

GUJARAT TECHNOLOGICAL UNIVERSITY



Chandkheda, Ahmedabad

Affiliated



G H PATEL COLLEGE OF ENGINEERING & TECHNOLOGY

A Project Report

On

Electronic Health Records

B. E. IV, Semester – VII

COMPUTER ENGINEERING

Submitted by:

Group:28070d

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Academic Year

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AKNOWLEDGEMENT

In performing our project, we had to take help and guideline of some respected persons, who deserve our greatest gratitude. The completion of this assignment gives us much pleasure. We would like to show our gratitude to **Prof. Krushna Pandit, G H PATEL COLLEGE OF ENGINEERING AND TECHNOLOGY** for giving us a worthy guideline for assignment throughout numerous consultations. We would also like to expand our deepest gratitude to all those who have directly and indirectly guided us in doing this project.

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We would also like to thank our Department of Computer Engineering to kindly support us in performing and evaluating this project.

Thanking you,

Prit Patel

CERTIFICATE

This is certifying that **Mr. Prit Patel** of Computer Engineering fourth year 8th Semester, Enrolment number: **140110107047** respectively has satisfactorily completed his term work in project (2180706) under the title “**Electronic Health Record**” for the term ending April 2018.

Date:

Guide By:

Prof. Krushna Pandit

Head CE Dept.

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GUJARAT TECHNOLOGICAL UNIVERSITY

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Place: Anand

Date: _____

Name of Guide: Prof. Krushna Pandit

Signature of Guide: _____

ABSTRACT

Electronic Medical Records are now creating significant impact on healthcare practices than ever before. Even though most of the reasons for implementing EMRs focus on improving medical care as a whole, individual should also consider the effective increased EMR use may have been at the level of the patient physician encounters.

Software's of ERMS are changing rapidly. Some healthcare organizations do not understand some functions of EMRs, even though they have many functionalities and uses which can be used to improve the relationship between patient and physician and the quality of patient's healthcare.

EMR stores approximately all the medical history of the patient maintained by patient and at the central database as well, which can be used in future to take care of the patient. Storing the medical records electronically can reduce the paper work, which can also be time efficient. EMR can contain the records such as x-Ray, medicines, physician consulted, family history etc.

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CHAPTER 1: INTRODUCTION

1.1 PROJECT SUMMARY

EHR is an App for electronic medical record. It is compatible with any android phone owned by the patient, and contains entire medical record. It is tamperproof it is infinitely more HIPPA compliant compared to current system and it is patient controlled. It is a cloud/web based system with a simple word platform. EHR is designed to empower the patient to control their own healthcare by providing state of the art medical information at their fingertips.

EHR is designed to restore the sanctity of patient physician relationship and reduce the influences of third parties such as insurance and government regulations from day to day patient care. Currently such interferences are causing havoc resulting in severely frustrated healthcare providers and nurses leading to poorer outcomes and patient satisfaction.

EHR is designed so the physician time with the patient will increase substantially. Under current system providers are barely able to spend few minutes with the patient face to face while spending twice the time completing paperwork and documentation that has nothing to do with patient's healthcare however it is imposed upon them because of regulatory mandates. With implementation of EHR providers will be able to spend almost 90% of their time with the patient face to face which will result in tremendous patient satisfaction and improved outcomes.

EHR is designed to eliminate redundancy from nurse's work which is burdened with need for unnecessary documentation, and repetitious robotic duties. Nurses will truly be able to focus on what they are trained to do which is "to take care of the patient" and assist physician to achieve best outcome for each and every patient. Data is easily transferred from one chart to the other and there is no need for faxing and copying. Happy nurses and happy staff!! Any information such as recent ER visits, hospital visits, different provider visits, all the tests done, will be instantly available wherever the patient is. This would prevent duplication of the testing, redundancy of duplicate records at multiple places and virtually will create a paperless environment in a true sense.

Each time App Is opened during the visit by a provider, a simple word page will open. On the left side of the page there is a vertical column which will have different folders. Starting on the top with demographics, past history, family history, social history, vaccinations, Physical examination, Labs are, X-rays and so on. Folders with names of the different physicians-patient is seeing. Under each physician folder tab visits will be listed in chronological order with dates.

Patient will have control over each of these tabs to lock or unlock. The data from the patient's device to physician's device can be transferred via a NFC (Near Field Communication) or authentication using a QR code will be done and then the secure data transfer will occur.

1.2 AIM AND OBJECTIVE OF THE PROJECT

The main purpose behind of this project will be to create a medium where all the medical records of the patient will be store centrally in a data base and even in the user's smart phone, which will reduce the paper work. EHR is designed to restore the sanctity of patient physician relationship and reduce the influences of third parties such as insurance and government regulations from day to day patient care. Currently such interferences are causing havoc resulting in severely frustrated healthcare providers and nurses leading to poorer outcomes and patient satisfaction.

EHR is designed so the physician time with the patient will increase substantially. Under current system providers are barely able to spend few minutes with the patient face to face while spending twice the time completing paperwork and documentation that has nothing to do with patient's healthcare however it is imposed upon them because of regulatory mandates. With implementation of EHR providers will be able to spend almost 90% of their time with the patient face to face which will result in tremendous patient satisfaction and improved outcomes. EHR is designed to eliminate redundancy from nurse's work which is burdened with need for unnecessary documentation, and repetitious robotic duties. Nurses will truly be able to focus on what they are trained to do which is "to take care of the patient" and assist physician to achieve best outcome for each and every patient.

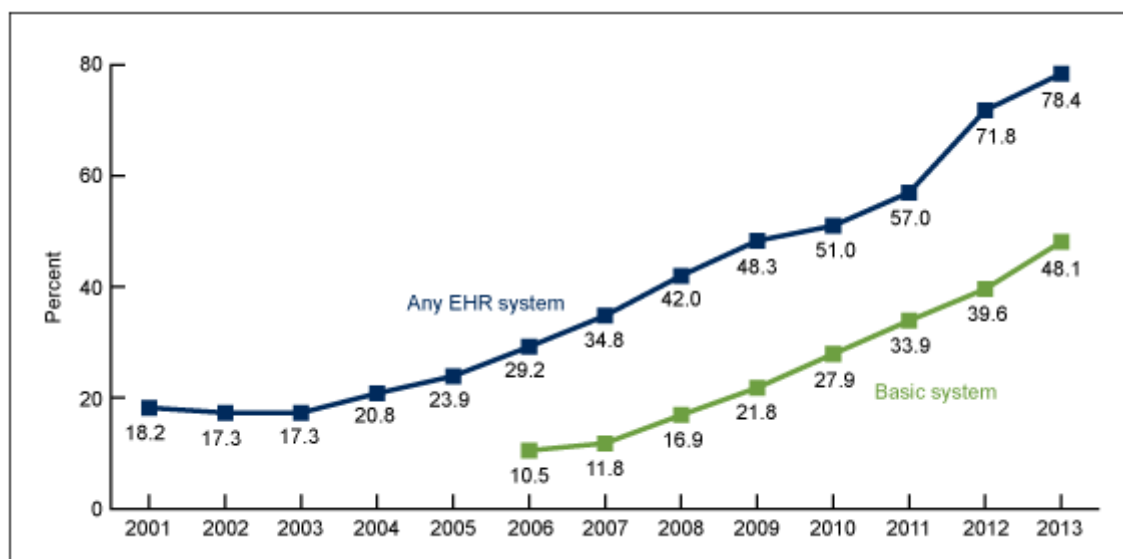
1.3 PROBLEM SPECIFICATION

This project ensure that the patients important data will be securely stored at the central data base and in patient's smartphone. Authentication techniques will be adopted to ensure that the data to be transferred is valid.

Patient will have a control on what data to share and what not to. User must be able to fetch all the data from the database when required without any data lose. Implementing this project will reduce the paper work and will store the data digitally. Doctors will be able to give their precious time to patients, which will improve the patient doctor relation.

1.4 BRIEF LITERATURE REVIEW

There Several evidence-based reviews that conclude some types of health information technology (IT), particularly electronic health records (EHRs) with advanced functionalities, have reduced medication errors and improved care processes, adherence to evidence-based guidelines, patient engagement, and patient satisfaction. Despite these many potential benefits, health care providers were initially slow to adopt EHRs. Around 2008, approx. 1.6 percent of non-federal acute care hospitals reported having a comprehensive EHR system and 7.7 percent had a basic EHR systems. Similarly, approximately 18 percent of office-based physicians used an EHR that met the criteria of a basic system in 2008. The basic purpose of this literature review is to provide examples of how organizations are implementing and optimizing the use of health EHRs from peer-reviewed publications and the gray literature by examining the context and organization specific factors, barriers and facilitators, and “lessons learned” associated with the successful implementation and optimal use of EHR systems.



