Project Name: E-Health Management System

Batch: PG-DAC AUG-2019

Guided By:

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1. Introduction:

1.1 Document Purpose:

This document is meant for the description of the structure and the database which we are using in this project. This document gives brief description about Architecture of the system, E-R diagram of the system and the table descriptions, the page navigation diagrams and the detail description for the page navigation.

1.2 Project Background:

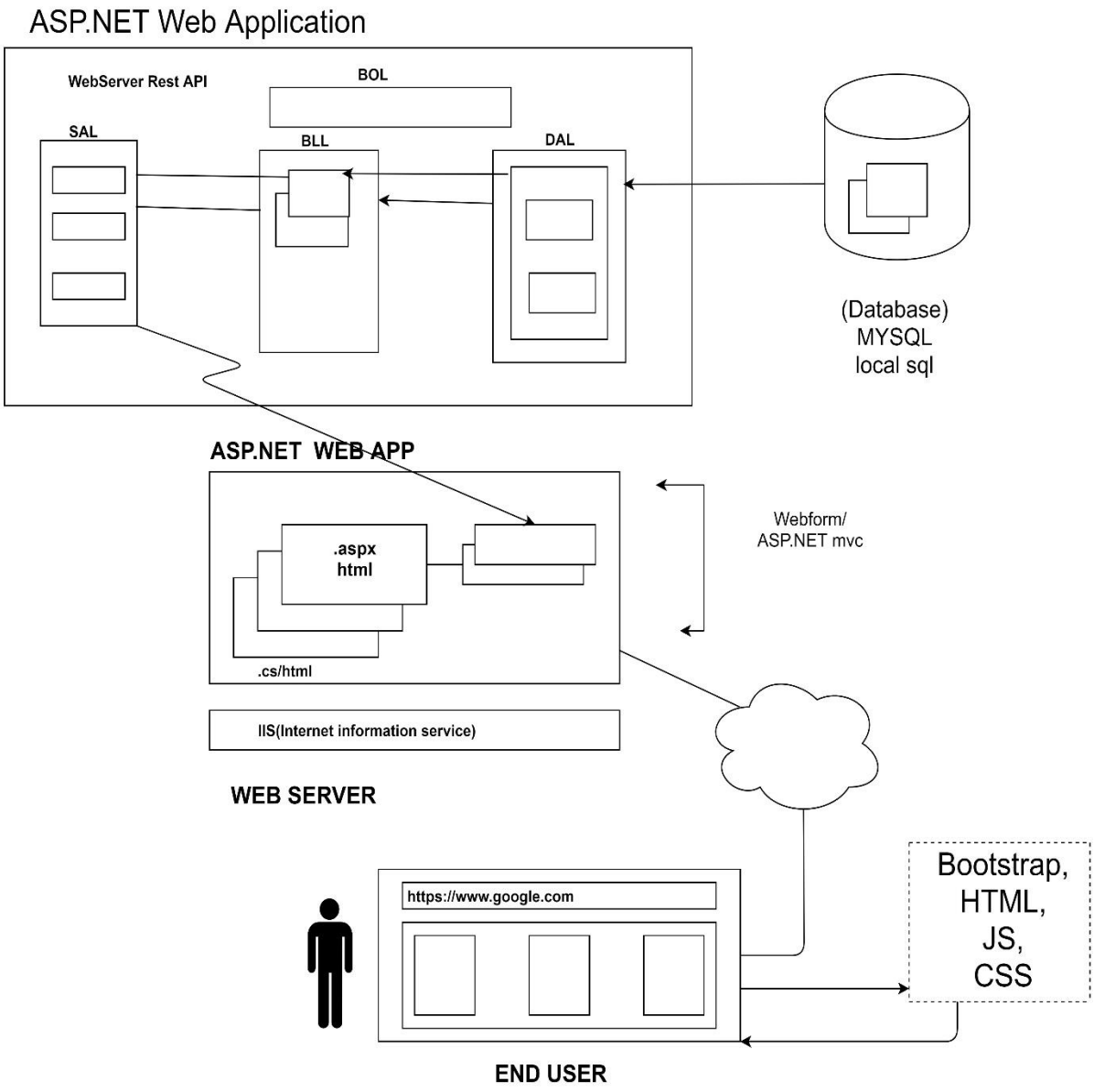
The proposed project is a web based appointment booking system that provides patients with a platform to book an appointment with the doctor online. It overcomes the issue of managing and booking appointments according to patient's choice or demands.

1.3 Goals of Project:

This project offers an effective solution where patients can view various doctors available according to the specialization and time slots. They can book the appointments with the preferred doctor. Patient can also view their past appointment history. At doctor's end, doctor can manage/view the appointments and can view the patient's history by searching with their name. On visiting the patient at the doctor's clinic, doctor will mark the patient's appointment as visited and will generate a prescription which will be sent to patient and pharmacy. If any test is prescribed, then it will be send to laboratory

2. **Architecture Design:**

Following diagram shows the details of the e-faming system architecture.



This System consist of three tiers as listed below,

- First tier
- Second tier
- Third tier

First Tier:

This tier is used for user interface and it is called as client tier. In this tier we are using HTML, CSS, AJAX and BOOTSTRAP because of it provides better interactivity, easier navigation, compact. The use of java script facilities us for the client side validation. That's why in first tier we are using the java script. We are using HTML for the presentation purpose.

Second Tier:

Second tier comprises of MVC (Model View Controller) which is web-based application framework.

Third Tier:

Third tier consists of Database and Database Access Layer which fetch the data from database.

3. Business Requirements Overview:

- Website for patient and doctor to communicate.
- Website will be opened globally.
- There are mainly four types of user:
  - ✓ Patient
  - ✓ Doctor
  - ✓ Pharmacist
  - ✓ Laboratory-incharge
- The patient can view the prescribed diagnosis, medicines and reports on the same portal.
- The doctor has to be first registered on the portal and verified by the admin to start their services on the website.
- Website provides the list of doctors available nearby for a particular diagnosis.

4. Functional Requirements:

Website consists of two modules described as below.

1. New user registration module.
2. Registered user Login module.

4.1 New user registration module:

- Patient will register here by providing their basic details.
- Doctors will register with their license number.
- Pharmacy will be registered with their drug license number
- Laboratory will be registered.

4.2 Registered user Login module:

4.2.1 Patient Login module

- List of doctors available.
- Search the doctor by name.
- Booking an appointment with the doctor.
- Consultation History
- Search Pharmacy
- Lab reports
- Feedback

4.2.2 Doctor Login module

- Patient appointment list.
- Appointment summary.
- Search patient by name.
- Create prescription.
- Send prescription to patient and pharmacy.
- Send prescribed tests to laboratory.
- Update the time slots.

4.2.3 Pharmacy Login module

- Patient's prescription
- Medicines in stock.
- Billing & payment.

4.2.4 Laboratory Login module

- Prescribed tests for the patient.
- Send the test reports to patient and doctor.
- Billing & Payment.

5. Non-Functional Requirements:

- The website should use professional design, look and feel and color scheme.
- Reader will have no limitations for accessing the website through Internet. The portal being an internet website.
- Being a public website, the site must follow general usability guidelines for menus, navigation, colors, links and other actions provided on the screens.
- The system should be designed in such a manner that user will be able to complete tasks in minimum number of steps.

6. Database Design:

Doctor Master Table

Field	Type	Null	Key	Default	Description
Did	Integer	No	Primary key	Null	Doctor Id
dinfoid	Integer	No	Foreign key	Null	Doctor Information
daddid	Integer	No	Foreign key	Null	Doctor Address
dcontactid	Integer	No	Foreign key	Null	Doctor Contact
dcertid	Integer	No	Foreign key	Null	Doctor Certification
dtimeid	Integer	No	Foreign key	Null	Doctor allotted time slots

Doctor information Table

Field	Type	Null	Key	Default	Description
dinfoid	Integer	No	Primary key	Null	Doctor information Id
username	Varchar2(45)	No		Null	Doctor username
password	Varchar2(45)	No		Null	Doctor account password
firstname	Varchar2(45)	No		Null	Doctor first name
lastname	Varchar2(45)	No		Null	Doctor last name
Dob	Varchar2(45)	No		Null	Date of birth
gender	Varchar2(45)	No		Null	Doctor gender

Doctor Address Table

Field	Type	Null	Key	Default	Description
daddid	Integer	No	Primary key	Null	Doctor address id
City	Varchar2(45)	No		Null	Doctor City
State	Varchar2(45)	No		Null	Doctor state
pincode	Integer	No		Null	Doctor pincode

Doctor Contacts Table

Field	Type	Null	Key	Default	Description
dcontactid	Integer	No	Primary key	Null	Doctor contact id
mobile	Varchar2(45)	No		Null	Doctor mobile no
Email	Varchar2(45)	No		Null	Doctor email id

Doctor Certification Table

Field	Type	Null	Key	Default	Description
dcertid	Integer	No	Primary id	Null	Doctor id
licence	Varchar2(45)	No		Null	Doctor licence
specialization	Varchar2(45)	No		Null	Doctor specialization
certification	Varchar2(45)	No		Null	Doctor certification
Fees	Integer	No		Null	Doctor fees
Rating	Integer	No		Null	Doctor rating
experience	Integer	No		Null	Doctor experience

Doctor time slots Table

Field	Type	Null	Key	Default	Description
dtimeid	Integer	No	Primary key	Null	Doctor time id
checkin	Varchar2(45)	No		Null	Doctor check in time
checkout	Varchar2(45)	No		Null	Doctor check out time

Patient Master Table

Field	Type	Null	Key	Default	Description
Pid	Integer	No	Primary key	Null	Patient id
pinfoid	Varchar2(45)	No	Foreign key	Null	Patient information
paddid	Varchar2(45)	No	Foreign key	Null	Patient address
pcontactid	Integer	No	Foreign key	Null	Patient contact

