



P-2835



HEALTHCARE MANAGEMENT SYSTEM

A PROJECT REPORT

Submitted by

S.DHIVIYA

71205104006

P.KEERTHANA

71205104019

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE – 641 006

ANNA UNIVERSITY: CHENNAI 600 025

APRIL 2009



ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report “**HEALTHCARE MANAGEMENT SYSTEM**” is the bonafide work of “**DHIVIYA.S and KEERTHANA.P**” who carried out the project work under my supervision.

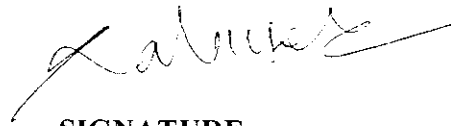


SIGNATURE

Dr.S.Thangasamy

DEAN OF THE DEPARTMENT

Dept of Computer Science & Engg,
Kumaraguru College of Technology,
Coimbatore-641 006.



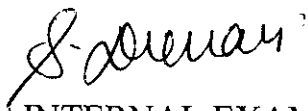
SIGNATURE

Mrs.R.Kalaiselvi

SUPERVISOR

Senior Lecturer,
Dept of Computer Science & Engg,
Kumaraguru College of Technology,
Coimbatore-641 006.

The candidates with University Register Nos. **71205104006**, **71205104019** were examined by us in the project viva-voce examination held on. **21.7.2009**



INTERNAL EXAMINER



EXTERNAL EXAMINER

ABSTRACT

Health Care Management is a combined effort involving the patients and their families/caregivers, professional health care providers, medical schemes, support groups and employers. Important to all stakeholders is the obtaining and sharing of credible information. The internet currently allows the sharing and distribution of a large amount of information which is not connected on the semantic level, and of which much is irrelevant. Furthermore, the information obtained has only a little guarantee of accuracy.

The purpose of the semantic web is to bring structure to the content of web pages allowing software agents to carry out intelligent tasks for the user. This opens a new set of opportunities that can be utilized to improve health care management on a personal and health care provider level. The aim of this project is to identify the needs and match them to the services possible with the semantic web. Success of the healthcare management system is determined by the teamwork of technicians and the clinicians.

ACKNOWLEDGEMENT

We are extremely grateful to **Dr.R.Annamalai**, Vice Principal, Kumaraguru College Of Technology for having given us this opportunity to embark on this project.

We are deeply obliged to **Dr. S. Thangasamy**, Dean, Department of Computer Science and Engineering for his valuable guidance and useful suggestions during the course of this project.

We express our heartiest thanks to our Course Coordinator **Mrs.P.Devaki**, Department of Computer Science and Engineering, who have helped us to overcome the perplexity while choosing the project.

We thank our guide **Mrs.R.Kalaiselvi**, Senior Lecturer, Department of Computer Science and Engineering, for her excellent guidance in each and every step of our project and been with us to complete the project.

We thank the **teaching and non-teaching staff** of our Department for providing us the technical support in the duration of our project.

We also thank all our **parents and friends** who helped us to complete this project successfully.

TABLE OF CONTENTS

CHAPTER NO.	TOPIC	PAGE NO.
1.	INTRODUCTION	
	1.1 PROJECT OVERVIEW	1
2.	SYSTEM STUDY AND ANALYSIS	
	2.1 PROBLEM STATEMENT	3
	2.2 EXISTING SYSTEM	
	2.2.1 DRAWBACKS OF THE EXISTING SYSTEM	3
	2.3 PROPOSED SYSTEM	
	2.3.1 ADVANTAGES OF THE PROPOSED SYSTEM	4
	2.4 USERS OF THE SYSTEM	5
3.	DEVELOPMENT ENVIRONMENT	
	3.1 HARDWARE REQUIREMENTS	7
	3.2 SOFTWARE REQUIREMENTS	7
4.	SYSTEM DESIGN AND DEVELOPMENT	
	4.1 ELEMENTS OF DESIGN	8
	4.1.1 MODULAR DESIGN	
	4.1.2 DATABASE	

	4.2 TABLE STRUCTURE	18
	4.3 DATA FLOW DIAGRAM	22
5.	IMPLEMENTATION	
	5.1 SYSTEM IMPLEMENTATION	26
6.	SCREEN SHOTS	27
7.	CONCLUSION	45
	7.1 FUTURE ENHANCEMENTS	
8.	REFERENCE	46

LIST OF TABLES

TABLE NO.	TABLE NAME	PAGE NO.
1	DOCTOR DETAILS	18
2	PATIENT DETAILS	18
3	AREA DETAILS	19
4	AVAILABLE DAY TABLE	19
5	DOCTOR AREA LINK TABLE	19
6	DOCTOR AVAILABLE DAY LINK TABLE	19
7	DOCTOR PATIENT LINK TABLE	20
8	DOCTOR SPECIALITY TABLE	20
9	DOCTOR SPECIALITY LINK TABLE	21
10	ONLINE APPOINTMENT TABLE	21

LIST OF FIGURES

FIGURE NO.	FIGURE NAME	PAGE NO.
1	SYSTEM LEVEL DATA FLOW DIAGRAM	22
2	DFD FOR VIEWING GENERAL INFORMATION	23
3	DFD FOR ONLINE APPOINTMENT FIXING	23
4	DFD FOR DOCTOR PATIENT RELATIONSHIP	24
5	DFD TO FIND A DOCTOR BY SPECIALITY AREA	24
6	DFD TO FIND A DOCTOR BY AVAILABLE DAYS	25
7	DFD TO FIND A DOCTOR NEARER TO A SPECIFIC AREA	25

LIST OF ABBREVIATIONS

HMS – Healthcare Management System

BMI – Body Mass Index

ASP – Active Server Pages

CLR – Common Language Runtime

HTML – Hypertext Markup Language

SQL – Structured Query Language

DAO – Data Access Objects

ADO – ActiveX Data Objects

CHAPTER 1

INTRODUCTION

1.1 PROJECT OVERVIEW

This project has been developed to provide details regarding the overall activities of the ABC hospital. This system facilitates storage, retrieval processing and reporting of all related data involved in the hospital activity. With the help of the reports the performance of the hospital can be determined.

The system also aims to provide other useful information to the public such as the importance of clean hands, disease management, latest medical news and the calculation of Body Mass Index (BMI). The system also provides facilities for online appointment with a doctor working in the hospital.

The system maintains the records of doctors and patients .Through this system we can view the required information in a particular category easily and quickly. It makes tedious work very easy.

The necessary steps that have been followed while starting the project are:

- System study of the requirements
- Reference of the studies made
- Rough design of the system
- Testing of the design through the operation
- Making the necessary change

- Obtaining the final design
- Coding the project
- Testing the system
- Implementing the project

CHAPTER 2

SYSTEM STUDY AND ANALYSIS

2.1 PROBLEM STATEMENT

Aim is to develop a flexible and fast response system which provides the benefits of elegant operation, enhanced administration and control, superior patient care, cost control and improve the profits of a hospital.

2.2 EXISTING SYSTEM

The existing system is manual one where all the details of the operations in the hospital are entered into different registers which are to be maintained. The hospital employs a non –standardised approach to maintain patient details, scheduling appointments, providing inadequate service to the patients, etc.

2.2.1 DRAWBACKS OF THE EXISTING SYSTEM

The drawbacks of the existing can be summarized as below:

- Time consuming
- Data redundancy
- Data inconsistency
- Lot of paperwork
- Historical data retrieval takes a long time
- Not easy to understand for a naive user
- Access and retrieval of relevant information requires considerable overhead

- Generation of reports is difficult, since various records are to be verified
- Miscommunication between various departments often results in chaos

2.3 PROPOSED SYSTEM

The objective of implementing the proposed system is to reduce the overhead incurred by the employees of the hospital and to make the whole process simple and efficient .It has been decided that the proposed system will have computerised entry for all the operations carried out in the hospital.

2.3.1 ADVANTAGES OF PROPOSED SYSTEM

The expected benefits of the proposed system are as follows:

- Intuitive and easy to use
- Flexible and scalable
- Easy and quick implementation
- Data from a single source ensuring integrity
- Various reports can be generated as per the requirement
- Data standardization
- Improved decision making
- Retrieval of historical patient records will be much simpler
- Drastically improves the healthcare service provided to the people
- Reduces the operating cost and increases the quality of the healthcare services

- Improves the quality of the service provided by the hospitals in collection and management of the patient information

2.4 USERS OF THE SYSTEM

The users of the proposed HMS have been categorised as follows and each of the user categories will have a set of rights which manage their use of the proposed system,

- Administrator
- Public

ADMINISTRATOR

System administrators are usually charged with installing, supporting and maintaining servers or other computer systems, and planning for and responding to service outages and other problems. Other duties may include scripting or light programming, project management for systems-related projects, supervising or training computer operators, and being the consultant for computer problems beyond the knowledge of technical support staff. A system administrator must demonstrate a blend of technical skills and responsibility.

PUBLIC

The public users are those who are benefited from the system. They can make an appointment, view doctor schedule, find a doctor nearest to their area of location, search doctors by their speciality areas and also by their available day. In addition the public can check their BMI to find if they are fit or not. The users can also get latest medical news, the hospital events and other related useful information.

CHAPTER 3

DEVELOPMENT ENVIRONMENT

3.1 HARDWARE SPECIFICATION

Processor	: Pentium IV
RAM	: Minimum 256 MB
Hard disk	: 20GB
Monitor	: 14" color Monitor
Keyboard	: 107 keys
Mouse	: Logitech scroll mouse

3.2 SOFTWARE SPECIFICATION

Operating system	: Windows XP Professional
Front end	: Microsoft Visual Studio 2005
Back end	: Ms Access
Language	: ASP.NET

CHAPTER 4

SYSTEM DESIGN AND DEVELOPMENT

4.1 ELEMENTS OF DESIGN

System design is the process or art of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. One could see it as the application of system theory to product development. There is some overlap and synergy with the disciplines of systems analysis, systems architecture and systems engineering.

Creation of a website project consists of the following stages:

1. **Determining customer needs**

First, we focus our attention on the customer's goals and the tasks which the site is to fulfill. In this project, the goal of the customer is to obtain information in an easy and quick manner. The information may be regarding the hospital, about the doctors, or any other related information. A huge amount of attention is paid to the already existing projects of a similar topic, their advantages and drawbacks are determined as well.

2. **Development of the navigation structure of the site**

Convenience of navigation inside a site may, at times, play a major role. According to statistics, some 15-20% of users, when visiting a site, fail to find the necessary information and leave without finding what they were looking for.

For this reason, we pay plenty of attention to this stage of project development. A high level of enclosure of pages and complexity of arrangement of elements create an obstacle for users who visit sites for the first time. In this situation, the potential client's re-visiting your site is rather questionable.