Percentage of office based EHR physician with EHR System: US 2001-2013

1.5 MATERIAL / TOOLS REQUIRED

- The project will be developed using Android Studio which is a API for downloading android apps.
- SQL Server to connect android app with database.
- Inbuilt database to store user personal data.
- QR Code
- Bluetooth/Wi-Fi for data transfer.

CHATER 2: REQUIREMENT ANALYSIS

2.1 Feasibility study

Legal Feasibility

The proposed parking system will not only accumulate but also process and store sensitive data such as credit card information. The information is significant in processing the financial transactions when the customers are paying the parking fees. Such information is also considered personally identifiable as it can be used in uniquely identifying the clients utilizing the parking. In the present age, there are a lot of malicious individuals looking to secure access to such information for their personal gain. Privacy rules or data protection acts, such as HIPAA and PCIDSS, require all companies handling complex information to do with a lot of attention so as to protect the identity and funds of their customers. As a result, adequate measures have to be taken to ensure that the new system is secure so as to protect the clients' identity as well as from other losses in the event of an attack.

Operational Feasibility

The new system will not only solve the issues related to the existing system but also feat on the chances present. Some of the problems related the existing system include; first time customers find it hard in locating parking areas when they arrive at the airport, issues with identifying the most suitable parking, entering full parking lots then having to find new lots, and use of paper tickets which are also easily misplaced by the customers. The new system is predictable to solve these problems and capitalize on the market prospects. The airport's parking hence increasing the revenue produced due to the fact that eliminating these issues will encourage more customers to utilize the services provides this. The new system will also fit with the existing business situation hence optimizing the performance of the parking hence enabling it attain its objectives. This is due to the fact that the new system will be able to integrate and co-exist with the current system.

Economic Feasibility

The proposed or new system will add a lot of economic value to Developers. Basing on the given information, there are no exact figures on the amount of income generated by the parking. However, there is data indicating the faults of the current system, which discourage some customers from utilizing the parking. The new system will alleviate the faults of the current system hence retaining the old and attracting new customers. The new system will turn the old customers into repeat or loyal customers who will always be utilizing the parking despite increased rivalry, changes in prices or economic conditions. As a result, the parking will always be generating high proceeds and retain profitability. The new system will also enable the parking to attract new customers who will help in maximizing the revenue.

Technical Feasibility

The current system collects processes and stores many customer data utilized in the day-to-day actions of the parking. However, the current system is related to various faults. This is due to the fact that some of the customers have issues with discover parking areas, identify most suitable parking and also lose their paper tickets. Therefore, the new system requires a good infrastructure both hardware and software to enable it overcome these challenges successfully. The software has to be able to process the big data due to the large number of customers while

the hardware has to be able to store the large data. The airport also needs technically skilled staff so as to operate the IT infrastructure utilized by the parking. Good IT infrastructure and technically skilled employees will ensure that services are not interrupted.

2.2 USER CHARACTERISTICS

The end users of this system would be the Physicians, Patients, Technicians, Database Administrator, Developer, Employee.

1. **Physicians**: - Will be able to fetch particular patient's data and treat them. Unique patient ID will be used by the physician to retrieve the data. Physicians will have a privilege to update the patient's data.
2. **Patients**: - Will be able to manage their medical history store in a central data base and internal database as well. Patient will be able to give feedback.
3. **Technicians**: - Will provide technical support in case system faces any technical issues.
4. **Administrator**: - Will have all the privilege to access the data and can use all the functionality of the system.
5. **Developer**: - Will provide technical software updates to the application if required.
6. **Employee**: - Will not have all the functionalities. Employee will not have the privilege to update the patient's data.

2.3 HARDWARE AND SOFTWARE REQUIREMENT

Hardware Requirements

- External Database
- CPU type: Intel Pentium 4
- Clock Speed: 3.0GHZ
- Ram Size: 512 MB
- Hard Disk Capacity: 40 GB
- Mobile: Android Mobile

