

1.1 COMPANY PROFILE

Technotronix is an emerging IT consulting company providing end to end corporate services and solutions. Our primary focus is to provide affordable software solutions for our clientele with an edge of technological advancement and change driven ideology. It has consulting practice and service oriented delivery with experienced IT professionals in Software Engineering, Off-the-shelf technology solutions on a case by case basis to satisfy specific requirements of our clients. We leverage our proven expertise in developing technology to drive business efficiency and productivity to satisfy customers increasingly demanding requirement to improve operational efficiency, higher employee productivity, faster go-to-market, and maximized customer satisfaction.

Technotronix deploys a global delivery model for Enterprise Solutions, Client Relationship Management, Business Intelligence,

Business Process Operations & Quality Management, Product Lifecycle Management, and Infrastructure Management Services by Facilitating skilled technical resources, technical consulting and project management for our clients.

1.1 **Existing System and Need for System:-**

Existing system is a manual register system In a Hospital, the staff on duty in the front-office has a lot to do in terms of Incoming patients, Registration, Allotting Rooms and beds, coordinating with Doctors, making Bills etc. Manually it is very difficult to maintain information with regard to all these aspects.

There are lots of chances of error and hence a monetary loss to the hospital or inconvenience to Patients and also a time consuming procedure.

Need Of System:

- In order to overcome the condition of chaos at the front office in a Hospital, it is proposed to develop software to maintain the information of Bed's, information of the departments, doctor's information, maintain the Patients database, services provided to the patients, Registration and Discharge details along with Billing of patients.

- Computerization has become a must for efficient Hospital management. Computers can reduce the manual workload and give information simply at the press of a button.
- These days computerising of patient medical records are helpful in analysing records and post evaluation of these records for helping hospitals and doctors measure and improve the quality of care they provide.

1.2 Scope of Work:-

The goal of system is to provide the platform for different users to access different kind of services and reduce data redundancy. There are 5 users of this system.

I)Admin -

Authorizes and authenticates other users of this system.

Creates login credentials for other users

Add / Update Doctor and Doctor Details

Add / Update Employees Details

Add /Update Departments of the Hospital

II)Receptionist

Record Inpatient Admission and Discharge Details.

Registers Outpatient and schedule appointments

Add Bed Details

Update and Maintain Patient's Payments Receivables

III) Lab Assistant

Add / Update Lab Test details to the patient's Account

Add / Update Test Results to the Patient's Records

Update Patient's Account with the Test Charges.

IV)Nurse

Add / Update Patient's Medication Prescription Details

V)Doctor

View the date specific Appointments Scheduled

View the Patients History

1.3 Operating Environment – Hardware and Software:-

Hardware requirements:-

The h/w required to execute this system are,

➤ Server side-

- Hard Disk- min. 40 GB
- RAM- 1 GB or Higher
- Processor- Dual core 2.0 GHz or Higher Version
- Plug and play devices like Monitor, Mouse, Keyboard etc.

➤ Client side-

- Hard Disk- min. 10 GB
- RAM- min. 500 MB
- Processor- Dual core 2.0 GHz or Higher Version
- Plug and play devices like Monitor, Mouse, Keyboard etc.

Software requirements:-

The s/w required to execute this system are,

➤ **Server side-**

- Application Server : IIS 6.0
- O.S : Windows Xp or higher
- DB : MS SQL Server 2005

➤ **Client side-**

- Web Browser: Internet Explorer 8.0, Mozilla Firefox 3.6
- Internet connection
- MS .Net framework 3.5
- Visual Studio 2008
- ASP.Net Using C#

1.4 Detail Description Of Technology Used:-

A) Asp.Net-

➤ About ASP.NET

ASP.NET is a server side scripting technology that enables scripts (embedded in web pages) to be executed by an Internet server.

- ASP.NET is a Microsoft Technology
- ASP stands for Active Server Pages
- ASP.NET is a program that runs inside IIS
- IIS (Internet Information Services) is Microsoft's Internet server
- IIS comes as a free component with Windows servers

➤ .NET Framework (3.5)

ASP.NET 3.5 is not a new version of ASP.NET. It's just the name for a new ASP.NET 2 framework library.

ASP.NET having framework that can be divided into 5 steps:

1) PROGRAMMINGLANGUAGES:

It contains all programming languages such as

C#, J#, VB Script, JAVA Script etc.

2) CLS:

Type of the CTS i.e. common type specification 'which indicate to support all programming and also have integrate all languages into one umbrella so CLS is one method towards that.

3) ASP.NET:

It is used to dynamically write the pages on web and also interactive with web pages.

4) CLASS LIBRARIES:

Class libraries contains all programming languages like C#,J#,VB Script etc.

5) CLR: Contains all programming languages, class libraries, and asp.net part into this CLR, CLR is main concept also important part in ASP.NET framework.

B) MS SQL SERVER-

It is a stand for “structure query language”.it is the language that provides an interface to relational database system. It was developed by IBM in 1970.

Microsoft SQL Server is a relational database server, developed by Microsoft It is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet). There are at least a dozen different editions of Microsoft SQL Server aimed at different audiences and for different workloads (ranging from small applications that store and retrieve data on the same computer, to millions of users and computers that access huge amounts of data from the Internet at the same time). Microsoft SQL Server's primary query languages are T-SQL and ANSI SQL.

➤ **MS SQL SERVER FEATURES**

- SQL can be used by a range of users, including those with little or no programming experience.
- It is a non-procedural language.
- It reduces the amount of time required for creating and maintaining systems
- It is English like language.

➤ **MS SQL SERVER 2005**

MS SQL Server 2005 is highly scalable, fully relational, high performance, multi-user Database Server that can be used by enterprise of any size to manage large amounts of data for Client/Server application. Following are some features of SQL Server:

- Multi-user Support
- Parallel Database Backup and Restore

- Data Replication
- Data Warehousing
- Distributed Queries
- Distributed Transactions
- Distributed Locking
- Provide a secure environment to address privacy and compliance requirements with built-in features that protect our data against unauthorized access.

- **C) IIS -**

- **ABOUT IIS**

IIS (Internet Information Server) is one of the most powerful web servers from Microsoft that is used to host your ASP.NET Web application. IIS has its own ASP.NET Process Engine to handle the ASP.NET request. So, when a request comes from client to server, IIS takes that request and process it and send response back to client.

➤ **IIS WEBSERVER**

The system will let you know when you are installing a new role whether that roll will require new feature modules for example IIS-Web server requires these modules:

- IIS-Common HTTP Features
- IIS-Application Development
- IIS-security
- IIS- performance

➤ **ABOUT IIS 6.0**

Normally IIS 6.0 is used, but now a day's moving an application from IIS 6.0 to IIS 7.0 by adding standard ASP.NET application.

IIS 6 process model is the default model on machines running Windows 2003 Server operating system. It introduces several

changes and improvements over the IIS 5 process model. One of the biggest changes is the concept of application pools.

All AppDomains were hosted by the ASP.NET worker process. To achieve a finer granularity over security boundaries and personalization, the IIS 6 process model allows applications to run inside different copies of a new worker process. Each application pool can contain multiple AppDomain.

Another big change from the previous model is the way IIS listens for incoming requests. With the IIS 5 model, it was the IIS process, who was listening on a specific TCP port for HTTP requests. In the IIS 6 architecture, incoming requests are handled.

2.1 Proposed System

- Proposed system will be an automated system which facilitates –
 - ✓ Patient's registration Process.
 - ✓ Quick updates of patient's medication records.
 - ✓ Maintenance of patient's test details
 - ✓ User friendly Access
 - ✓ Report generation.

2.2 Objectives of System

Since any healthcare data is very sensitive system should facilitate proper storage of data and front desk job of patient registration , rescheduling appointments , allotment of bed , patient discharge process and final bill generation.

- Patient registration process should be fast and less time consuming
- Medication records should be easily updated
- Doctors can easily view test details and medications prescribed for specific patients.
- Provide security to the system by authenticating the users through
- Login and password facility.
- Easy and less time consuming.

2.3 User Requirements:-

- The system works 24/7 provide access to the records as per the users requirement.

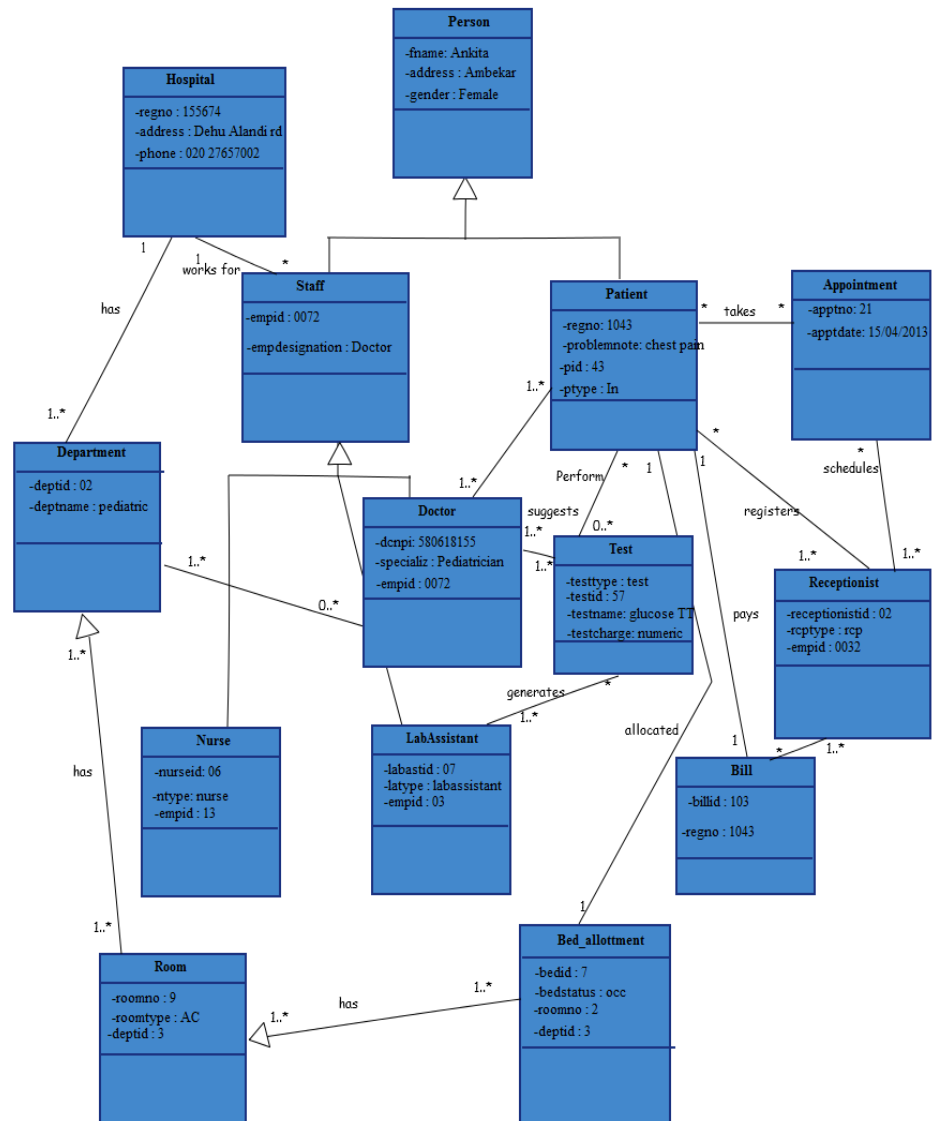
PERFORMANCE

- Saving and accessing the information from database should not take long time
- The system should be able to generate reports.
- The database should have functionality of updating whenever it is required.
- Availability of needed information.
- Minimum response time.
- Make document centralized.
- Reduce data redundancy.
- Fully automated system instead of manual system
- Secured storage of document (use of encryption at various levels)
- Large space for storage no need to keep different registers.

