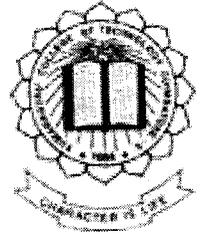


P-2705



**HMS – Hospital Management System
Patient Module
By**

**Gopi Shankar. V
Register Number: 71206621016**

Of

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE

A PROJECT REPORT

Submitted to the



FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

*In partial fulfillment of the requirements
for the award of the degree
Of*

MASTER OF COMPUTER APPLICATIONS

**ANNA UNIVERSITY
CHENNAI 600 025**

July 2009

KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE - 641006
BONAFIDE CERTIFICATE

Certified that this project report titled “**Hospital Management System – Patient Module**” is the bonafide work of “**Mr. Gopi Shankar. V**” (Register Number: **71206621016**) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Supervisor


Head of the Department

Submitted to Project and Viva Examination held on 06.07.2009


Internal Examiner


External Examiner

Date: 04.06.2009

CERTIFICATE

This is to certify that, **Mr. V.Gopishankar, III M.C.A, Reg No: 71206621016** Student of **Kumaraguru College of Technology, Coimbatore** has successfully completed his project work, titled **Hospital Management System – Patient Module** as part of his course curriculum.

He has done the project using **Struts2** during the period of **18-12-2008 to 03-06-2009**. He has completed the assigned project well within the time frame. He was sincere, hardworking and his conduct during the project was commendable.

We wish him all the best in his future endeavors.

For Director/Assistant Director/In-charge



(V. Govindaraju)

(V.Govindaraju)

ACKNOWLEDGEMENT

First and foremost I thank God for his good will and blessings showered on me throughout the project. The success of this project needs cooperation and encouragement from different quarters. Words are inadequate to express my profound and deep sense of gratitude to those who helped me in bringing out this project successfully.

I wish to express my deep unfathomable feeling of gratitude and indebtedness to **Prof. R. Annamalai**, Vice Principal – Kumaraguru College of Technology, Coimbatore for the successful completion of the project work.

I am very gladly taking this opportunity to express a special word of thanks to **Dr. M. Gururajan M.Sc., Ph.D**, Head of the Department, Kumaraguru College of Technology, Coimbatore for encouraging me to do this work.

I would express heartfelt thanks to our internal project coordinator **Dr. A. Muthukumar**, Professor, Kumaraguru College of Technology as with out his best guidance it would not have been possible for me to successfully complete this project

I would express heartfelt thanks to our internal guide **Mr.C. Rajankrupa, M.C.A.**, Senior Lecturer, Kumaraguru College of Technology as with out his best guidance it would not have been possible for me to successfully complete this project who also gave his innovative ideas at crucial times and tremendous encouragement.

ABSTRACT

The project “**HOSPITAL MANAGEMENT SYSTEM - PATIENT MODULE**” is a web-based application developed for Hospitals. The objective of this project is to provide all services of Hospital through improved productivity.

Our Hospital Management System (HMS) is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals and clinics. And more importantly it is backed by our reliable and dependable support.

HMS Patient module takes care of all patient related operations performed in the Hospital. Operations includes patient registration, Doctors management, inpatient, out patient managements, appointments to the patients and doctors, doctors scheduling, billing and ward managements in the hospital.

The other functionalities includes registering of emergency patients in to the hospital will be taken a special care, patients visit will be of out patient type initially and can be varied later depending on the patients condition.

Table of Contents

1. INTRODUCTION.....	1
1.1. Company Profile.....	1
1.2. Outline of Project	1
1.3. Hardware Requirements	2
1.4. Software Requirements	2
1.5. About the Software.....	2
1.5.1. Struts2 Framework.....	2
1.5.2. JBOSS SERVER.....	3
1.5.3. MySQL	4
2. SYSTEM ANALYSIS	5
2.1. Existing System.....	5
2.2. Proposed System	5
3. SYSTEM DESIGN.....	7
3.1. DATA FLOW DIAGRAMS:	7
3.1.1. Level-1	7
3.1.2. Level-2	8
3.1.3. Level-3	9
3.2. SEQUENCE DIAGRAM:.....	10
3.3. Table Structures.....	13
4. SYSTEM DEVELOPMENT.....	19

4.1. Introduction	19
4.2. Module Description.....	19
4.2.1. Patient Registration.....	19
4.2.2. Registering of Emergency Patients	20
4.2.3. Patient Searching	20
4.2.4. Out Patient Management.....	20
4.2.5. In Patient Management	20
SYSTEM IMPLEMENTATION	21
5. SYSTEM TESTING.....	22
5.1. Introduction on Testing:.....	22
5.1.1 UNIT TESTING.....	22
5.1.2 INTEGRATION TESTING	23
5.1.3. VALIDATION TESTING	24
5.1.4. SECURITY TESTING.....	25
5.1.5 White Box Testing:.....	26
5.1.6 Black Box Testing:	26
6. FUTURE ENHANCEMENT	28
7. CONCLUSION	28
8. APPENDICES.....	29
9. REFERENCES.....	39

List of Tables

S. No	Name of Table	Page No.
1	Admin	13
2	User Type	13
3	User	14
4	Doctor	14
5	Department Type	15
6	Department	15
7	Staff	15
8	Laboratory	16
9	Patient	17
10	Department Ward	17
11	Ward	17
12	Medical Report	17
13	Doctor Medical Report	18
14	Patient Medical Report	18

List of Figures

S. No	Name of Figure	Page No.
1	Data Flow Diagram Level 1	7
2	Data Flow Diagram Level 2	8
3	Data Flow Diagram Level 3	9
4	Sequence Diagram	10
5	Class Diagram	11

List of Abbreviations

Acronyms	Full Form
HMS	Hospital Management System
BARCiNDiA	Bannari Amman Consultings

1. INTRODUCTION

1.1. Company Profile

BARCiNDiA.NET

Bannariamman Consultings (BARCiNDiA), based at Coimbatore, is a part of a group involved in software development & Technology Training. They have good experience in successfully executing projects for all type of customers. BARCiNDiA is a technology oriented company promoted by professionals with rich experience and expertise in the industry. The company is focusing on providing technical training and software development for various applications. BARCiNDiA also looks at providing the necessary business computing systems for optimizing the total systems integration, with the help of its vast product range.

1.2. Outline of Project

HMS – HOSPITAL MANAGEMENT SYSTEM

Hospital Management System Patient module is an efficient and yet powerful application developed for managing hospitals. HMS takes care of all the functional requirements of the hospitals with keeping users perspective in mind.

Hospital management system patient module includes following modules

- Patient Registration,
- Registering of Emergency Patients,
- Patient Searching,
- Out patient management,
- In patient management,
- Doctor Management,
- Appointments.