ASP.NET 2.0 has a built in site navigation feature which provides a consistent way for the user to navigate a website. The new site navigation system allows defining all the links at a central location file usually an XML file and display those links in lists or navigation menus in each required page using navigation-based server controls.

ASP.NET site navigation offers the following features,

- Site maps
- ASP.NET controls
- Programmatic control
- Access rules
- Custom site-map providers

In our project, we have the site map feature. A site map , web.sitemap is created which reflects the structure of our site .The navigation structure in our ASP.NET web pages must be displayed, so that users can move easily around our site. The ASP.NET site-navigation controls are as follows,

- SiteMapPath

This control displays a navigation path — which is also known as a breadcrumb or eyebrow — that shows the user the current page location and displays links as a path back to the home page. The control provides many options for customizing the appearance of the links.

- TreeView

This control displays a tree structure, or menu, that users can traverse to get to different pages in the site. A node that contains child nodes can be expanded or collapsed by clicking it.

- Menu

This control displays an expandable menu that users can traverse to get to different pages in the site. A node that contains child nodes is expanded when the cursor hovers over the menu.

Also, at this stage, there is an issue of the informational value of the site, the pages on it and how to name them. In this project, the information provided is brief and informative enough, and care is taken so that there are no excessive deviations from the topic.

3. Development of a project design

At this stage, a study of the following issues occurs,

- The aesthetic outlook of the project
- The color palette
- Designs of the main and internal pages of the project
- The choice of the font set

During the development of a project design we try to take into account the features of the corporate styles, using the advanced technologies for creation of the appearance of the site.

In order to have a consistent look for the overall project, we have used the concept of 'master pages' available in ASP.NET. A single master page defines

the look, feel and the standard behavior for all of the pages (or a group of pages) in our website.

The common appearance and the behaviour of our website is first decided and then the master page is created. In the master page, you add placeholders called ContentPlaceHolders where the content (child) pages will insert their custom content. In the next step, individual content pages are created which contain the content to display. When users request the content pages, they merge with the master page to produce output that combines the layout of the master page with the content from the content page. In our project, the hospital logo, name and the main links are placed in the master page.

4. The software part of the project

At this stage, depending on the customer requirements and the functionality of the project, the following stages are possible,

- The text content of the project is maintained in an efficient and flexible manner by the administrator by allowing changes whenever needed
- The news column on our site, adds vitality to the project
- Development of a database structure

5. Testing

When the above stages have been finished, finally the testing of the project is performed. The project is tested to see if it satisfies the targeted customer or not.



4.1.1 MODULAR DESIGN

The following modules are used in the proposed system

- Home
- General information
- Online appointment
- Pharmacy
- Lab information
- News & events
- BMI Calculator
- Find a doctor
- Other useful information to the public

HOME

The home page consists of all the information about the hospital. The rapid changes in healthcare industry and the need to adapt to the changes, in order to provide quality service to the patients.

The home page also contains a separate login for the administrator. The administrator uses a user name and a password in order to view, update, add or delete the information about the doctors working for the hospital. To view the diseases and treatments provided, a link is given in the home page. When the user clicks the particular symptom from the list given, they can view the cause of the symptom, steps to get relief from the symptom and also the appropriate time to consult the doctor.

GENERAL INFORMATION

The general information module allows the public to view the schedule of the doctors in the hospital. The schedule of all the doctors is displayed along with their names.

ONLINE APPOINTMENT

The online appointment module helps the public to fix an appointment with a doctor in hospital. While fixing an appointment, the name of the person, his/her date of birth, date of appointment, doctor's name, his/her e-mail id, and their phone number should be given along with a convenient time to call. The applicant will receive an e-mail regarding their confirmation or cancellation of appointment. The applicant will also be informed through a call in the time specified by them to call in case of confirmation of the appointment.

PHARMACY

The pharmacy module contains information regarding the working of the pharmacy in hospital. The Hospital pharmacy usually has stock for a larger range of medications, including more specialized medications, than would be feasible in the community setting.

LAB INFORMATION

The lab information module contains information regarding the different types of scans, their use and their functionalities are described in detail. It serves as an information provider to the public.

NEWS & EVENTS

This module contains latest medical news. It also lists the events conducted by the hospital such as free campaign, awareness programme, national seminars etc.

BMI CALCULATOR

The BMI calculator is used to calculate the Body Mass Index (BMI) when given the height (in cms) and weight (in pounds). The resulting value can be verified against a table from which the user can conclude whether he/she is in obese condition or not.

$$\text{BMI} = \frac{\text{weight in kilogram}}{(\text{height} * \text{height in cms} / 10,000)}$$

FIND A DOCTOR

This module allows the user to find a list of doctors working in the hospital. The doctor can be searched in one of the following ways

- Speciality
- Available Day
- Residential Area

Speciality

The users can view the list of doctors based on their speciality areas. Some of the speciality areas are Radiology, ENT, Cardiology etc...

Available Day

By selecting a particular day of a week, the user can view the doctors list who are available on that particular day.

Residential Area

In case of emergencies, the users can view the doctors residing in the same residential area by selecting an area name from the list of area names.

OTHER USEFUL INFORMATION

Other useful information section is used to create awareness to the public, regarding the importance of clean hands, disease management and the latest developments in medical fields.

4.1.2 DATABASE

A database is a collection of inter-related data stored. The general objective of database design is to make the data access easy, inexpensive and flexible to the user.

The tables in the Healthcare Management System have been normalized up to the Third Normal Form.

DOCTOR TABLE

The doctor table contains information about the doctors. The information includes the name of the doctor, his/her qualification, his/her specialization, their address, phone number and their respective schedules. The schedules are to be followed by the doctors unless an emergency occurs.

PATIENT TABLE

The patient table contains the required information about the patients. The information includes patient name, address and their phone number.

AREA DETAILS

The area table contains the list of area names in Coimbatore such as Gandhipuram, Ganapathy, Saravanampatti etc...

AVAILABLE DAY TABLE

This table contains the names of the days in a week. The doctors may be available only a few days in a week. For example, a doctor may be available from Monday.

DOCTOR AREA LINK TABLE

This table is used as a link between the doctor and area details table, to find out the doctors in a particular area.

DOCTOR AVAILABLE DAY LINK TABLE

This table is used as a link between the doctor and available day table, to find out the doctors available in a particular day of the week.

DOCTOR PATIENT LINK TABLE

This table is used as a link between the doctor and patient details table, to find out the patient and their consulting doctor. A doctor can have more than one patient under his/her supervision. Also a patient can be treated by more than one doctor.

DOCTOR SPECIALITY TABLE

This table contains the names of various speciality fields such as Radiology, ENT, etc...

DOCTOR SPECIALITY LINK TABLE

This table is used as a link between the doctor and specialty table, to find out the doctors available in a particular specialty area.

ONLINE APPOINTMENT TABLE

This table is used to store the information such as name, date of birth, date of appointment, requested doctor, e-mail id and the phone number of the user who applies for an online appointment.

4.2 TABLE STRUCTURE

TABLE 1: DOCTOR DETAILS

FIELD NAME	DATA TYPE
DOCTOR_ID	PRIMARY KEY
DOCTOR_NAME	TEXT
DOCTOR_QUA	TEXT
DOCTOR_ADDRESS	TEXT
DOCTOR_PHONE	NUMBER(ALLOWS NULL)
DOCTOR_SCHEDULE	TEXT

TABLE 2: PATIENT DETAILS

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
PATIENT_NAME	TEXT
PATIENT_ADDRESS	TEXT
PATIENT_PHONE	NUMBER(ALLOWS NULL)

TABLE 3: AREA DETAILS

FIELD NAME	DATA TYPE
AREA ID	PRIMARY KEY
AREA NAME	TEXT

TABLE 4: AVAILABLE DAY TABLE

FIELD NAME	DATA TYPE
A_ID	PRIMARY KEY
DAY	TEXT

TABLE 5: DOCTOR AREA LINK TABLE

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
AREA_ID	FOREIGN KEY
DOCTOR_ID	FOREGIN KEY
DOCTOR_NAME	TEXT

TABLE 6: DOCTOR AVAILABLE DAY LINK TABLE

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
A_ID	FOREGIN KEY
DOCTOR_ID	FOREGIN KEY
DOCTOR_NAME	TEXT

TABLE 7: DOCTOR PATIENT LINK TABLE

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
DOCTOR_ID	FOREGIN KEY
PATIENT_NAME	TEXT

TABLE 8: DOCTOR SPECIALITY TABLE

FIELD NAME	DATA TYPE
S_ID	PRIMARY KEY
SPECIALITY	TEXT

TABLE 9: DOCTOR SPECIALITY LINK TABLE

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
S_ID	FOREGIN KEY
DOCTOR_NAME	TEXT

TABLE 10: ONLINE APPOINTMENT TABLE

FIELD NAME	DATA TYPE
ID	PRIMARY KEY
APP_NAME	TEXT
DATE OF BIRTH	DATE/TIME
APP_DATE	DATE/TIME
REQUESTED_DOCTOR	TEXT
PHONE NO	NUMBER
TIME TO CALL	DATE/TIME

4.3 DATA FLOW DIAGRAM

Data flow diagrams are graphical representation depicting information regarding the flow of control and the transformation of data from input to output. The DFD may be used to represent the system or software at any level of abstraction.