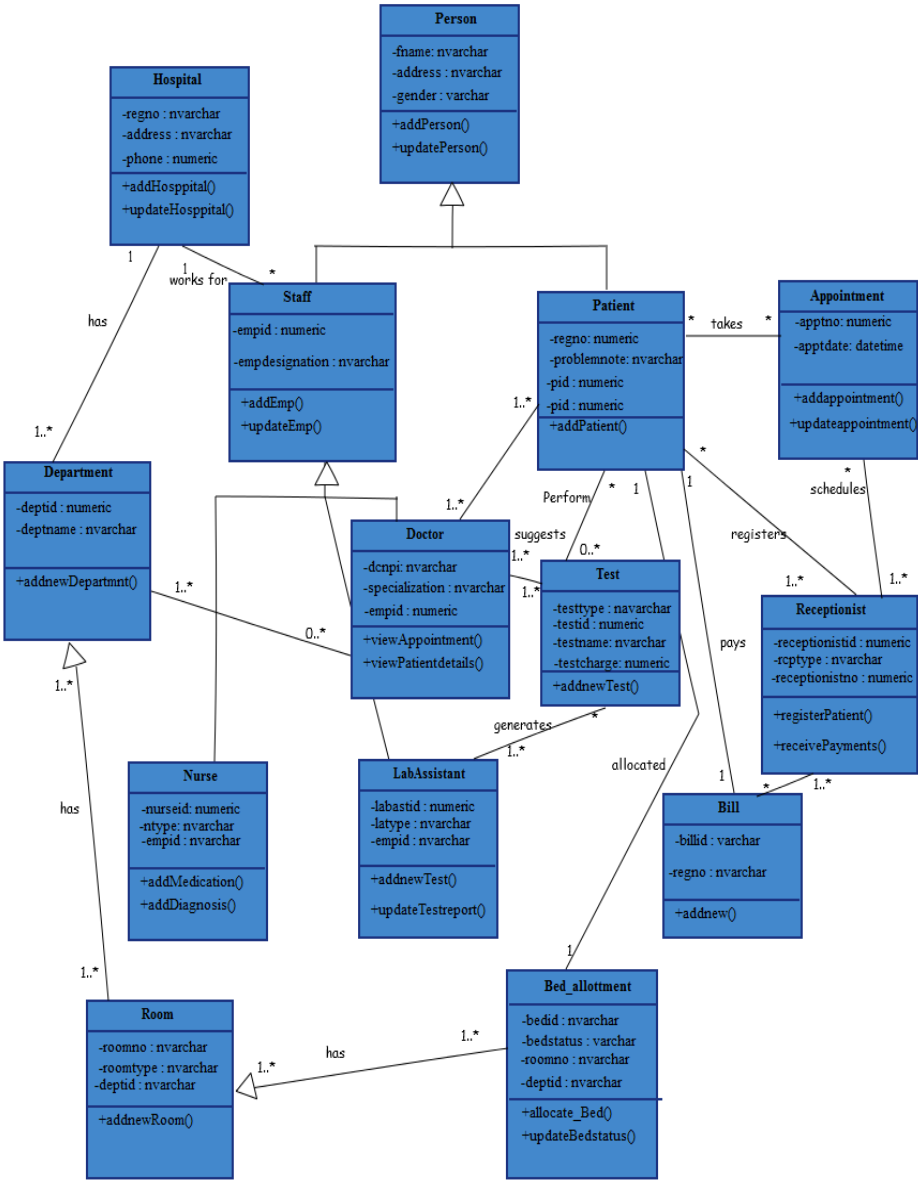
Data Integrity:-

The data regarding patient is integrated & should be kept safe i.e. no any external access is allowed to access patient's data. Only authenticated users can handle that data & work accordingly.