SYSTEM CONFIGURATION

The minimum requirements for the system to run effectively are:

1.3. Hardware Requirements

Hard disk	:	160 GB
Main memory	:	2 GB RAM
Processor	:	Core 2 Duo 1.8·GHz

1.4. Software Requirements

IDE	:	MyEclipse
Frame Work	:	Struts 2
Technology	:	Java
ORM	:	Hibernate
Database	:	MySQL

1.5. About the Software

1.5.1. Struts2 Framework

Struts and web work has joined together to develop the Struts 2 Framework. Struts 2 Framework is very extensible and elegant front controller framework based on many standard technologies like Java Filters, Java Beans, Resource Bundles, XML etc. The framework is designed to streamline the full development cycle, from building, to deploying, to maintaining applications over time. The framework can use any data access technologies like JDBC, EJB, Hibernate etc and for the View, the framework can be integrated with JSP, JTL, JSF, Jakarta Velocity Engine, Templates, PDF, XSLT etc.

- **Exception Handlers:**

Exception handlers allows us to define the exception handling procedure on global and local basis. Framework catches the exception and then displays the page of our choice with appropriate message and exception details.

- **Interceptors:**

The Interceptors are used to specify the "request-processing lifecycle" for an action. Interceptors are configured to apply the common functionalities like workflow, validation etc. to the request.

HIBERNATE

Hibernate core is the most popular Java ORM persistence tool. It provides automatic and transparent object/relational mapping allowing java objects to persist in a database after the java program exits.

Hibernate is an object-relational mapping (ORM) library for the Java language, providing a framework for mapping an object-oriented domain model to a traditional relational database. Hibernate solves Object-Relational impedance mismatch problems by replacing direct persistence-related database accesses with high-level object handling functions.

1.5.2. JBOSS SERVER

JBoss Application Server (or JBoss AS) is a free software / open source Java EE-based application server. Because it is Java-based, the JBoss application server is cross-platform, usable on any operating system that Java supports.

In this project, jboss-4.2.2.GA is used as deployment server. Before deploying the project the server should be configured and necessary jars should be added. JBOSS uses the port number 8081. After deploying, the project can be run using any web browser by specifying the following address in url area.

`http://localhost:8081/HMS`

1.5.3. MySQL

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With superior speed, reliability, and ease of use, MySQL has become the preferred choice of corporate IT Managers because it eliminates the major problems associated with downtime, maintenance, administration and support.

In this project, MySQL server 5.0 is used. It contains MySQL system tray monitor, MySQL migration tool kit, MySQL Administrator, MySQL Query browser. The user name is **root** and schema name is **trunk**. This should be specified in the config.cfg file.

1.5.4 MYECLIPSE

MyEclipse is a commercially available Java EE and AJAX IDE created and maintained by the company Genuitec, a founding member of the Eclipse Foundation. MyEclipse is built upon the Eclipse platform, and integrates both proprietary and open source solutions into the development environment.

2. SYSTEM ANALYSIS

2.1. Existing System

The existing system is available in many hospitals in India. It is used for basic operations of hospital management. The existing system does not cover all the department and tend to be loosely coupled to be each other. Too much of manual work has to be done .

DISADVANTAGES OF EXISTING SYSTEMS

- It occupies large amount of space for file storage.
- It has poor searching capability.
- It has no security for data.
- Data are easily destructible one.
- No Provisions to apply through online.
- Needs lot of manual work to be done
- No email facility to send the bill details to customers.

2.2. Proposed System

The proposed system is designed to eliminate the drawbacks of the existing systems. The proposed system describes how all the operations of a Hospital Management can be achieved using HMS. HMS provide features such as online appointment for patients, mailing facility, search facility etc. HMS provide features for getting appointments online and a centralized database for storing all details. The database used for HMS is MySQL. MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With superior speed, reliability, and ease of use, MySQL has become the preferred choice of corporate IT Managers because it eliminates the major problems associated with downtime, maintenance, administration and support. The front end used here is Struts 2. Struts 2 is an elegant, extensible framework for creating enterprise-ready Java web applications. The framework is designed to streamline the full

development cycle, from building, to deploying, to maintaining applications over time. HMS uses a middleware called Hibernate. Hibernate is an object-relational mapping (ORM) library for the Java language, providing a framework for mapping an object-oriented domain model to a traditional relational database. Hibernate solves Object-Relational impedance mismatch problems by replacing direct persistence-related database accesses with high-level object handling functions.

ADVANTAGES OF PROPOSED SYSTEM

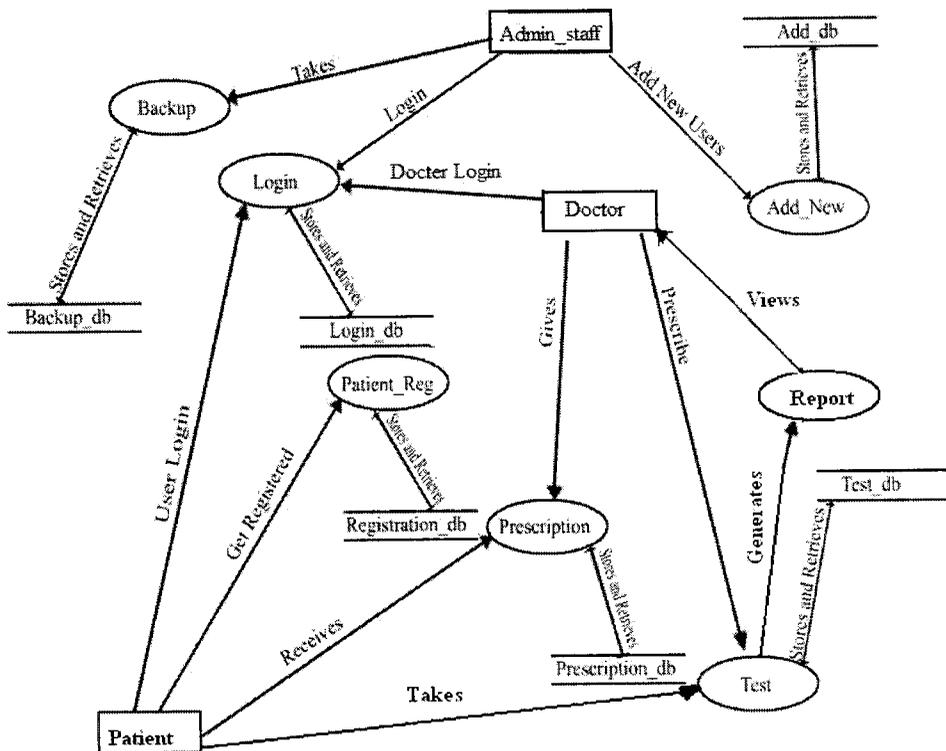
- To automate the project functionalities makes the management more flexible, easy, fast and efficient.
- Security feature are adapted to the users according to the privileges.
- Enable to access the required data whenever required in the form of detailed efficient and fast.

