

Clinic Management System

Project Divided into 3 phases

1. Phase 1: Console Application,c#

1. Modules to be done

1. User Login and Log File creation
2. Patient Management
3. Medicine Management
4. Test Management
5. Staff Management

Phase 1: Console Application with Database and Log

Standards to be followed:

3 layered application architecture - View layer, Business Logic layer, Model and Data layers

Follow MS coding standards

All needed validations to be done

Screen 1- Login wireframe and console UI screenshot

```
Welcome to CMS
Please Login
-----
Enter User Name:
Enter Password:
```

Screen 2- After Login wireframe and console UI screenshot

```
Clinical Management System
-----
Welcome Praveena

What would you like to do?
1. Manage Patient
2. View Log
3. Logout and exit
Enter your choice
```

Use case: 1

Prepared
by

Use case	User Logs in
Pre condition	Username and password exists The role 'admin' exists
Normal Flow	<ol style="list-style-type: none"> 1. User opens the application and sees the Home page of CMS 2. System asks for username and user gives username 3. System asks for password and user gives in password 4. If the username and password is correct, the user is taken to the welcome page with a menu. User chooses any menu option
Alternate Flow	<ol style="list-style-type: none"> 1. If the username or password is wrong, the system gives the message "Wrong username or password". 2. User is prompted again to give the username and password. 3. After three wrong attempts, the application closes
Input	<ol style="list-style-type: none"> 1. Username 2. password
Validations	<ol style="list-style-type: none"> 1. Username should be six characters long 2. Password should be six characters long 3. To login, username and password combination should be right and the role should be admin 4. Only three consecutive wrong attempts are allowed. On the third wrong attempt the activity is written to log text file and the application closes

Screen 3- Manage Patient wireframe and console UI screenshot

```

                                CMS Manage Patient
                                -----
What would you like to do?

1. Add Patient
2. See List of Patients
3. Search and View patient
4. Go to Main Menu

Enter your choice

```

Use case: 2	
Prepared	

by	
Use case	Receptionist manages patient - List, Search and View Patient, Add Patient
Pre condition	Receptionist is logged into the system
Normal Flow	<ol style="list-style-type: none"> 1. The System displays the Patient management menu <ol style="list-style-type: none"> 1. Add Patient 2. See List of Patients 3. Search and View patient 4. Go to Main Menu 2. Receptionist chooses option 1 to add a new patient 3. System asks to enter Full name and user gives Full name 4. System asks to enter Age and user gives Age 5. System asks to enter Blood Group and user gives Blood Group 6. System asks to enter Phone number and user gives Phone number 7. System asks to enter Address and user gives Address 8. After successful creation, the system displays a message “Successfully added” with a new Patient Reg. number and displays the Patient Management menu 9. The user can again choose 1 for adding another patient or else he can choose option 2 for seeing the list of patient 10. The system displays the lists of patients added with Patient Management menu

	<p>11.If the user wants to search a patient, the user chooses option 3</p> <p>12. The system displays Search Patient Menu:-</p> <p>How would you like to search for the patient?</p> <ol style="list-style-type: none"> 1. By patient registration number 2. By Phone number 3. Go to Manage Patient Menu <p>13.</p> <p>(i) If the user chooses option 1 in search, System asks to enter Patient Reg. Number and user gives Patient Reg. Number.</p> <p>(ii). The system displays the patient details of entered Reg. number and displays the menu :-</p> <p>How would you like to proceed?</p> <ol style="list-style-type: none"> 1. Edit Patient 2. Disable Patient 3. Go Back <p>14.</p> <p>(i) If the user chooses option 2, System asks to enter Phone number and the user gives Patient Phone number. The system displays the patient details of the entered phone number .</p> <p>(ii) The system displays the patient details of entered Reg. number and displays</p> <p>How would you like to proceed?</p> <ol style="list-style-type: none"> 1. Edit Patient 2. Disable Patient 3. Go Back <p>15. For Edit and Disable Patient, Refer Use case 3</p>
Alternate Flow	<ol style="list-style-type: none"> 1. If the searched Patient Registration number or Phone number does not exists, the system gives a message “Patient does not exist” 2. Admin goes back to the Manage Patient menu and chooses “Add Patient” option <p>To See the Add patient Flow, Refer Normal flow</p>