3.1 Object Diagram



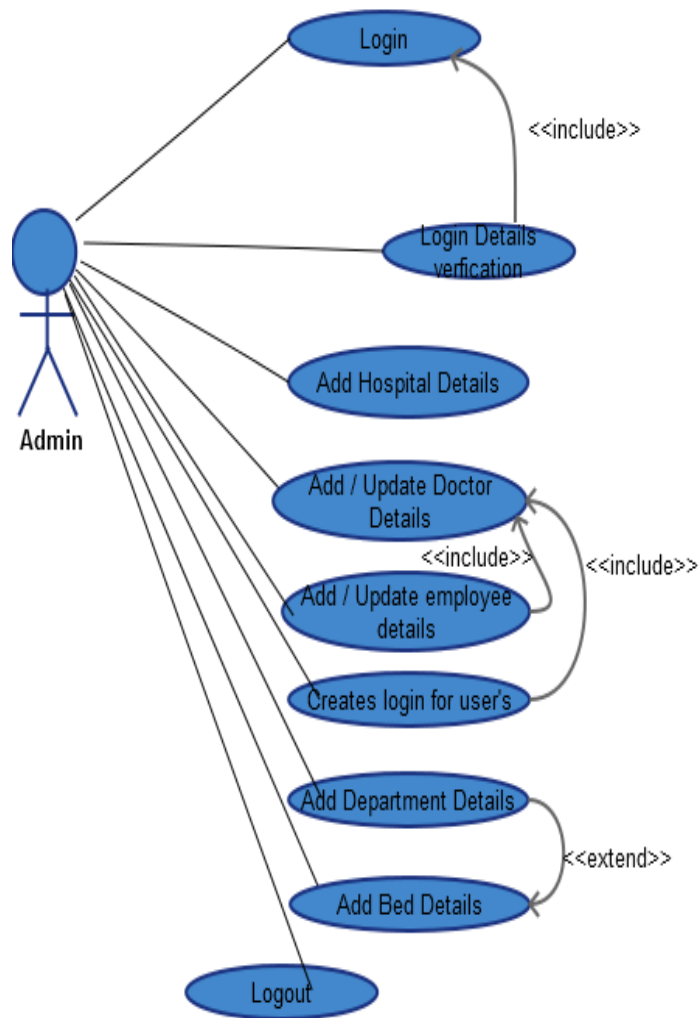
3.2 Class Diagram



3.3 Use Case Diagrams

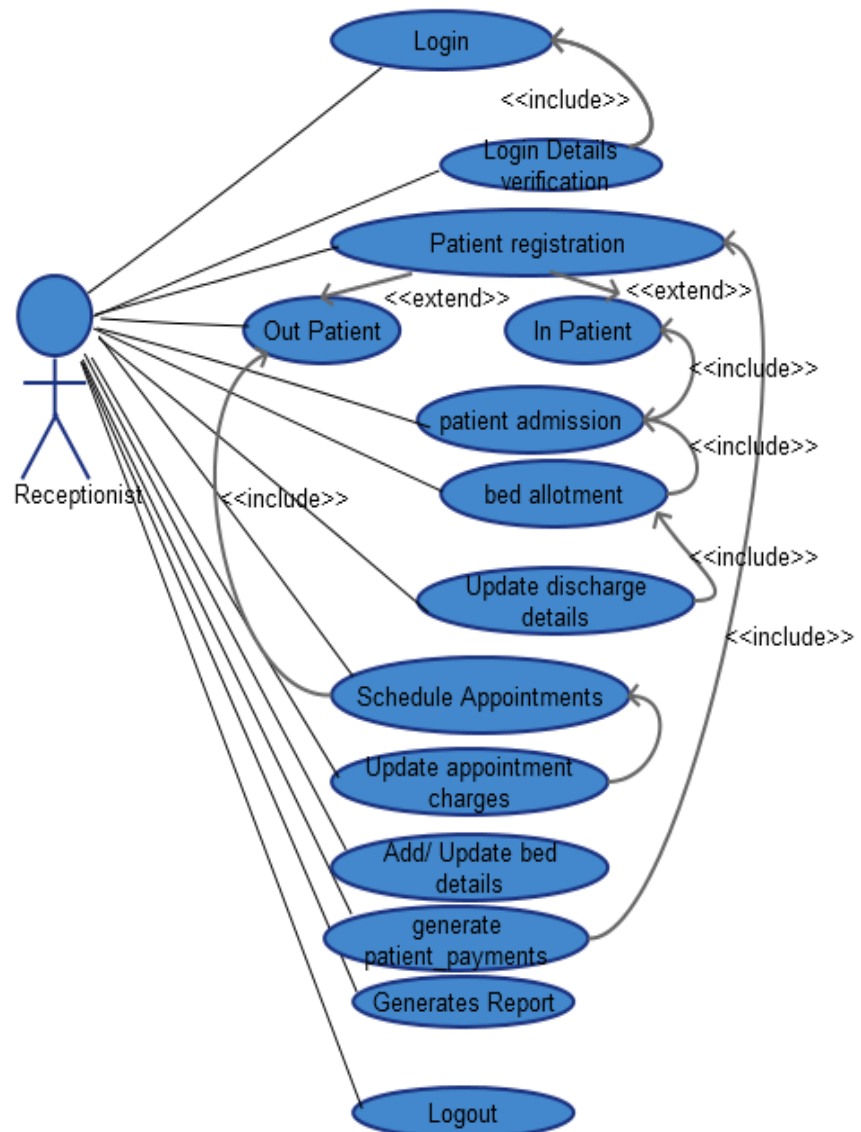
A. For Admin

For Admin



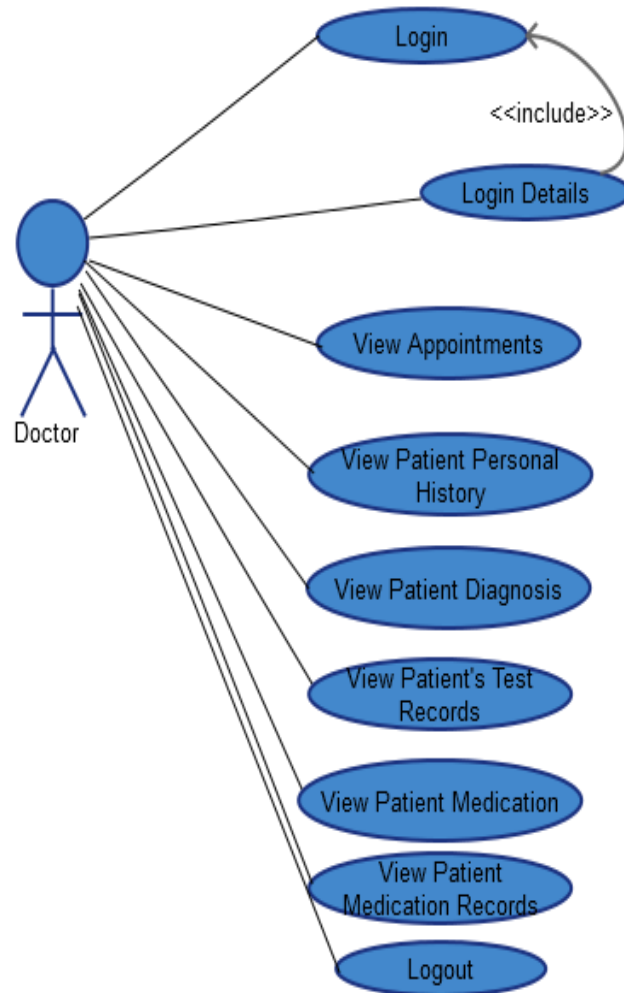
B. For Receptionist

For Receptionist



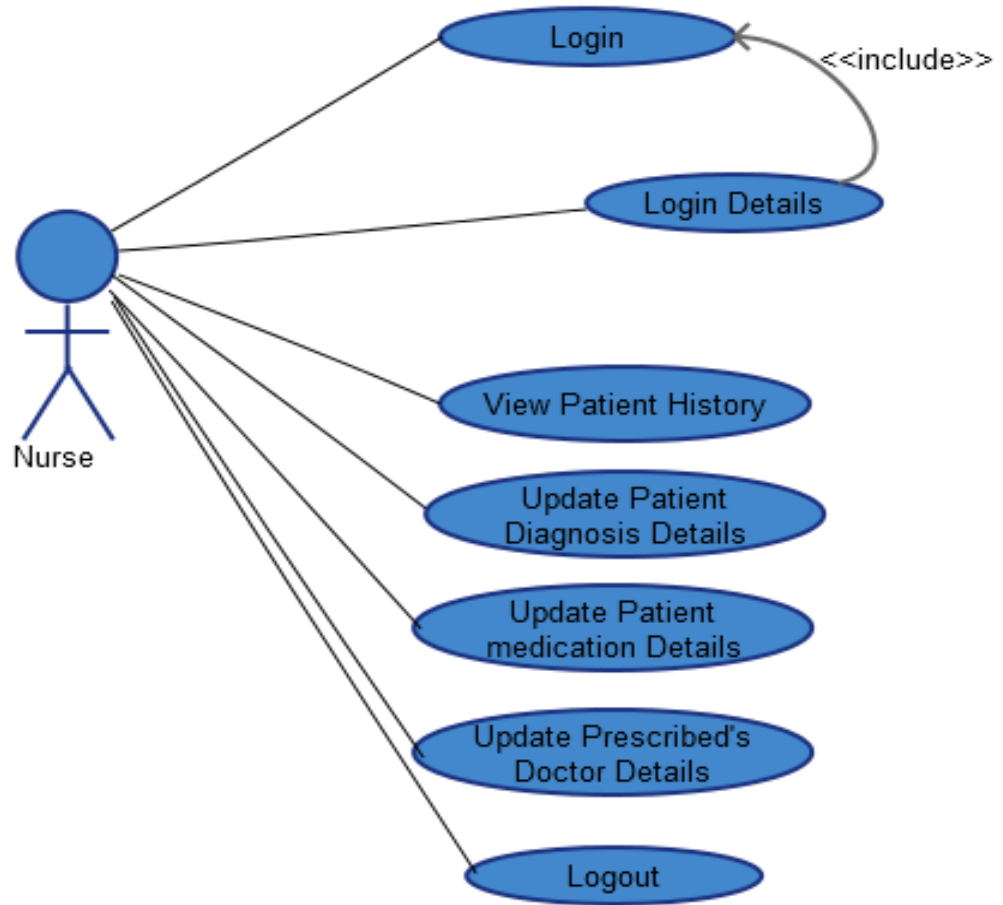
C. For Doctor

For Doctor



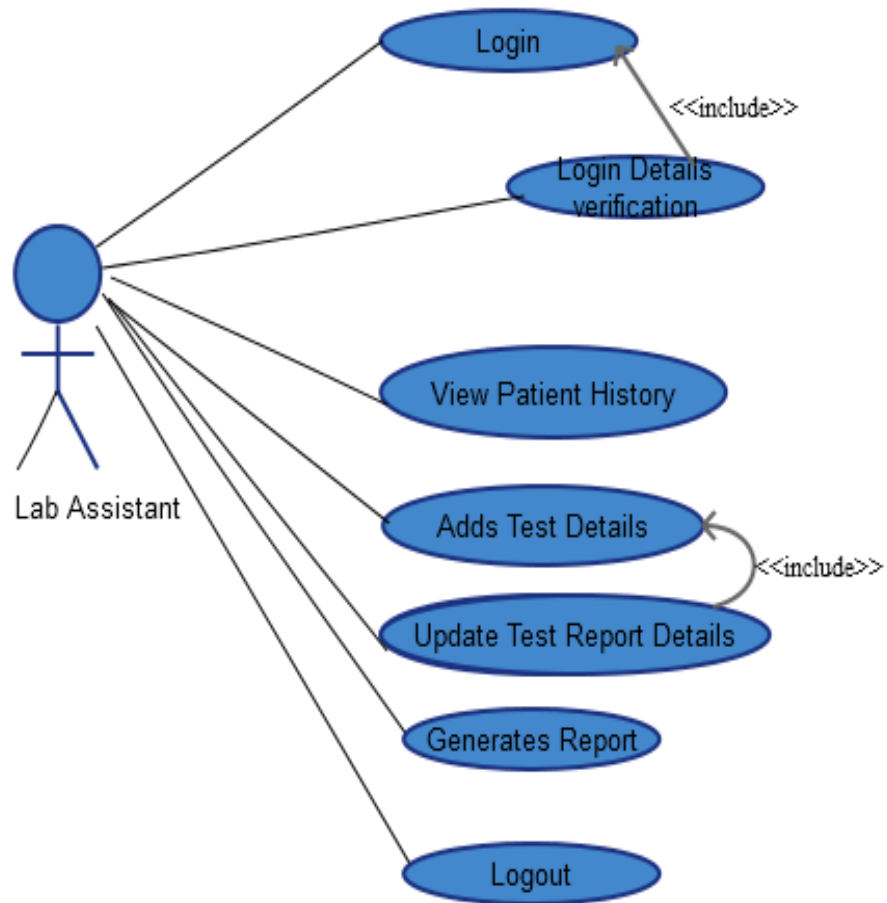
E. For Nurse

For Nurse



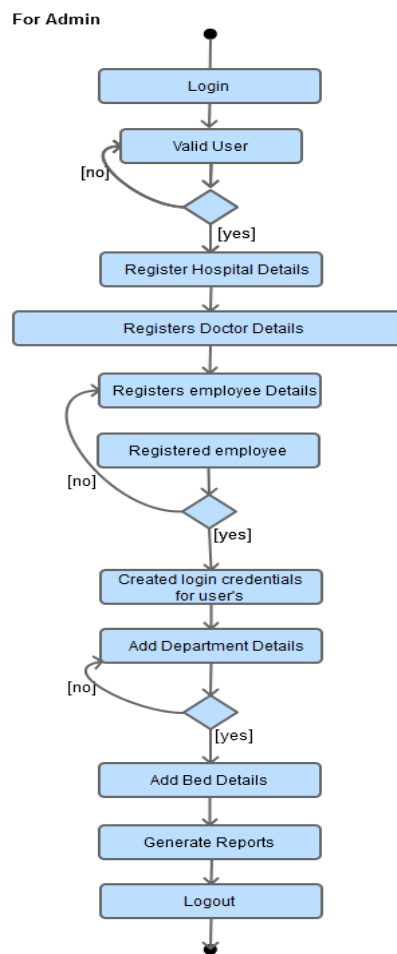
D. For Lab Assistant

For LabAssistant

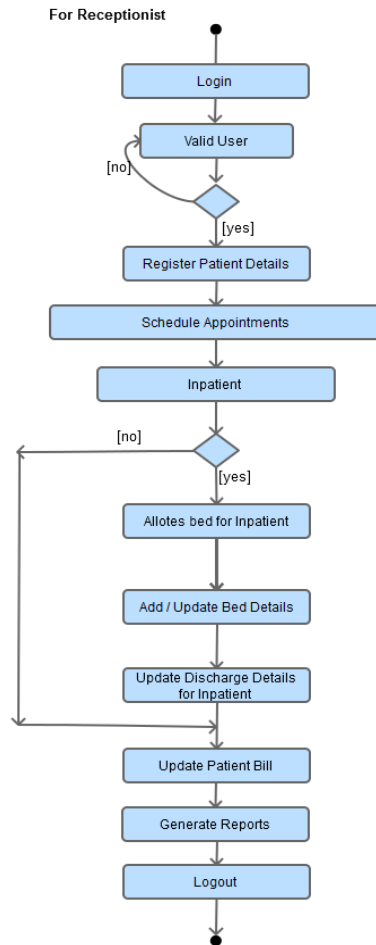


3.4 Activity Diagrams

A. For Admin

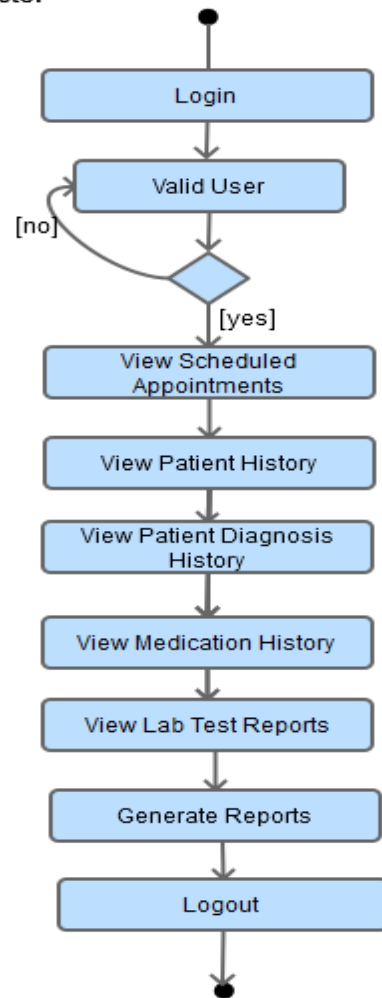


B. For Receptionist

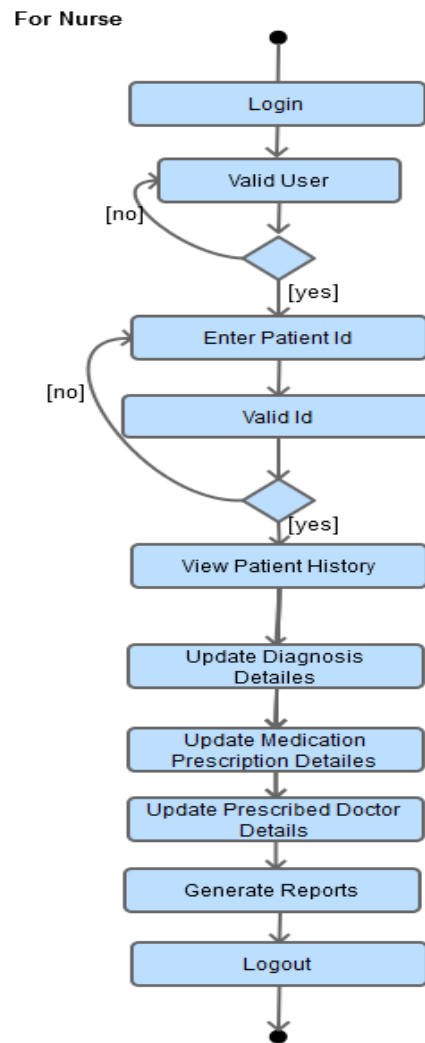


C. For Doctor

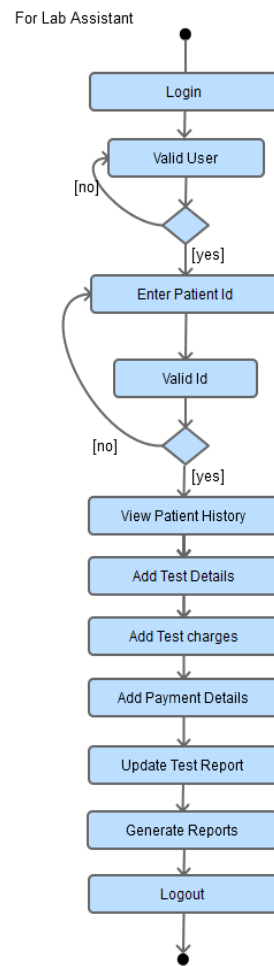
For Doctor



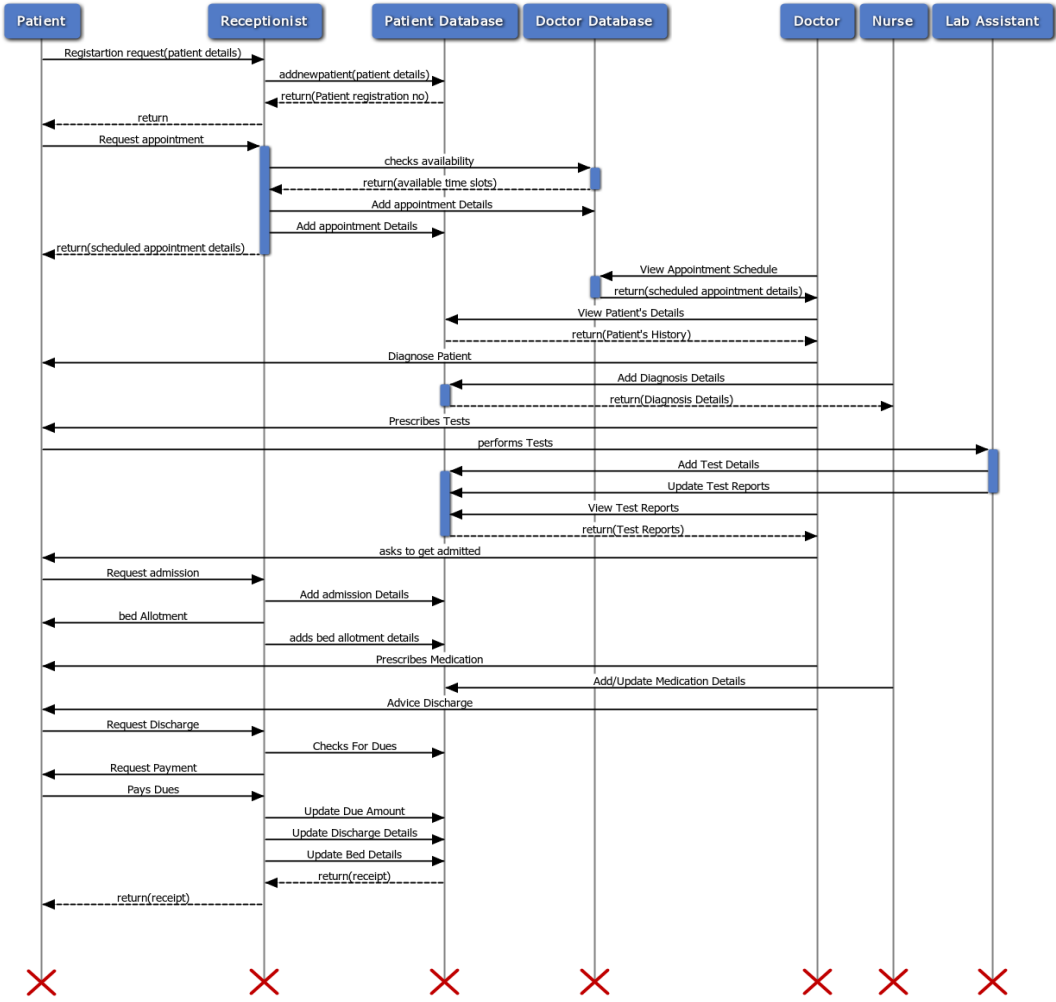
D. For Nurse



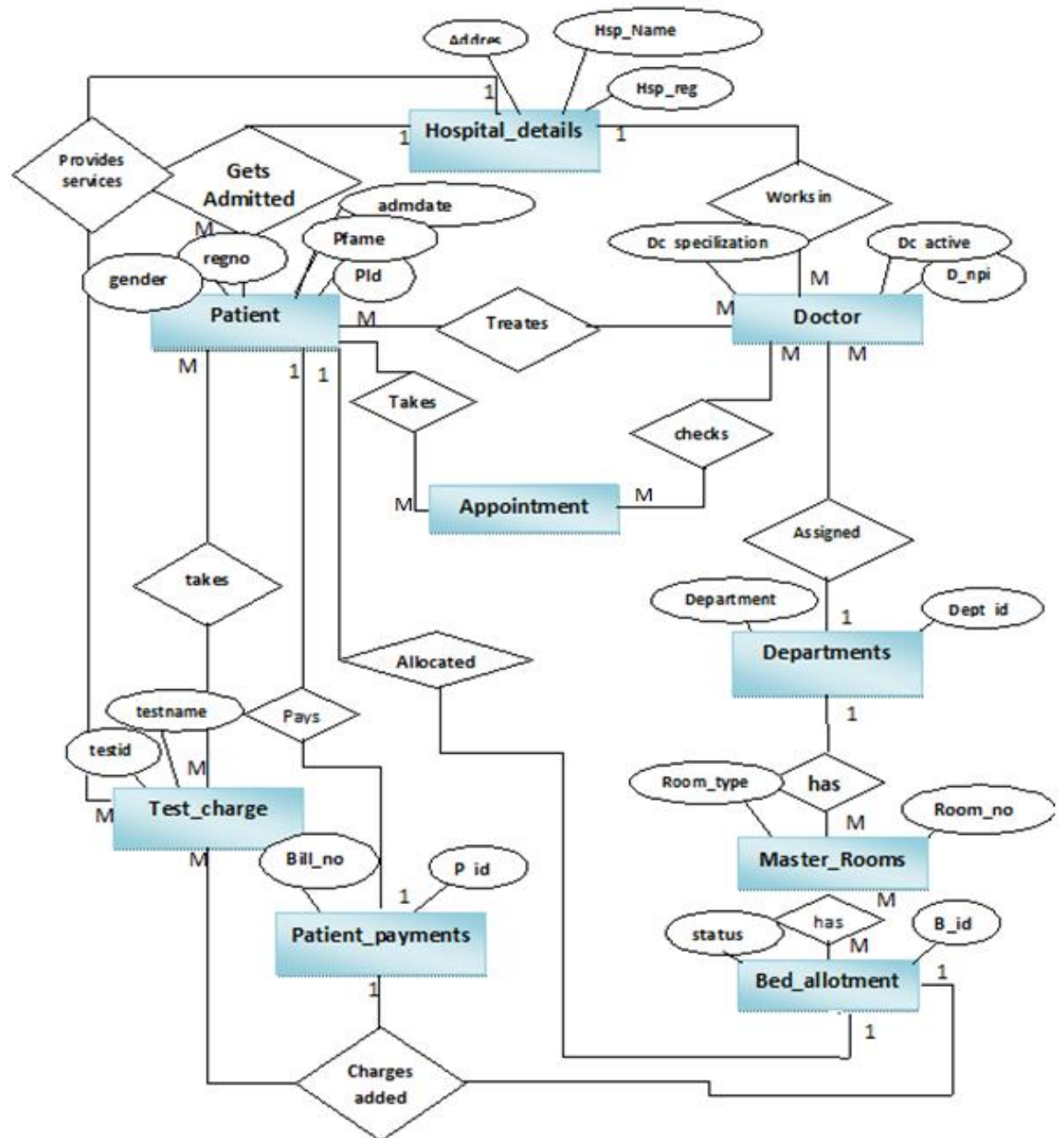
E. For Lab Assistant



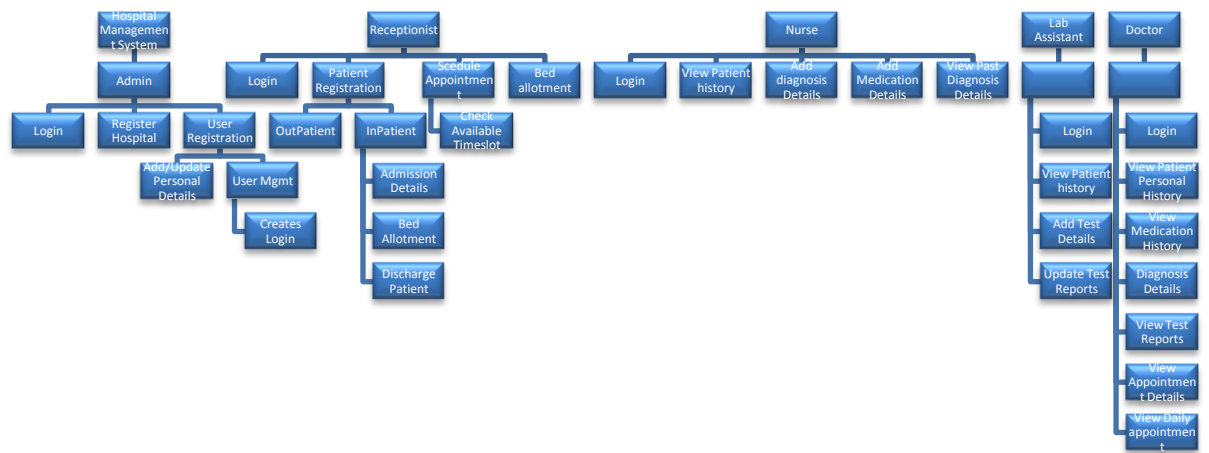
3.5 Sequence Diagram



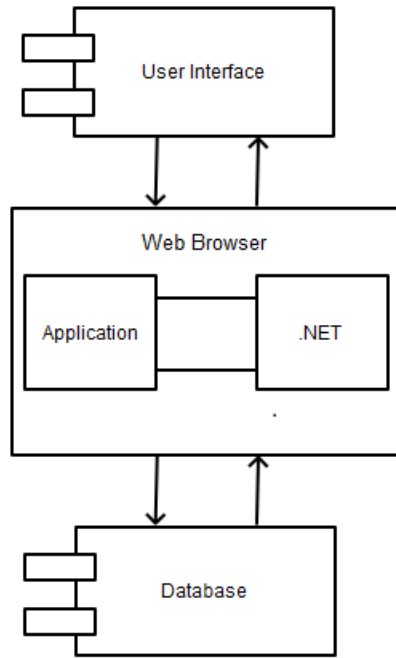