- Online appointment fixing
- Facility for fast searching
- S/W for billing and printing reports
- Emailing facility for patients
- High data security
- Low utilization of disc space

3. SYSTEM DESIGN

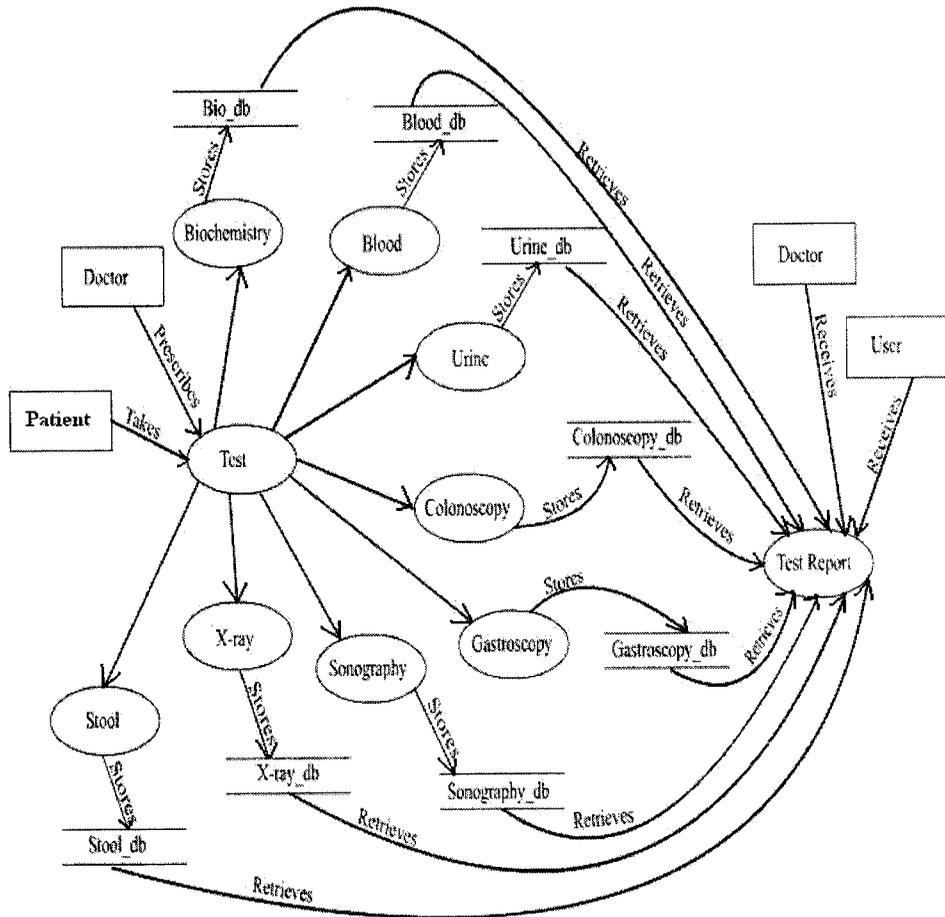
3.1. DATA FLOW DIAGRAMS:

3.1.1. Level-1



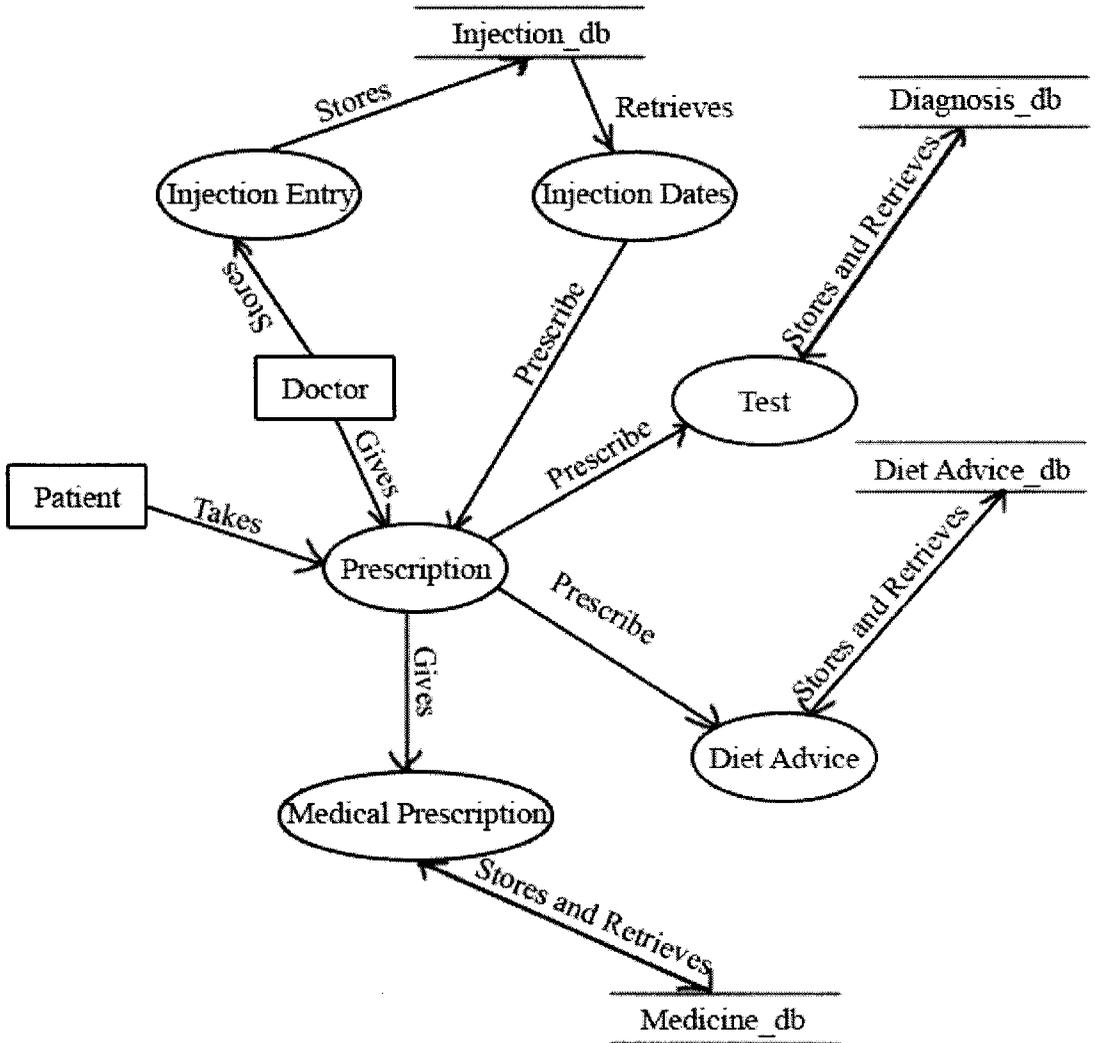
This Figure Level 1 DFD shows the high level process and their interrelation. The Administration Staffs, Patient, Doctors and Staffs are the User of this system and it show the how they are interact with the Hospital Management System.