Figure 1: System Level Data Flow Diagram

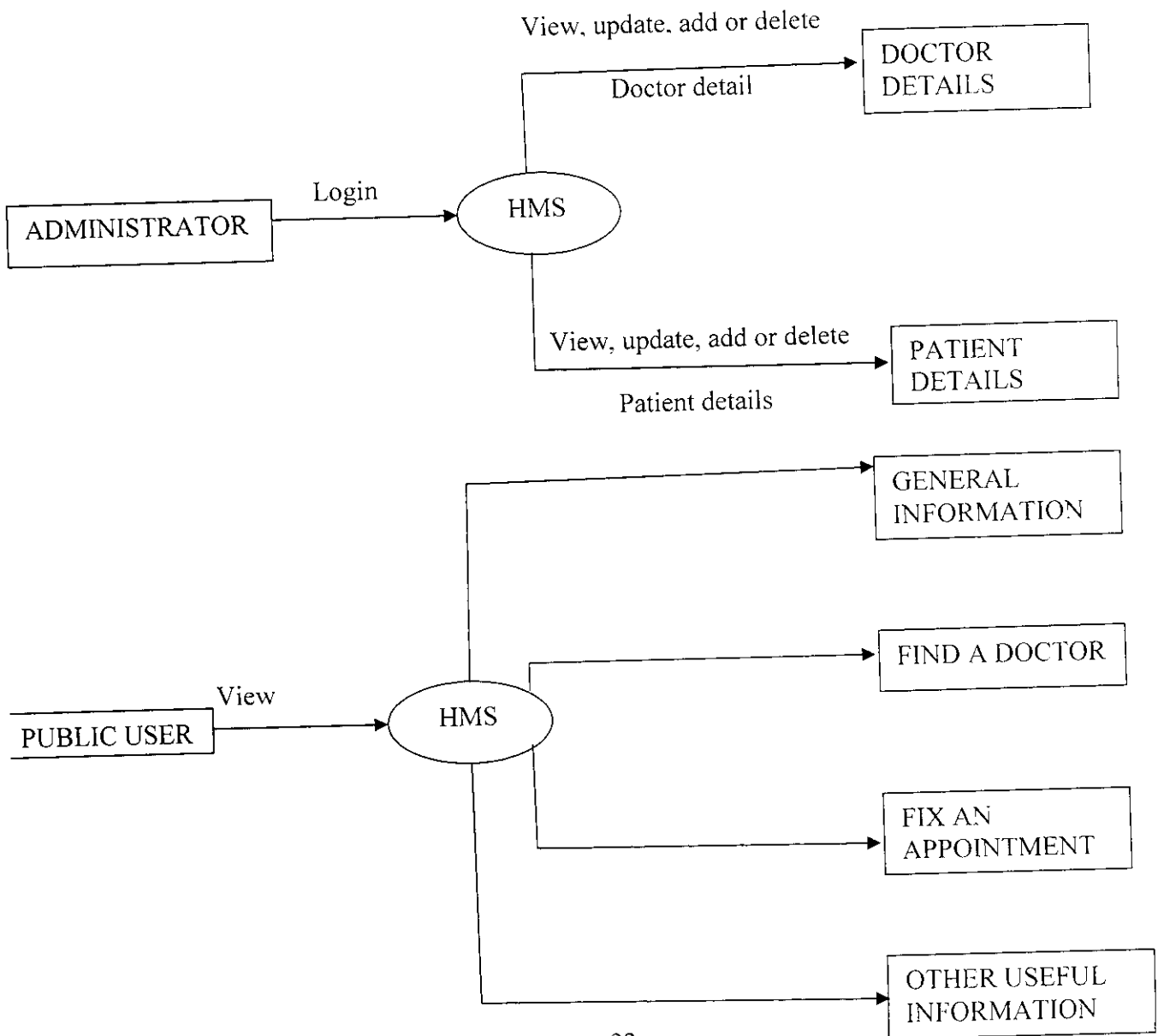


Figure 2: DFD for viewing General information

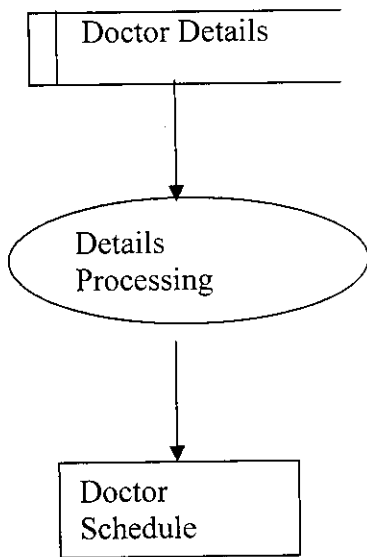


Figure 3: DFD for Online Appointment Fixing

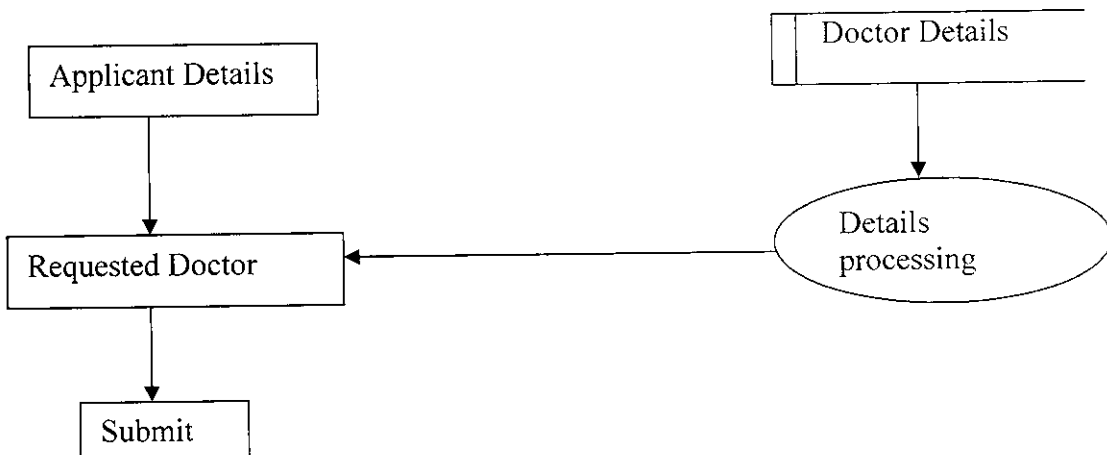


Figure 4: DFD for Doctor and Patient relationship

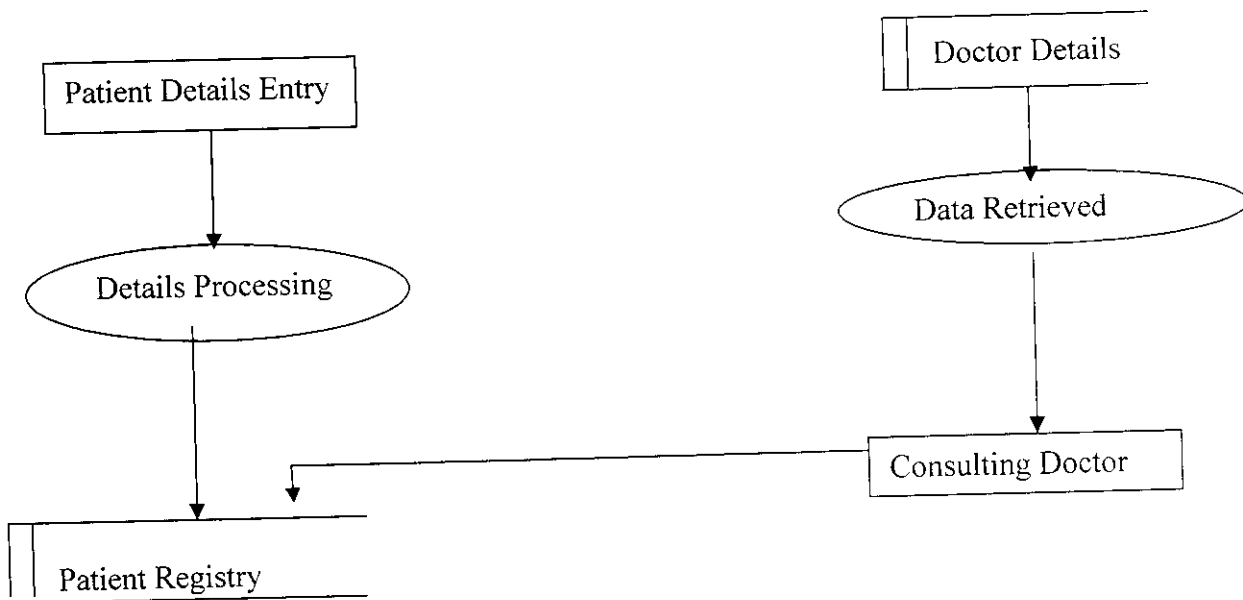


Figure 5: DFD to Find A Doctor by Speciality Area

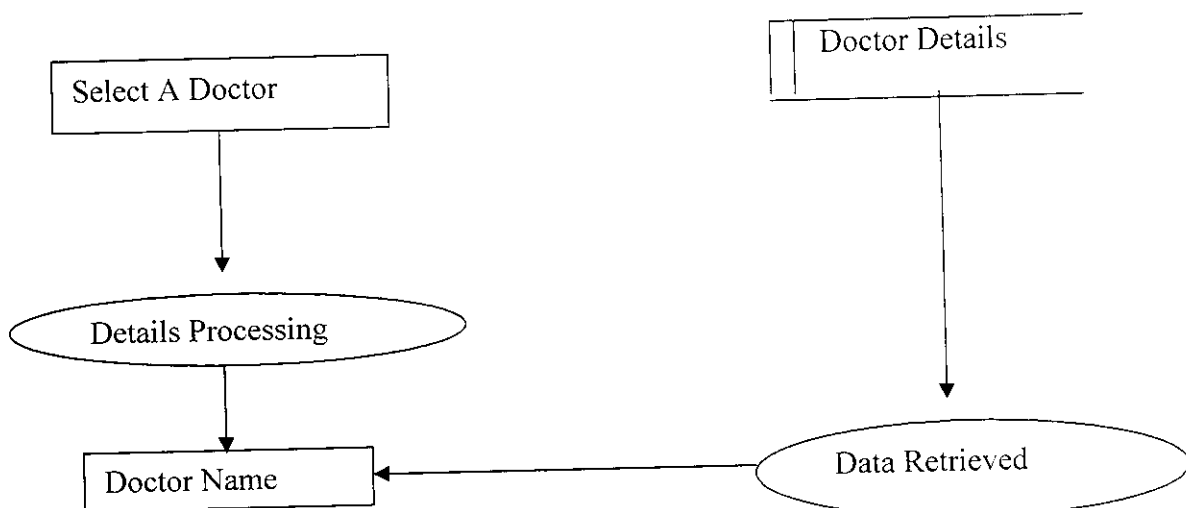


Figure 6: DFD to Find A Doctor by Available Days

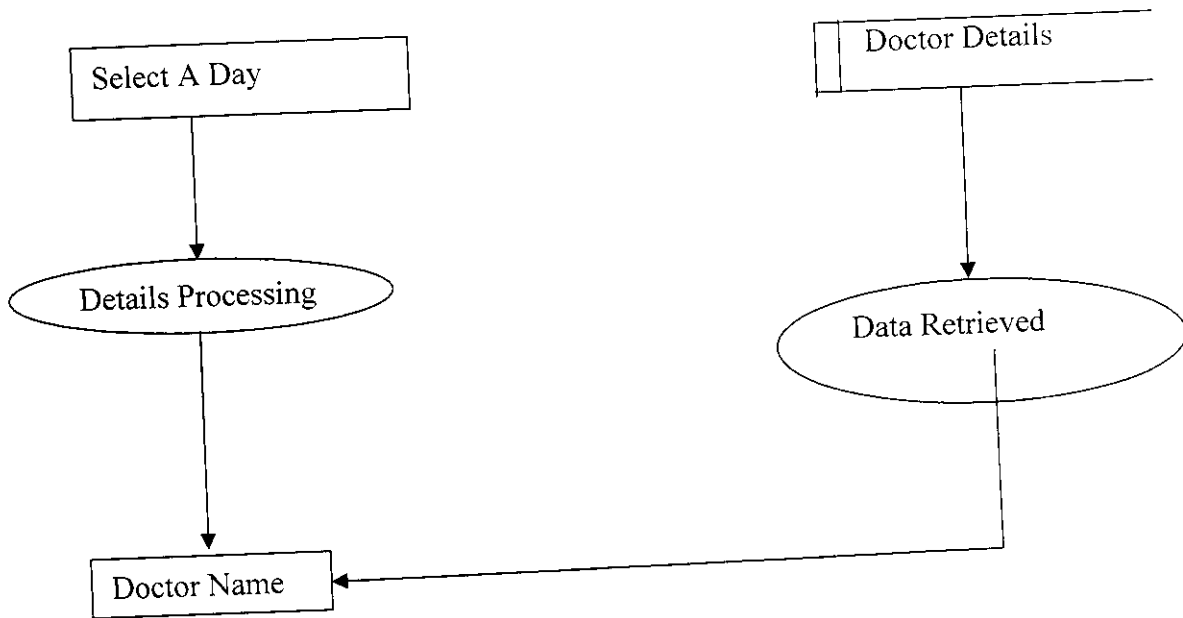
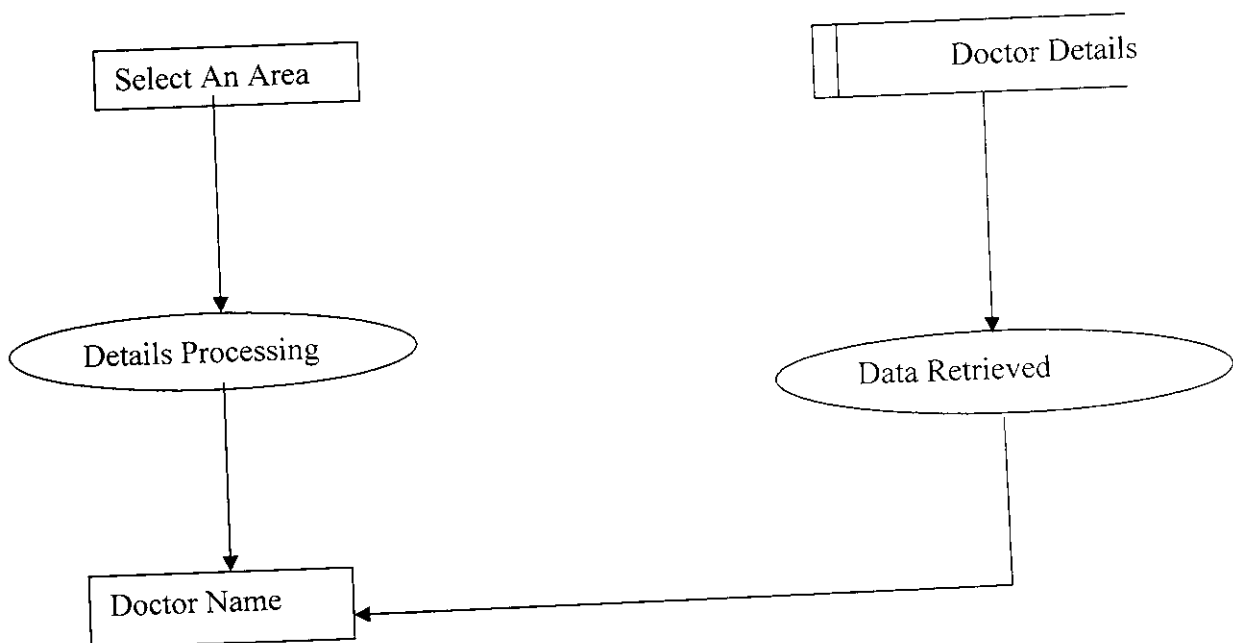


Figure 7: DFD to Find A Doctor Nearer to a Specific Area



CHAPTER 5

IMPLEMENTATION

5.1 SYSTEM IMPLEMENTATION

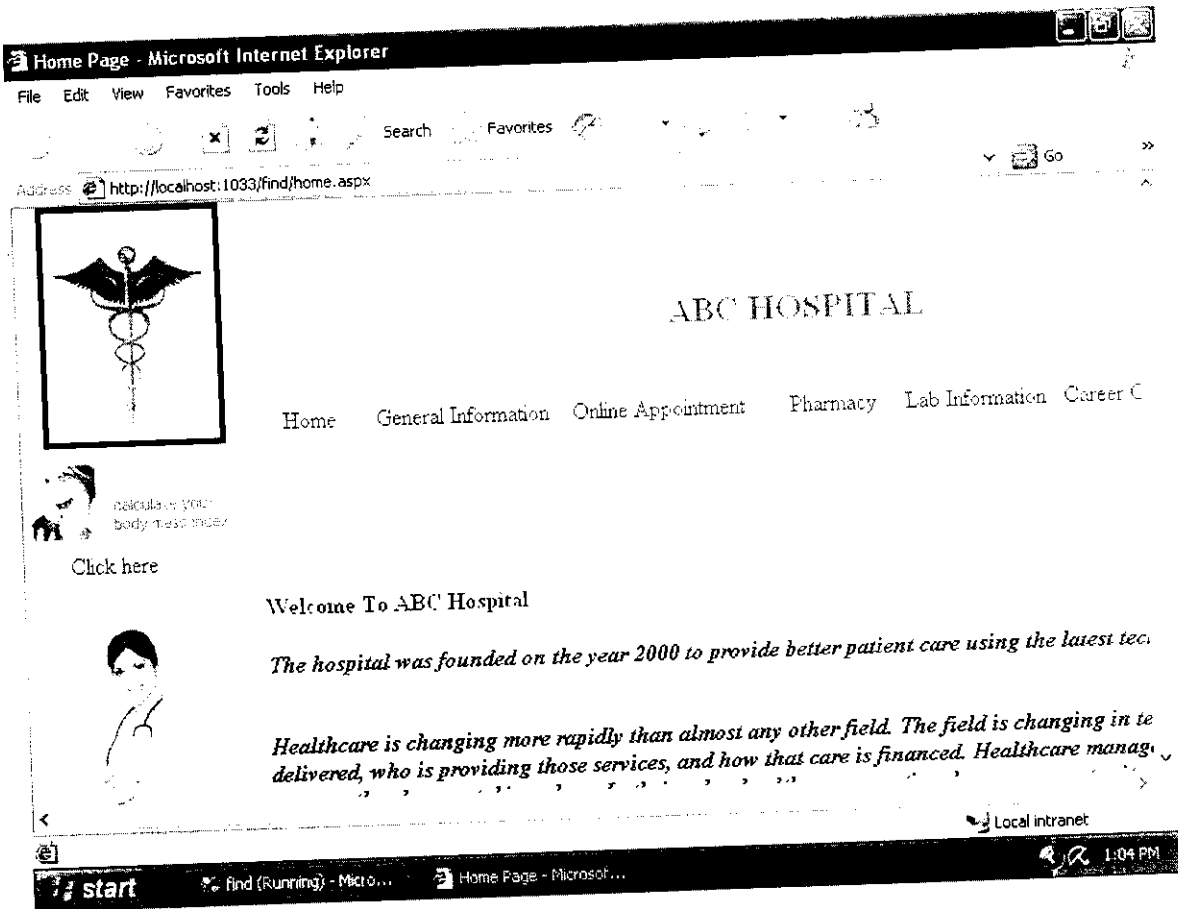