3.6 Entity Relationship Diagram (ERD)



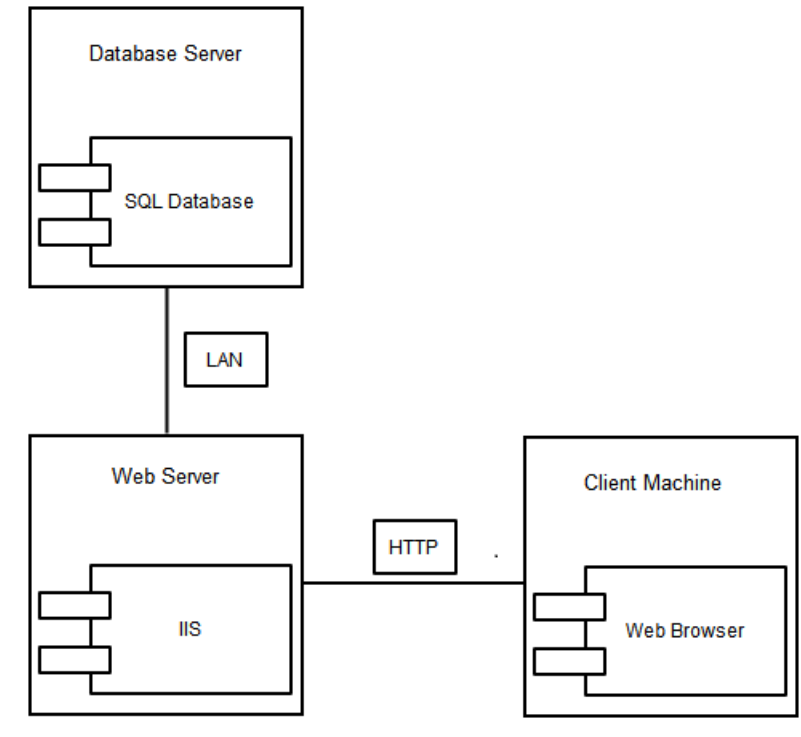
3.7 Module Hierarchy Diagram



3.8 Component Diagram



3.9 Deployment Diagram:



3.10 Module Specification:

The Hospital management System has Admin, Doctor, Nurse, Administration, Pharmacist, Laboratorist and Patient modules

Each employee has his own account on Hospital Management System

Admin :

Add Doctor's details

View, Update Doctor's records

Add User's Details

View, Upodateusers records

Create Login's for all user's of the System

Change the Password

Doctor :

View Patient's Personal Records

View Patient's Test Reports

View Patient's Previous medication Details

View Patient's Diagnosis Details.

Can view the medication of a patient that is given to him

Can check his/her schedule on daily, weekly and monthly datespecific
basis

Can check for Daily Appointments log

Change password

Receptionist :

Register new patients