3.1.2. Level-2



This Figure shows Level 2 DFD shows the Test process in Hospital and their interrelation. The Lab Incharges, Doctors and Patient are the Three main User of this system and it show how they are interact with the Hospital Management System.

3.1.3. Level-3



3.2. SEQUENCE DIAGRAM:

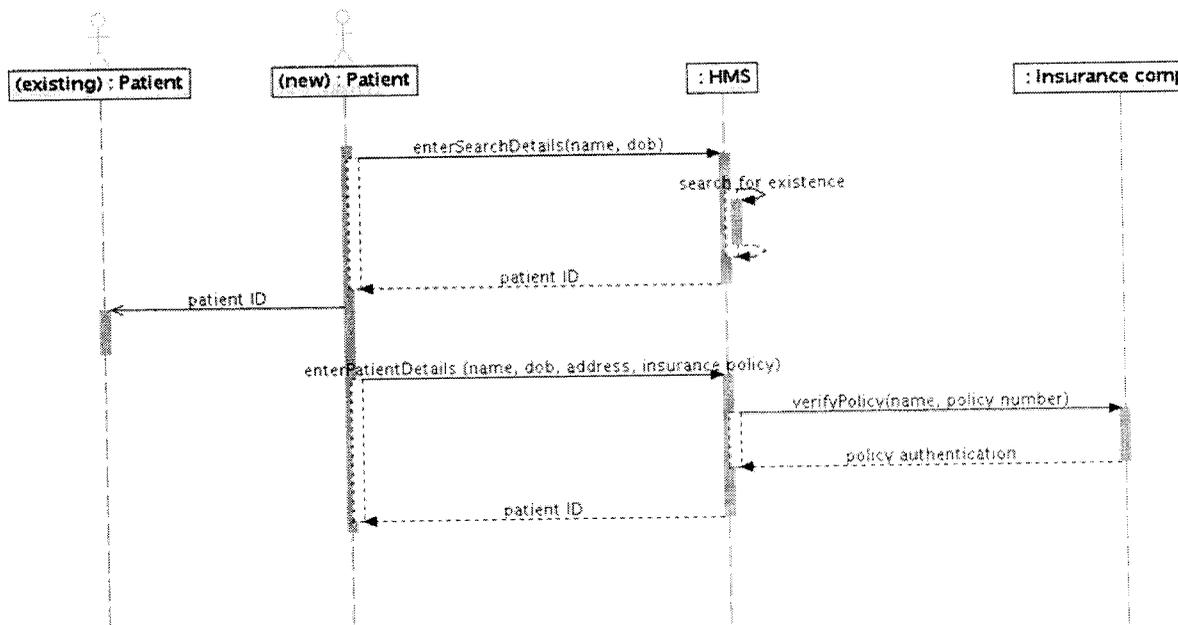


Figure 3.2.1 Sequence Diagram

This Figure 3.2.1 shows Sequence diagram of the Insurance Claim management for the Patient in Hospital Management System.

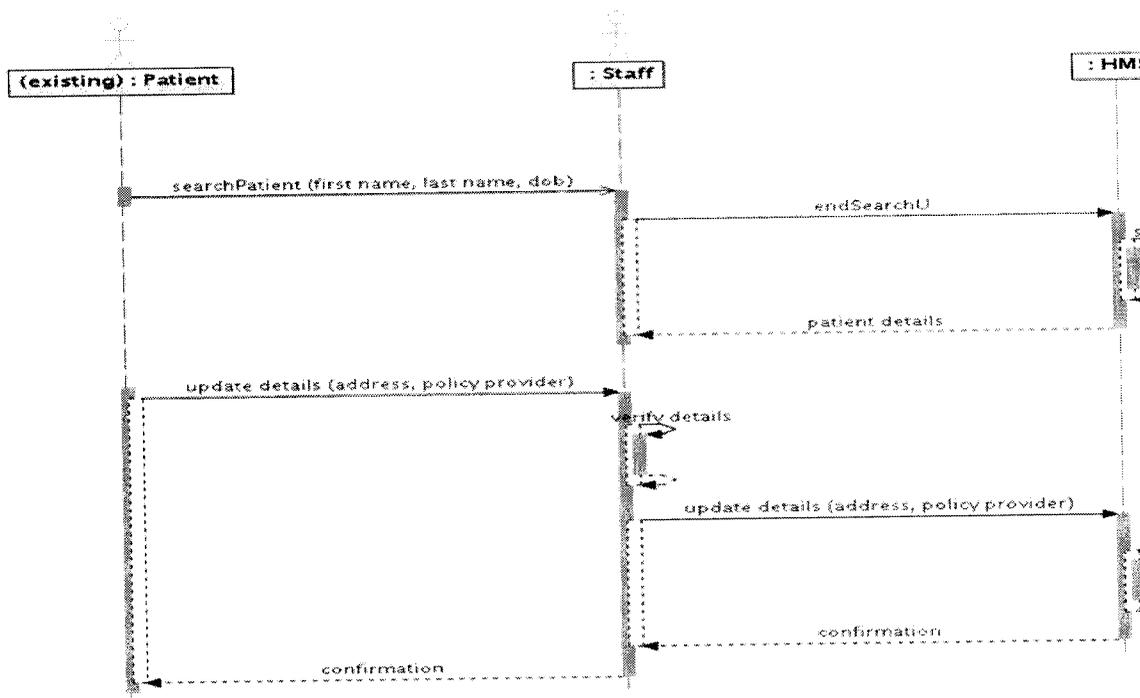
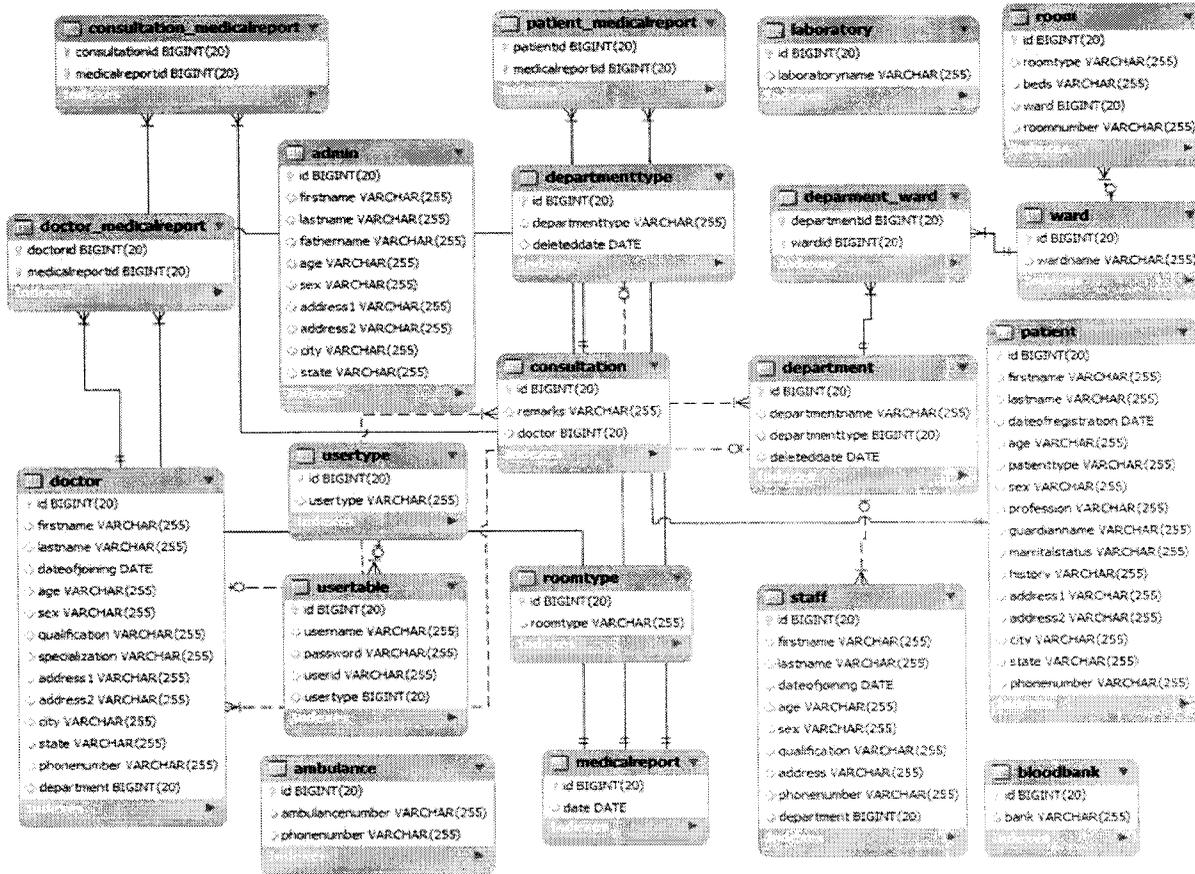