Input	<ol style="list-style-type: none"> 1. Full Name 2. Date of Birth 3. Blood group 4. Phone number 5. Address
Validations	<ol style="list-style-type: none"> 1. If the searched patient is not in the system, show the appropriate message “Sorry, there is no such patient.” 2. Name should have at least three characters 3. Date of birth in correct format. Else show message “Give the date in the correct format (‘dd-mm-yyyy’). 4. Gender identification using F/ M/ O 5. Phone number should have 10 digits

Screen 4- Search patient - wireframe and console UI screenshot

```

CMS Manage Patient
-----
What would you like to search the patient?
1. By patient registration number
2. By Phone number
3. Go to Manage Patient Menu
Enter your choice

```

```

CMS Patient View
-----
Name: Praveena           Age: 18           Patient Reg No: 12412
Created on: 1, Mar,2017   Gender: F
Active: Yes

How would you like to proceed?
1. Edit Patient
2. Disable Patient
3. Go Back
Enter your choice

```

Use case: 3

Prepared by	
Use case	Receptionist searches patient to Edit, Disable them

Pre condition	Receptionist is logged into the system Patient Exists
Normal Flow	<ol style="list-style-type: none"> 1. To Search Patient, Refer Use case 2 2. 3. <ol style="list-style-type: none"> 1. The system displays the patient details of entered Reg. number and displays :- <ol style="list-style-type: none"> How would you like to proceed? 1. Edit Patient 2. Disable Patient 3. Go Back 2. If the user wants to Edit, he chooses option 1. The system displays a menu :- <ol style="list-style-type: none"> Which field do you want to edit? 1. Name 2. Address 3. The user can update the name or Address according to the option chosen and the system shows a message “Updated successfully” 4. Go to Step 1
Alternate Flow	<p>To Search Patient, Refer Use case 2</p> <ol style="list-style-type: none"> 1. Go to normal flow Step 1 2. If the user wants to Disable the Patient, he chooses option 2 3. The system displays “Do you want to disable the Patient? (y/n) 4. If the user enters ‘y’ the system displays “Successfully disabled”, go to Search patient menu 5. If the user enters ‘n’ -exit and go to Search patient menu
Input	<ol style="list-style-type: none"> 1. Full Name 2. Date of Birth 3. Blood group

	<ol style="list-style-type: none"> 4. Phone number 5. Address
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Validations	<ol style="list-style-type: none"> 1. If the searched patient is not in the system, show the appropriate message “Sorry, there is no such patient.” 2. Phone number should have 10 digits 3. If the user enters a number other than that in the menu choice, then give the message ‘Wrong choice. Please choose an item from the menu.’ 4. <p>When doing the edit option</p> <ol style="list-style-type: none"> 1. Give option only to edit name and address. Do the same validations as done for Add. 2. All other fields- Do Not give option to edit.
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Use case: 4	
Prepared by	
Use case	Admin manages staff- List, Search and View Staff, Add Staff
Pre condition	Admin is logged into the system
Normal Flow	<ol style="list-style-type: none"> 1. The System displays the Staff management menu <ol style="list-style-type: none"> 1. Add Staff 2. See List of Staffs 3. Search and View staff 4. Go to Main Menu 2. Admin chooses option 1 to add a new staff 3. System asks to enter Full name and user gives Full name 4. System asks to enter DOB and user gives DOB 5. System asks to enter Phone number and user gives Phone number