Patient Information Table

Field	Type	Null	Key	Default	Description
pinfoid	Integer	No	Primary key	Null	Patient information id
username	Varchar2(45)	No		Null	Patient username
password	Varchar2(45)	No		Null	Patient password
firstname	Varchar2(45)	No		Null	Patient first name
lastname	Varchar2(45)	No		Null	Patient last name
history	Varchar2(45)	No		Null	Patient History
Dob	Varchar2(45)	No		Null	Patirnt date of birth

Patient Address

Field	Type	Null	Key	Default	Description
paddid	Integer	No	Primary key	Null	Patient address id
City	Varchar2(45)	No		Null	Patient city
State	Varchar2(45)	No		Null	Patient state
pincode	Integer	No		Null	Patient pincode

Patient contact

Field	Type	Null	Key	Default	Description
pcontactid	Integer	No		Null	Patient contact id
mobile	Varchar2(45)	No		Null	Patient mobile no
Email	Varchar2(45)	No		Null	Patient email id

Pharmacy master table

Field	Type	Null	Key	Default	Description
Pid	Integer	No	Primary key	Null	Pharmacy id
pinfoid	Varchar2(45)	No	Foreign key	Null	Pharmacy information
pcontactid	Varchar2(45)	No	Foreign key	Null	Pharmacy contacts
paddid	Varchar2(45)	No	Foreign key	Null	Pharmacy address
pcertid	Varchar2(45)	No	Foreign key	Null	Pharmacy certificate

Pharmacy information

Field	Type	Null	Key	Default	Description
pinfoid	Integer	No	Primary key	Null	Pharmacy information id
username	Varchar2(45)	No		Null	Pharmacy username
password	Varchar2(45)	No		Null	Pharmacy password
companyname	Varchar2(45)	No		Null	Pharmacy name
competentname	Varchar2(45)	No		Null	Pharmacy competent

Pharmacy Address

Field	Type	Null	Key	Default	Description
paddid	Integer	No	Primary key	Null	Pharmacy address id
city	Varchar2(45)	No		Null	Pharmacy city
state	Varchar2(45)	No		Null	Pharmacy state
pincode	Integer	No		Null	Pharmacy pincode

Pharmacy certificate

Field	Type	Null	Key	Default	Description
pcertid	Integer	No	Primary key	Null	Pharmacy certification id
licence	Varchar2(45)	No		Null	Pharmacy certificate

Pharmacy contacts

Field	Type	Null	Key	Default	Description
pcontactid	Integer	No	Primary key	Null	Pharmacy contact id
mobile	Varchar2(45)	No		Null	Pharmacy mobile no
email	Varchar2(45)	No		Null	Pharmacy email id

Laboratory master table

Field	Type	Null	Key	Default	Description
lid	Integer	No	Primary key	Null	Laboratory id
labinfoid	Integer	No	Foreign key	Null	Laboratory information
labaddid	Integer	No	Foreign key	Null	Laboratory address
labcontactid	Integer	No	Foreign key	Null	Laboratory contact
labcertiid	Integer	No	Foreign key	Null	Laboratory certification

Laboratory information

Field	Type	Null	Key	Default	Description
linfoid	Integer	No	Primary key	Null	Laboratory information id
username	Varchar2(45)	No		Null	Laboratory username
password	Varchar2(45)	No		Null	Laboratory password
laboratory name	Varchar2(45)	No		Null	Laboratory name
incharge name	Varchar2(45)	No		Null	Laboratory Incharge name

Laboratory address

Field	Type	Null	Key	Default	Description
laddid	Integer	No	Primary key	Null	Laboratory address id
city	Varchar2(45)	No		Null	Laboratory city
state	Varchar2(45)	No		Null	Laboratory state
Pincode	Integer	No		Null	Laboratory pincode

Laboratory contacts

Field	Type	Null	Key	Default	Description
lcontactid	Integer	No	Primary key	Null	Laboratory id
mobile	Varchar2(45)	No		Null	Laboratory mobile no
email	Varchar2(45)	No		Null	Laboratory email

Laboratory certification

Filed	Type	Null	Key	Default	Description
lcertid	Integer	No	Primary key	Null	Laboratory certification id
licence	Varchar2(45)	No		Null	Laboratory licence no

Appointment master

Field	Type	Null	Key	Default	Description
appointmentid	Integer	No		Null	Appointment id
dinfoid	Integer	No		Null	Doctor id
pinfoid	Integer	No		Null	Patient id
timeslot	Varchar2(45)	No		Null	Time slots given for appointment
date	Varchar2(45)	No		Null	Date of apppointment
status	Varchar2(45)	No		Null	Appointment status

Prescription table

Field	Type	Null	Key	Default	Description
prescriptionid	Integer	No	Primary key	Null	Prescription id
dinfoid	Integer	No		Null	Doctor id
pinfoid	Integer	No		Null	Patient id
appointmentid	Integer	No		Null	Appointment id
date	Varchar2(45)	No		Null	Prescription date
timeslot	Varchar2(45)	No		Null	Time slot
details	Varchar2(45)	No		Null	Prescription details

Report master

Field	Type	Null	Key	Default	Description
reportid	Integer	No	Primary key	Null	Report id
doctorid	Integer	No		Null	Doctor id
patientid	Integer	No		Null	Patient id
details	Varchar2(45)	No		Null	Report details

Admin table

Field	Type	Null	Key	Default	Description
adminid	Integer	No	Primary key	Null	Admin id
username	Varchar2(45)	No		Null	Admin username
password	Varchar2(45)	No		Null	Admin password
email	Varchar2(45)	No		Null	Admin email

Feedback table

Field	Type	Null	Key	Default	Description
feedbackid	Integer	No	Primary key	Null	Feedback id
doctorid	Integer	No		Null	Doctor id
patientid	integer	No		Null	Patient id
details	Varchar2(45)	No		Null	Feedback details
date	Varchar2(45)	No		Null	Date and time

7. System Design:

7.1 Use - Case Diagram:

Admin:

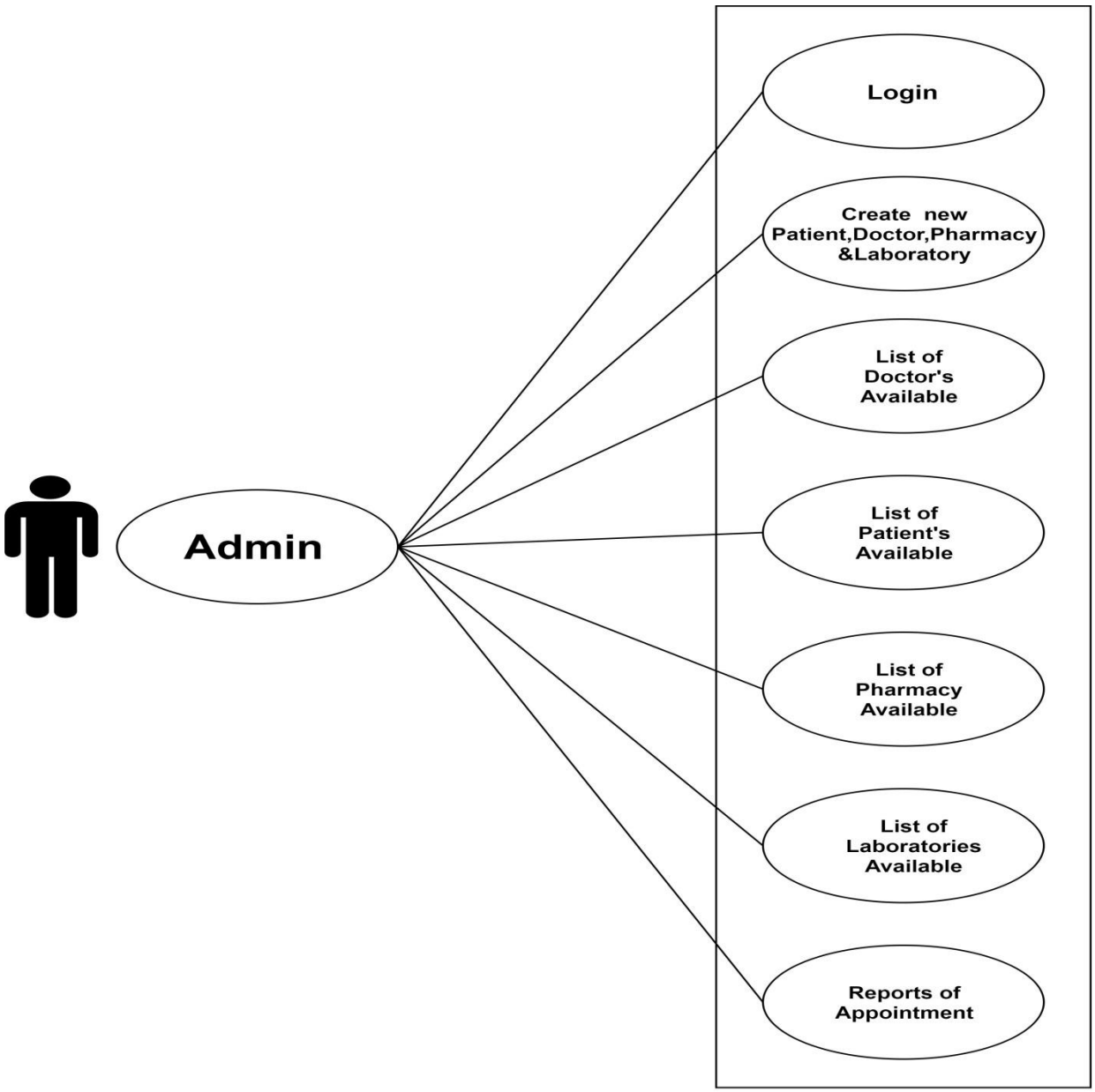


Fig. Use case diagram for Admin

Doctor:

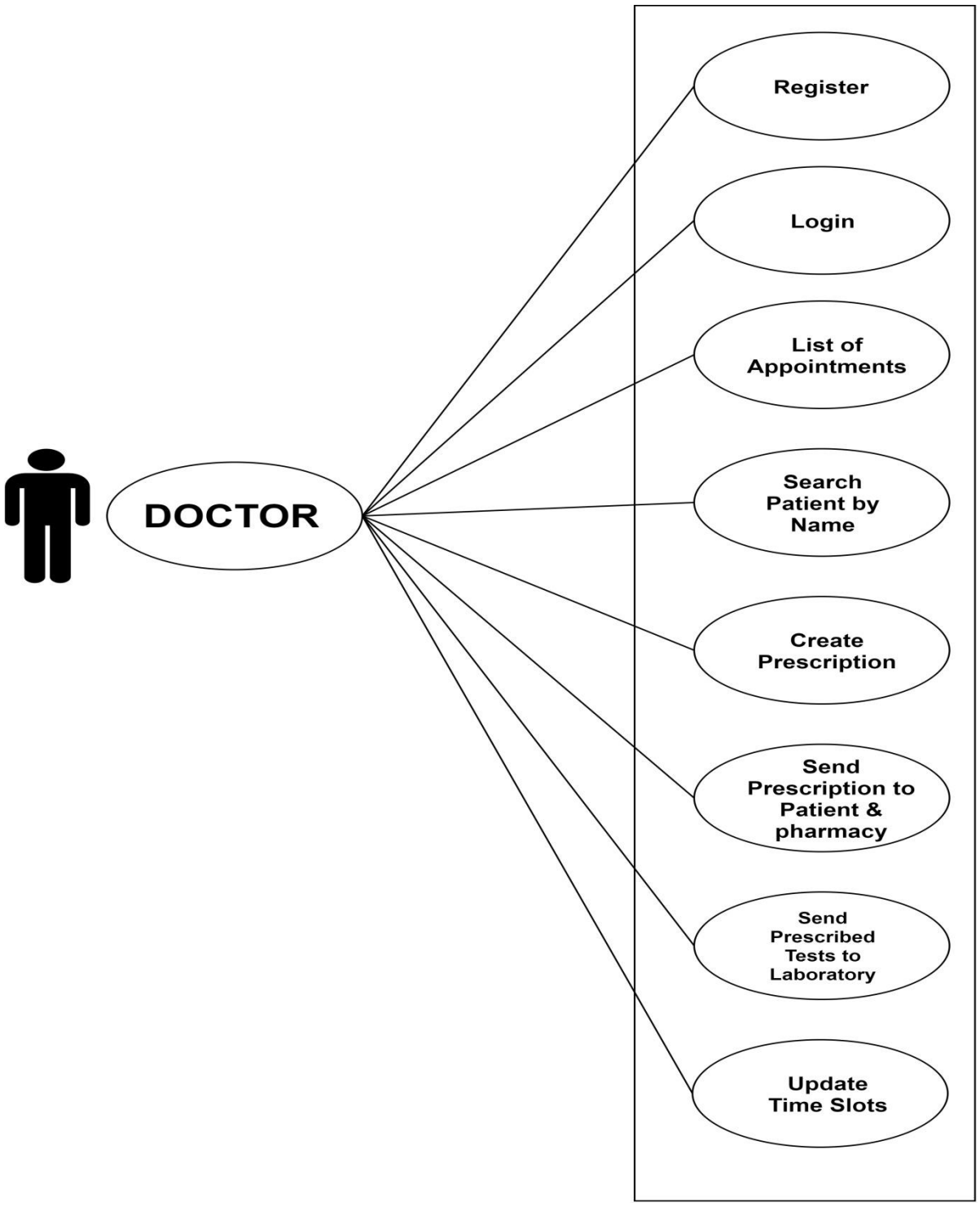


Fig. Use case diagram for Doctor

Patient:

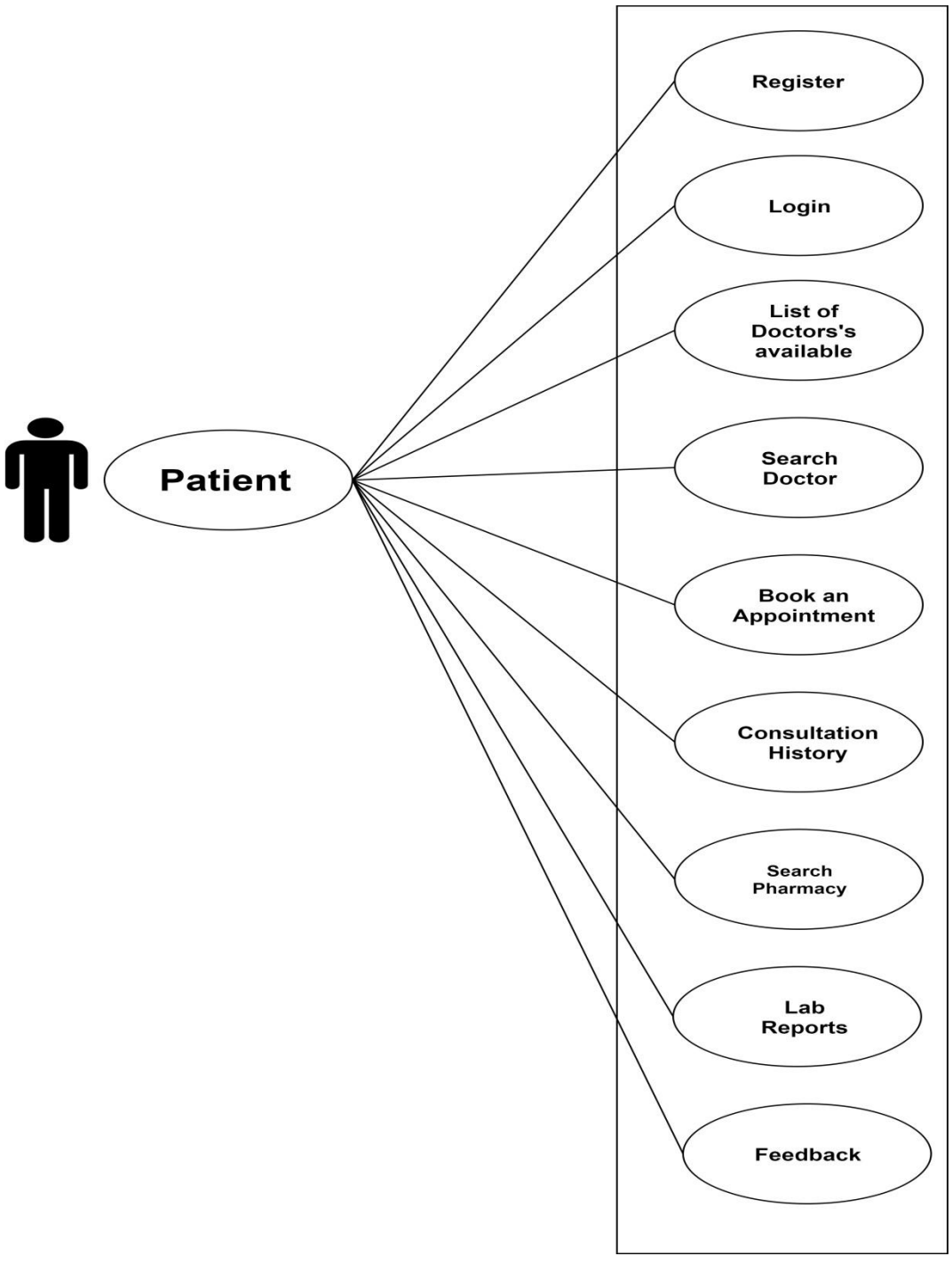


Fig. Use case diagram for Patient

Pharmacy:

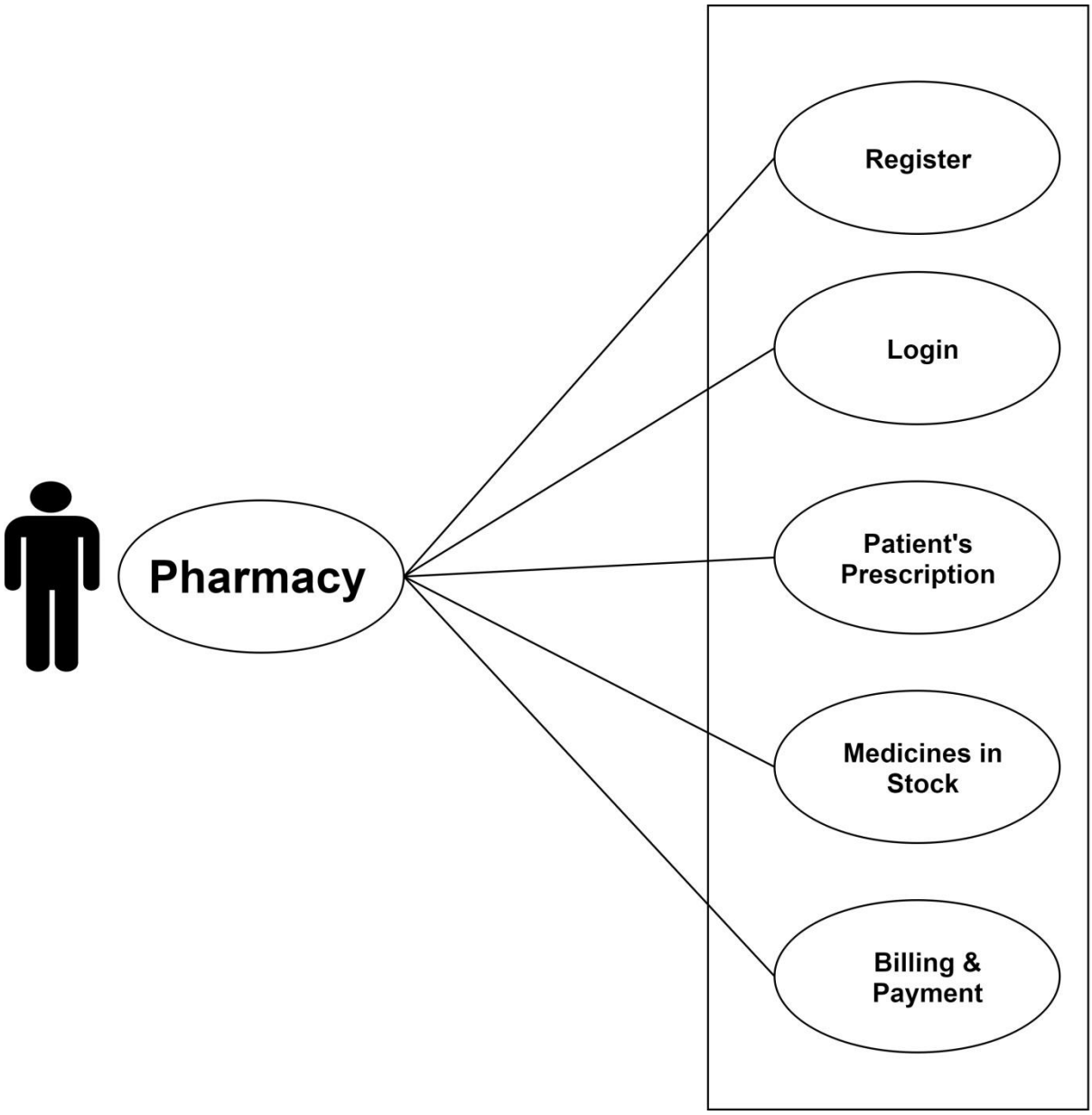


Fig. Use case diagram for Pharmacy

Laboratory:

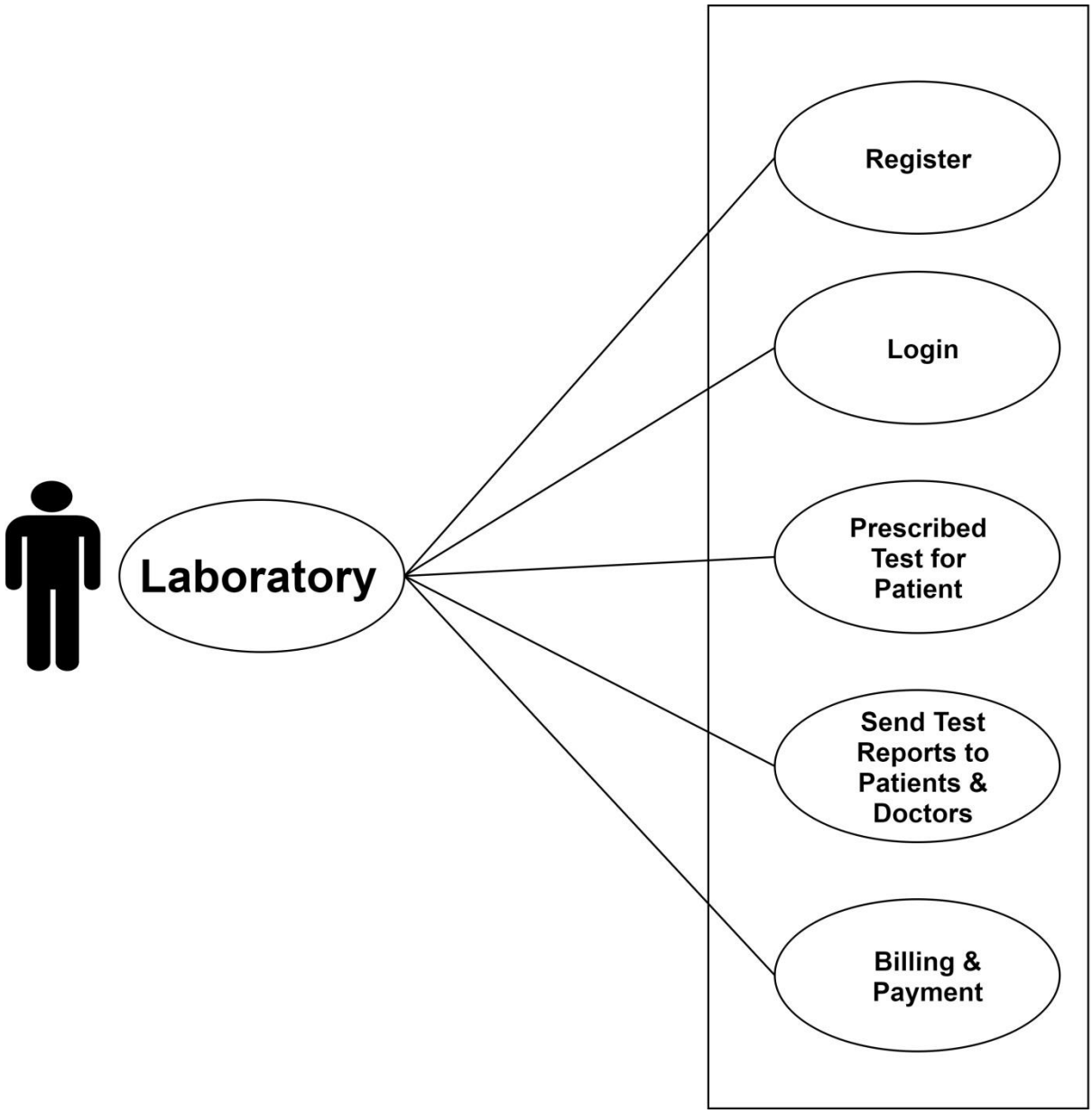
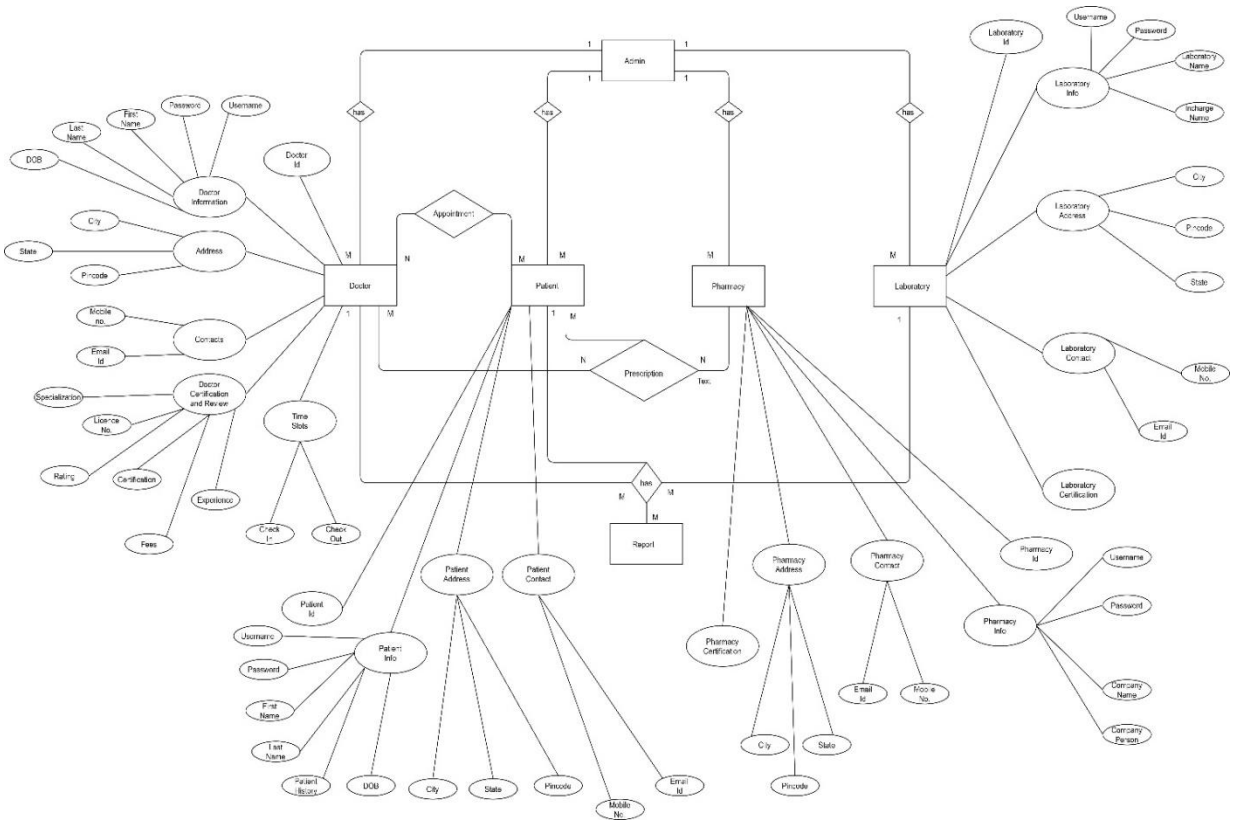


Fig. Use case diagram for Laboratory

7.2 E-R Diagram:



Above E-R Diagram shows that database of E-Health Management System consists of the following entities:

- Doctor

This entity contains the did, username, password, firstname, lastname, dob, gender, doctor address(table), doctor contact(table), doctor certification(table), doctor time slots(table).

- Patient

This entity contains the pid, username, password, firstname, lastname, dob, gender, patient address(table), patient contact(table).