Software Requirements

- Operating System: Android
- The Android SDK

- Apache Ant
- Android Operating System in Smart Phone

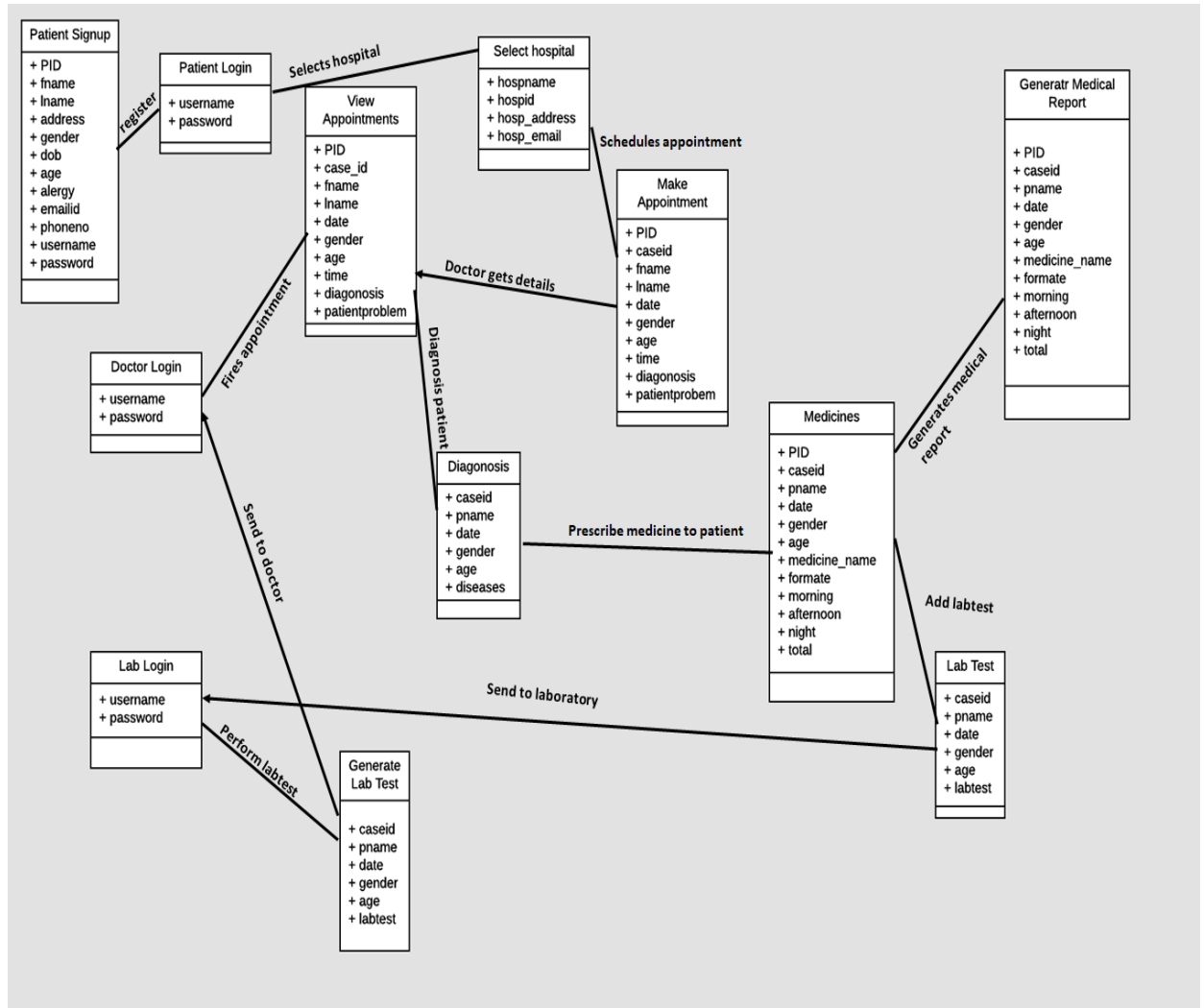
2.4 TOOLS AND TECHNOLOGY

- PHPStroam
- Mysql Database
- APIs

CHAPTER 3: SYSTEM DESIGN

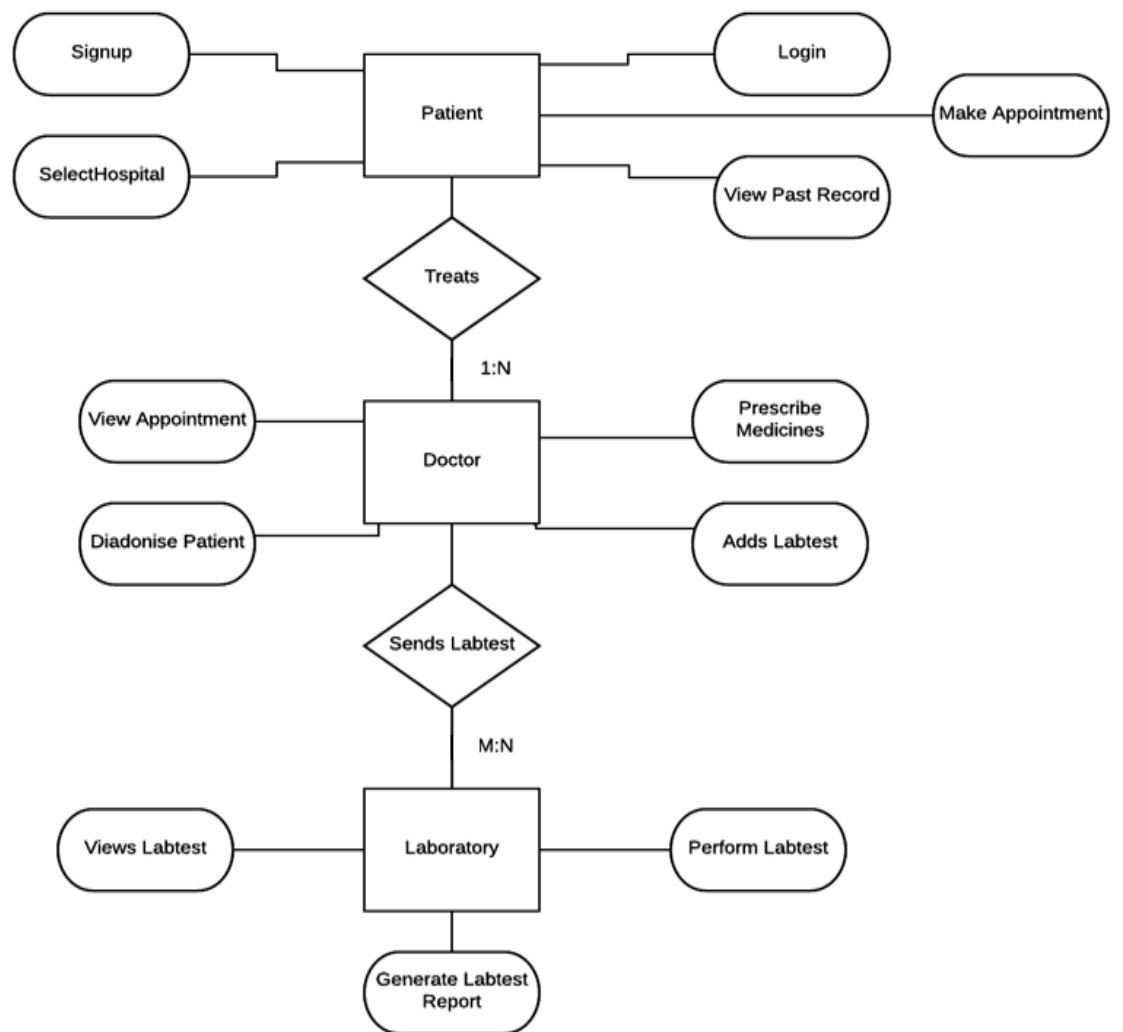
3.1 CLASS DIAGRAM

Class Diagram of EHR



(Class Diagram)

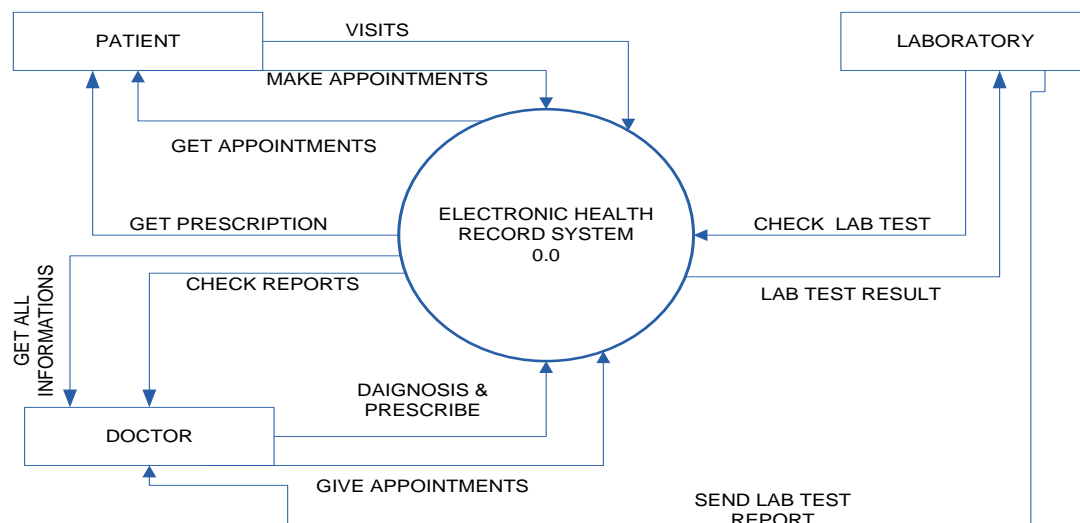
3.2 E-R DIAGRAM



(E-R Diagram)

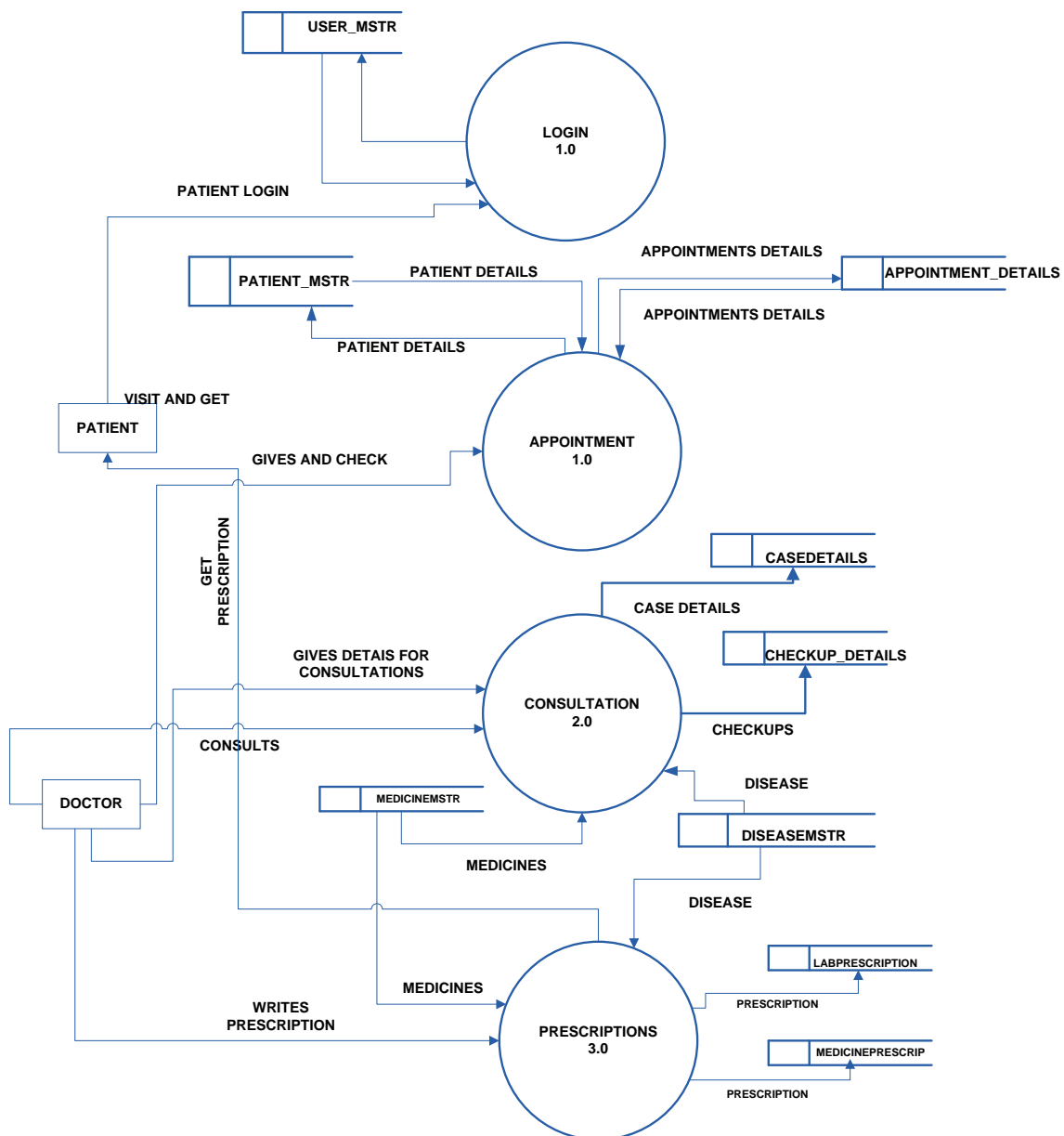
3.3 DATA FLOW DIAGRAM(DFD)

