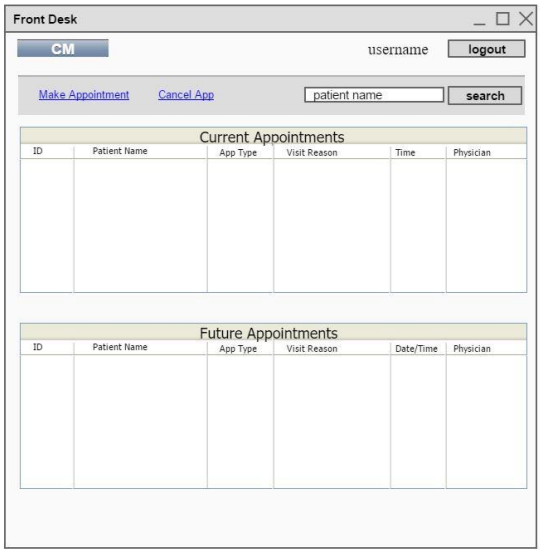
4. ER-Diagram

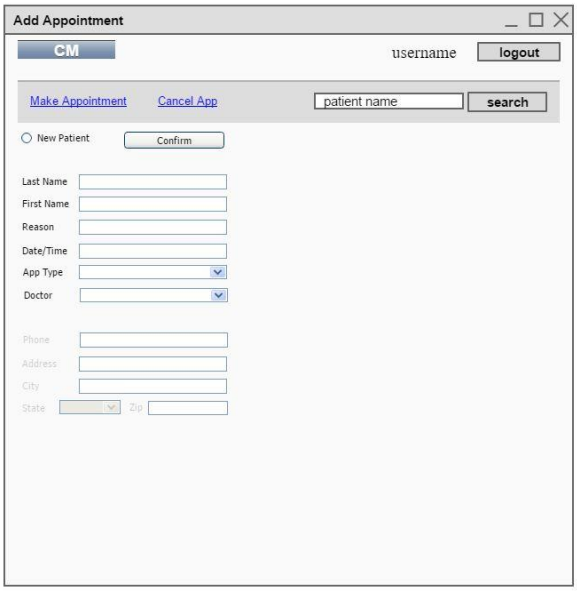

E-R DIAGRAM FOR MEDICAL CLINIC MANAGEMENT SYSTEM
patient id
vacancy
room number
Rooms
Assigned
last name
first name
id
sex
phone
address
email
Governs
N
insurance
Patient
Nurse
id
last name
first name
title
history
ISA
Employee
Attends
Doctor
physician
Receptionist
pharmacist
lab tech
Record
Maintains
Governs
Governs
Lab
patient id
appointment
follow up
results
patient id
pharmacy
patient id
patient perscription
medicine id
medicine
quantity
creately
www.creately.com • Online Diagramming