6. System asks to enter Address and user gives Address
7. System asks to enter Joining date and user gives Joining date
8. System asks to enter salary and user gives salary
9. After successful creation, the system displays a message “Successfully added” with a new StaffId and displays the Staff Management menu
10. The user can again choose 1 for adding another staff or else he can choose option 2 for seeing the list of staff
11. The system displays the lists of staffs added with Staff Management menu
12. If the user wants to search a staff, the user chooses option 3
13. The system displays Search Staff Menu:-
How would you like to search for the staff?
1. By Staff Number
2. By Phone number
3. Go to Manage staff Menu
14.
(i) If the user chooses option 1 in search, System asks to enter Staff Number and user gives Staff Number
(ii). The system displays the staff details of entered staff Number and displays the menu :-
How would you like to proceed?
1. Edit Staff
2. Disable staff
3. Go Back
15.
(i) If the user chooses option 2, System asks to enter Phone number and the user gives the staff Phone number. The system displays the staff details of the entered phone number .
(ii) The system displays the Staff details of entered Phone number and displays
How would you like to proceed?
1. Edit staff
2. Disable staff

	<p>3.Go Back</p> <p>16. For Edit and Disable staff, Refer Use case 5</p>
Alternate Flow	<p>1. If the searched staff Number or Phone number does not exists, the system gives a message “Staff does not exist”</p> <p>2. Admin goes back to the Manage Staff menu and chooses “Add Staff” option</p> <p>To See the Add staff Flow, Refer Normal flow</p>
Input	<p>1. Full Name</p> <p>2. Date of Birth</p> <p>3. Phone number</p> <p>4. Address</p> <p>5. Joining Date</p> <p>6. Salary</p>
Validations	<p>1. If the searched staff is not in the system, show the appropriate message “Sorry, there is no such staff.”</p> <p>2. Name should have at least three characters</p> <p>3. Date of birth in correct format. Else show message “Give the date in the correct format (‘dd-mm-yyyy’).</p> <p>4. Joining date in correct format. Else show message “Give the date in the correct format (‘dd-mm-yyyy’).</p> <p>5. Phone number should have 10 digits</p> <p>6. UserName Password should have at least 6 characters.</p>

Use case: 5

Prepared by	
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Use case	Admin searches staff to Edit, Disable them
Pre condition	Admin is logged into the system Staff Exists
Normal Flow	<p>To Search Staff, Refer Use case 4</p> <ol style="list-style-type: none"> The system displays the staff details of entered Staff Number and displays :- How would you like to proceed? <ol style="list-style-type: none"> Edit Staff Disable Staff Go Back If the user wants to Edit, he chooses option 1. The system displays a menu :- <p>Which field do you want to edit?</p> <ol style="list-style-type: none"> Name Address The user can update the name or Address according to the option chosen and the system shows a message “Updated successfully” Go to Step 1
Alternate Flow	<p>To Search Staff, Refer Use case 4</p> <ol style="list-style-type: none"> Go to normal flow Step 1 If the user wants to Disable the Staff, he chooses option 2 The system displays “Do you want to disable the staff? (y/n) If the user enters ‘y’ the system displays “Successfully disabled”, go to Search staff menu If the user enters ‘n’ -exit and go to Search staff menu
Input	<ol style="list-style-type: none"> Full Name Date of Birth Phone number Address Joining Date

	6. Salary
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Validations	<ol style="list-style-type: none"> 1. If the searched staff is not in the system, show the appropriate message “Sorry, there is no such staff.” 2. Phone number should have 10 digits 3. If the user enters a number other than that in the menu choice, then give the message ‘Wrong choice. Please choose an item from the menu.’ 4. When doing the edit option <ol style="list-style-type: none"> a. Give option only to edit name and address. Do the same validations as done for Add. b. All other fields- Do Not give option to edit.
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Use case: 6	
Prepared by	
Use case	Pharmacist manages Medicine- List, Search and View Medicine, Add medicine
Pre condition	Pharmacist is logged into the system