EHR System DFD Diagram



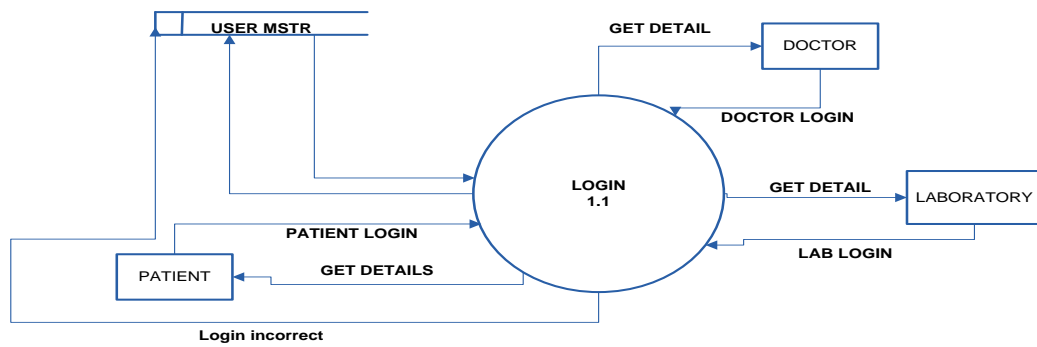
LEVEL-0 DFD

(DFD Level-0)

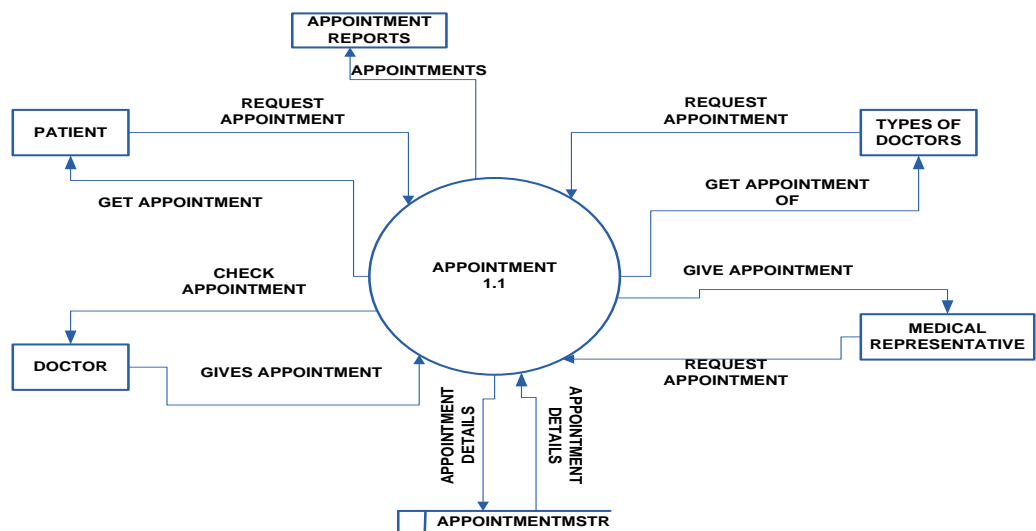


FIRST LEVEL DFD

(DFD Level-1)

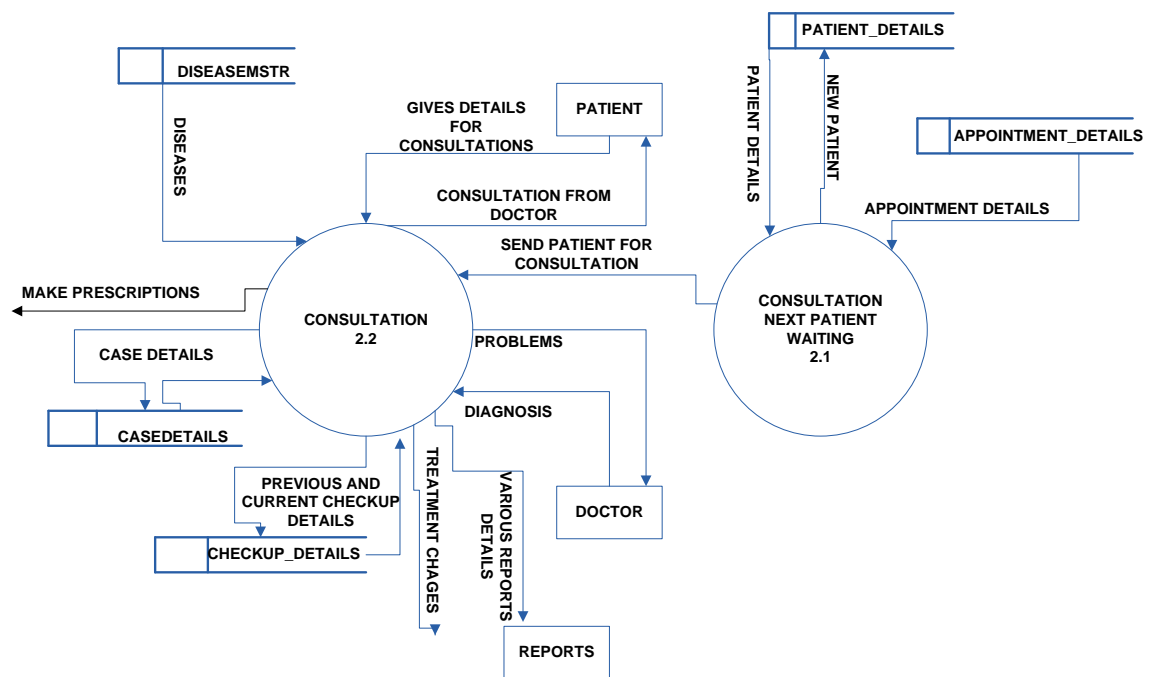


LEVEL-2 DFD FOR LOGIN

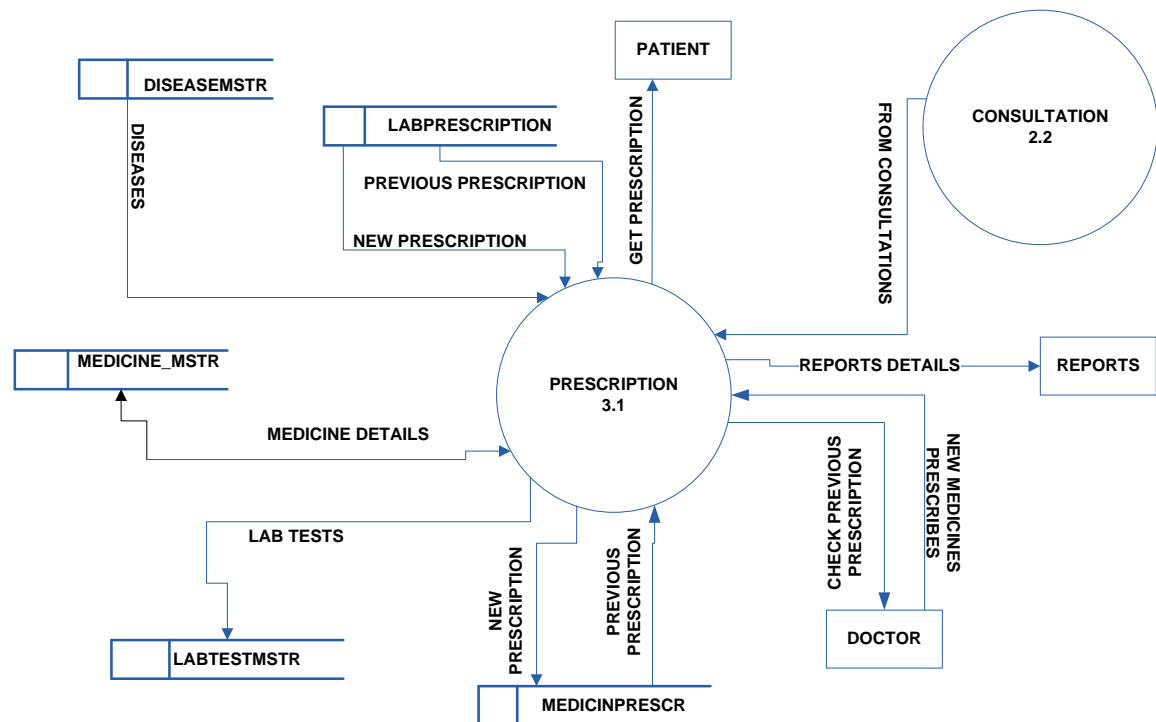


LEVEL-2 DFD FOR APPOINTMENT

(DFD Level-2)