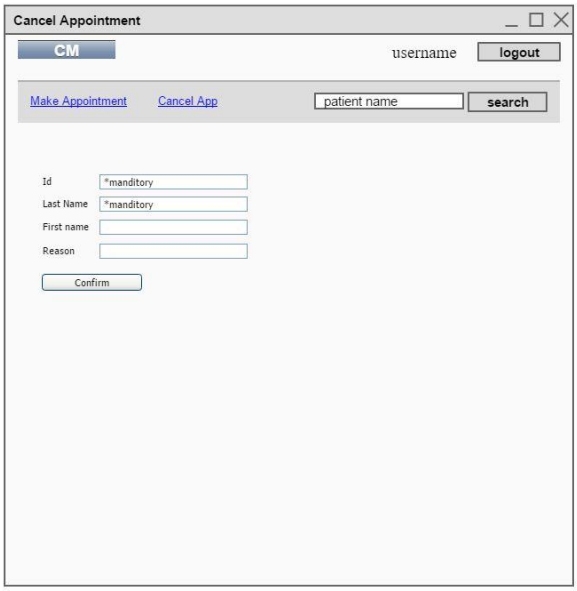
5. User Interface

5.1 Front Desk UI

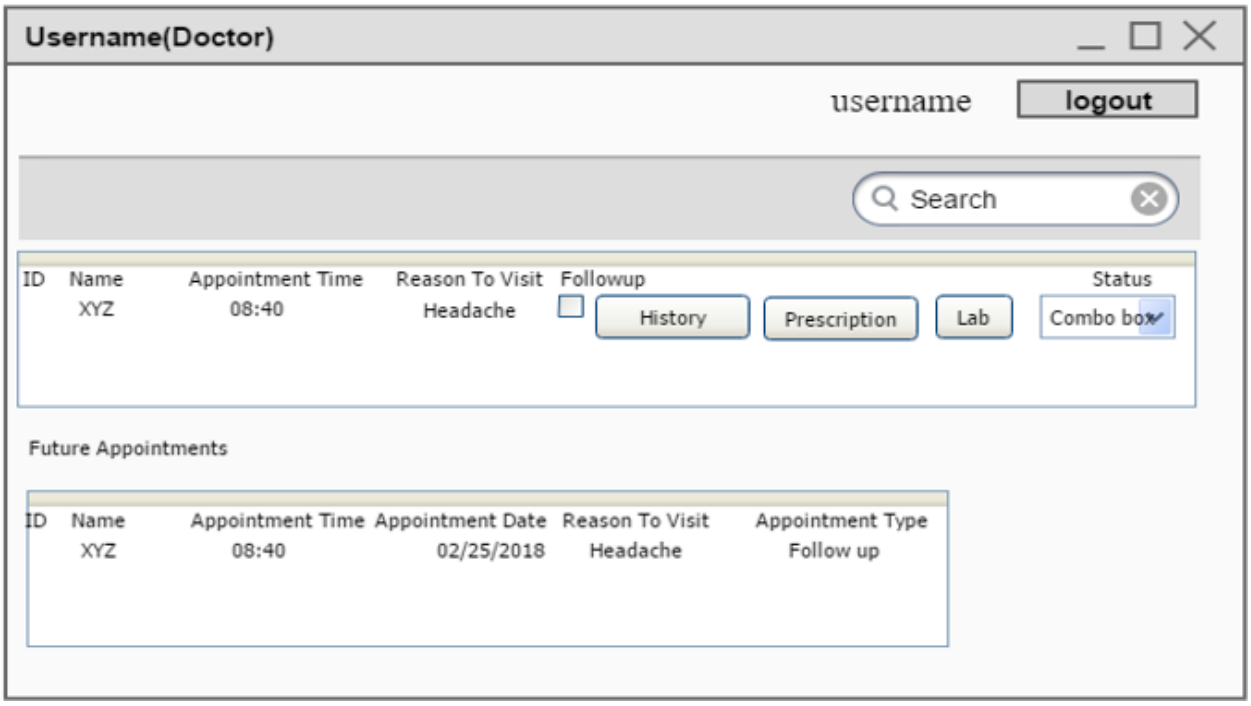


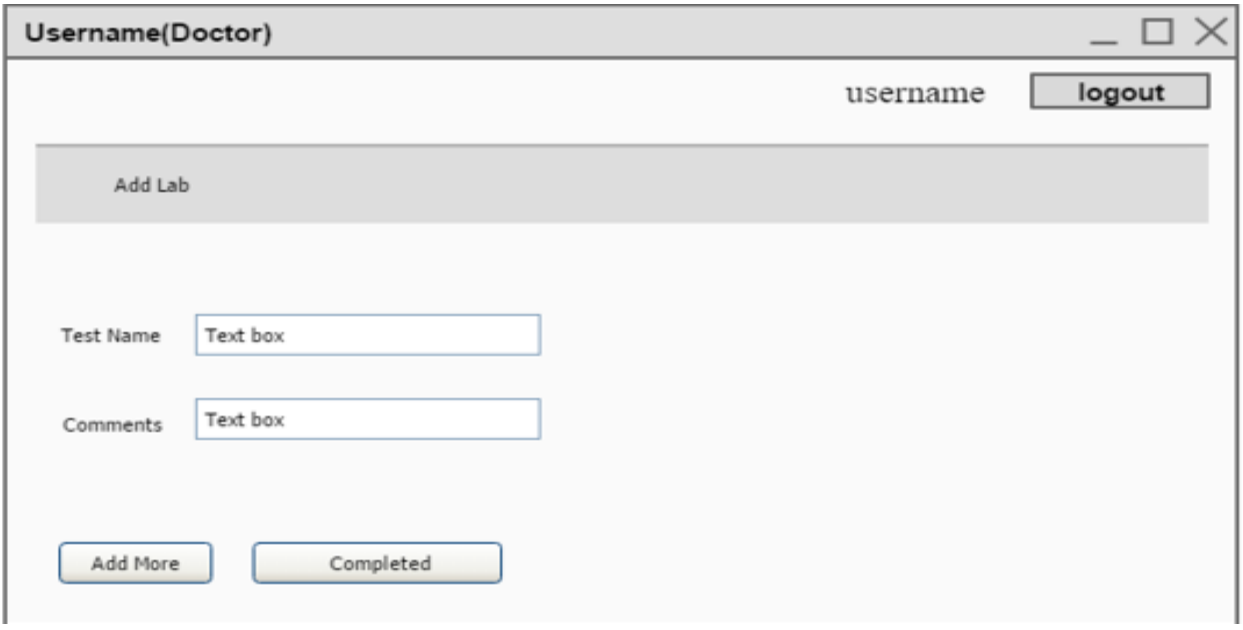


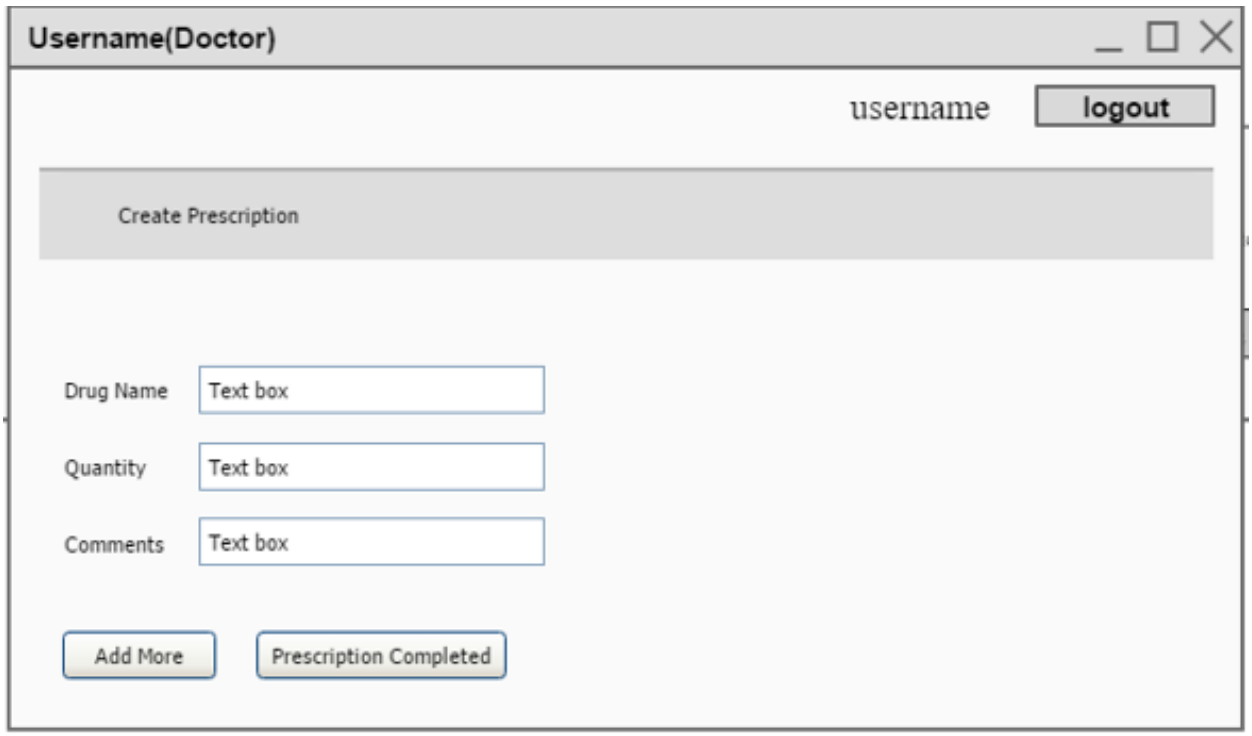


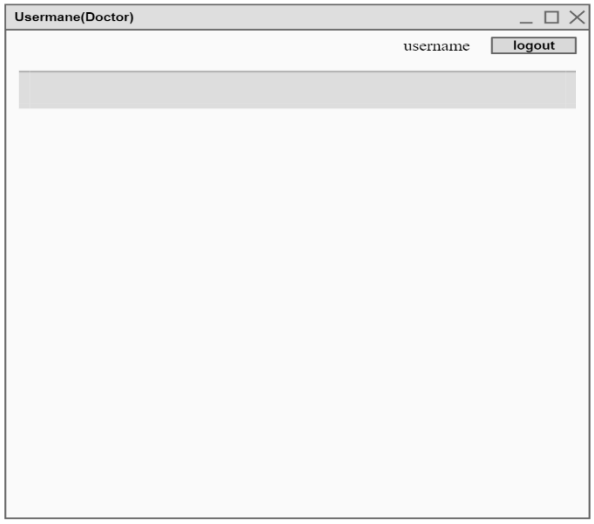