System implementation is the part of the software engineering life cycle, where the design artifacts are converted to a working application. Coding is done in this stage using an apt framework and programming language, which would solve the specific problem the best way. Once the design is coded into a working application, it has to be verified, validated and tested in detail. The tested product if successful is deployed in the user environment.

Each program is tested individually using the test data during development. The individual programs are then linked together and an overall testing is done.

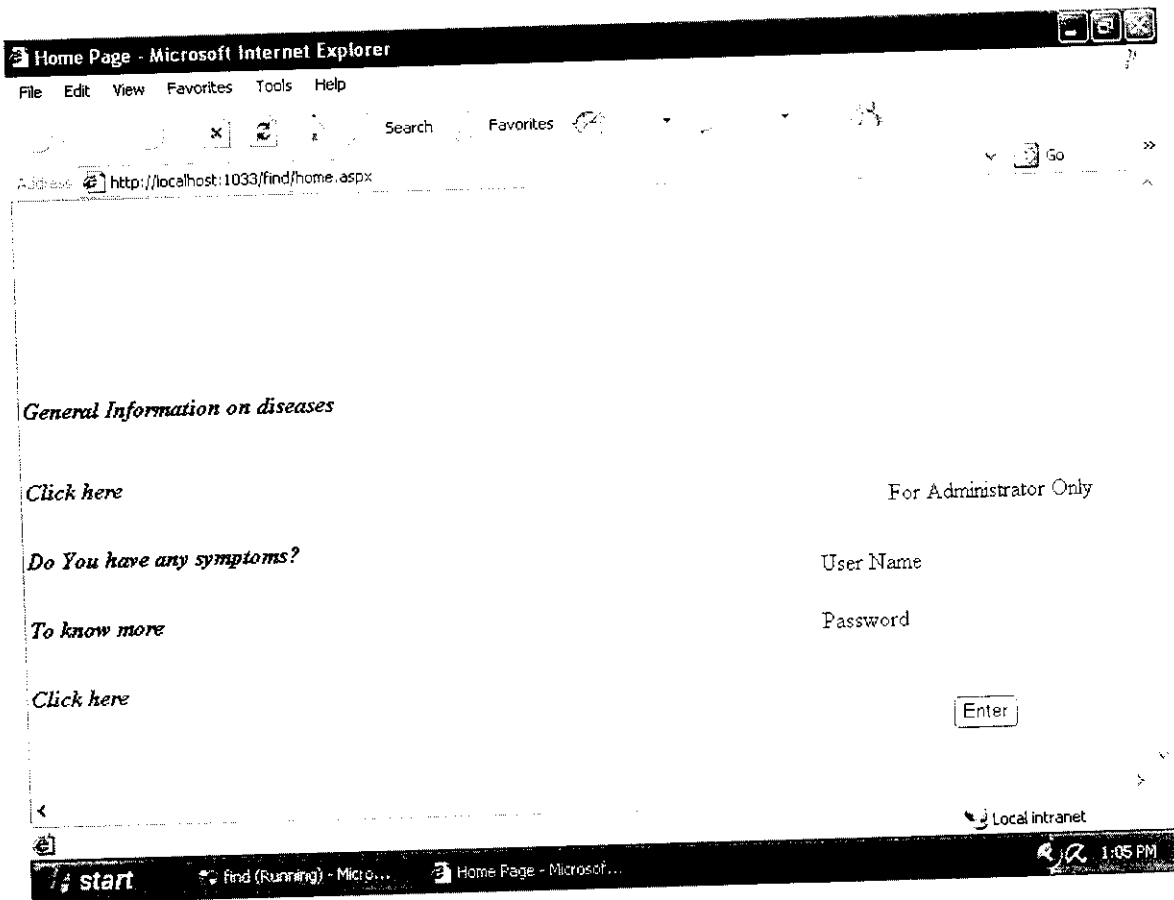
CHAPTER 6

SCREEN SHOTS

The figure represents the home page:



The figure represents the general information on diseases:



The figure represents the general information about doctors:

General Information - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address http://localhost:1033/find/gen.aspx

Home > General Information

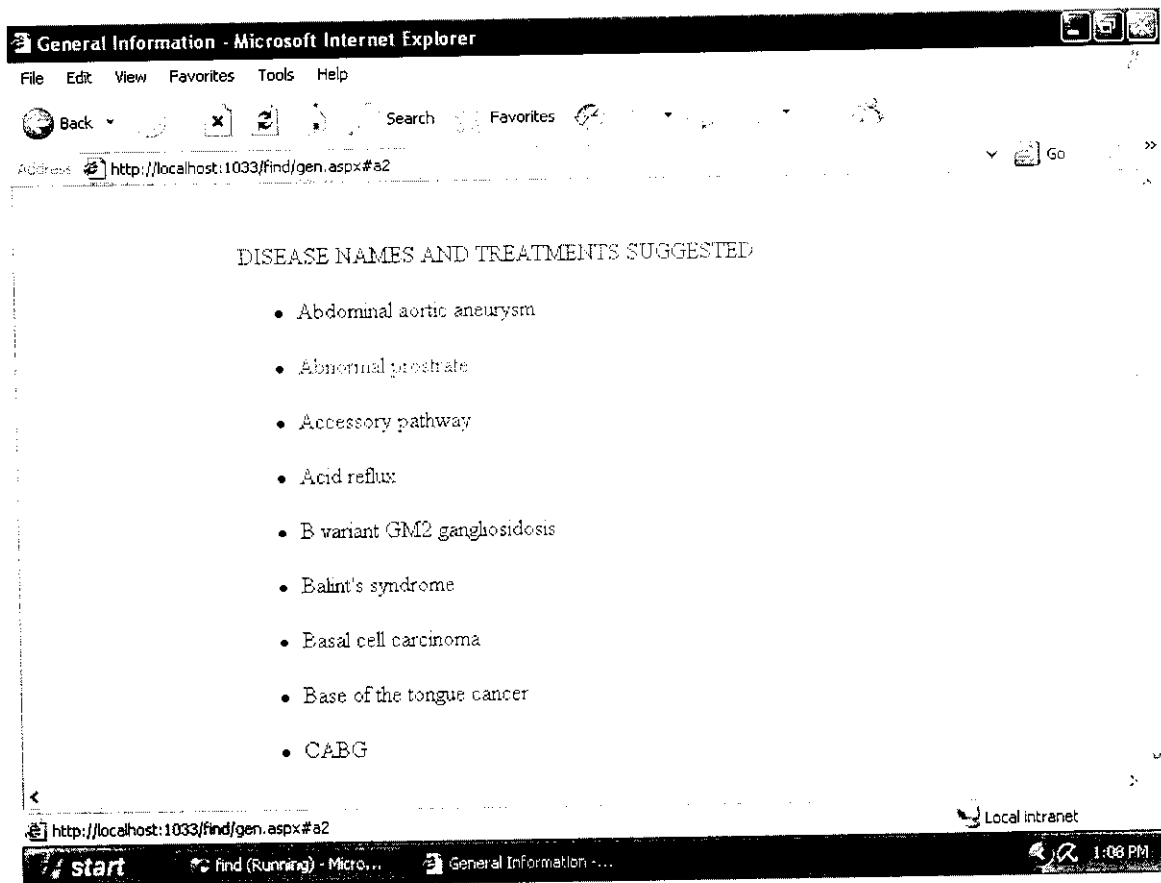
View Doctors Schedule

Ashish Jain	11-12 PM
Dinshaw Pardiwala	8-9 AM
Mihir Bapat	2-4 PM
Niraj Vora	4-6 PM
Jyotsna Oak	8-10 AM
Sunil Kumar Singh	4-6 PM
Prashant Nair	2-4 PM
Pradeep Kaul	9-11 AM
Pradeep Nambiar	2-3 PM
Sandeep Goyle	4-5 PM
Kauatav Talapatra	9-10 AM
Rajesh Mistry	8-9 AM

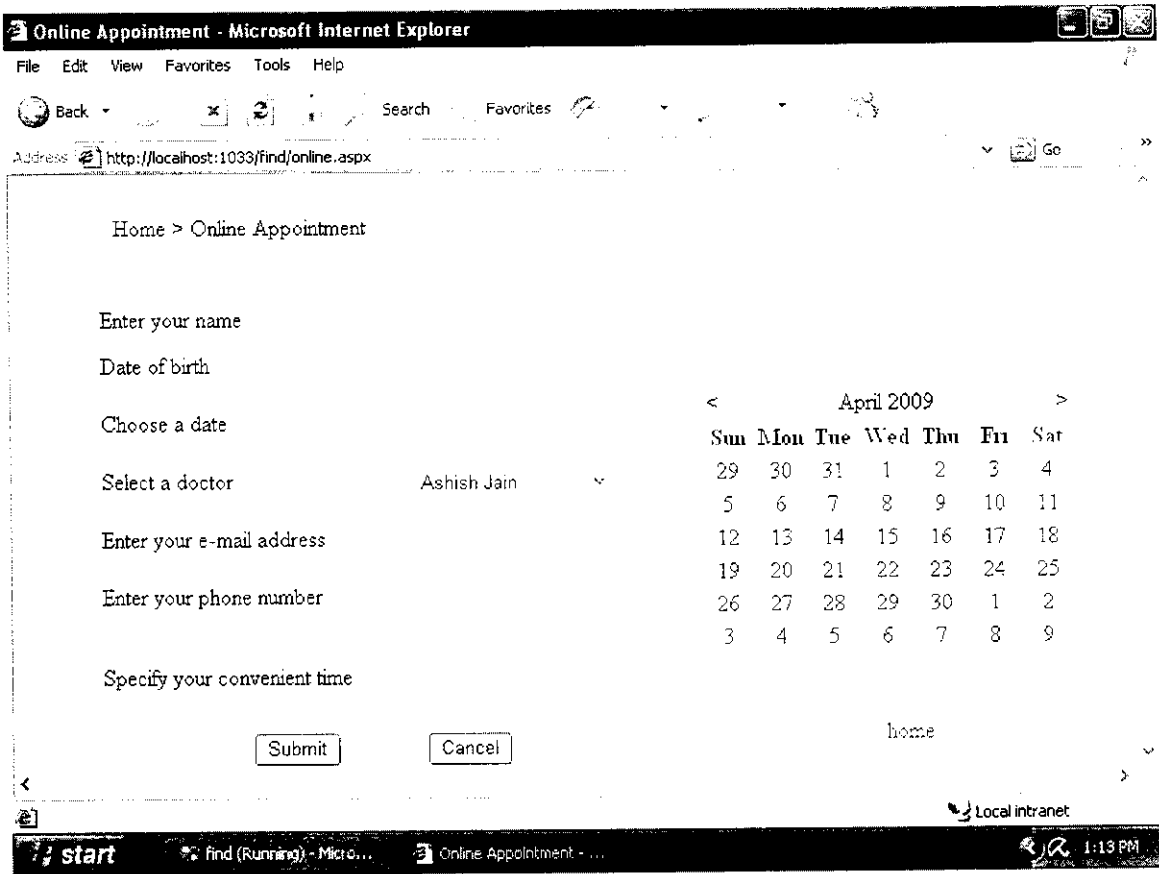
Local intranet

start find (Running) - Micro... General Information - ... 1:07 PM

The figure represents general information about diseases:



The figure represents online appointment page:



The figure represents details about pharmacy:

Pharmacy - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address http://localhost:1033/find/pharmacy.aspx

ABC HOSPITAL

Home General Information Online Appointment Pharmacy Lab Information Career Options News & Eve

Home > Pharmacy

Need of Pharmacies

All patient medications ordered by physicians are provided through the hospital's licensed pharmacists. The pharmacists monitor profile for possible drug interactions to avoid additional problems.

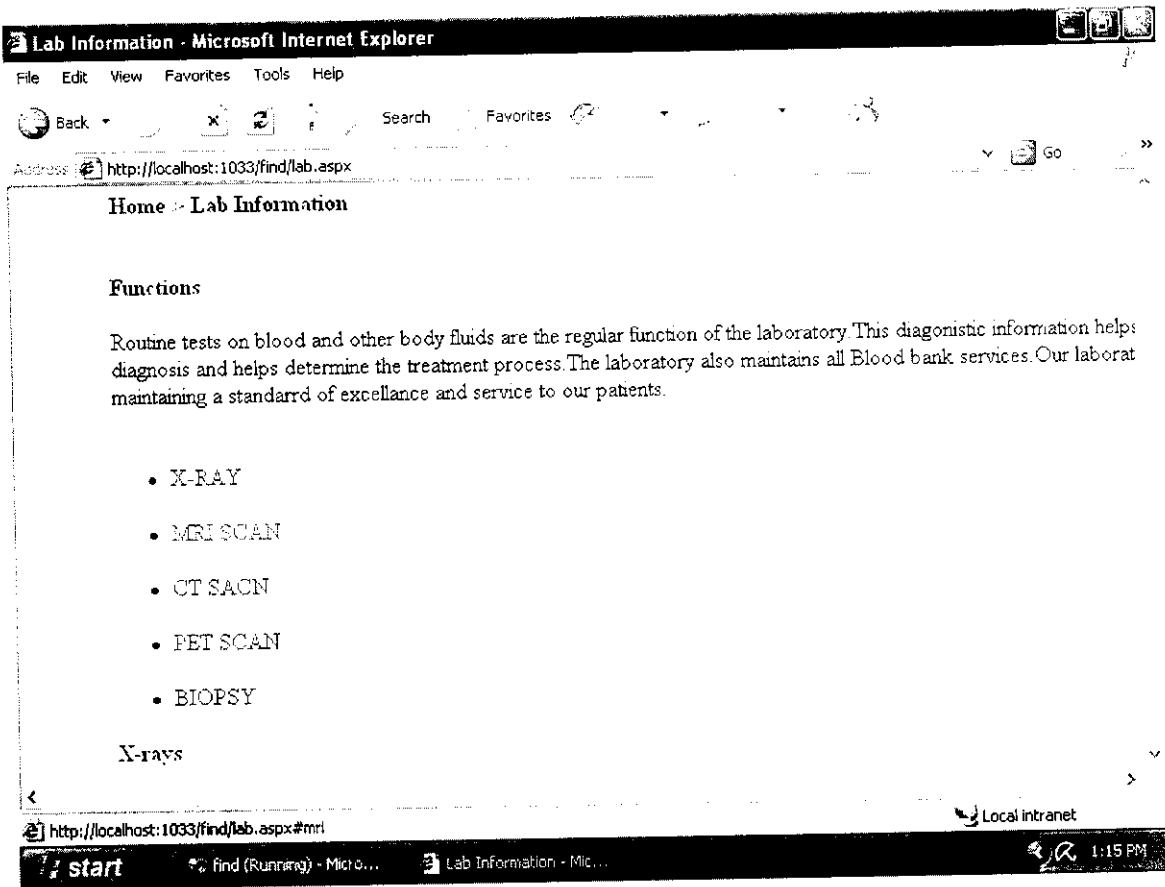
The principal functions of Pharmacy Services are to