- Pharmacy

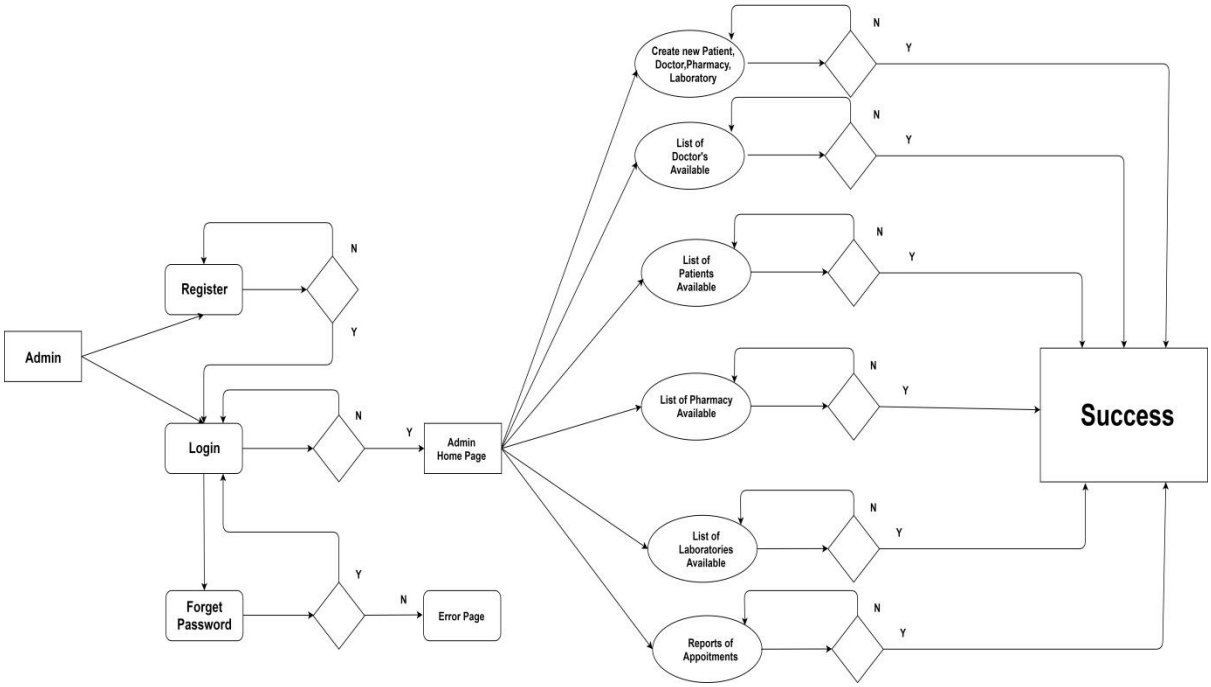
This entity contains the pid, username, password, firstname, lastname, company name, competent name, pharmacy address(table), pharmacy contact(table), pharmacy certification(table).

- Laboratory

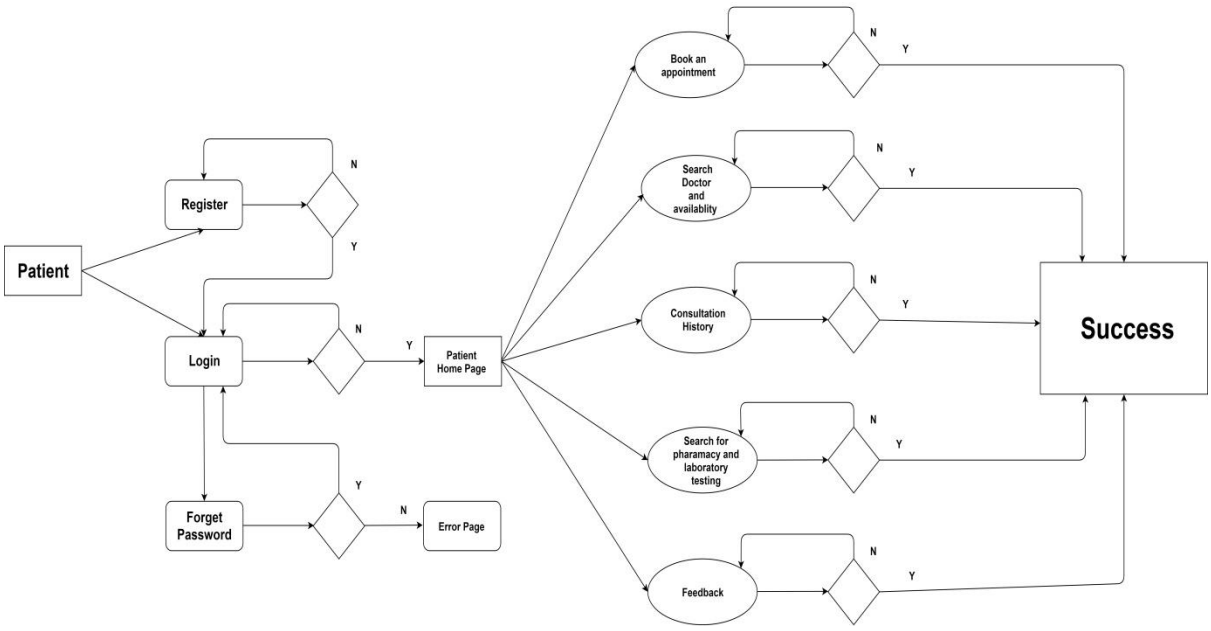
This entity contains the laboratoryid, username, password, laboratory name, incharge name, laboratory address(table), laboratory contact(table), laboratory certification(table).

7.3 Page Navigation Diagram:

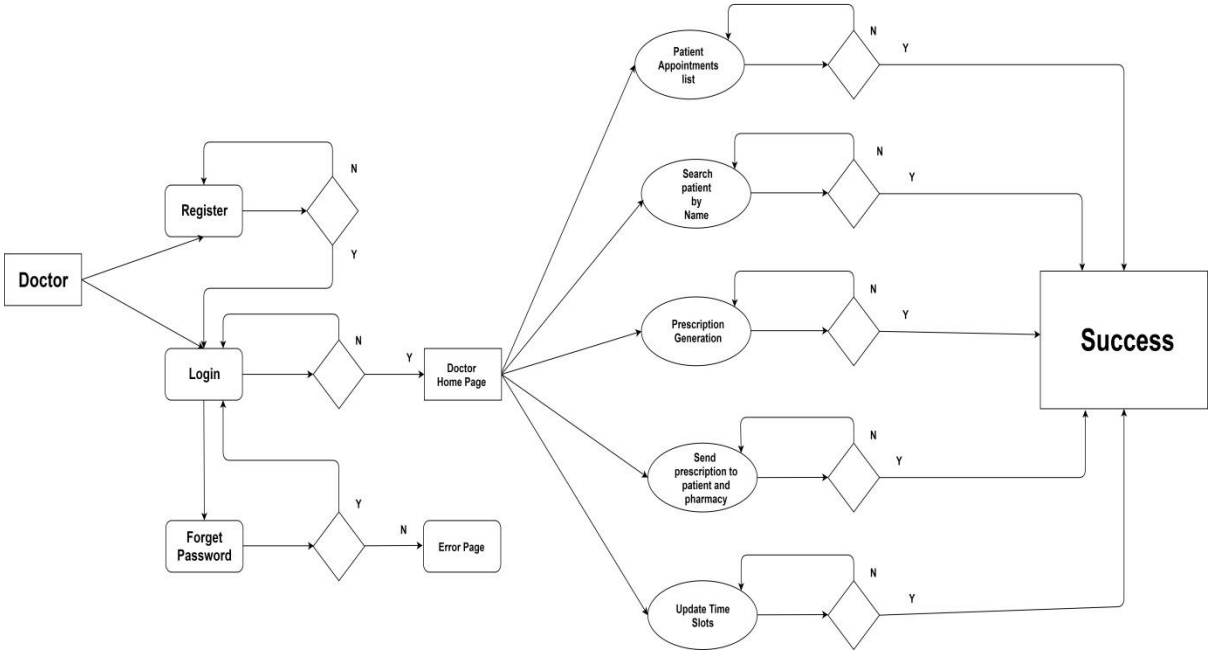
Admin:



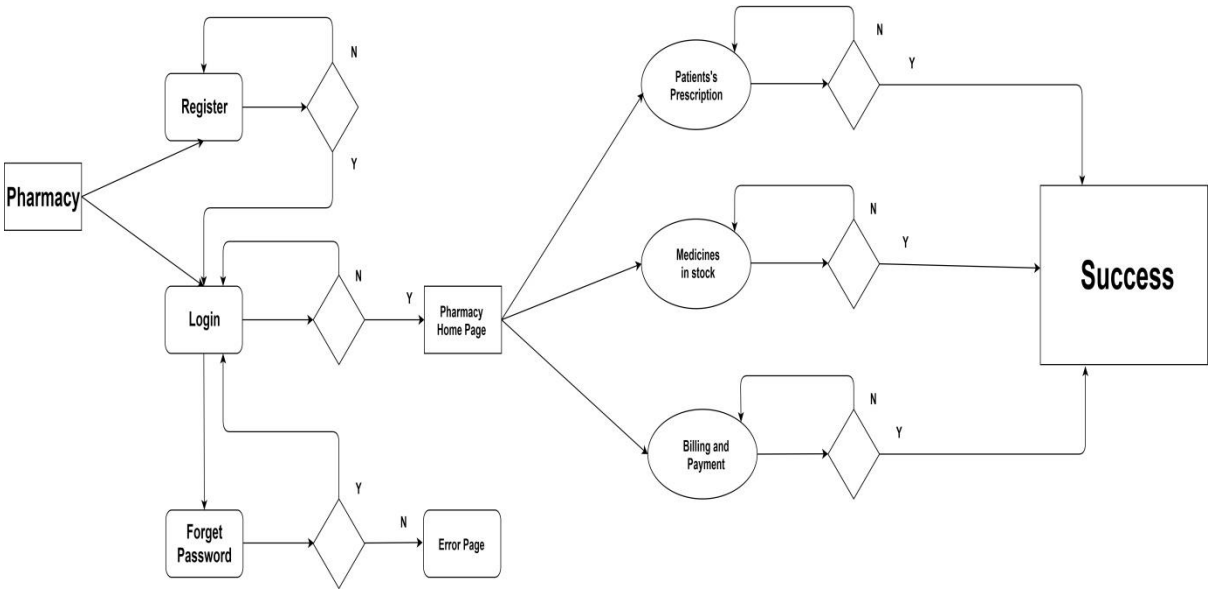
Patient:



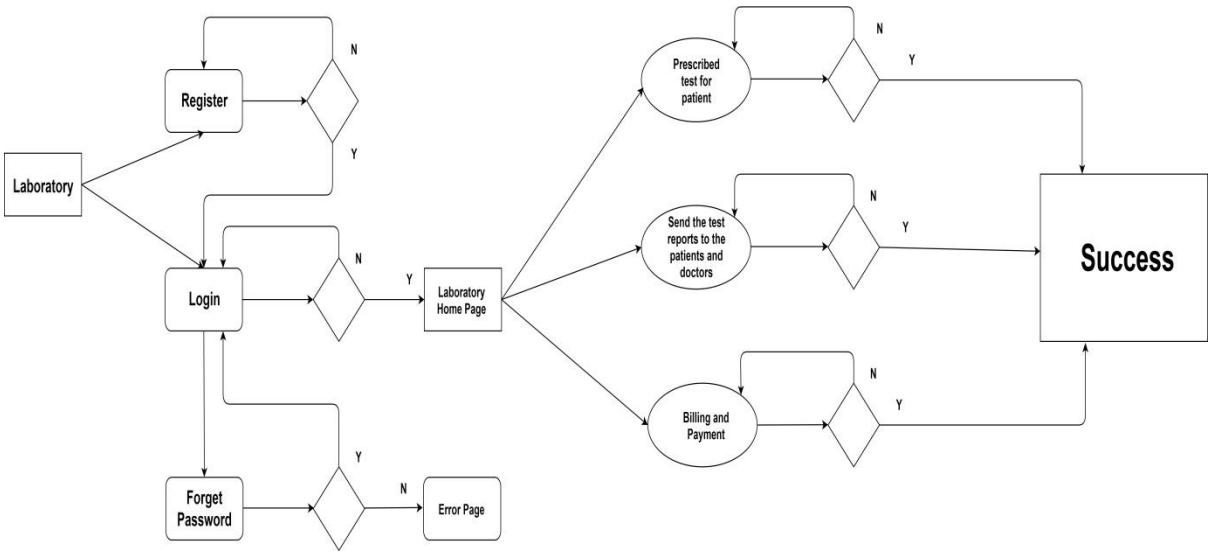
Doctor:



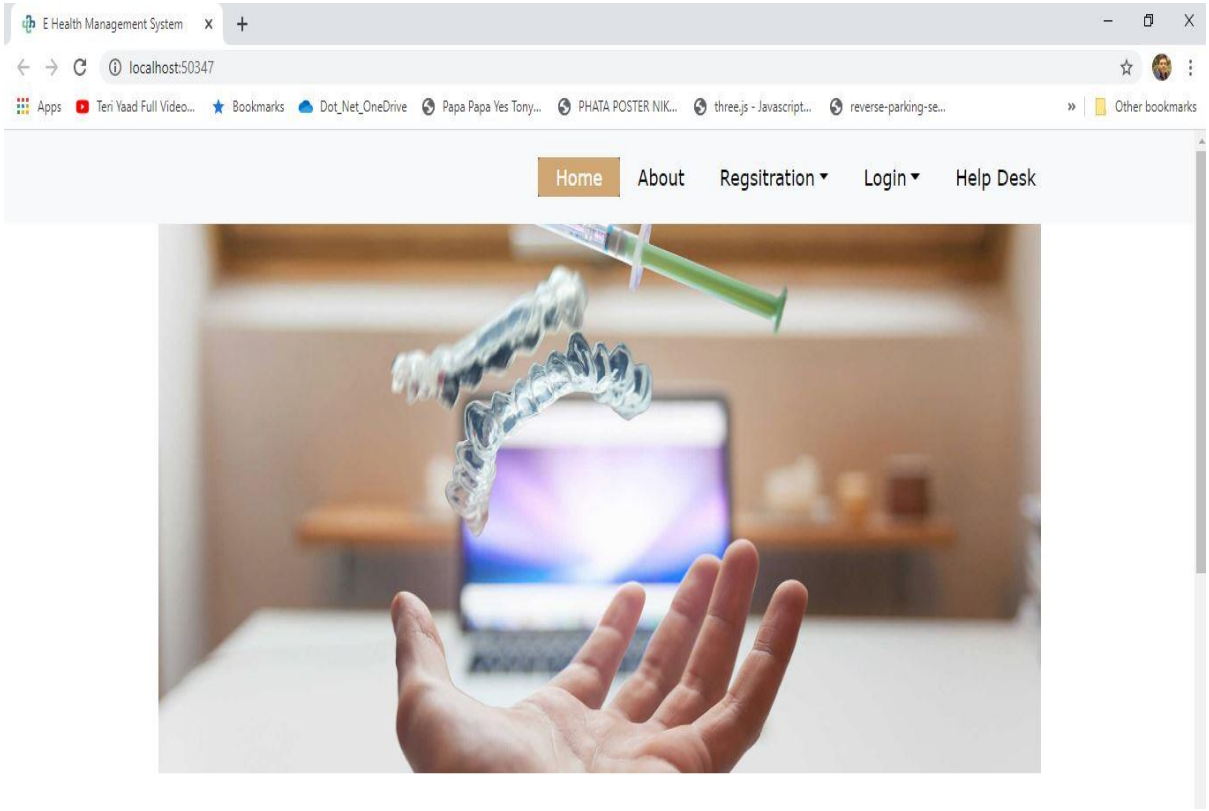
Pharmacy:



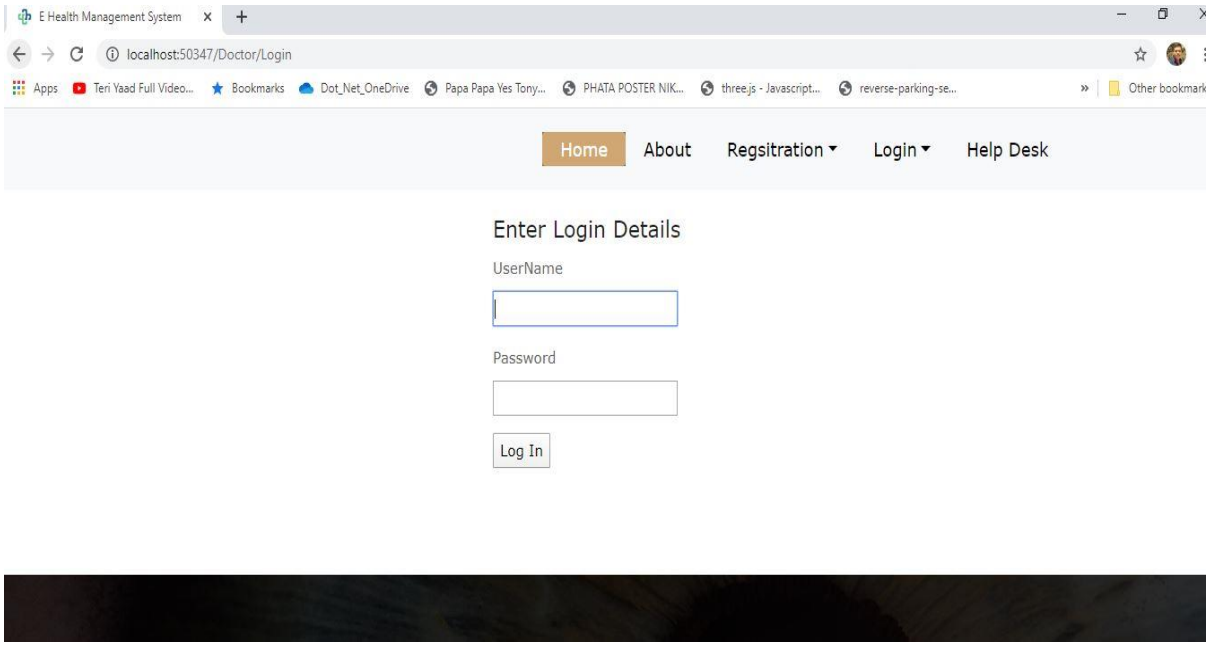
Laboratory:


Laboratory
Register
N
Y
Login
N
Y
Laboratory Home Page
Forget Password
Y
N
Error Page
Prescribed test for patient
N
Y
Send the test reports to the patients and doctors
N
Y
Billing and Payment
N
Y
Success