View, edit outpatient record

Schedule appointments for outpatients

Can check available timeslots for each doctor

Insert bed Details

Allot bed to a patient

Update when patient will leave bed

Transfer patient from one bed to another

Can check patients which has allotted bed

Bed allotment history of any patient

Can check and edit billing information of a patient

Charge bill to a patient

Receive payment from a patient

Check billing history of a patient

Change password

LabAssistant :

Add documentation against a patient

Add Test Details to the Patient's account

Update Test Report Details against Patient's Record.

View Patient's History.

Change password

Nurse :

View Patient's Records

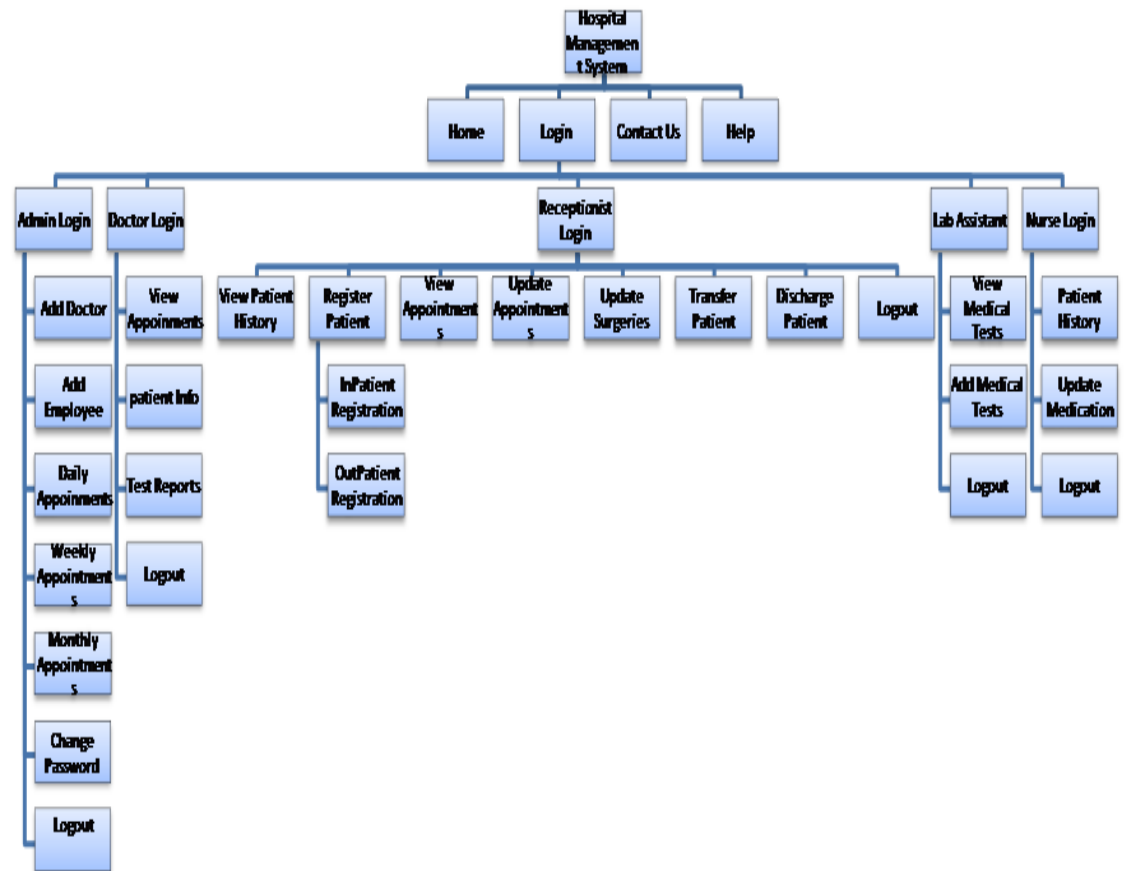
Insert / Update Patient's Diagnosis Details.

Insert /Update Patient's medication Details.

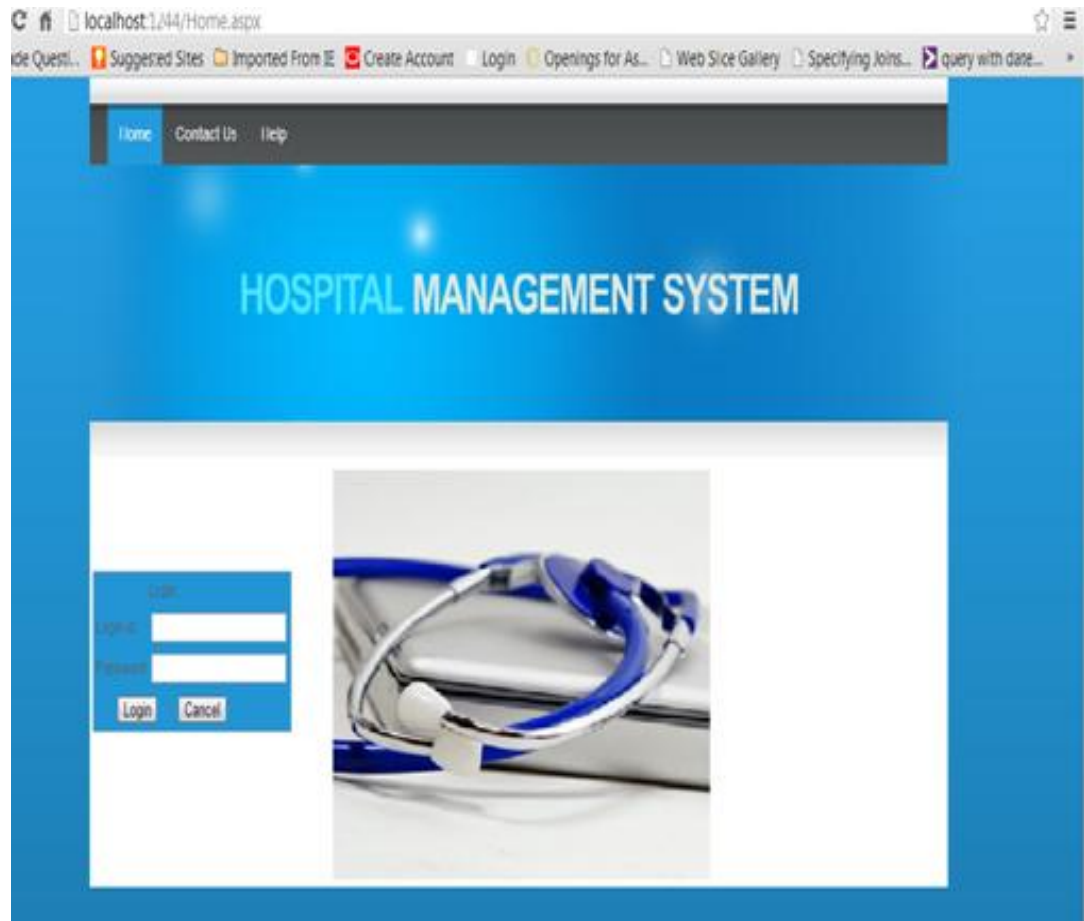
Check patient's previous medication and diagnosis details.