- procure, store, and distribute hospital, clinic, and outpatient drug supplies in a safe, efficient, and effective manner
- provide patient care as members of the team to patients and families in a variety of locations and situations
- allocate, utilize, and evaluate available resources to meet the standards of pharmacy practice
- plan, implement, monitor, and evaluate the quality of professional and technical services
- provide leadership for pharmacy practice and safe medication use that is visible and proactive
- recruit and retain personnel with a high level of pharmacy practice knowledge and skills

Local intranet

start find (Running) - Micro... Pharmacy - Microsoft ... 1:14 PM

The figure represents the lab information:



The figure represents career options:

Career Plans - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address http://localhost:1033/find/career.aspx

Home General Information Online Appointment Pharmacy Lab Information Career C

Home > Career Plans

- As a doctor
- In hospital management

As a doctor

We are constantly looking out for self motivated individuals at every level who are passionate, excellence at every opportunity.

Hence, even if we can't have you today with an explicit job offer that matches your skill set, so compelling enough, we'll create a position just for you.

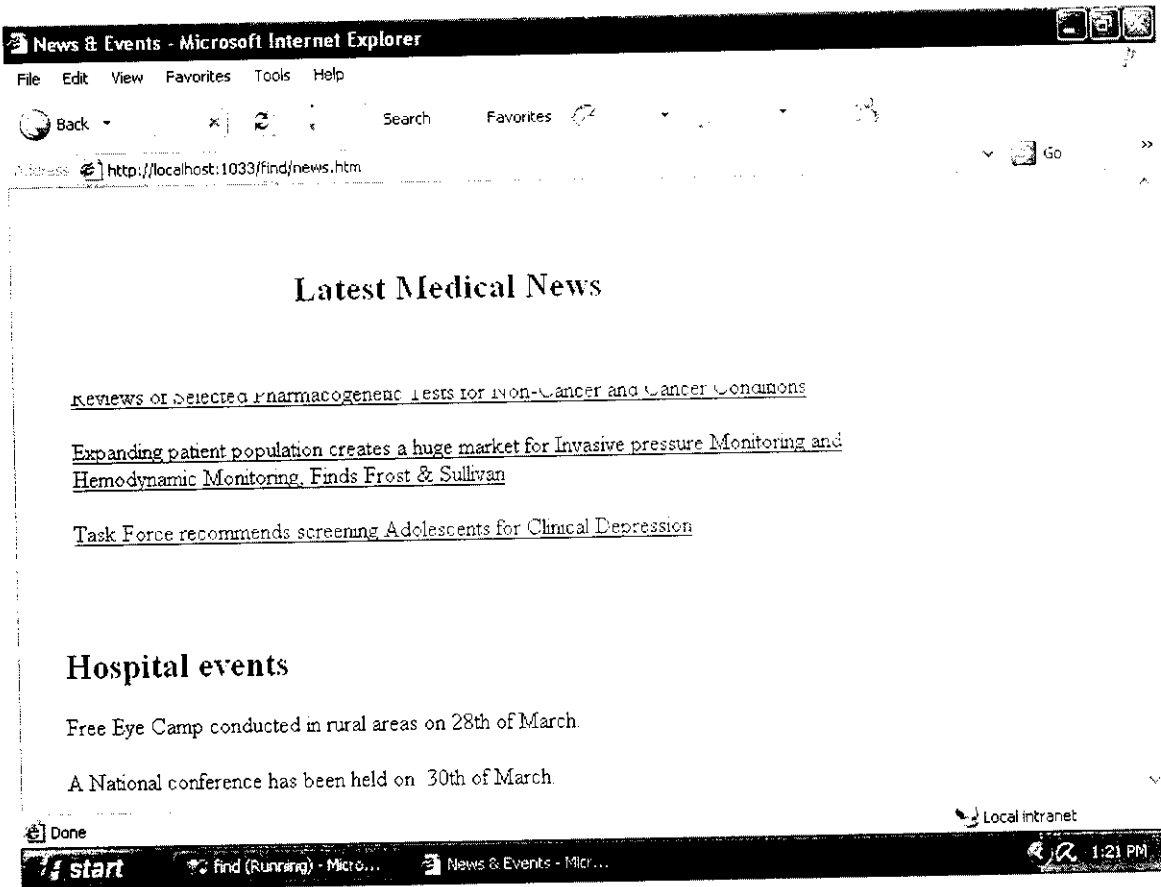
In hospital management

Career opportunities in the field of Hospital Management are increasing very rapidly not only hospital industry, but also with the difference in the nature of work in hospitals. It is an apt c nature along with a flair for organizing, and an eye for detail. A Hospital Manager requires a