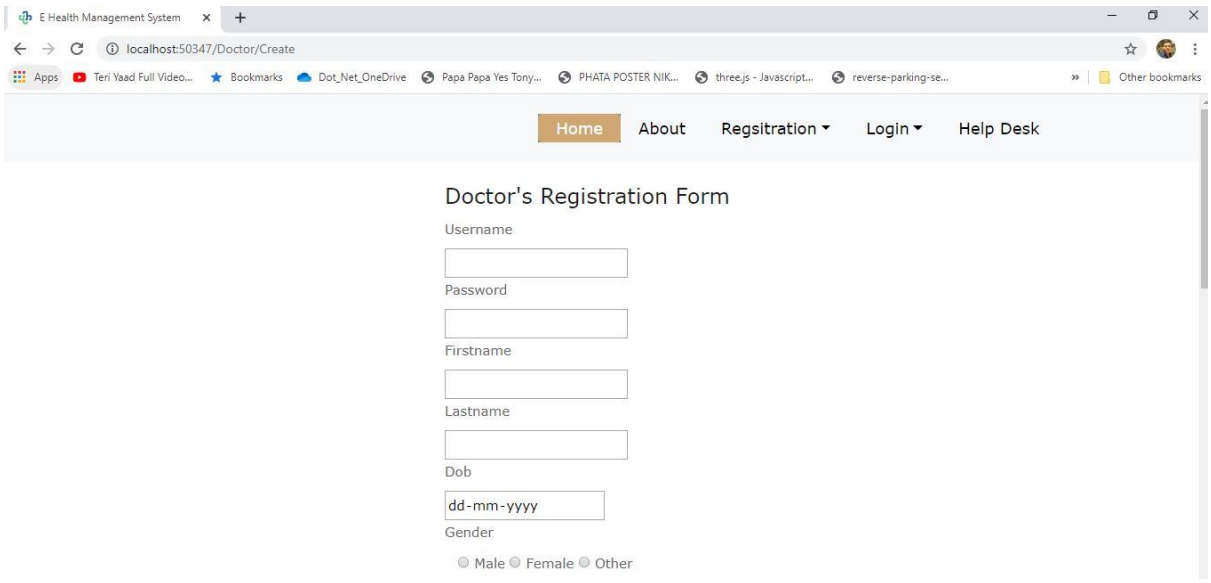
Home Page:



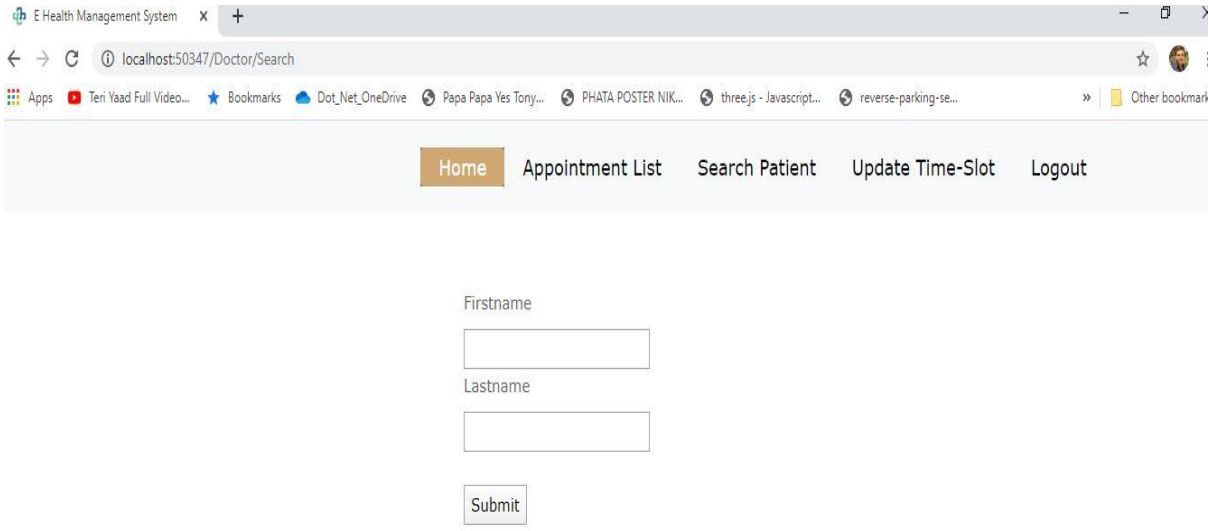
Login Page:



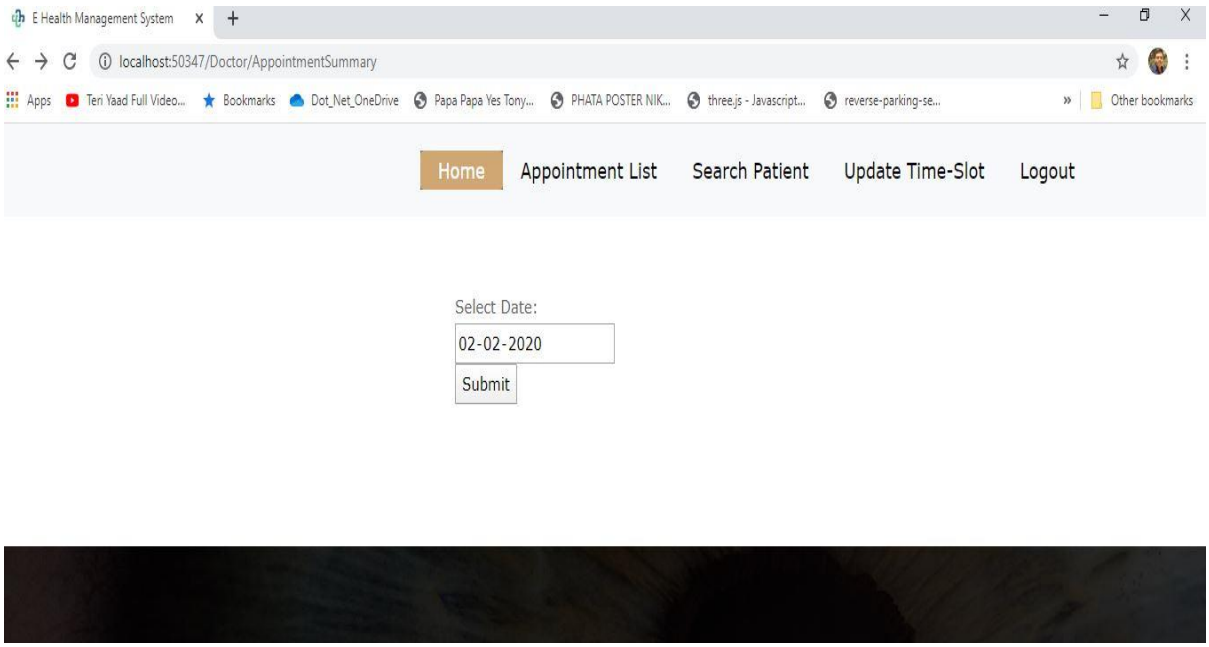
Registration Page:



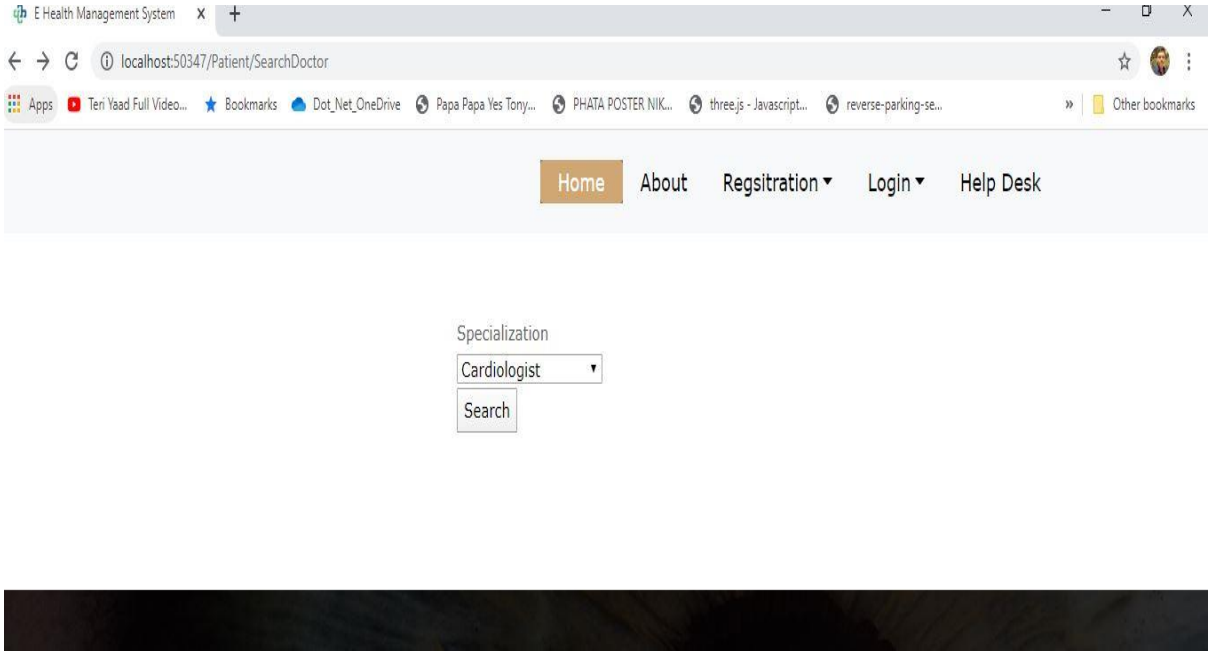
Search Patient:



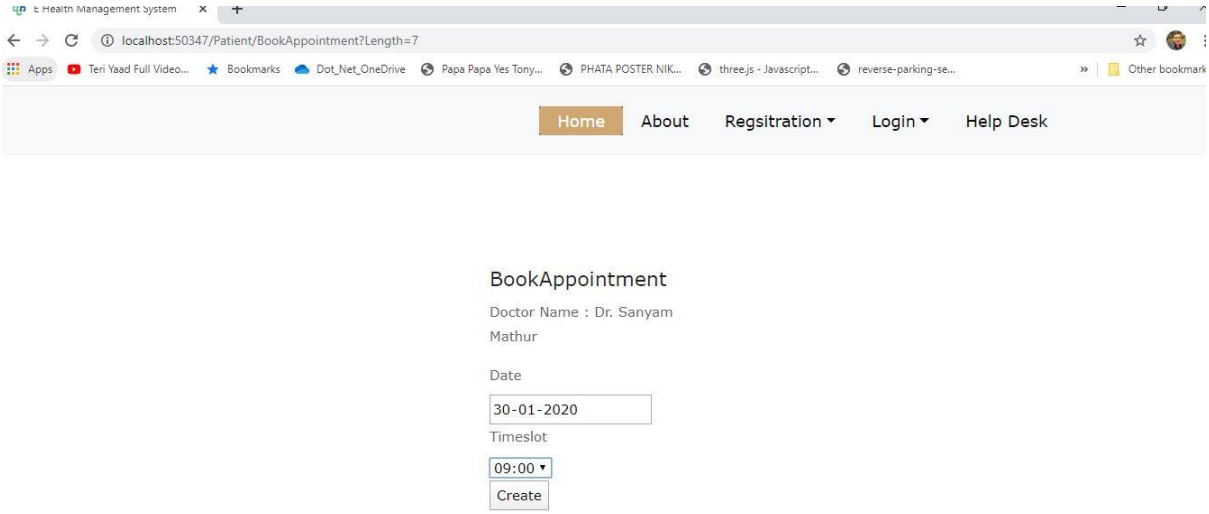
Appointment List:



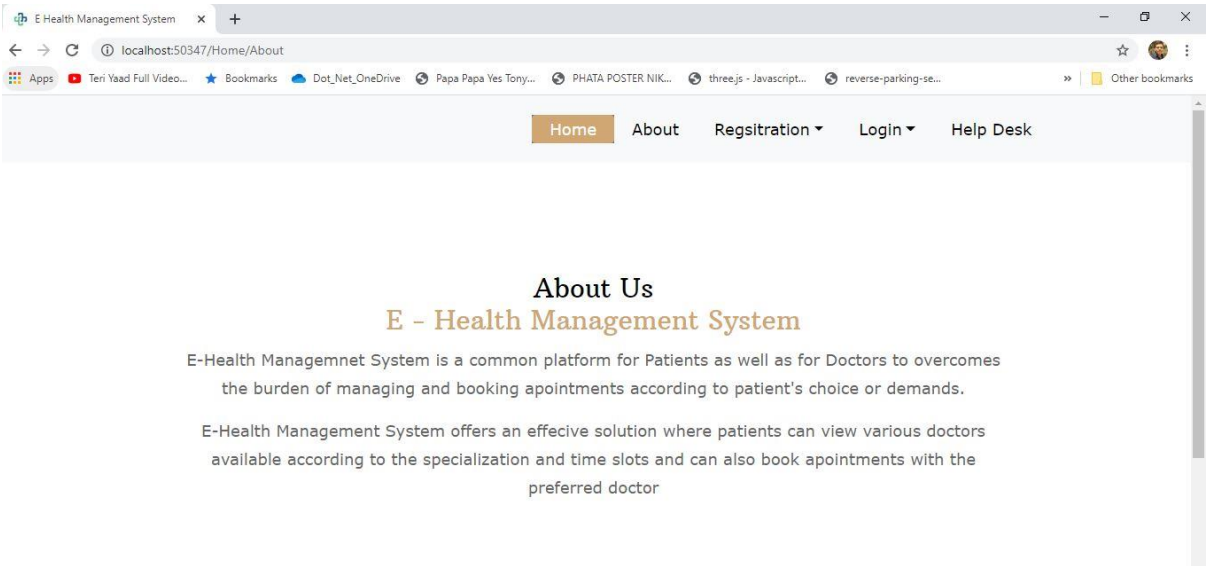
Search Doctor:



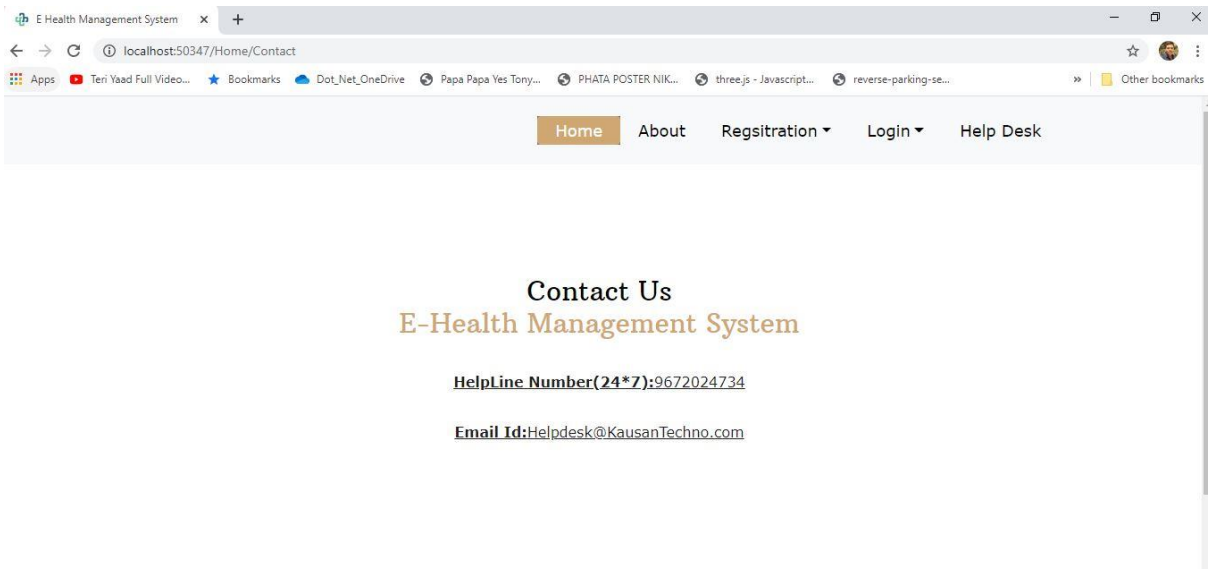
Book Appointment:



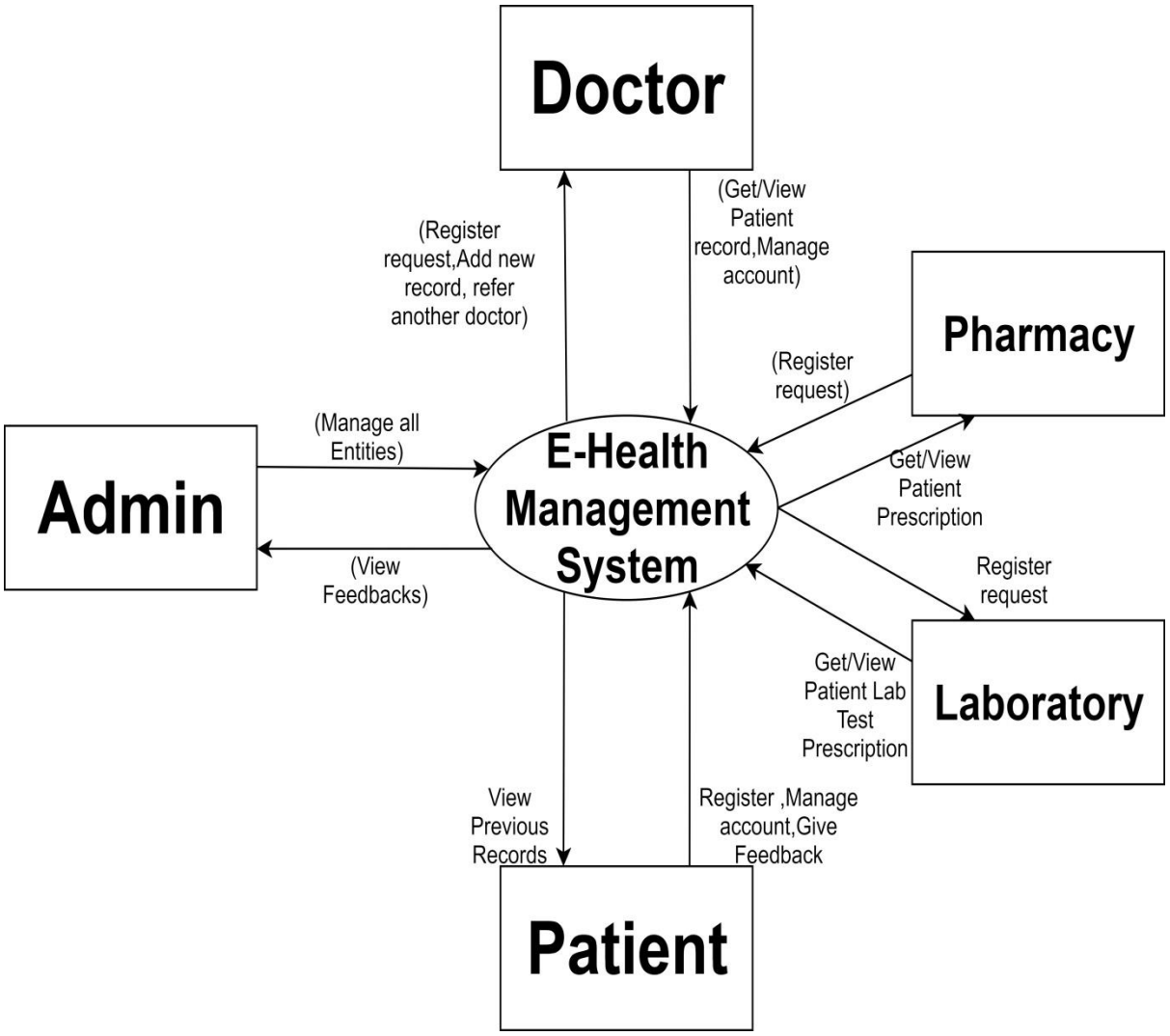
Aboutus:



Helpdesk:


E Health Management System
localhost:50347/Home/Contact
Home
About
Regsitration
Login
Help Desk
Contact Us
E-Health Management System
HelpLine Number(24*7):9672024734
Email Id:Helpdesk@KausanTechno.com

7.4 Data Flow Diagram:



8. Conclusion and Future Scope:

- E-Health Management system helps patients to save their medical history at the central repository i.e., any doctor who has a login to the system can view the patients previous history i.e., prescriptions and reports

- In future patient can take doctor appointment from our application and also find pharmacies through this platform.