LEVEL 2 DFD FOR CONSULTATION

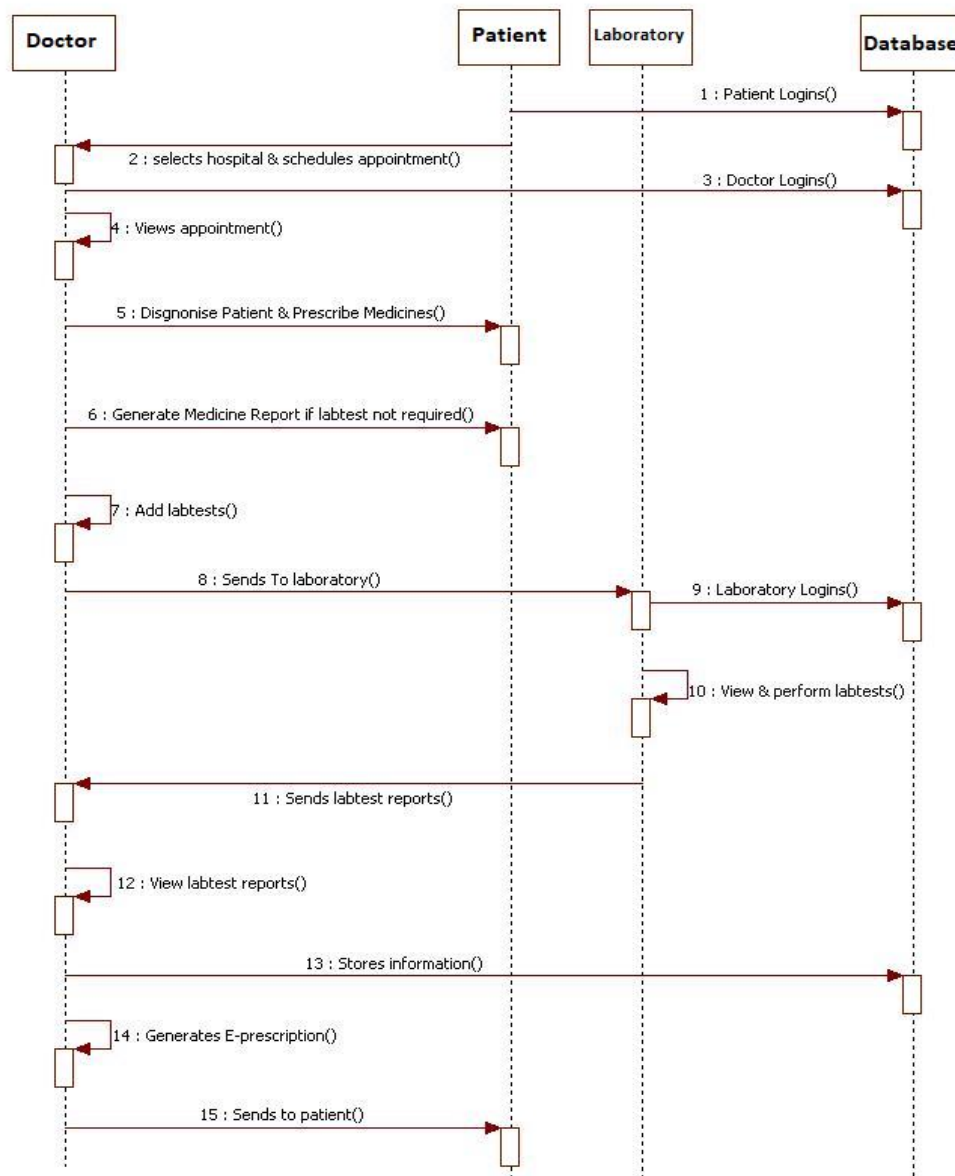


LEVEL 2 DFD FOR PRESCRIPTION

(DFD level-2)

3.4 SEQUENCE DIAGRAM

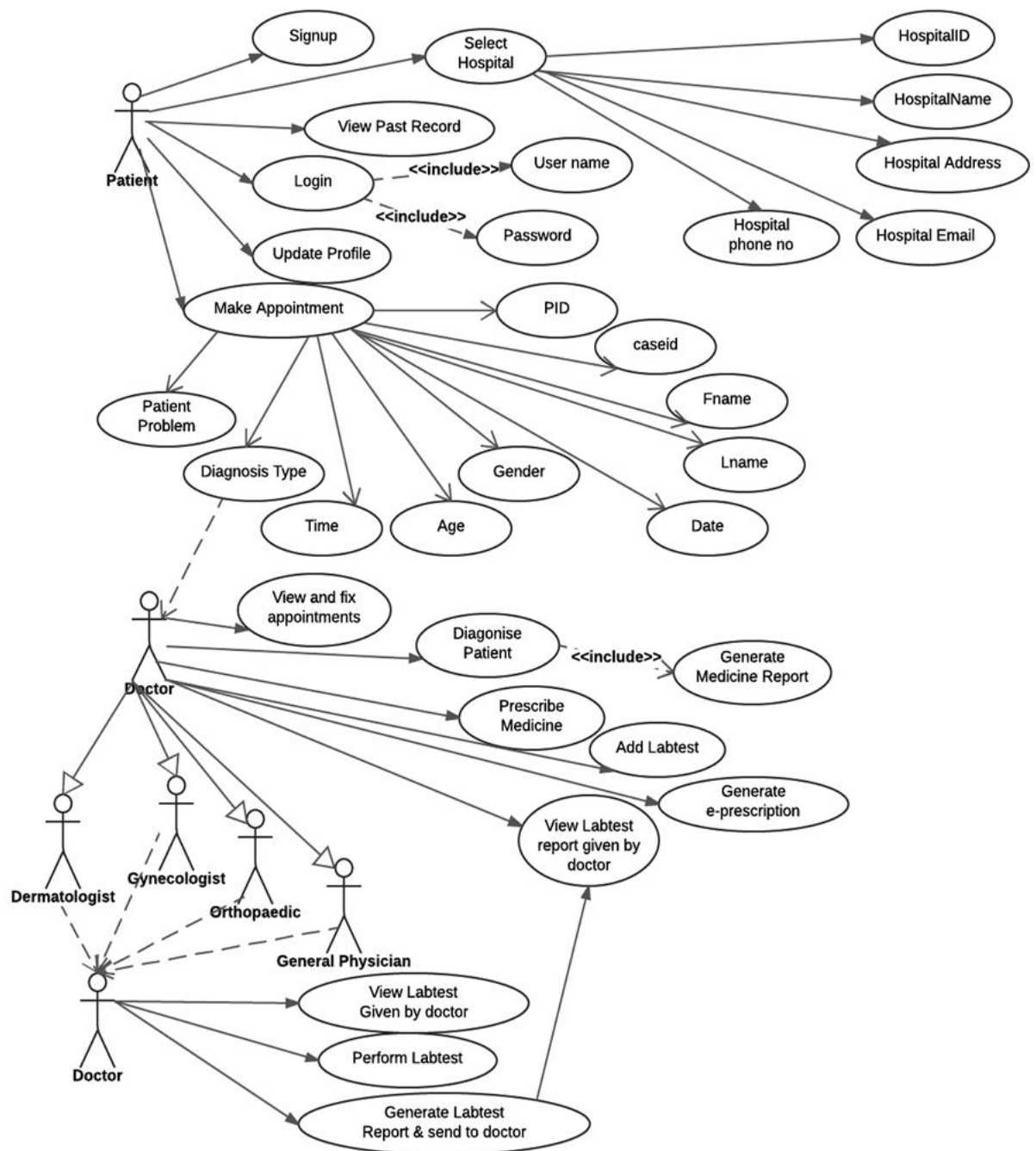
SEQUENCE DIAGRAM FOR EHR SYSTEM



(Sequence Diagram)