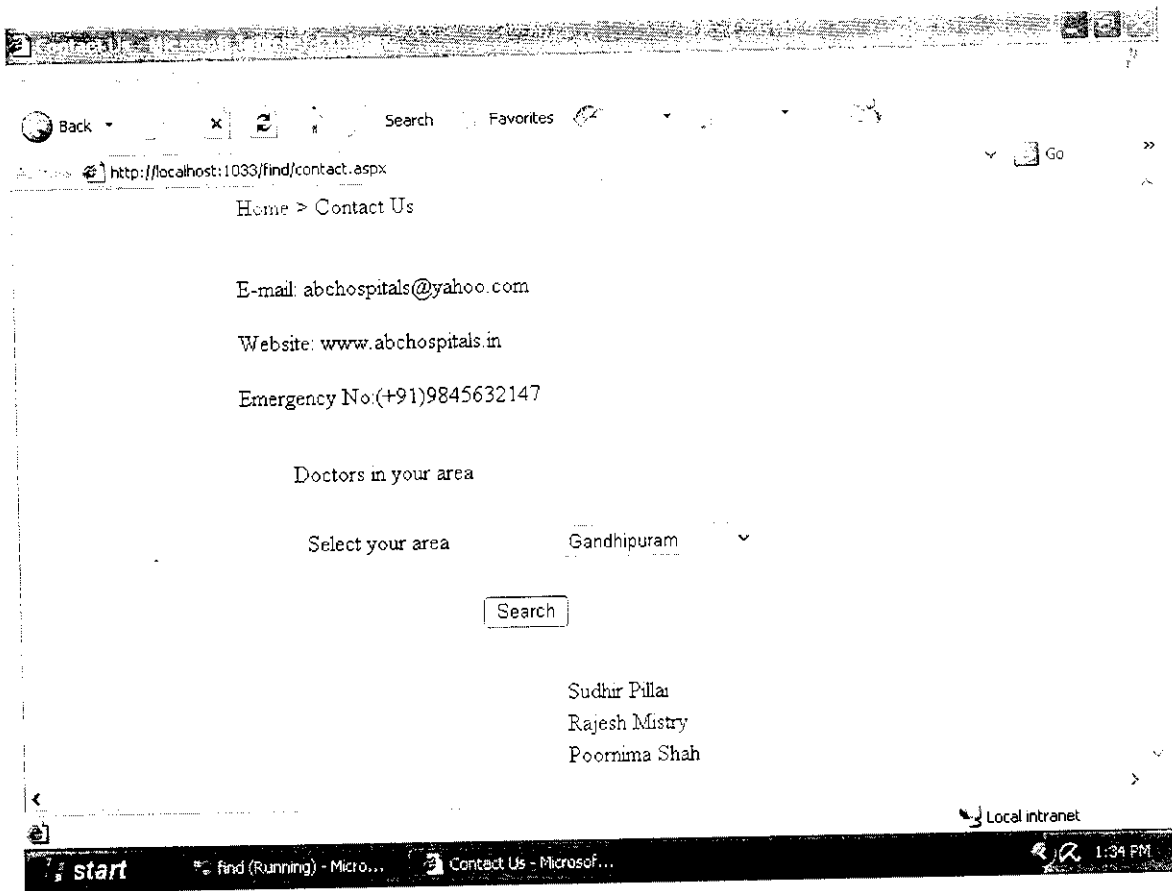
Local intranet

start find (Running) - Micro... Career Plans - Micros... 1:20 PM

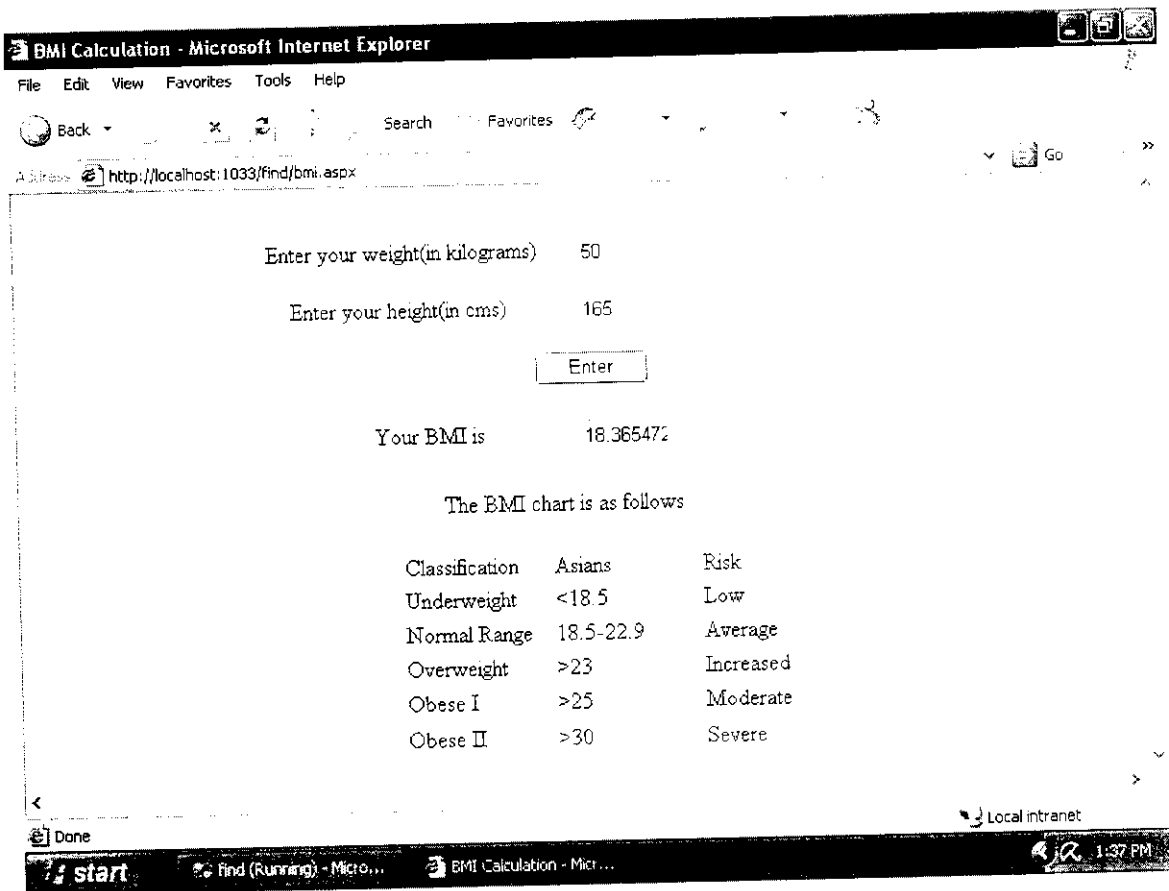
The figure represents the latest medical news:



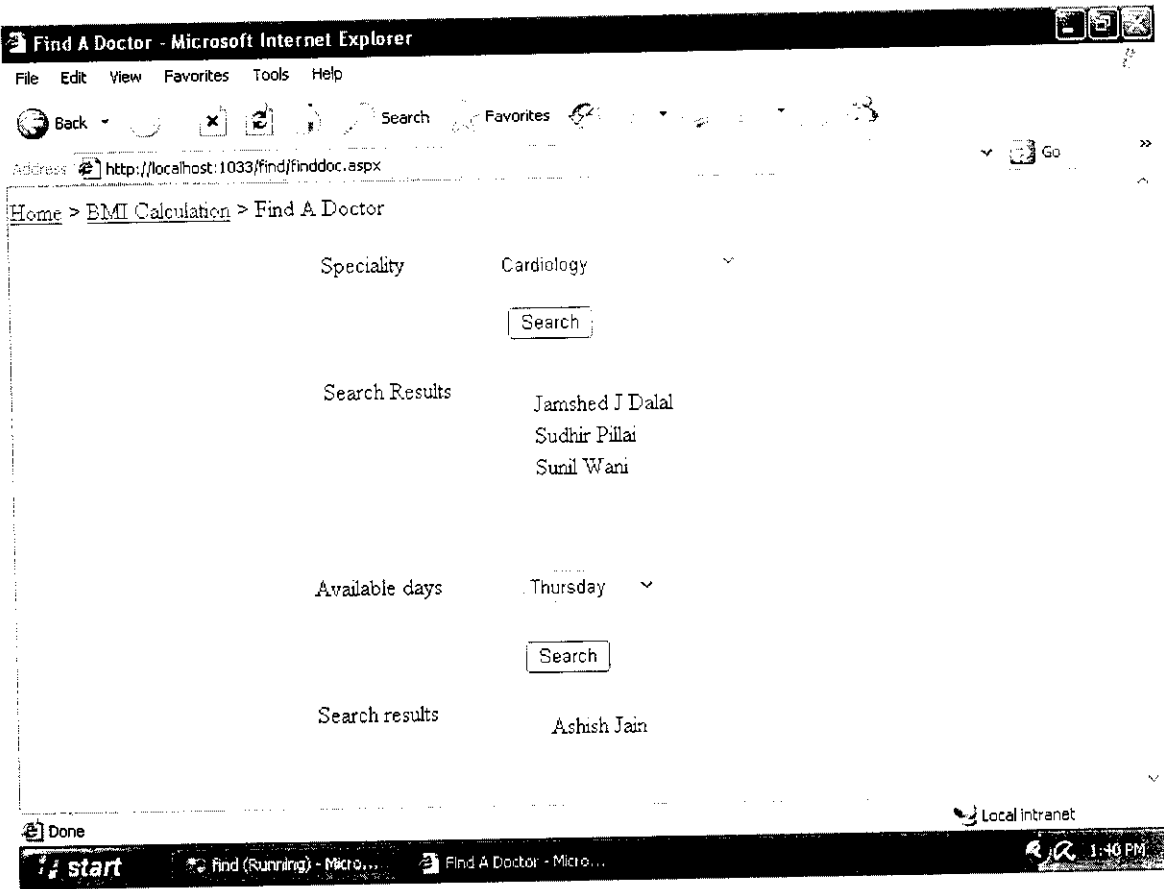
The figure represents the contact us page:



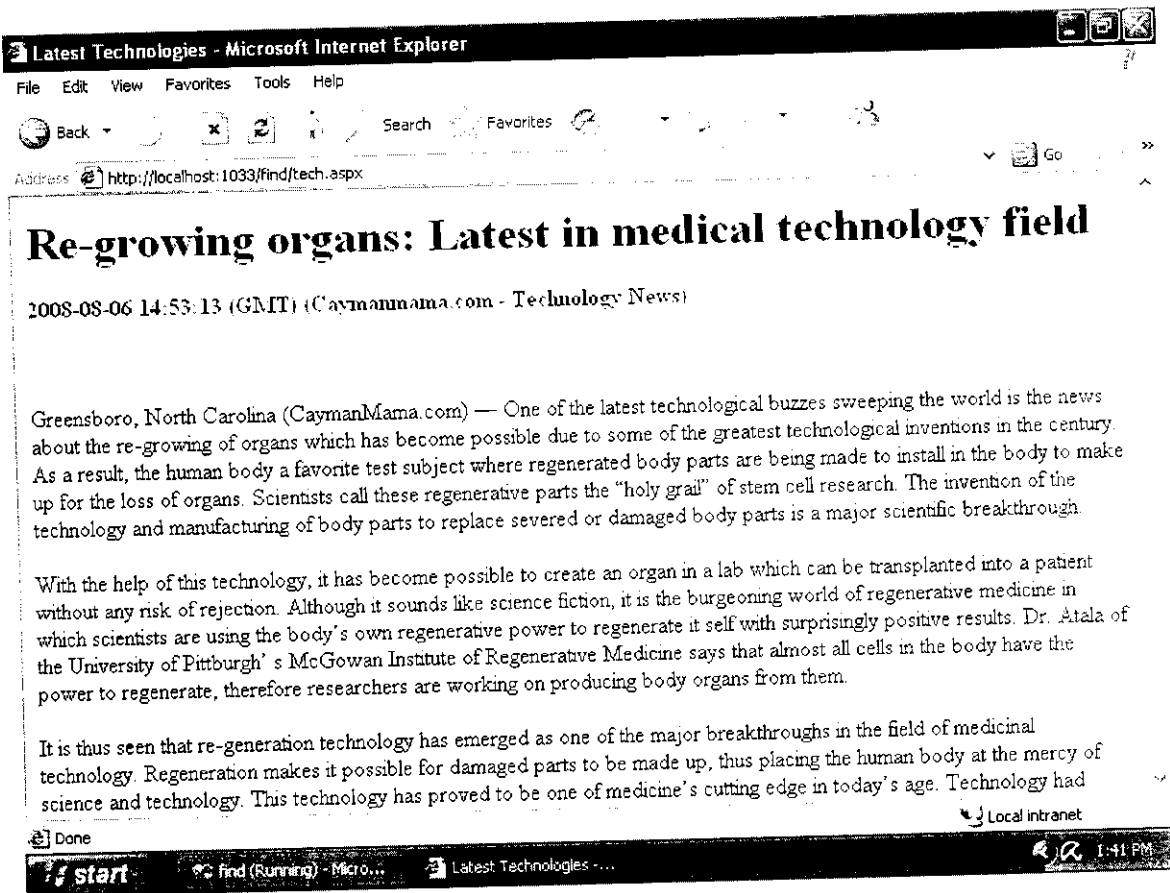
The figure represents the BMI calculator page:



The figure represents find a doctor page:



The figure represents the latest technology page:



The figure represents clean hands page:

The screenshot shows a Microsoft Internet Explorer browser window. The title bar reads "Importance Of Clean Hands - Microsoft Internet Explorer". The menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The address bar shows the URL "http://localhost:1033/find/clean%20hands.aspx". The page content includes a breadcrumb trail "Home > BMI Calculation > Clean Hands" and several paragraphs of text about hand-washing and zoonotic diseases. The status bar at the bottom shows "Done" and "Local intranet". The Windows taskbar at the very bottom shows the "start" button and two open applications: "find (Running) - Micro..." and "Importance Of Clean ...". The system clock shows "1:42 PM".

Importance Of Clean Hands - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address http://localhost:1033/find/clean%20hands.aspx

Home > BMI Calculation > Clean Hands

Careful hand-washing greatly helps reduce the spread of disease between animals and people, known as zoonotic disease, said Dr. James Cook, AVMA president. "We are exposed to germs or expose others to germs as we go through our day, interacting with animals and other people," Cook said.

Often the best way to avoid getting sick or spreading diseases to other people, he said, is by keeping our hands free of germs with thorough handwashing. Dogs and cats, especially those that go outside, can carry germs from the environment into the home on their fur, paws or in their mouths.

The Centers for Disease Control and Prevention estimates that 5,000 people die from food-borne illnesses each year. Poor hand-washing is to blame for many of these deaths.

In addition, there are 76 million food-borne illnesses resulting in more than 300,000 hospital admissions each year. Cook said that it's critical to wash your hands before and after food preparation and eating, as well as after handling animals.

Experts say it's important to use soap and running water and scrub all surfaces of your hands for 20 seconds before drying with a paper towel. An alcohol-based hand sanitizer can be used if soap and water aren't available.

Done Local intranet

start find (Running) - Micro... Importance Of Clean ... 1:42 PM

The figure represents the administrator page:

The screenshot shows a Microsoft Internet Explorer browser window titled "Administrator - Microsoft Internet Explorer". The address bar displays "http://localhost:1033/find/gen%20adm.aspx". The page content is divided into two main sections: a form for editing a specific doctor's record and a table listing multiple doctors.