Normal Flow	<ol style="list-style-type: none"> 1. The System displays the Medicine management menu <ol style="list-style-type: none"> 1. Add Medicine 2. See List of Medicine 3. Search and View Medicine 4. Go to Main Menu 2. Pharmacist chooses option 1 to add a new medicine. 3. System asks to enter medicine name and user gives medicine name 4. System asks to enter generic name and user gives generic name 5. System asks to enter company name and user gives company name 6. System asks to enter quantity and user gives quantity 7. System asks to enter Price and user gives Price 8. After successful creation, the system displays a message “Successfully added” with a new MedicineId and displays the Medicine Management menu 9. The user can again choose 1 for adding another medicine or else he can choose option 2 for seeing the list of medicines 10. The system displays the lists of medicines added with medicine Management menu 11. If the user wants to search a medicine, the user chooses option 3 12. The system displays Search medicine Menu:- How would you like to search for the medicine? <ol style="list-style-type: none"> 1. By Medicine code 2. By MedicineName 3. Go to Manage Medicine Menu 13. <ol style="list-style-type: none"> (i) If the user chooses option 1 in search, System asks to enter Medicine code and the user gives Medicine code. (ii). The system displays the Medicine details of entered Medicine code and displays the menu :- How would you like to proceed? <ol style="list-style-type: none"> 1. Edit Medicine 2. Disable Medicine 3. Go Back
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	<p>14.</p> <p>(i) If the user chooses option 2, System asks to enter MedicineName and the user gives MedicineName. The system displays the Medicine details of entered MedicineName .</p> <p>(ii) The system displays the Medicine details of entered MedicineName and displays</p> <p style="padding-left: 40px;">How would you like to proceed?</p> <p style="padding-left: 80px;">1.Edit Medicine</p> <p style="padding-left: 80px;">2.Disable Medicine</p> <p style="padding-left: 80px;">3.Go Back</p> <p>16. For Edit and Disable Medicine, Refer Use case 7</p>
Alternate Flow	<p>1. If the searched Medicine code or MedicineName does not exists, the system gives a message “Medicine does not exist”</p> <p>2. Pharmacist goes back to the Manage Medicine menu and chooses “Add Medicine” option</p> <p>To See the Add Medicine Flow, Refer Normal flow</p>
Input	<p>1.Medicine Name</p> <p>2.Generic Name</p> <p>3.Company Name</p> <p>4.Quantity</p> <p>5.Price</p>
Validations	<p>1. If the searched Medicine is not in the system, show the appropriate message “Sorry, there is no such medicine.”</p> <p>2.Name should have at least three characters</p>

Prepared by	
Use case	Pharmacist searches Medicine to Edit, Disable them
Pre condition	Pharmacist is logged into the system Medicine Exists
Normal Flow	<ol style="list-style-type: none"> 1. To Search Medicine, Refer Use case 6 2. 3. <ol style="list-style-type: none"> 1. The system displays the medicine details of entered Medicine code and displays :- <ol style="list-style-type: none"> How would you like to proceed? 1. Edit Medicine 2. Disable Medicine 3. Go Back 2. If the user wants to Edit, he chooses option 1. The system displays a menu :- <ol style="list-style-type: none"> Which field do you want to edit? 1. Quantity 2. Price 3. The user can update the Quantity or Price according to the option chosen and the system shows a message “Updated successfully” 4. Go to Step 1
Alternate Flow	<p>To Search Medicine, Refer Use case 6</p> <ol style="list-style-type: none"> 1. Go to normal flow Step 1 2. If the user wants to Disable the Medicine, he chooses option 2 3. The system displays “Do you want to disable the Medicine? (y/n) 4. If the user enters ‘y’ the system displays “Successfully disabled”, go to Search Medicine menu 5. If the user enters ‘n’ -exit and go to Search Medicine menu

Input	<ol style="list-style-type: none"> 1. Medicine Name 2. Generic Name 3. Company Name 4. Quantity 5. Price
Validations	<ol style="list-style-type: none"> 1. If the searched medicine is not in the system, show the appropriate message “Sorry, there is no such medicine.” 2. If the user enters a number other than that in the menu choice, then give the message ‘Wrong choice. Please choose an item from the menu.’ 3. When doing the edit option <ol style="list-style-type: none"> a. Give option only to edit Quantity and Price. Do the same validations as done for Add. b. All other fields- Do Not give option to edit.