3.5 USE CASE DIAGRAM

USE-CASE DIAGRAM FOR EHR SYSTEM



(Use Case Diagram)

CHAPTER 4: DATA DICTIONARY

Table: User_Login_Table

Filename	Datatype	Description	Constraint
UID	Int(50)	Primary	Unique Key_AInc
User Name	Varchar(50)		PK
Password	varchar		-
CreateDateTime			
UpdateDateTime			
Status	Varchar(50)		
Active	Varchar(50)		
Type	Varchar(50)		

Table:Use_Info_Table

Filename	Datatype	Description	Constraint
User_Info_Id	Int(50)	Primary	Unique Key_AIn
User_Name	Varchar(50)		Foreign key
Full Name	Varchar(50)		
Gender	Varchar(50)		
DOB	Int(50)		
City	Varchar(50)		
Pincode	Int(50)		
M_Number	Int(50)		
Email_ID	Varchar(50)		
Address	Varchar(50)		
CreateDateTime			
UpdateDateTime			

Table: Prescription_Table

Filename	Datatype	Description	Constraint
UserID	Int(50)	Primary	Not Null
Prescribed Medicines	Varchar(50)		
D_ID	Int(50)		
Doctor Type	Varchar(50)		
H_ID	Int(50)		
CreateDateTime			
UpdateDateTime			

Table: Hospital_Table

Filename	Datatype	Description	Constraint
H_Name	Varchar(50)		
H_ID	Int(50)	Primary	Not Null
H_Address	Varchar(50)		
Contact No.	Number(15)		
D_ID	Int(50)		
CreateDateTime			
UpdateDateTime			

Table: Doctor_Table

Filename	Datatype	Description	Constraint
D_ID	int(50)	Primary Key	Not Null
D_FName	Varchar(50)		
D_LName	Varchar(50)		
D_Email	Varchar(50)		
D_Contact No.	Number(15)		
Age	Number(100)		
Speciality	Varchar(50)		
H_ID	int(50)		Foreign Key
CreateDateTime			
UpdateDateTime			

Table: Patient_Table

Filename	Datatype	Description	Constraint
P_ID	int(50)	Primary Key	Not Null
P_FName	Varchar(50)		
P_LName	Varchar(50)		
P_Email	Varchar(50)		
P_Contact No.	Number(15)		
Age	Varchar(50)		
CreateDateTime			
UpdateDateTime			

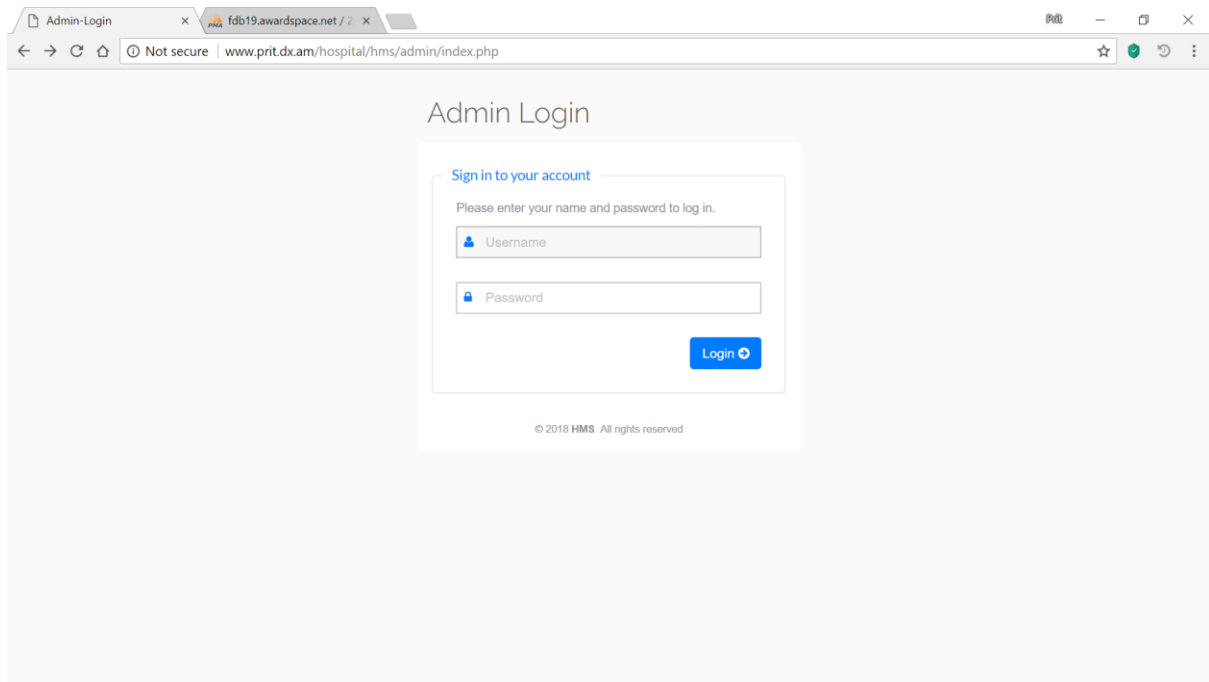
Tabel: Patient_History

Filename	Datatype	Description	Constraint
P_ID	Int(50)	Primary Key	Not Null
Document_Type	Varchar(50)		
CreateDataTime			
UpdateDateTime			

Tabel: Lab Test

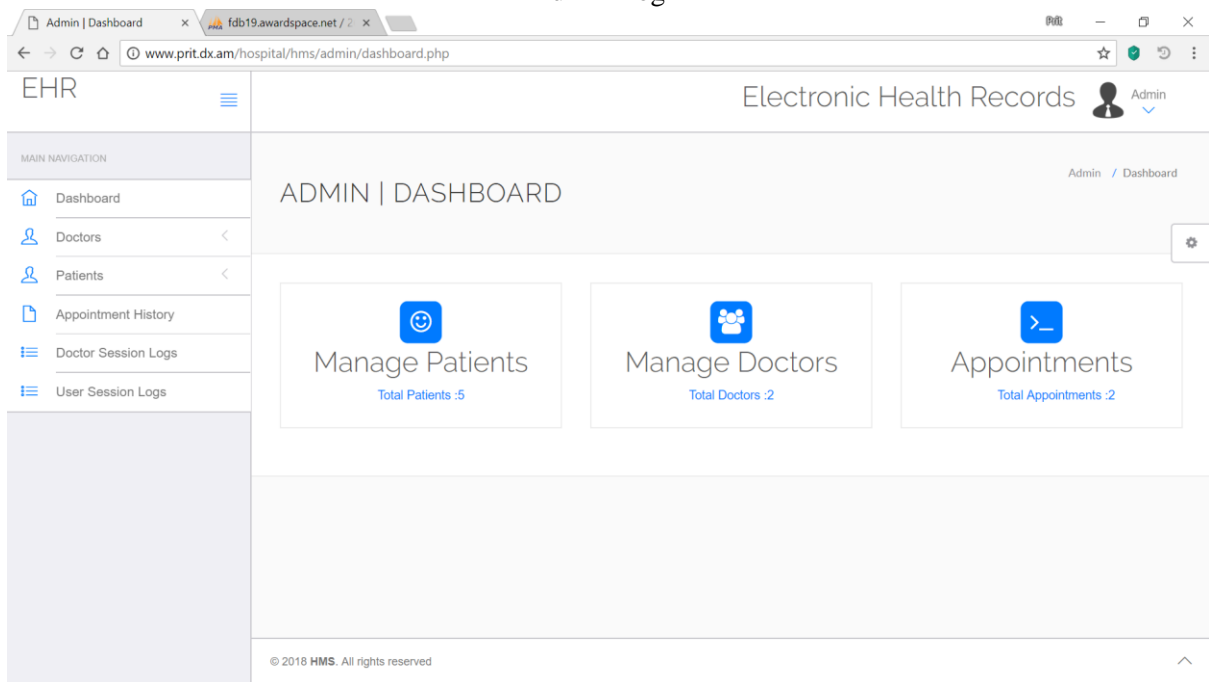
Filename	Datatype	Description	Constraint
P_ID	Int(50)	Primary Key	Not Null
D_ID	Int(50)		
Document_Type	Varchar(50)		
CreateDataTime			
UpdateDateTime			

CHAPTER 5: SNAPSHOTS



The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/admin/index.php`. The page is titled "Admin Login". It features a login form with the heading "Sign in to your account" and the instruction "Please enter your name and password to log in." The form contains two input fields: "Username" and "Password", each with a corresponding icon (a person for username and a lock for password). A blue "Login" button is positioned to the right of the password field. Below the form, the text "© 2018 HMS. All rights reserved" is displayed.