Figure3.2.2 Sequence Diagram

This Figure 3.2.2 shows Sequence diagram of the updating Patient details to the Policy Provider in Hospital Management System.



SCHEMA DIAGRAM



3.3. Table Structures

1.Admin

Column Name	Data Type	Description
Id	BIGINT(20)	Primary key
firstname	string	First name of admin
lastname	string	Last name of admin
Fathername	string	Father name of admin
Age	date	Age
Sex	string	sex
Address1	string	Address of admin
Address2	string	Address of admin
City	string	City name
State	string	State name
Table Description: Admin table stores the details of the admin of the hospital management system.		

2. User table

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
username	string	Name of the User
Password	string	Password
Userid	BIGINT(20)	User id
usertype	string	Type of the user
Table Description: User Table stores the details about the user information.		

3. User Type

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
Usertype	string	User type
Table Description: User Type table stores only the user type of the HMS.		

4. Doctor

Column Name	Data Type	Description
Id	string	Primarykey
firstname	string	Doctor's firstname
lastname	date	Doctor's lastname
dateofjoining	string	Doctor's Date of joining
Age	string	Age of the doctor
Sex	string	Doctor's Sex
qualification	string	Educational Qualification of doctor
specialization	string	Specialization of the doctor
Address1	string	Doctor's address
Address2	string	Doctor's address
City	string	City where doctor lives
State	string	State where doctor resides
Department id	BIGINT(20)	Department where doctor belongs
Table Description: Doctor table stores every thing about the doctor, every bit of information about doctor.		

5. Department Type

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
departmenttype	BIGINT(20)	Type of the department
deleteddate	date	Deleted date
Table Description: Department type table stores various department under certain type.		

6. Department

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
Departmentname	string	Department name
Departmenttype	BIGINT(20)	Type of the department
deleteddate	date	Deleted date
Table Description: Department table stores details about departments available in the hospital.		

7. Patient

Column Name	Data Type	Description
Id	string	Primarykey
firstname	string	Patient's first name
Lastname	string	Patient's last name
Dateofregistration	date	Patient's registration date
Age	date	Patient's age

Patienttype	string	Patient's type
Sex	string	Patient's sex
Profession	string	Patient's profession
Guardianname	string	Patient's guardian name
martialstatus	string	Patient's martial status
History	string	Patient's previous history
Address1	string	Patient's address
Address1	string	Patient's address
City	string	Patient's city
State	string	Patient's state
phonenumber	BIGINT(20)	Patient's phone number
Table Description: Patient table holds the information about patients who have registered as patient in the hospital.		

8. Staff

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
firstname	string	Staff's First name
lastname	string	Staff's Last name
Dateofjoining	date	Staff's Date of joining
Age	date	Staff's age
Sex	string	Staff's sex
Qualification	string	Staff's educational qualification
Address	string	Staff's address
Phonenumber	BIGINT(20)	Phone number of Staff's
Departmentid	BIGINT(20)	Staff's department id
Table Description: Staff table holds the information about the staffs who are employed in various departments.		

9. Laboratory

Column Name	Data Type	Description
id	BIGINT(20)	Primarykey
labname	string	Laboratory name
Table Description: Laboratory table holds the information about the laboratories available in the hospital.		

10. Ward

Column Name	Data Type	Description
id	BIGINT(20)	Primarykey
Wardname	string	Name of the ward
Table Description: Ward table holds the information about the wards available in the hospital.		

11. Department ward

Column Name	Data Type	Description
id	BIGINT(20)	Primarykey
Wardid	BIGINT(20)	Ward id

12. Medical Report

Column Name	Data Type	Description
Id	BIGINT(20)	Primarykey
Date	Date	Date of the medical report
Table Description: Medical Report table holds the medical reports that are taken.		

13. Doctor Medical Report

Column Name	Data Type	Description
DoctorId	BIGINT(20)	Doctor id
medicalreportid	BIGINT(20)	medical report
Table Description: Doctor Medical Report table holds relation between doctor and medical reports		

14. Patient Medical Report

Column Name	Data Type	Description
patientId	BIGINT(20)	Patient id
medicalreportid	BIGINT(20)	medical report
Table Description: Patient Medical Report table holds relation between Patients and medical reports		

4. SYSTEM DEVELOPMENT

4.1. Introduction

System development is a series of operations performed to manipulate data to produce output from computer system. This aim at translating the design of the system produced during the design phase into code in user programming language. A modular approach is used for the development of the software.

The development phase for the project was created from the specifications created during the design phase. A principal activity of the development phase is coding and testing the computer program that make up the computer program component of the overall system. Other important activities include implementation, planning, equipment acquisition and system testing. The development phase concludes with the report and review.