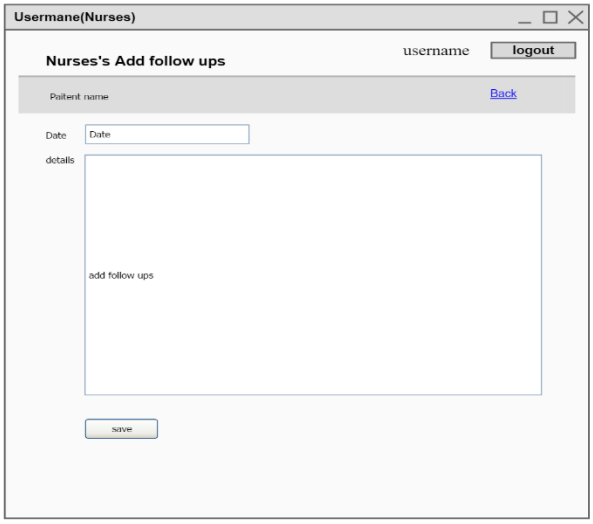
5.2 Medical Staff UI

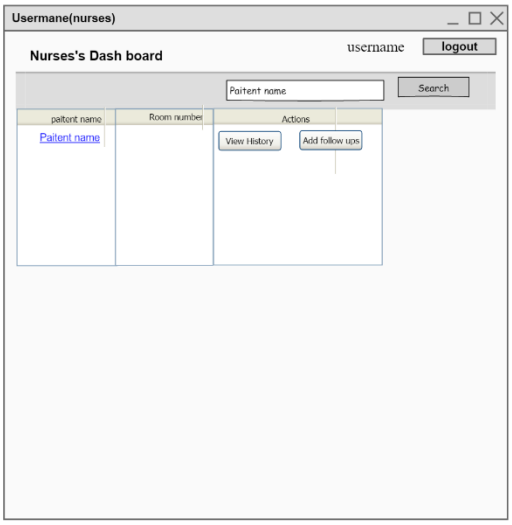


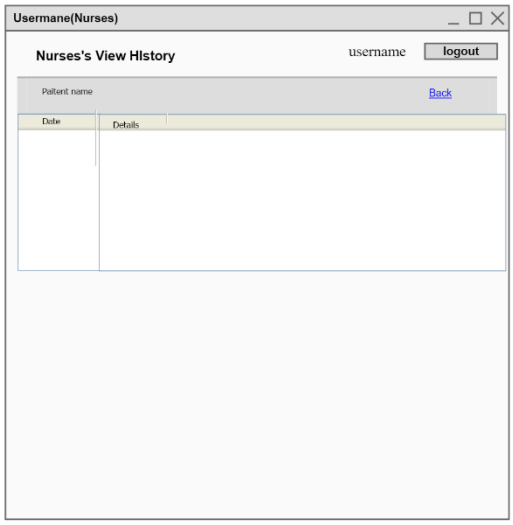



Username(Doctor)
username
logout
Create Prescription
Drug Name
Text box
Quantity
Text box
Comments
Text box
Add More
Prescription Completed


Usermane(Doctor)
username
logout


Usermane(Nurses)
Nurses's Add follow ups
username
logout
Paitent name
Back
Date
Date
details
add follow ups
save





5.3 Pharmacist Screen

5.4 Lab Technician Screen