Change password

3.12 Web Site Map Diagram



3.13 User interface design:- Screens (without Data)



localhost:1242/Admin/Add_doctor.aspx

← → localhost:1242/Admin/Add_doctor.aspx

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Add Doctor Details

Doctor's First Name

Doctor's Last Name

Doctor's Middle Name

NPI Number

Date_of_Birth MMCOYYYY

Gender Male Female

Department

Specialization

Phone Number 1

Phone Number 2

Address

City

State

Country

Zip

E-Mail 1

E-Mail 2

Status

- ✖ Create Login
- ✖ Doctor
 - Add Doctor
 - Update Doctor
- ✖ Employee
- ✖ Department
 - Logout

localhost:1242/Admin/Add_employee.aspx

HOSPITAL MANAGEMENT SYSTEM

Add Employee

Employee ID:

First Name: Last Name:

Middle Name:

Date Of Birth: MM/DD/YYYY Gender: Male Female

Phone Number 1: Join Date: MM/DD/YYYY

Phone Number 2:

Address:

City:

State:

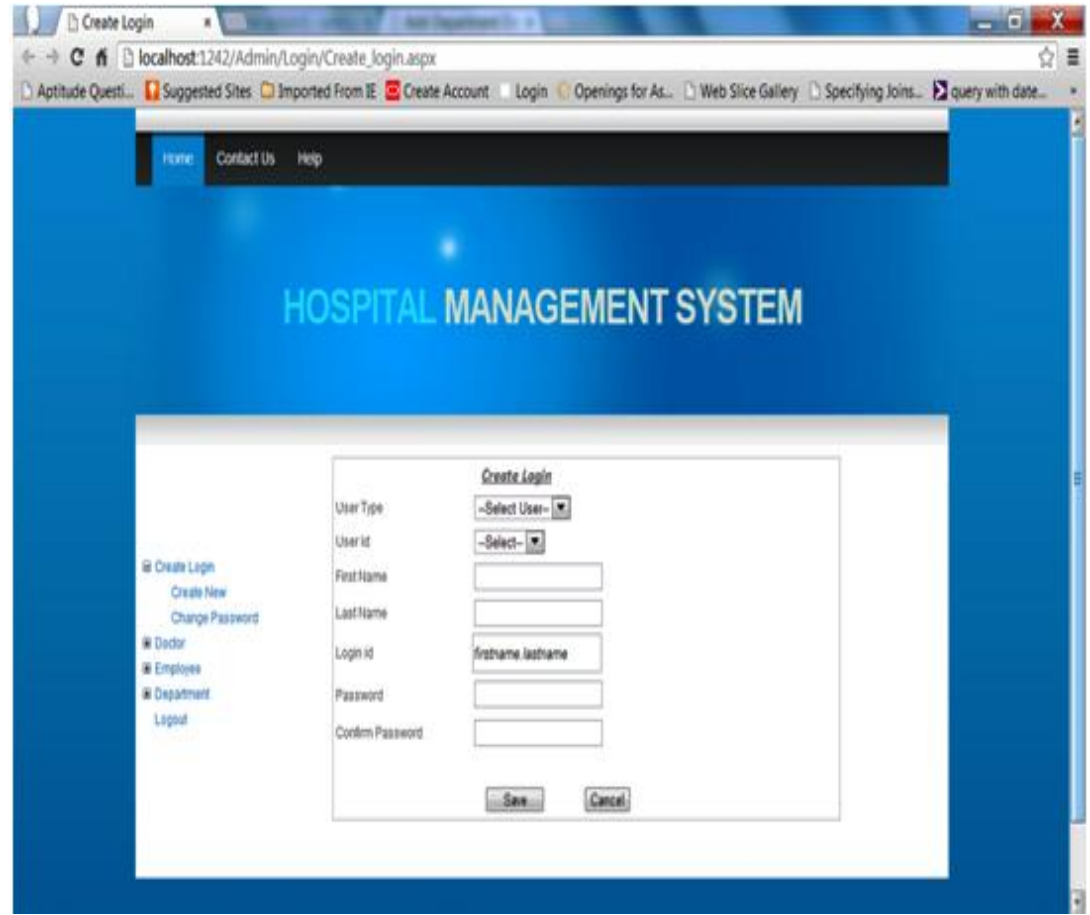
Zip:

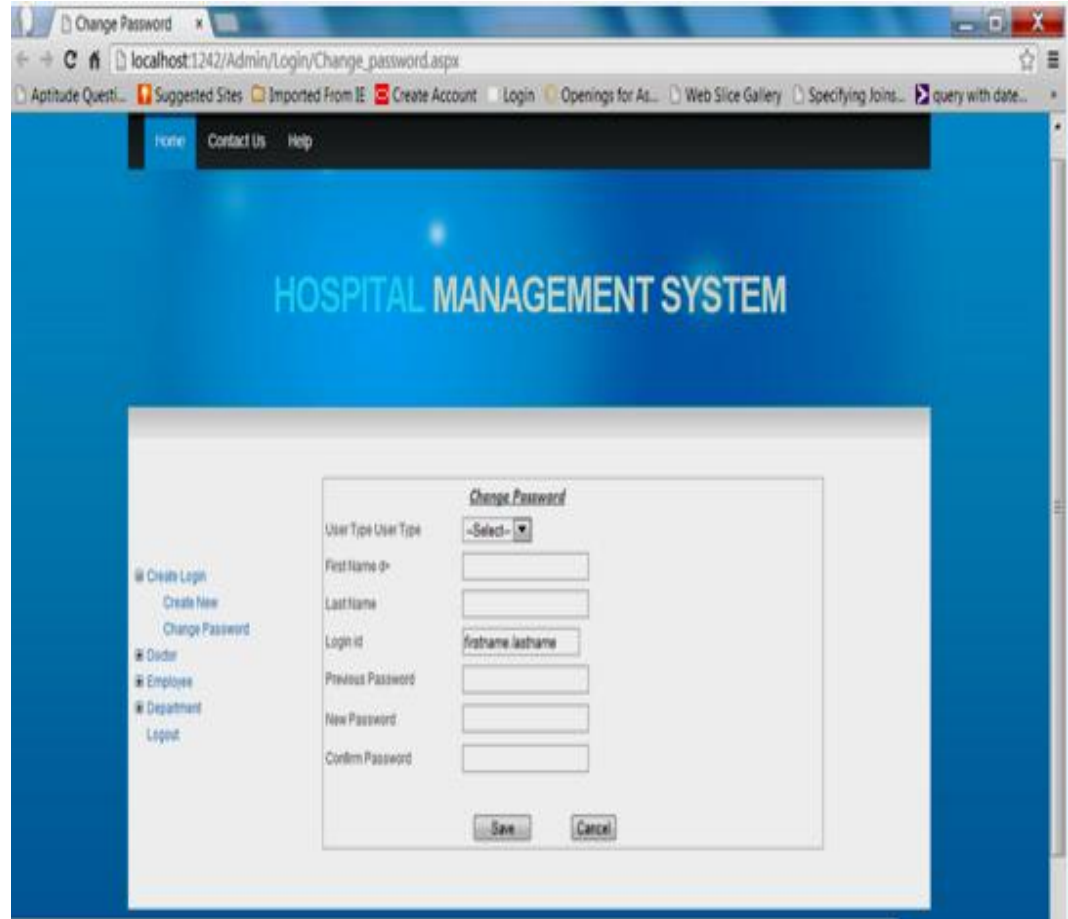
Country:

Email ID:

Joined As:

- Create Login
- Doctor
- Employee
 - Add Employee
 - Update Employee
- Department
- Login





localhost:1243/Receptionist/Patients/Out_Patient_registration.aspx

← Aptitude Questi... Suggested Sites Imported From IE Create Account Login Openings for As... Web Slice Gallery Specifying Joins... query with date...