Use case: 8	
Prepared by	
Use case	Lab Technician manages Test- List, Search and View Test, Add Test
Pre condition	Lab Technician is logged into the system

Normal Flow	<ol style="list-style-type: none"> 1. The System displays the Test management menu <ol style="list-style-type: none"> 1. Add test 2. See List of Test 3. Search and View Test 4. Go to Main Menu 2. Admin chooses option 1 to add a new Test. 3. System asks to enter Test name and user gives Test name 4. System asks to enter low range and user gives low range 5. System asks to enter high range and user gives high range 6. System asks to enter unit and user gives unit 7. System asks to enter Price and user gives Price 8. After successful creation, the system displays a message “Successfully added” with a new TestId and displays the test Management menu 9. The user can again choose 1 for adding another test or else he can choose option 2 for seeing the list of tests 10. The system displays the lists of tests added with Test Management menu 11. If the user wants to search a Test, the user chooses option 3 12. The system displays Search Test Menu:- How would you like to search for the test? <ol style="list-style-type: none"> 1. By Test code 2. Go to Manage Test Menu
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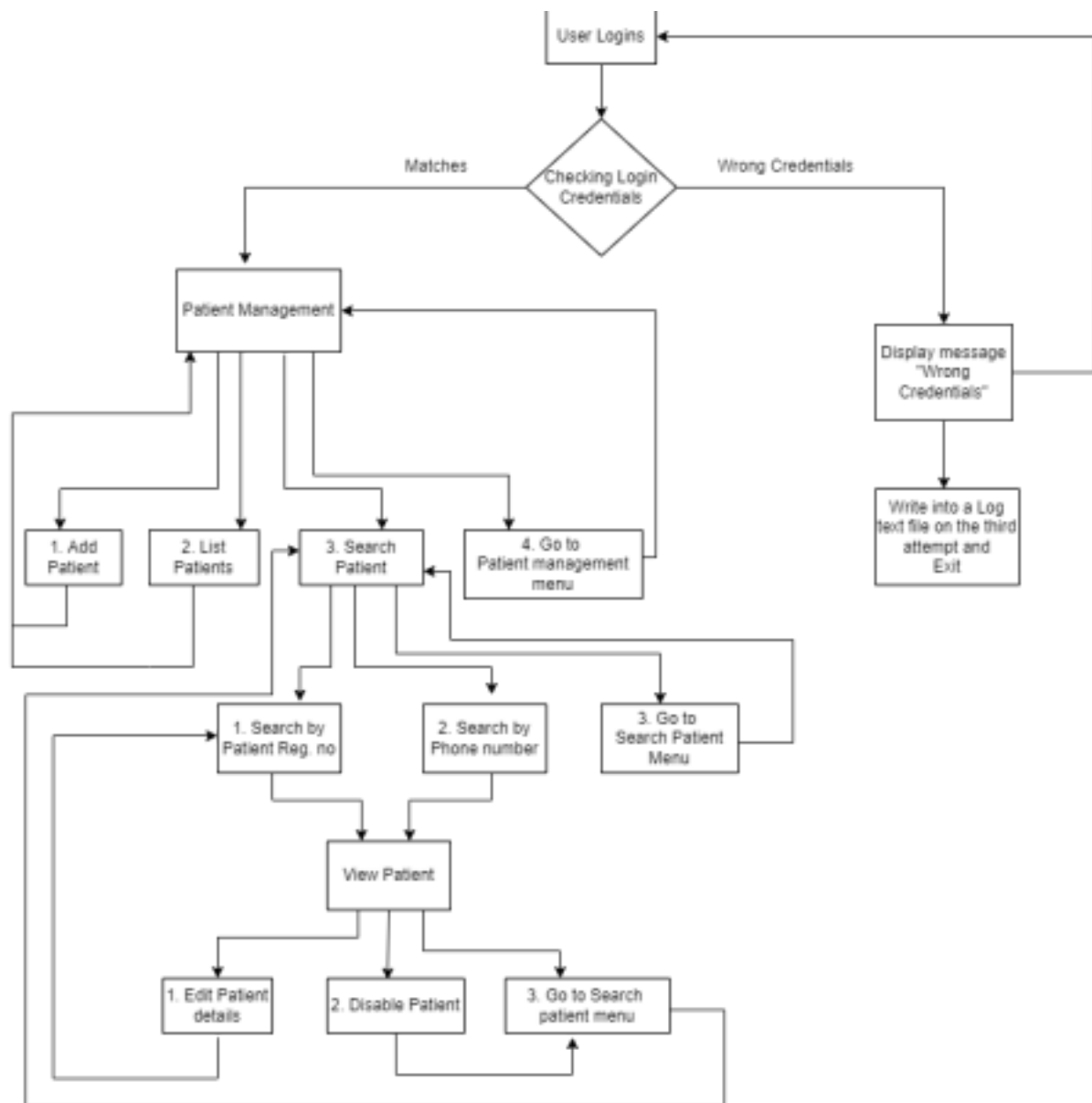
	<p>13.</p> <p>(i). If the user chooses option 1 in search, System asks to enter Test code and user gives Test code</p> <p>(ii). The system displays the Test details of entered Test code and displays the menu :-</p> <p style="padding-left: 40px;">How would you like to proceed?</p> <p style="padding-left: 80px;">1. Edit Test</p> <p style="padding-left: 80px;">2. Disable Test</p> <p style="padding-left: 80px;">3. Go Back</p> <p>14. For Edit and Disable Test, Refer Use case 8</p>
Alternate Flow	<p>1. If the searched Test code does not exist, the system gives a message “Test does not exist”</p> <p>2. Lab Technician goes back to the Manage Test menu and chooses “Add Test” option</p> <p>To See the Add Test Flow, Refer Normal flow</p>
Input	<p>1. Test Name</p> <p>2. Low Range</p> <p>3. High Range</p> <p>4. unit</p> <p>5. Price</p>