4.2. Module Description

Patient Registration,
Registering of Emergency Patients,
Patient Searching,
Out patient management,
In patient management,
Doctor Management,

4.2.1. Patient Registration

Apart from entering all the demographic details of the Patient, Registration Module also provide the facility of entering the Medical History of the Patient, and this Medical History can be view by Doctors in their module when that Patient goes to the respective Doctor

4.2.2. Registering of Emergency Patients

At some critical circumstances we have to bypass the procedure that we follow now, one place where we want to revamp the process is admitting emergency patients. We need to diagnose the patient first and later on we take care about registration.

4.2.3. Patient Searching

Patient Searching is searching the existing patients (already registered users) with the one of the following key values as search items that includes id, name, city etc.

4.2.4. Out Patient Management

After Patient Registration, the patient appointment with concerned Consulting Doctor is scheduled. At the pre-allocated time, the Patient comes to the consultation chamber of the Consulting Doctor, where the Consulting Doctor records his history, diagnose and prescribe medicines & investigation.

4.2.5. In Patient Management

In Patient management is designed to take care of all the activities and functions pertaining to Inpatient Management. This module automates the day-to-day administrative actives and provides instant access to other modules, which leads to a better patient care. It provides comprehensive data pertaining to Admission of Patients & Ward Management: Availability of beds, Estimation, Agreement preparation, Collection of advance, planned admission, Emergency admission and so on. The Inpatient module also deals with Ward Management: Shifting from one ward to the other, Bed availability, Surgery, Administration of drugs, nursing notes, charge slip and so on.

SYSTEM IMPLEMENTATION

Implementation is the state in the System where the theoretical design is turned into a working system. The system can be implemented only after through testing is done and if found to work according to the specification. The most crucial stage in achieving a new successful system relies in giving confidence for the users on the new system that will work efficiently and effectively.

It involves careful planning, investigation of the current system and to constraints on implementation, design of methods to achieve the changeover, an evaluation of changeover methods apart from planning. System Analysis and design efforts will be more complex system being used for writing program code.

Program Code Preparation

One of the important development activities is the code of programming. The system DFD's and other channels are converted to modular programs; they have to be complied, tested and debugged.

5. SYSTEM TESTING

5.1. Introduction on Testing:

Software testing is a critical element of software quality assurance and represents the ultimate reviews of specification, design and coding testing represents interesting anomaly for the software. During earlier definition and development phases, it was attempted to build software from an abstract concept to tangible implementation.

The testing phase involves the testing of developed system using various test data. Preparation of the test data plays vital role in the system testing. After preparing the test data the system under study was tested using those data. While testing the system, errors were found and corrected. The following are the test cases for some of the modules in Hospital Management System.

5.1.1 UNIT TESTING

Module or Unit Testing is the process of testing all program units that make up a system. Unit testing focuses on an individual module thus allowing one to uncover all the errors made logically and while coding in the module.

Test case ID	Test description	Test inputs	Expected output
T001	To check Newly registered patient are added to the database properly	Click on Register Patient submenu under patient menu and enter the required details for registering the patient and click Register button	Newly Registered Patient is added to the system
T002	Checking for pre-fetched data on the combo box	Open the Add Doctor Menu and click the combo box for Department.	All the departments are to be displayed

T003	Checking for updation can be there while editing the doctor Profile.	Login as a doctor, go to Profile and onclick edit, update the fields and click	Updated Profile should be displayed.
------	--	--	--------------------------------------

The testing is done individually on each module and every form designing. Each and every form is tested to complete their functionality. The small units in the proposed project are the web forms and the functionality behind it. By means of this unit testing the errors such as alignment problem, visibility of the required fields, available of expected data such as vehicle types, data connection between the database and the forms, action reflection on database, Using the test plans, prepared in design phase of the system development as a guide, important control paths are tested to uncover error within the boundary of the proposed project. In this testing each module is found to be working satisfactory, as regard to expected output from the proposed project.

5.1.2 INTEGRATION TESTING

Data can be lost across an interface, one module can have an adverse effect on the other sub-functions, when combined may not produce the desired functions. Integrated testing is the systematic testing to uncover the errors within the interface.

Test case: Integration testing

Test case ID	Test description	Test inputs	Expected output
T001	To check the menus for corresponding users	Open the login page, Provide Username : admin Password : admin	Add Doctor, Add Staff and other admin menus are displayed
T002	Checking appointments by the doctor	Login as doctor, click on appointments	Appointments for the doctor is displayed.

T003	Checking the pdf conversion	Login as a Lab Incharge and enter the patient ID and select particular Test and click on generate report	Result of the Particular Test to be displayed as a pdf in acrobat reader with patient details.
------	-----------------------------	--	--

In the proposed project, the presence several forms the migration from one form to the other form will be successfully carried out.

5.1.3. VALIDATION TESTING

Software validation is achieved through a series of black box testing that demonstrate conformity with requirements.

Test case: Validation testing

Test case ID	Test description	Test inputs	Expected output
T001	To check the age field	Open the new user registration page. Fill the required fields and fill the age column as "abc\$"	Error message describing that type only numerals.
T002	Checking username length while adding new users	Input user name with more than 15 characters	Displays the error message that username should not exceed 15 characters.

In the proposed system validation testing is achieved in the form of checking the textbox inputs on the web pages specified. If the textbox should only handle the numerical values, example: age field. The specified textbox should accept the numerical values otherwise it should display error message.

5.1.4. SECURITY TESTING

If the administrators have to enter the server side of the software we have to specify the user name and password. When the user enters the user name and the password, checking it with already registered in the database or not. If it matches, then only the user is allowed to access the page. Otherwise he is denied accesses and there by provides a strong security.

Test case: Security testing

Test case ID	Test description	Test inputs	Expected output
T001	To check the encryption of password	Go to new user registration page, provide the required details.	Stores Password field in the database as an encrypted manner
T002	Checking for enabling of user menu	Login as lab assistant, using his Username and Password	Only menus corresponding to the department of the lab assistant are displayed.
T003	Checking whether the user is valid or not	Login with incorrect username or password.	Shows error message that provided username or password was incorrect.

The main security concern on the web based project is the concept of hacking. Hacking can be done on any way one is the username and password encryption, the other one is the tapping of sensitive information. This security is avoided because of the encryption technique followed. Thus using this security testing the unauthorized access is avoided.

5.1.5 White Box Testing:

White box testing sometimes called glass box testing, is a test case design method that uses the control structure of the procedural design to derive test cases. Using white box testing methods, the internal calculations for bills for various aspects will be processed successfully.