Out Patient Registration

Patient Registration Number: _____ Date: 12/04/2013

Patient Id: _____

patient_type: Inpatient OutPatient

Patient's First Name:

Patient's Middle Name:

Patient's Last Name:

Gender: Male Female

VisitType:

Date Of Birth: MM/DD/YYYY

Address:

City: State:

Zip: Country:

Department:

Doctor Name:

Initial Problem Note:

Phone Number 1:

E-Mail:

- Patients
- Register New
- OP Registration
- IP Admission
- Patient History
- Discharge Summary
- Update InPatient
- Bed
- Billing
- Appointments

In_Patient_Admission

localhost:1242/Receptionist/Patients/InPatient_admission.aspx

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HOSPITAL MANAGEMENT SYSTEM

- Patients
- Register New
 - OP Registration
 - IP Admission
 - Patient History
 - Discharge Summary
- Bed
- Billing
- Appointments

InPatient Admission

IP No: _____ PatientId: _____

Doctor Information:

Referral Doctor Name:

Department:

Doctor Name:

Bed Allotment:

Room Type:

Bed Id:

Admission Details:

Date: 04/11/2013 Time: 11:21:00PM

Payment Information:

Advance Paid:

localhost:1243/Receptionist/Appointments/newappointment%20.aspx

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HOSPITAL MANAGEMENT SYSTEM

New Appointment

Patient Type: New Patient Regular Patient

Enter Patient ID: Date: 11/04/2013

Visit Type:

Patient's First Name:

Patient's Middle Name:

Patient's Last Name:

Doctor Information:

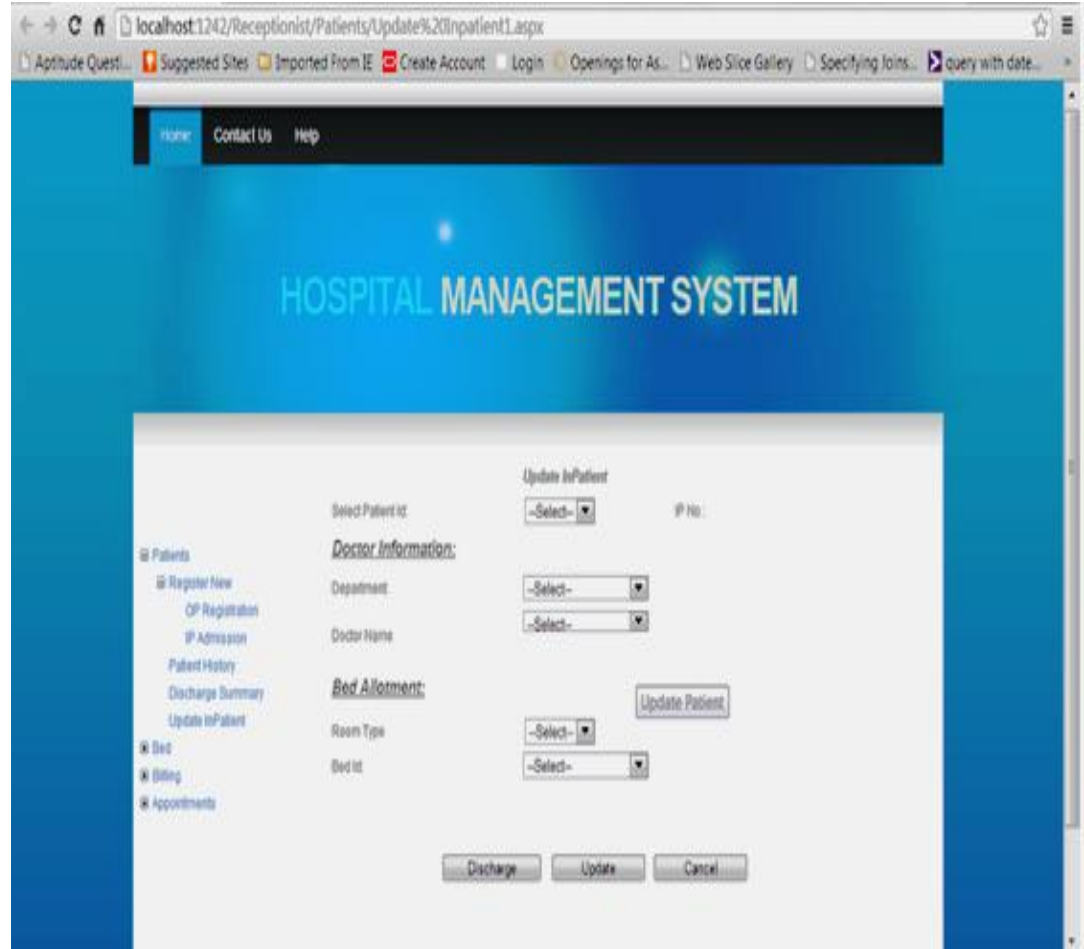
Select Department:

Select Doctor:

Select Date: MM/DD/YYYY

Available Time Slots:

- Patients
- Doc
- Billing
- Appointments
 - View Appointment Schedule
 - New Appointment
 - Update Appointment



localhost:1243/Lab%20Assistant/Add_Test.aspx

Aphude Quest... Suggested Sites Imported From IE Create Account Login Openings for As... Web Slice Gallery Specifying Joins... query with date...

HOSPITAL MANAGEMENT SYSTEM

Add Test Details

Enter PatientId

Patient First Name Patient Last Name

Patient Middle Name

Refered By

Test Name Test Id 2040

Test Date 12042013 Test Time 23:47:12

Test Charges Advance Paid

Report Date DDMMYYYY

- Patients
- Add Test Details
- Update Test Details
- Test Report
- New Test Charges
- Change Password
- Logout

3.14 Table specification:-

1)Hospital_details

Fieldname	Datatype(Width)	Remark
Hsp_regno	Varchar(10)	Primary key
Hsp_name	Varchar(50)	Not null
Address	Varchar(10)	Not null
City	Varchar(10)	Not null
State	Varchar(10)	Not null
Country	Varchar(10)	Not null
Zip	Int	Not null
Phonenumber1	Int	Not null
Phonenumber2	Int	Not null
Fax	Int	Not null
Email1	Varchar(20)	Not null
Email2	Varchar(20)	Not null

2)Department

Fieldname	Datatype(Width)	Remark
Dept_id	Varchar(50)	Primary key
Department	Varchar(10)	Not null
No_of_rooms	Varchar(10)	Not null

3)Master_room

Fieldname	Datatype(Width)	Remark
Room_type	Varchar(10)	Primary key
Roomcharge	Float	Not null

4)Bed allotment

Fieldname	Datatype(Width)	Remark
B_id	Varchar(10)	Primary key
Room_type	Varchar(10)	Not null
Room_no	Varchar(10)	Foreign key references dept_room
Status	Varchar(10)	Not null

5)Dept_room

Fieldname	Datatype(Width)	Remark
Room_no	Varchar(10)	Primary key
Dept_id	Varchar(10)	Foreign key references department
Room_type	Varchar(10)	Foreign key references master_rom

6)Doctor

Fieldname	Datatype(Width)	Remark
Dc_npi	varchar(20)	Primary key
emp_id	varchar(20)	Foreign key references employee
Dc_specialization	varchar(20)	Not null
Dc_active	varchar(5)	Not null

7) Visittype

Fieldname	Datatype(Width)	Remark
Visit_typeid	Varchar(10)	Primary key
Visit_type	Varchar(10)	Not null
Appt_charge	Float	Not null

8) Employee

Fieldname	Datatype(Width)	Remark
emp_id	varchar(20)	Primary key
Emp_fname	varchar(20)	Not null
Emp_lname	varchar(20)	Not null
Emp_mname	varchar(20)	Not null
Emp_Dob	Date	Not null
Emp_Gender	varchar(5)	Not null
Emp_Joindate	Date/time	Not null
Emp_designation	varchar(20)	Not null
Emp_phonenumber1	Integer	Not null
Emp_phonenumber2	Integer	Not null
Emp_Address	varchar(20)	Not null
Emp_City	varchar(20)	Not null
Emp_State	varchar(20)	Not null
Emp_Country	varchar(20)	Not null
emp_Zip	Integer	Not null
Email	varchar(20)	Not null

9)User

Fieldname	Datatype(Width)	Remark
Usr_id	varchar(20)	Primary key
Usr_type	varchar(10)	Not null
Usr_fname	varchar(20)	Foreign key references emp_fname from employee
Usr_lname	varchar(20)	Foreign key references emp_lname from employee
Emp_id	varchar(20)	Foreign key references emp_id from employee
Loginid	varchar(20)	Not null
Password	varchar(20)	Not null

10)Outpatient

Fieldname	Datatype(Width)	Remark
Opd	Varchar(5)	Primary key
Pid	varchar(10)	Foreign key references pid in patient
Apptno	varchar(10)	Foreign key references apptno in appointment
	varchar(10)	Foreign key references bed_allotted
Ptype	varchar(10)	Not null
Dc_npi	varchar(20)	Primary key

11)Inpatient

Fieldname	Datatype(Width)	Remark
IPD_No	varchar(10)	Primary key
Pid	varchar(10)	Foreign key references pid in outpatient
Roomtype	varchar(10)	Foreign key references master_room
Bedid	varchar(10)	Foreign key references bed_allotted
Ptype	varchar(10)	Not null
admdate	date	Not null
status	varchar(10)	Not null
Problemnote	varchar(20)	Not null
Advancepaid	varchar(20)	Not null
Discharge	Datetime	Not null

12)Patient

Fieldname	Datatype(Width)	Remark
Pid	Varchar(5)	Primary key
Visittype	Varchar(5)	Not null
Patientfname	Varchar(10)	Not null
Patientlname	Varchar(20)	Not null
patientmname	Varchar(10)	references hospital_inpatient(patientid),
gender	Varchar(5)	Not null
Ptype	Varchar(2)	Not null
age	Int	Not null
Dob	Date	Not null
Address	Varchar(20)	Not null
City	Varchar(20)	Not null
State	Varchar(20)	Not null
Country	Varchar(20)	Not null
Zip	Int	Not null
department	Varchar(20)	Not null
Doctorname	Varchar(20)	Not null
Problemnote	Varchar(5)	Not null
Phonenumber	integer(5)	Not null
Email	Varchar(20)	Not null
Regdate	Date/time	Not null
Apptno	Varchar(10)	Foreign key references Appointment table

13)Appointment

Fieldname	Datatype(Width)	Remark
Apptno	Varchar(10)	Primary key
Pid	Varchar(10)	Foreign key references outpatient(pid)
Department	Varchar(10)	Foreign key references department
Dc_npi	Varchar(10)	Foreign key references doctor
Appt	Date/time	Not null
Visit_typeid	Varchar(10)	Foreign key references visittype
Problemnote	Varchar(50)	
Apptstatus	Varchar(5)	Not null
Aadvancepaid	Varchar(10)	
Abalancedue	Varchar(10)	Not null

14)Test_charge

Fieldname	Datatype(Width)	Remark
Testname	Varchar(15)	Primary key
Testdescription	Varchar(20)	Not null
Test_charge	Float	Not null

15)Pat_Test

Fieldname	Datatype(Width)	Remark
Testid	Varchar(10)	Primary key
Pid	Varchar(10)	Foreign key references outpatient
Ptype	Varchar(10)	Foreign key references outpatient
Dc_npi	Varchar(10)	Foreign key references doctor
Testname	Varchar(10)	Foreign key references test_charge
Testdate	Datetime	Not null
Testtime	Datetime	Not null
Tadvancepaid	float	Not null
Tbalancedue	Float	Not null
Reportdesc	Varchar(50)	Not null
Reportdate	datetime	Not null

16)Patient_medication

Fieldname	Datatype(Width)	Remark
Pmid		
Pid	int	references hospital_inpatient(patientid),
Ptype	Varchar(5)	References ptype from Outpatient
Dc_npi	Varchar(5)	Reference key references Doctor(Dc_npi)
Mednote	Varchar(50)	Not null
Prescdate	Datetime	Not null

17)Inpatient_History

Fieldname	Datatype(Width)	Remark
Inh_id	Varchar(5)	Primary key
Pid	Varchar(5)	Foreign key references Outpatient
Test_id	Varchar(5)	Foreign key references Pat_test
Pm_id	Varchar(5)	Foreign key references Patient_medication
department	Varchar(10)	Foreign key references Department
Dc_npi	Varchar(5)	Foreign key references Doctor

18)Bed_History

Fieldname	Datatype(Width)	Remark
bh_id	Varchar(5)	Primary key
B_id	Varchar(5)	Foreign key references bed_allotment
Pid	Varchar(5)	Foreign key references Outpatient
Allotted_date	Datetime	
Transfer_date	Datetime	
P_status	Varchar(5)	Foreign key references Inpatient
No_of_days	Varchar(5)	
Charge	Float	

19)Patient_payments

Fieldname	Datatype(Width)	Remark
Bill_no	Varchar(5)	Primary key
Pid	Varchar(5)	Foreign key references Outpatient
Roomtype	Varchar(5)	Foreign key references Master_room
No_of_days	Int	Not null
Nursing_charges	Float	
Consult_charge	Float	
Medicine_charge	Float	
Test_charge	Float	
Other_charges	Float	
Bill_amt	Float	Not null
Advancepaid	Float	Not null
Net_amount	float	

3.15 Testing procedures & implementations:-

Software testing is a critical element of software quality assurance & represents the ultimate review of specification, design and code generation. It is the process of executing a program with a primary objective of finding errors. Testing gives the guarantee that the software does not fail and runs according to its specification and in the way the end user expects. This can be done by various software testing techniques which provide a systematic guidance for designing tests that exercise the internal logic of software components, and exercise the input and output domains of the program to uncover errors in programming function, behavior and performance.