Validations	<ol style="list-style-type: none"> 1. If the searched test is not in the system, show the appropriate message “Sorry, there is no such Test.” 2. Test low Range and High Range should be in Numbers.
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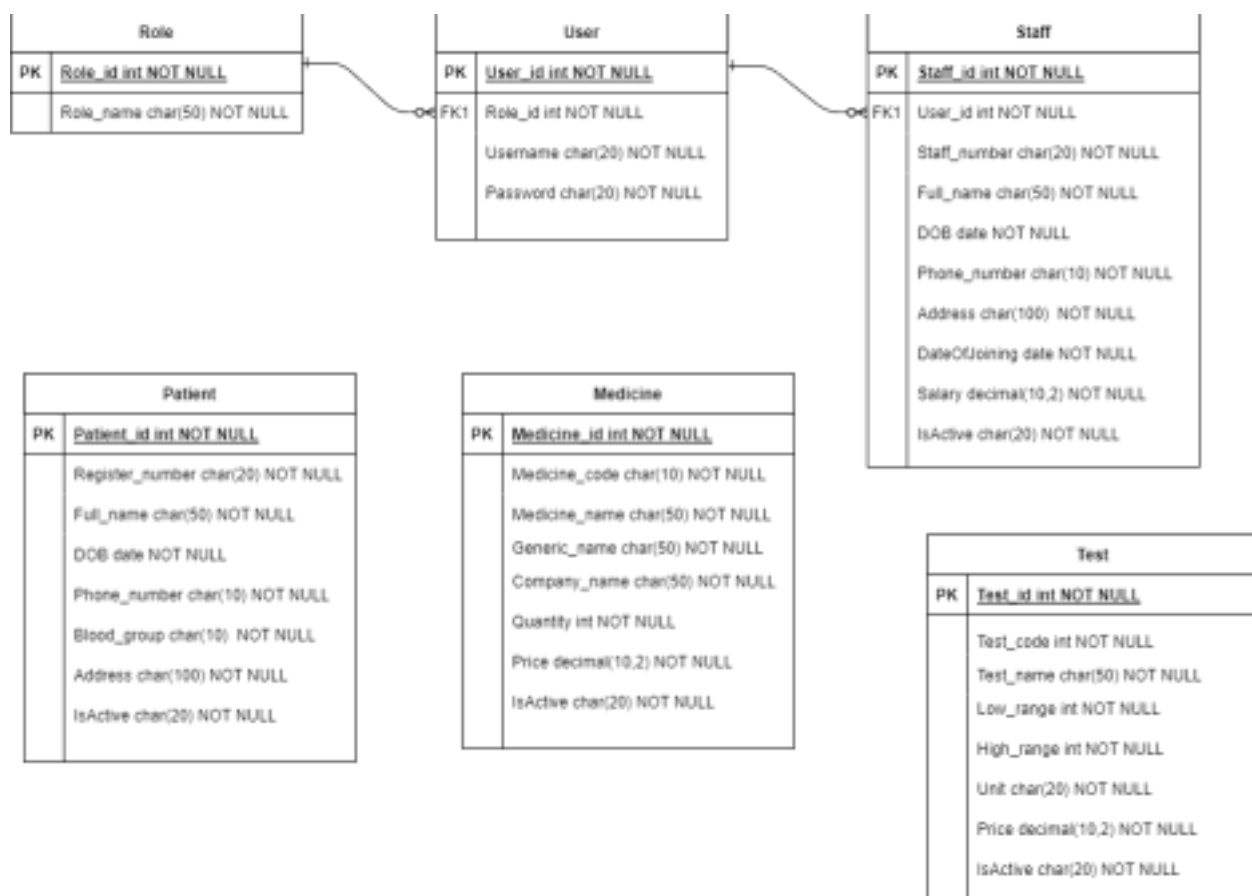
Use case: 9	
Prepared by	
Use case	Lab Technician searches Test to Edit, Disable them
Pre condition	Lab Technician is logged into the system Test Exists
Normal Flow	<ol style="list-style-type: none"> 1. To Search Test, Refer Use case 8 2. 3. <ol style="list-style-type: none"> 1. The system displays the Test details of entered Test code and displays :- How would you like to proceed? <ol style="list-style-type: none"> 1. Edit Test 2. Disable Test 3. Go Back 2. If the user wants to Edit, he chooses option 1. The system displays :- Do you want to edit the Price? 3. The user can update the Price and the system shows a message “Updated successfully” 4. Go to Step 1
Alternate Flow	<p>To Search Test , Refer Use case 8</p> <ol style="list-style-type: none"> 1. Go to normal flow Step 1 2. If the user wants to Disable the Test, he chooses option 2 3. The system displays “Do you want to disable the Test? (y/n) 4. If the user enters ‘y’ the system displays “Successfully disabled”, go to Search Test menu 5. If the user enters ‘n’ -exit and go to Search Test menu