Admin Login



The screenshot shows the "Admin | Dashboard" page of the Electronic Health Records system. The browser window has the URL `www.prit.dx.am/hospital/hms/admin/dashboard.php`. The page layout includes a sidebar on the left with the "EHR" logo and a "MAIN NAVIGATION" menu containing links to Dashboard, Doctors, Patients, Appointment History, Doctor Session Logs, and User Session Logs. The main content area is titled "ADMIN | DASHBOARD" and features three large cards: "Manage Patients" (with a smiley face icon and "Total Patients :5"), "Manage Doctors" (with a group of people icon and "Total Doctors :2"), and "Appointments" (with a calendar icon and "Total Appointments :2"). The top right of the dashboard shows the user "Admin" and a settings gear icon. The footer includes the text "© 2018 HMS. All rights reserved" and an upward arrow icon.

Admin Dashboard

The screenshot shows the 'Add Doctor' form in the EHR system. The browser address bar displays 'www.pritdx.am/hospital/hms/admin/add-doctor.php'. The left sidebar contains navigation links: Dashboard, Doctors, Patients, Appointment History, Doctor Session Logs, and User Session Logs. The main content area is titled 'ADMIN | ADD DOCTOR' and contains a form with the following fields:

- Doctor Specialization: Select Specialization
- Doctor Name: Enter Doctor Name
- Doctor Clinic Address: Enter Doctor Clinic Address
- Doctor Consultancy Fees: Enter Doctor Consultancy Fees
- Doctor Contact no: Enter Doctor Contact no
- Doctor Email: Enter Doctor Email id
- Gender: ☐ Female ☐ Male
- Password: New Password
- Confirm Password: Confirm Password

A 'Submit' button is located at the bottom of the form.

Add Doctor

The screenshot shows the 'Manage Doctors' table in the EHR system. The browser address bar displays 'www.pritdx.am/hospital/hms/admin/manage-doctors.php'. The left sidebar is the same as the previous screenshot. The main content area is titled 'ADMIN | MANAGE DOCTORS' and contains a table with the following data:

#	Specialization	Doctor Name	Creation Date	Action
1.	Neurologist	Yogesh Patel	2018-02-21 09:48:22	✎ ✕
2.	Ayurved	Vijay	2018-04-08 15:31:27	✎ ✕

Manage Doctor

ADMIN | ADD DOCTOR

Add Doctor

Patient Name
Enter Patient Name

Patient Address
Enter Patient Address

Patient City
Enter Patient City

Patient Age
Enter Patient Age

Patient Contact no
Enter Patient Contact no

Patient Email
Enter Patient Email id

Gender
☐ Female ☐ Male

Password
New Password

Confirm Password
Confirm Password

[Submit](#)

Add Patient

ADMIN | MANAGE PATIENTS

Manage Patients

#	Full Name	Address	Age	Gender	Email	Creation Date	Update Date	Action
1.	Ritu Shah	Bhavnagar	23	Female	ritu@gmail.com	2018-02-01 12:03:47	02-04-2018 10:31:14 PM	✎ ✖
2.	priti	3321	21	male	priti907@gmail.com	2018-03-02 11:52:05		✎ ✖
3.	Ketan Patel	5072 Maiden Lane Ct Southaven, MS 38872	34	male	ketanp@gmail.com	2018-04-02 19:41:55		✎ ✖
4.	RaneshKetan Patel	5072 Maiden Lane Ct Southaven, MS 38872	34	male	ranesh@gmail.com	2018-04-02 19:41:55		✎ ✖
5.	Ketan	5072 maiden ln ct	37	male	ketan907@gmail.com	2018-04-07 20:37:22		✎ ✖

Manage Patient

Doctor Login

EHR | Doctor Login

Sign in to your account

Please enter your name and password to log in.

Username

Password

Login

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Doctor Login

Doctor | Dashboard

Doctor | Dashboard

Electronic Health Records

My Profile

Update Profile

My Appointments

View Appointment History

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Doctor Dashboard

The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/doctor/add-medication.php`. The page title is "DOCTOR | ADD MEDICATION". On the left is a sidebar menu with options: Dashboard, Add Medication, Add Labtest, Add Radiology Image, Add Patient History, Display Medical History, Display Patient Labtest, Display Medication, and Display Radiology Images. The main content area contains a form titled "Add Medication" with the following fields: "Consulted Doctor ID" (with a dropdown arrow), "Patient ID" (with a dropdown arrow), "Medication" (text input), "Dosage" (text input), and "Frequency" (text input). A "Submit" button is at the bottom of the form. The top right of the page shows "Electronic Health Records" and a user profile icon.

Add Medication

The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/doctor/add-labtest.php`. The page title is "DOCTOR | ADD LABTEST". The sidebar menu is identical to the previous screenshot. The main content area contains a form titled "Add Labtest" with the following fields: "Consulted Doctor ID" (with a dropdown arrow), "Patient ID" (with a dropdown arrow), "File Description" (text input), and "Upload Report" (text input). Below the "Upload Report" field is a "Choose File" button and the text "No file chosen". A "Submit" button is at the bottom of the form. The top right of the page shows "Electronic Health Records" and a user profile icon.

Add Latest

The screenshot shows a web browser window with the URL www.pritdx.am/hospital/hms/doctor/add-radioimage.php. The page is titled "DOCTOR | ADD RADIO REPORT". On the left is a sidebar menu with options: Dashboard, Add Medication, Add Labtest, Add Radiology Image, Add Patient History, Display Medical History, Display Patient Labtest, Display Medication, and Display Radiology Images. The main content area contains a form titled "Add Radio Report" with the following fields: "Consulted Doctor ID" (with a dropdown arrow), "Patient ID" (with a dropdown arrow), "File Description" (text input), and "Upload Report" (with a "Choose File" button and the text "No file chosen"). A "Submit" button is at the bottom of the form. The top right of the page shows "Electronic Health Records" and a user profile icon.

Add Radio Report

The screenshot shows a web browser window with the URL www.pritdx.am/hospital/hms/doctor/add-medicalhistory.php. The page is titled "DOCTOR | ADD MEDICATION". The sidebar menu is identical to the previous screenshot. The main content area contains a form titled "Add Medication" with the following fields: "Consulted Doctor ID" (dropdown), "Patient ID" (dropdown), and a series of checkboxes for medical history: "Chicken pox or shingles", "Measles", "Mumps", "Scar Problem or chronic rash", "Eye problems", "Hearing loss or ear problems", "Chronic Cough", "Asthma", "Shortness of breath", "Lung problem", "Tuberculosis or positive TB skin test", and "Chest pain". Each checkbox has "YES" and "NO" radio button options. A "Submit" button is at the bottom of the form. The top right of the page shows "Electronic Health Records" and a user profile icon.

Add Medication

Add Medication

Doctor | Display Medical History

Electronic Health Records

DOCTOR | DISPLAY MEDICAL HISTORY

Display Medical History

Enter Patient ID

Enter Patient ID

Submit

#	1
MI	31
Consulted Doctor ID	mg@gmail.com
Patient ID	helpata@gmail.com
Chicken pox or shingles	yes
Measles	yes
Mumps	yes
Skin Problem or chronic rash	yes
Eye problems	yes
Hearing loss or ear problems	yes
Chronic Cough	no
Asthma	no
Shortness of breath	no
Lung problem	no
Tuberculosis or positive TB skin test	no
Chest pain	yes
Heart Stroke attack	no
Palpitations/irregular heart break	no
Heart murmur	yes
High Blood Pressure	no
Stroke or paralysis	no
Stomach or intestinal problem	no
Liver disease/hepatitis	yes
Kidney disease	no
Weight change	no

Display Medical History

Doctor | Display Labtest

Electronic Health Records

DOCTOR | DISPLAY LABTEST

Display labtest

Enter Patient ID

Enter Patient ID

Submit

#	MI	DocID	PatiID	File Description	File	Date	Filed
1	25	mg@gmail.com	helpata@gmail.com	Blood Report	http://prtdx.am/hospital/hms/doctor/labtest/heart.jpg	2019-04-02 18:01:21	Filed
2	25	mg@gmail.com	helpata@gmail.com	Blood Report	http://prtdx.am/hospital/hms/doctor/labtest/heart-1.jpg	2019-04-02 18:03:58	Filed