Test case: White box testing

Test case ID	Test description	Test inputs	Expected output
T001	To check appointments reaches the corresponding department	Login as admin, using Username: admin Password: admin Go to appointments page Click on generate report	Report regarding appointment to be displayed as a pdf in acrobat reader.
T002	Checking for enabling of user menu	Login as citizen, using Username: doctor Password: doctor	Only menus corresponding to the doctor to be displayed

5.1.6 Black Box Testing:

Black box testing also called behavior testing focuses on the functional requirements of the software. That is, black box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program.

Black box testing will be done with the help of end users who are going to use the application, it is mainly tested by the testers who will not care about the internal functionality of the application. He only cares about the input provided and the corresponding output to the provided input. By means of incorporating this black box testing several errors, bugs will be identified.

Test case: Black box testing

Test case ID	Test description	Test inputs	Expected output
T001	Checking for proper logout	Login as doctor, using Username: doctor Password: doctor Click on the logout	User should logout, the home page to be displayed
T002	Checking for unauthorized access	Open the home page . Enter Username: admin Password : aa (in correct password)	Message showing incorrect password is to be displayed.

6. FUTURE ENHANCEMENT

The Proposed System could be effectively implemented using Hospital Management System. Tight security will be provided for the users of HMS from unwanted access.

7. CONCLUSION

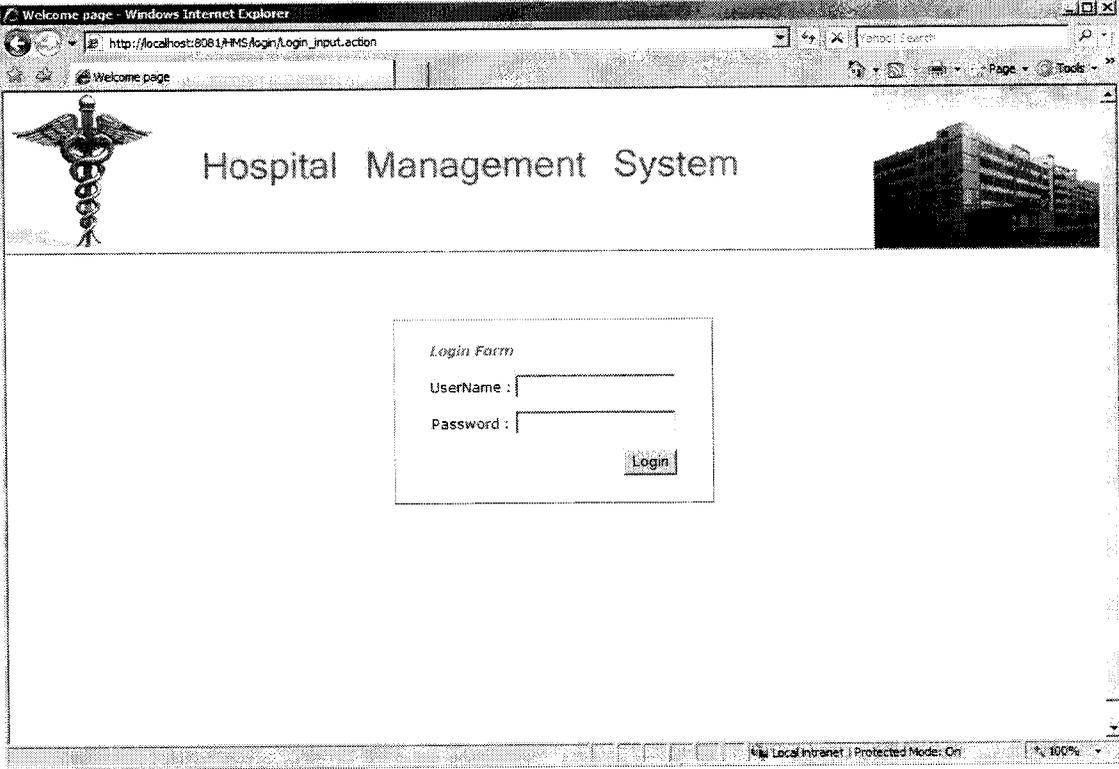
This project HMS – Hospital Management System was prepared with guidance and discussion with personal involved in this project and technical staff.

This project has developed with maximum care. It has been developed with an eye on expansion and flexibility at every stage of all the modules. This is, developed to meet almost all the requirements of the user. This will replace the existing manual system. This is more advantageous over the existing system as it takes into account the security and efficiency of the system. It is accurate and very fast and produces various kinds of detailed reports.

Further enhancements can be made at any later point of time. Reports can be represented in all-necessary perspectives. Added options can be included in designing reports. This project is developed in a user friendly manner in GUI software. The user can perform the operations such as addition, deletion, and modification of the database very easily but in a specified manner.

8. APPENDICES

Login:



Adding Department Type :

Administration Patient BloodBank Refer Doctor E-Medical Report Laboratory MyAccount Logout

Add/Edit Department Type

Department Type

Department Type	Edit	Delete
General	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Treatment	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Local intranet | Protected Mode: On 100%

Adding DepartmentType_Already Added:

Administration Patient BloodBank Refer Doctor E-Medical Report Laboratory MyAccount Logout

Add/Edit Department Type

Department Type

Department Type	Edit	Delete
Diagnosis	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
General	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Treatment	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Local intranet | Protected Mode: On 100%

Adding DepartmentType_found- ErrorMSG:

The screenshot shows a web browser window titled "Welcome page - Windows Internet Explorer" with the address bar displaying "http://localhost:8081/HMS/department/DepartmentTypeAction.action". The page features a header with a caduceus logo on the left, the text "Hospital Management System" in the center, and a building image on the right. Below the header is a navigation menu with the following items: Administration, Patient, BloodBank, Refer Doctor, E-Medical Report, Laboratory, MyAccount, and Logout.

The main content area is divided into two sections. On the left, there is a form titled "Add/Edit Department Type" with a message: "• DepartmentType already found". Below the message is a text input field labeled "Department Type" and a "Save" button.

On the right, there is a table with the following structure:

Department Type	Edit	Delete
Diagnosis		
General		
Treatment		

The status bar at the bottom of the browser window shows "Done", "Local intranet | Protected Mode: On", and "100%".