Form Fields:

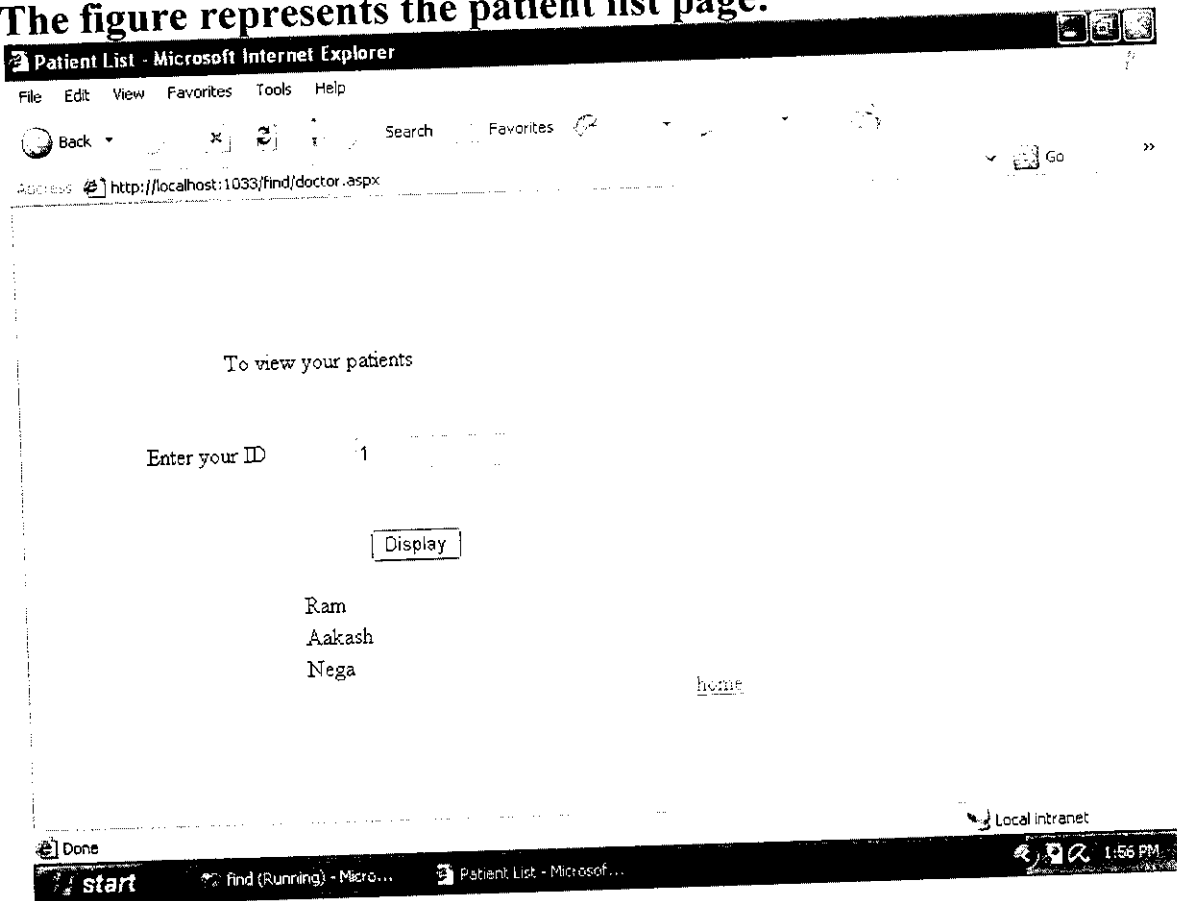
- Name: Jamshed J Dalal (with an "Insert" button)
- Qualification: MBBS,Md(Gen Medicine) (with an "Update" button)
- Address: Ram Nagar,Cbe (with a "Delete" button)
- Phone Number: 2647505 (with a "Search" button)
- Schedule time: 2-3 PM

Table of Doctors:

1	Jamshed J Dalal	MBBS,MD(Gen Medicine),DM(Cardiology),PhD (Cardiology)	Ram nagar,Cbe	2647505	2-3 PM
2	Sudhir Pillai	MBBS,MD(Gen Medicine),DM(Cardiology),DNE (Cardiology)	Gandipuram,Cbe	2785410	4-5 PM
3	Sunil Wani	MBBS,MD(Gen Medicine),DM(Cardiology)	Ganapathy,Cbe	2589630	9-10 AM
4	Alaric Arcojis	MBBS,MS(Orthopaedics),D'Orthopaedics,DNE (Orthopaedics)	Hopes Colonn,Cbe	2478199	10-11 AM

The browser's status bar at the bottom shows "Done", "Local intranet", and the system clock "1:52 PM".

The figure represents the patient list page:



The figure represents the sitemap page:

The screenshot shows a Microsoft Internet Explorer browser window titled "Site Map - Microsoft Internet Explorer". The address bar displays "http://localhost:1033/find/nav.aspx". The browser interface includes a menu bar (File, Edit, View, Favorites, Tools, Help), a search bar, and a "Go" button. The main content area is divided into two columns: "TREE VIEW" and "MENU VIEW".

TREE VIEW

- Home
 - General Information
 - Online Appointment
 - Lab Information
 - Pharmacy
 - News And Events
 - Career Plans
 - Contact Us
- = BMI Calculation
 - Latest Technologies
 - Patient Care
 - Clean Hands
 - Disease Management
- = Find A Doctor
 - Find Doctor And Patient

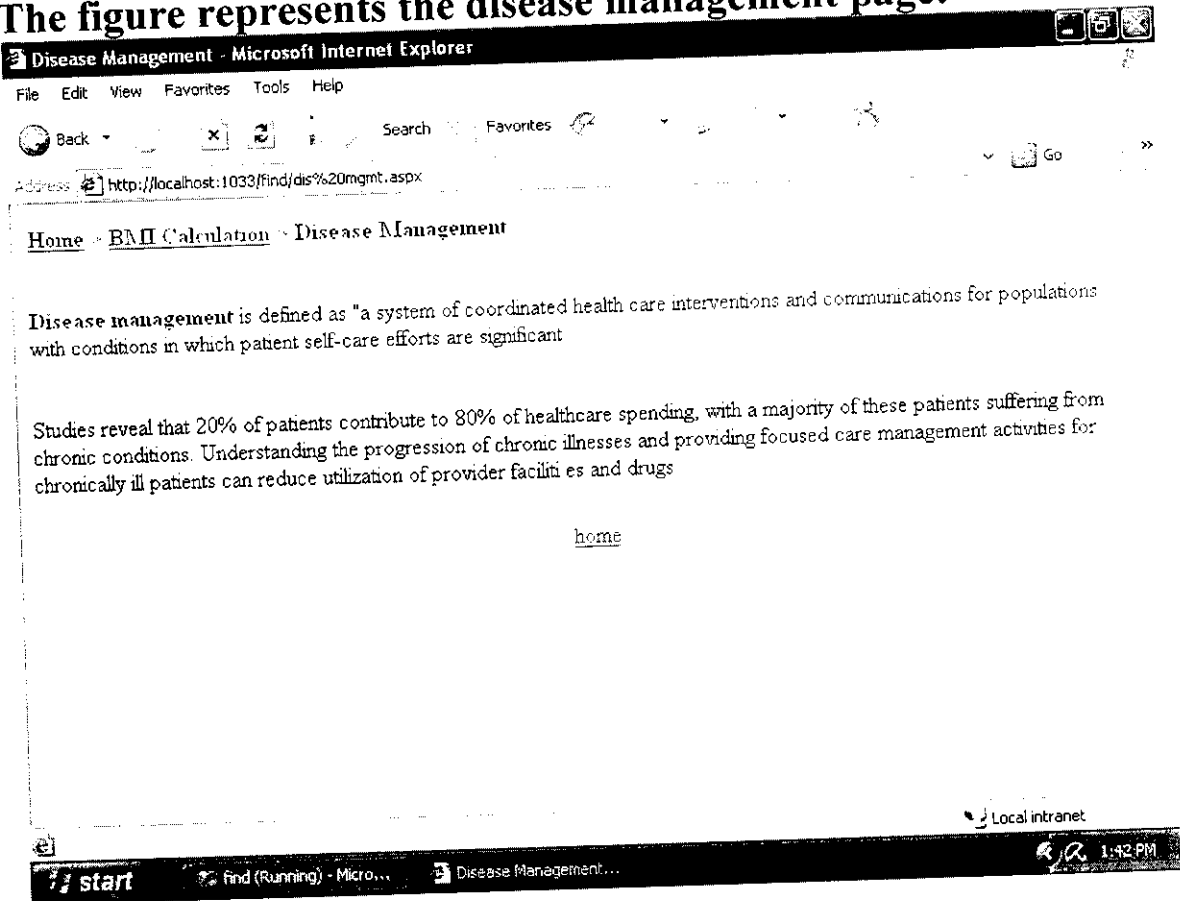
MENU VIEW

- Home ▶ General Information
- Online Appointment
- Lab Information
- Pharmacy
- News And Events
- Career Plans
- Contact Us
- BMI Calculation ▶ Latest Technologies
- Patient Care
- Clean Hands
- Disease Management
- Find A Doctor ▶ Find Doctor And Patient

A "Find A Doctor" button is visible below the "Find A Doctor" menu item.

The browser status bar at the bottom shows "Local intranet", the address "http://localhost:1033/find/finddoc.aspx", and the time "2:01 PM".

The figure represents the disease management page:



CHAPTER 7

CONCLUSION

The Healthcare Management System has been developed in a way to cater the needs of the public.

The system provides features which make it easier for the users of the system to work with while providing them with a good interface. Information technology in Health Care industry helps in achieving high accuracy in diagnoses, reducing the human errors, decreasing the processing time and thus improving patient care service.

7.1 FUTURE ENCHANCEMENTS

The HMS project has been developed for a medium-size hospital with about 25 doctors and 50 beds. This project has been designed in such a way that it can be extended for large, corporate hospitals also.

The system has been developed in such a way that there is future scope of improvement by adding modules that takes care of the payment of the doctors of the organization.

REFERENCES

1. Farrell, Joyce 'Visual Studio 2005'.
2. Getz and Litwin 'MS Access'.
3. Jamsa, Kris 'Visual Basic .Net'.
4. Martin, Tony and Selly, Domnic 'Visual Basic .Net Projects'.
5. Roman, Steven 'Access database design and programming'.
6. Samuels, Barbara 'Visual Basic'.
7. Viescas, John 'Running Microsoft Access'.