Display Labtest

The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/doctor/display-medication.php`. The page title is "DOCTOR | DISPLAY MEDICATIONS". On the left is a sidebar menu with options: Dashboard, Add Medication, Add Labtest, Add Radiology Image, Add Patient History, Display Medical History, Display Patient Labtest, Display Medication (selected), and Display Radiomages. The main content area has a header "DOCTOR | DISPLAY MEDICATIONS" and a sub-header "Display Medications". Below this is a form with "Enter Patient ID:" and "Enter Patient ID:" fields, and a "Submit" button. The form displays a table of medication data:

#	id	DocID	PatID	Medication	Dosage	Frequency	Date
1.	13	yngash@gmail.com	kequts@gmail.com	Medicine Name	Dosage	Frequency	2019-04-02 19:58:00
2.	14	yngash@gmail.com	kequts@gmail.com	Medicine Name	Dosage	Frequency	2019-04-02 19:58:00
3.	15	yngash@gmail.com	kequts@gmail.com	Medicine Name	Dosage	Frequency	2019-04-02 19:58:00

Display Medication

The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/doctor/display-radioimage.php`. The page title is "DOCTOR | DISPLAY RADIOIMAGES". On the left is a sidebar menu with options: Dashboard, Add Medication, Add Labtest, Add Radiology Image, Add Patient History, Display Medical History, Display Patient Labtest, Display Medication, and Display Radiomages (selected). The main content area has a header "DOCTOR | DISPLAY RADIOIMAGES" and a sub-header "Display Radiomages". Below this is a form with "Enter Patient ID:" and "Enter Patient ID:" fields, and a "Submit" button. The form displays a table of radiology image data:

#	id	DocID	PatID	File Description	File	Date
---	----	-------	-------	------------------	------	------

Display Radio Images

The screenshot shows a web browser window with the URL `www.prit.dx.am/hospital/hms/doctor/edit-profile.php`. The page title is "DOCTOR | EDIT DOCTOR DETAILS". On the left is a sidebar menu with options: Dashboard, Add Medication, Add Labtest, Add Radiology Image, Add Patient History, Display Medical History, Display Patient Labtest, Display Medication, and Display Radiology Images. The main content area contains a form titled "Edit Doctor" with the following fields:

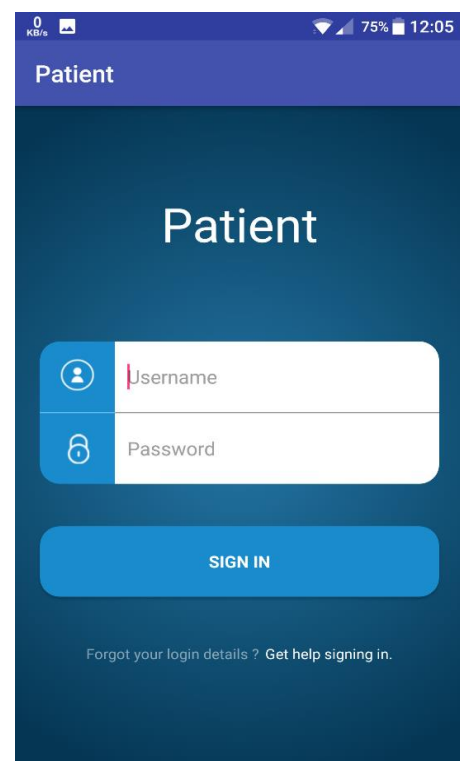
- Doctor Specialization:
- Doctor Name:
- Doctor Clinic Address:
- Doctor Consultancy Fees:
- Doctor Contact no:
- Doctor Email:

At the bottom of the form is an "Update" button. The browser's address bar shows the URL, and the top right corner displays "Electronic Health Records" with a user profile icon.

Doctor Detail



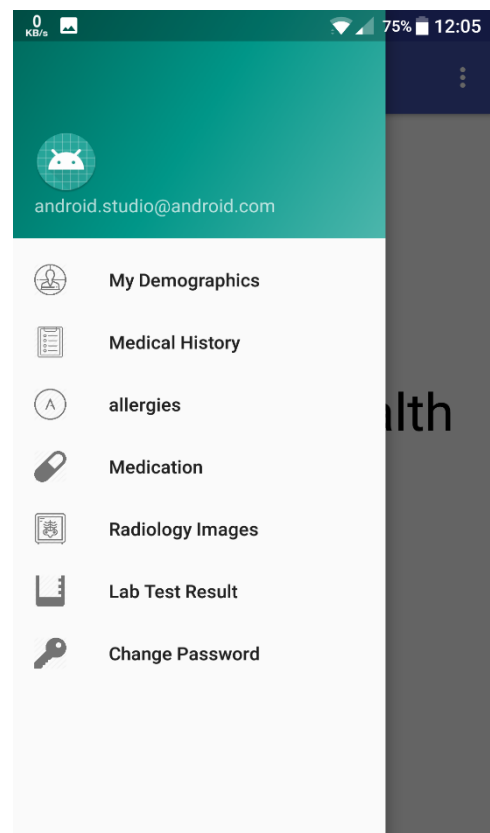
Main Page



Patient Login



Patient Dashboard



Patient Navigation

My demographics

Email
ketpate@gmail.com

Name
Ketan Patel

Age
34

Address
5072 Maiden Lane Cv.Southaven, MS 38672

City
Southaven

Gender
male

[Update](#)

My Demographics

Display Medical History

#	1
id	31
Consulted Doctor ID	rrr@gmail.com
Patient ID	ketpate@gmail.com
Chicken pox or shingles	yes
Measles	yes
Mumps	yes
Skin Problem or chronic rash	yes
Eye problems	yes
Hearing loss or ear problems	yes
Chronic Cough	no
Asthma	no
Shortness of breath	no
Lung problem	no

Display Medical History

Display Medications

#	id	DocID	Medication	Dosage	Frequ
1.	13	yogesh@gmail.com	Medicine Name	Dosage	Frequ
2.	14	yogesh@gmail.com	Medicine Name	Dosage	Frequ
3.	15	yogesh@gmail.com	Medicine Name	Dosage	Frequ

Display Medication

Display Radio Images

#	id	DocID	File Description	File	Date
1.	7	yogesh@gmail.com	X-ray(Hand)	View	2018-04-02 20:07:1

Display Radio Images

#	id	Doctor Email	File Description	File	Date
1.	25	yogesh@gmail.com	Blood Report	View	2019-02-19
2.	26	yogesh@gmail.com	Blood Report	View	2019-02-19

Display Latest

Change Password

Current Password

New Password

Confirm Password

[Submit](#)

Change Password

CHAPTER 6: SUMMARY OF RESULTS

6.1 FUTURE SCOPE

In this semester I designed and programmed most of the modules of my project and in future I will be planning to connect application with an external database so that the data can be stored centrally.

In future many more features can be added as specified below:

- Bill Payment
- QR Code
- NFC (Near Field Communication)
- Connecting External database and internal database

6.2 ADVANTAGES

After implementing this system, the following advantages can be seen:

- Improves patient time with doctor
- Patient Satisfaction
- Will reduce paper work
- As there will be less paper work nurse will be able to take care of patient effectively.
- Patients sanity

6.3 LIMITATION

- The system cannot be used in absence of internet.
- Application must be installed on user's smartphone.
- Only registered users will be allowed.
- Internet connection is required.

6.4 CONCLUSION

After successful implementation of this project the users which in our case which are patients and the physicians will be easily able to share their data with each other. The patients will be able to keep track of all his/her health records centrally which will reduce paper work. Electronic Health Records will be used by patients and physicians.

During a regular ER visit all the necessary documents will be available, so that the physicians can take proper care of the patient. Documents such as insurance, x-rays, Prescription, Medicines, consulting doctor, and all medical related records will be stored centrally.

Doctors will be able to spend 90% of their time with patient face to face which will result in tremendous patient satisfaction and will improve outcomes. And will also reduce the nurse work which is burdened with need for unnecessary documentation, and repetitious robotic duties. Data will be easily transferred from one chart to the other and there is no need for faxing and copying.

CHAPTER 7: REFERENCE

References

Reference Materials

- I referred all this articles, research papers and patents:
 - A) **Brian Fung** - How US Health care system waste \$750 billion annually
 - B) **Joseph S. Alpert** - The electronic medical records in 2016: Advantages and Disadvantages
 - C) **Keith L Martin** - It's time for everyone to stop talking interoperability and actually achieve it
 - D) **Ken Terry** - Why are doctors still waiting for interoperability?
 - E) **Allan H. Goroll** - Emerging from HER Purgatory --- Moving from Process to Outcomes

CHAPTER 8: APPENDIX