Adding Doctor:

Windows Internet Explorer
http://localhost:8081/HMS/doctor/DoctorAction_input.action

Administration Patient BloodBank Refer Doctor E-Medical Report Laboratory MyAccount Logout

Add/Edit Doctor

First Name: SivaKumar
Last Name: Ramasamy
Date of Joining: 4/18/2008
Age: 50
Sex: Male Female
Qualification: MBBS, MD
Department: Neurology
Specialization: sur
Present Address:
Permanent Address:
Phone Number:
State: Tamilnadu
City: Chennai

save

Error on page: Local intranet | Protected Mode: On 100%

Admin Menu :

The screenshot displays the 'Hospital Management System' interface. The navigation menu includes: Administration, Patient, BloodBank, Refer Doctor, E. Medical Report, Laboratory, MyAccount, and Logout. The 'Doctor's Management' dropdown menu is expanded, showing options: Eye Clinic, Ortho Clinic, Dental Clinic, Cardiology, and Add/Edit Clinic. The main form area contains the following fields:

- DepartmentType: ▾ Diagnosis ▾
- Department: ▾ Treatment ▾
- Doctor's Management: ▾ Clinic ▾
- Staff Management: ▾ Add/Edit Department Type
- Last Name:
- Date of Joining:
- Age:
- Sex: Male Female
- Qualification:
- Department:
- Specialization:
- Present Address:
- Permanent Address:

The browser's status bar at the bottom shows the URL: http://localhost:8081/HMS/department/DepartmentTypeAction_input.action and the text: Local Intranet | Protected Mode: On | 100%

Medical Report :

The screenshot displays a web application for a Hospital Management System. The page title is "Hospital Management System" and features a logo on the left and a building image on the right. A navigation menu at the top includes: Administration, Patient, BloodBank, Refer Doctor, E-Medical Report, Laboratory, MyAccount, and Logout. The main content area is titled "Electronic Medical Report" and shows patient details: Patient ID: 31, Patient Name: Raja Sundaram. Below this is a table of medical reports:

Sr.No	Date	Doctor	Test Conducted	Result	View Report
1	23/04/2009	Senthil Kumaran, M.D	ECG	Normal	View
2	28/04/2009	Raju M.S, FRCS	x-Ray	Admission Recommended	View
3	28/04/2009	Raju M.S, FRCS	Blood Test	High glucose	View

The footer of the page contains the text "Error on page." on the left and "Local intranet | Protected Mode: On" and "100%" on the right.

Patient Registration:

The image shows a screenshot of a web browser displaying a patient registration form. The browser window title is "Welcome page - Windows Internet Explorer" and the address bar shows "http://localhost:8081/HMS/patient/PatientAction_input.action". The form is titled "Patient Registration" and contains the following fields and values:

Field	Value
First Name:	RamKumar
Last Name:	Sahasivam
Date of Registration:	6/6/2008
Age:	60
Sex:	<input checked="" type="radio"/> Male <input type="radio"/> Female
Profession:	Business
Guardian Name:	
Marital Status:	Single
History:	Continuous Fever
Present Address:	13/121A, Raja Street, Coimbatore
Permanent Address:	13/121A, Raja Street, Coimbatore
City:	Coimbatore
State:	Tamilnadu
Phone Number:	9943934994

A "Register" button is located at the bottom right of the form. The browser status bar at the bottom shows "Error on page." and "Local intranet | Protected Mode: On".

Patient Search:

The screenshot displays a web browser window titled "Hospital Management System...". The page header features a caduceus logo on the left, the text "Hospital Management System" in the center, and a building image on the right. A navigation menu below the header includes links for Administration, Patient, BloodBank, Refer Doctor, E-Medical Report, Laboratory, MyAccount, and Logout. The main content area contains a "Search Patient Details:" form with the following fields: Patient Id, Patient Name, Date of Admission (with a calendar icon), and Location. A "search" button is positioned at the bottom right of the form. The browser's status bar at the bottom shows "Error on page.", "Local intranet | Protected Mode: On", and a zoom level of "100%".

Administration	Patient	BloodBank	Refer Doctor	E-Medical Report	Laboratory	MyAccount	Logout
----------------	---------	-----------	--------------	------------------	------------	-----------	--------

Search Patient Details:

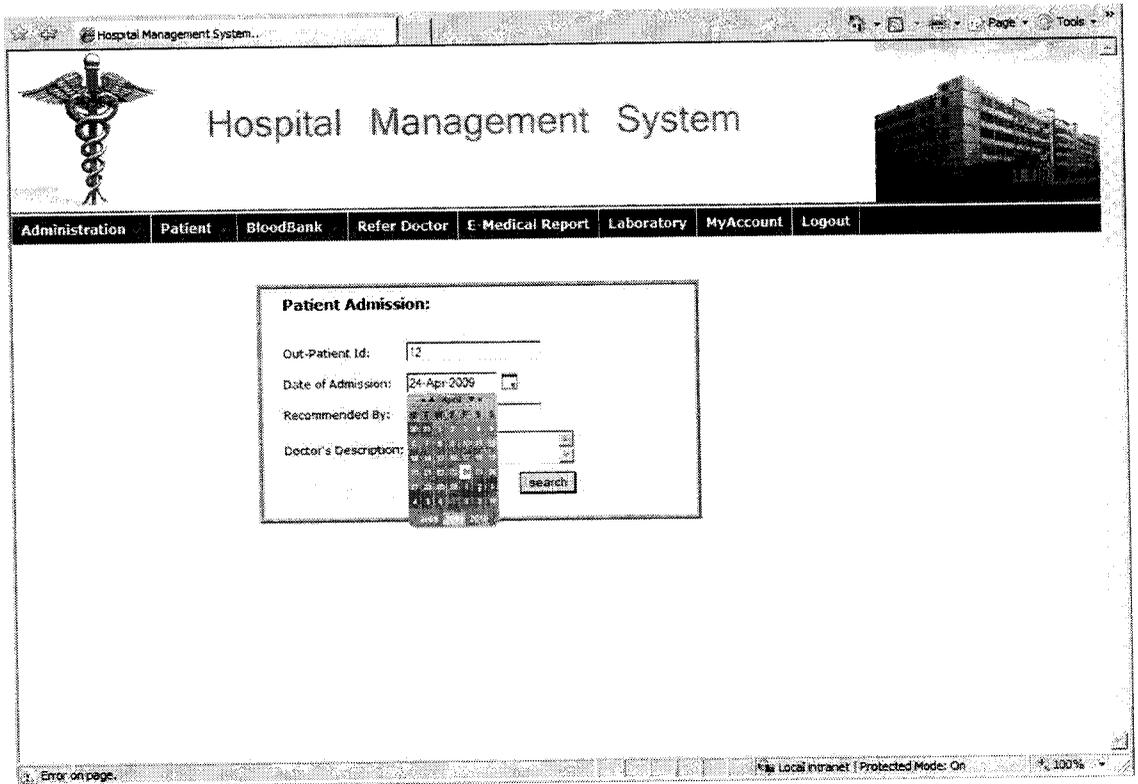
Patient Id:

Patient Name:

Date of Admission:

Location:

InPatient Admission (After Registration):



9. REFERENCES

Administrator: The one who manages and maintains computer systems and software.

HMS : Hospital Management System

IEEE: Institute of Electrics & Electronics Engineering

Server: The main computer on a network.

SRS: Software Requirements Specification

Client: People who uses HMS website to get appointments.

User: People who open the Holiday Maker website and don't have user account. They also called as "External Users".

Web: the network of computers that forms the Internet

BARCiNDiA: Bannari Amman Consultings