Input	<ol style="list-style-type: none"> 1. Test Name 2. Low Range 3. High Range 4. Unit 5. Price
Validations	<ol style="list-style-type: none"> 1. If the searched Test is not in the system, show the appropriate message “Sorry, there is no such Test.” 2. If the user enters a number other than that in the menu choice, then give the message ‘Wrong choice. Please choose an item from the menu.’ 3. When doing the edit option <ol style="list-style-type: none"> a. Give option only to edit Price. Do the same validations as done for Add. b. All other fields- Do Not give option to edit.

Workflow - flowchart



DB design for Role, Staff, Patient, Medicine, Test



Test cases that are to be mandatorily passed

Sl No	Test Case	Input	Expected result
	User Logs in: gives in user name	Username: null	Prompts again
	User Logs in: gives in username	Username: "lee"	Message: "User name has to be six characters long"

	User Logs in: gives in username	Username: "leeja123"	System accepts
	User Logs in: gives in password.	Password: ""	Prompts again
	User Logs in: gives in password.	Password: "lee"	Message: "Password has to be six characters long"
	User Logs in: gives in password.	Password: "leeja34"	System accepts
	Wrong username and password		Message: Username or password is wrong

	Wrong username and password consecutively for 3 attempts		<p>“Three wrong attempts. The application will close. Please see the log for details.”</p> <p>System writes into log and exits from application</p>
	Correct username and password		Shows the welcome screen with main menu option