The following software testing techniques were used in order to uncover errors in the system.

- Unit testing
- Integration testing
- White box testing

- Black box testing
- Acceptance testing (alpha and beta testing)

Test cases

Test case ID #	1
Test Case Name	To test functionality of login form
Prerequisite	Login form should get loaded
Objective	To find out bugs in login form

Sr No	Steps to be executed	Expected result	Actual result	Pass/fail criteria
	Login id Textbox Test Cases			
1	1. Enter invalid username 2. Enter correct password 3. Click on submit button	It should display error message "Enter valid username"	It displays error message "Enter valid username"	Pass
2	1. Enter correct username 2. Enter correct password	It should display homepage.	It displays homepage.	Pass

	3. Click on submit button			
3	1. Enter username greater than 50 characters. 2. Enter correct password 3. click on submit button	It should display error message "Enter username with maximum 50 characters"	It accepts username greater than 50 characters	Fail
4	1. Enter username as blank field 2. Enter correct password 3. click on submit button	It should display error message "Enter username"	It displays error message "Enter username"	Pass
	Password Textbox Test Case			
5	1. Enter correct username 2. Enter password less than 6 characters 3. Click on submit button	It should display error message "Enter password with minimum 6 characters"	It displays error message "Enter password with minimum 6 characters"	Pass

6	<ol style="list-style-type: none"> 1. Enter correct username 2. Enter password more than 50 characters 3. Click on submit button 	<p>It should display error message</p> <p>“Enter password with maximum 50 characters”</p>	<p>It displays error message</p> <p>“Enter password with maximum 50 characters”</p>	Pass
7	<ol style="list-style-type: none"> 1. Enter correct username 2. Enter password with 30 characters 3. Click on submit button 	<p>It should display homepage</p>	<p>It displays home page</p>	Pass

Test case ID #	2
Test Case Name	To test functionality of registration form
Prerequisite	Registration form should get loaded
Objective	To find out bugs in registration form

Sr No	Steps to be executed	Expected result	Actual result	Pass/fail criteria
	First Name Textbox Test Cases			
8	1. Enter name as blank field 2. Enter data in other fields 3. Click on submit button	It should display error message "Enter your name"	It displays error message "Enter your name"	Pass
9	1. Enter digits or special symbols in name field 2. Enter data in other fields 3. Click on submit button	It should display error message "Name has invalid digits/characters"	It displays error message "Name has invalid digits/characters"	Pass

10	1. Enter alphabet characters in name field 2. Enter data in other fields 3. Click on submit button	It should lead to successful registration	It should lead to successful registration	Pass
	Cancel button Test Cases			
11	1. Click on cancel button	It should clear the textbox values	It clears the textbox values	Pass

4.1 User Manual:-

The user manual is prepared reflexively because it is an item that must accompany every system. Manual is given so that there is a quick reference about the system package with the menu given study of the overall system.

User manual acts as a guide to the users of the system. It describes everything about the system from the user's point of view and helps the user to operate the system easily and efficiently.

User manual has all the points about system packages, features, & the terminologies used in the system. It covers the major points such as information about client side hardware and software requirements, implementation procedures, installation guidelines, abbreviations and much more.

There are two types of user manual

- I) **Operational manual:-** It describes the installation process of the system.
- II) **User manual:-** It describes how to use the system.

4.2 Operations manual / Menu Explanation

The detailed description of the system is as follows:

- **Home Page:**-First screen is home screen which is login page contains username and password for all users of the system. It
- It has the 'User Login' area for users, through which user can login into the system and use system according to their role.

As well as user can also view Help menu which can solve maximum queries of the new user Second is Contact us page to contact administrator in case need any help with the system.

Only authorized users who contain valid Login Id and Password can access this system. Each user has unique login id associated with his role in hospital.

- **For Admin:-**
- **Add Doctor:-** Any new user who wants to access this system has to be get registered by system admin first .This is unique feature of this system by which privacy policies of the healthcare information and security to the system database is preserved. Each user who is working as doctor in the Hospital hava to register his details first by admin . Admin creates login id and password for each user which can be used to access this system.
- **Add Employee:-** Currently this system has 4 main users whose roles are categorized as Doctor, Nurse , Lab Assistant and Receptionist
- Each new user has to undergo same process to get the access to the system.
- Admin will register user by entering his personal and contact information .Once user get registered Admin will create login id and password for same user depending on its employee id which is unique to each role.

- **Add Hospital:-**All hospital details its registration number, location, phonenumber will be stored in this section.
- This feature is for further advancement in the hospital If any new location is need to be updated in hospital details this system provides full functionality to map advance localities of the hospital.
- **Add Department :-**We can add further development of hospital to its database like adding new department updating department details.
- Admin also needs to add number of bed details from the respective department.

Admin can also generate ticket to communicate with staff members about performance of an individual or system. If any updating is not done then report generation may produces faulty or incomplete reports, so that problem can be conveyed to the staff members by generating ticket.

4.3 Program Specification/Flow Chart

The system is developed in ASP.Net and use C# as frontend and SQL Server2005 as backend.

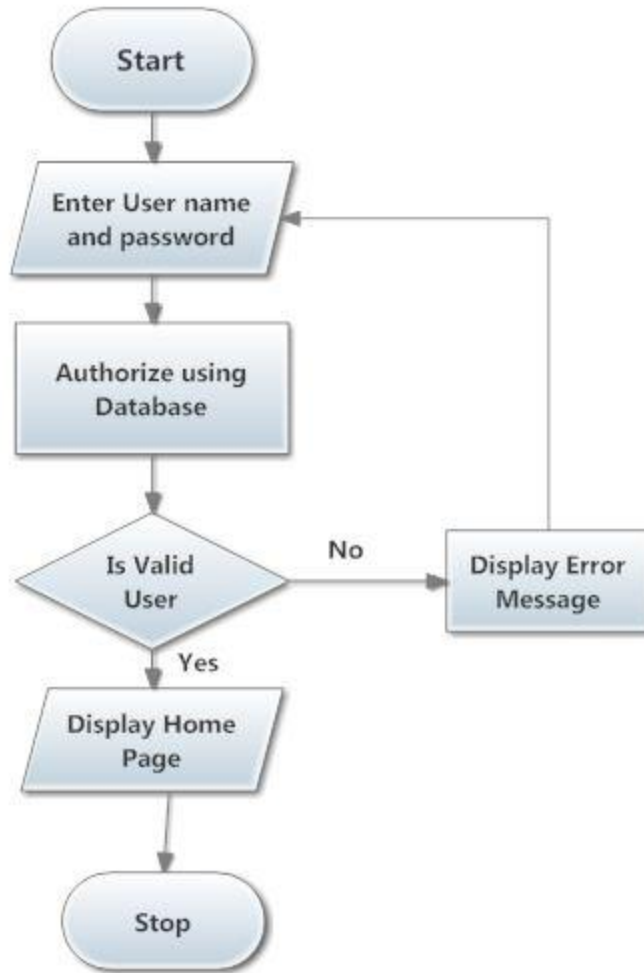
Following are the program specification used in the development process explained with the help of flowcharts.

User Authentication (Login)

Module Name		Authentication and Authorization
Program Name		Login to the System
Purpose		Check Authentication of User
Event		Click on “Login”Button
Input	Constraint	Description
Login Details (Username and Password)	The required fields must not be null and input data should be Valid.	Login details gets checked against Database
Output	The Login details gets checked against database	

	To check the authentication of user & user gets Notification message of successfully login	

FlowChart



Drawbacks And Limitations

Drawbacks

The system is capable of providing all essential features which are required by the client. But still system lacks somewhere and those points are not covered while developing system. These points may not affect systems behavior but still those points are essential as per the system's performance and flexibility is concerned.

Some points are also there which are overhead, but still needs to be there. Those are also considered as drawbacks of the system.

The system lacks in,

- Handling doctor's workbench efficiently
- If at any time doctor need to cancel the patient's appointment or add any problem note for self reference he has to go through the

receptionist for rescheduling of the appointment and approach nurse for updating any additional information

Limitations

This system Hospital Management system is a totally intranet system so it need hospital's private remote network though if the system works online through the web services its features can be enhanced to provide more online features to the users.

Proposed Enhancements

The system can be made more flexible and reflexive if it is an online management system

This system can be advanced to integrate with employees payroll module.

System can remind the patients before the appointments about the scheduled appointments

Patients can also view their own report's online

Doctor's can be provided facilities to add further diagnosis to the patient's records

And cancel or reschedule the appointments on his own provided this module is integrated with receptionist.

Conclusion

The system is best suited for Hospital in a developing phase. It provides features to update itself with the changing hospitals infrastructure.

In future if hospital adds departments to its facility system can be easily updated.

Admin is capable of adding new employees details and provide each user login credentials to access this system this ensures the security of each user.

Since patient's records are very sensitive ,only details as per user's role in the hospital are accessible this ensures confidentiality of patient's data.

Lab reports module is accessible to only lab assistant and doctor and not the other users of the system.

Medication records help doctor's to keep track of patient's under which drugs he/she is consuming so as to prescribe next medications accordingly.

So on the conclusion note this system is best suited for any hospital system and can be integrated with another modules to work for.