

Healthcare Management System

A PROJECT REPORT

SUBMITTED BY

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Requirements for the Degree of**

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Under the Supervision of

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DECLARATION

We hereby declare that the work presented in this report entitled "HEALTHCARE MANAGEMENT SYSTEM ", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.

We have given due credit to the original authors/sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. We have used quotation marks to identify verbatim sentences and given credit to the original authors/sources.

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ACKNOWLEDGMENT

Here, I gladly present this project report on “**.Healthcare Management System**” as part of the 6th semester MCA Master in Computer Applications. I take this occasion to thank God, almighty for blessing me with his grace and taking our endeavor to a successful culmination. I extend my sincere and heartfelt thanks to me esteemed guide, **Ms.** for providing me with the right guidance and advice at the crucial junctures and for showing me the right way. I have many understanding friends, who have helped me a lot on many critical conditions. Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

Utkarsh Gangal

Certificate

Certified that **Utkarsh Gangal (University Roll No.1900290149103)**, have carried out the project work having “Healthcare Management System” for Master of Computer Applications from Dr. A.P.J. Abdul Kalam Technical University (AKTU) (formerly UPTU), Technical University, Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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TABLE OF CONTENTS

| | |
|---|-------|
| Abstract..... | 08 |
| CHAPTER- I Introduction | 09-10 |
| CHAPTER- Literature View..... | 11 |
| CHAPTER-III Advantages to both end user and developer..... | 12 |
| CHAPTER-IV System Analysis..... | 13-15 |
| 4.1 Existing System..... | 13 |
| 4.2 Proposed System..... | 13-14 |
| 4.3 Advantages of Proposed System..... | 14-15 |
| CHAPTER-V Feasibility Study..... | 15-16 |
| 5.1 Economic Feasibility..... | 15 |
| 5.2 Technical Feasibility..... | 16 |
| 5.3 Operational Feasibility..... | 16 |
| CHAPTER-VI Problem Definition..... | 17-18 |
| CHAPTER-VII Result and Output Analysis..... | 19-21 |
| 7.1 Hardware Requirement..... | 19 |
| 7.2 Software Requirement..... | 20 |
| 7.3 Design Constraints..... | 21 |
| 7.4 System Features..... | 21 |
| CHAPTER-VIII System Overview..... | 22-30 |
| 8.1 Use Case Diagram..... | 22 |
| 8.2 Class Diagram..... | 23 |
| 8.3 Sequence Diagram..... | 24-25 |

| | |
|---|-------|
| 8.4 ER Diagram..... | 26 |
| 8.5 Use Case Definition and Diagram..... | 27-30 |
| CHAPTER-IX Module Description..... | 30-31 |
| 9.1 Administrator Module..... | 30 |
| 9.2 Doctor Module..... | 31 |
| 9.3 Appointment and Feedback Module..... | 31 |
| CHAPTER- X Database Structure..... | 32-34 |
| 10.1 Admin Login..... | 32 |
| 10.2 Appointment..... | 32 |
| 10.3 Doctor..... | 33 |
| 10.4 Feedback..... | 33 |
| 10.5 Patients..... | 34 |
| CHAPTER- XI System Implementation and Testing..... | 34-37 |
| 11.1 System Implementation..... | 34-35 |
| 11.2 System Testing..... | 35 |
| 11.3 Unit Testing..... | 36 |
| 11.4 Integration Testing..... | 36 |
| 11.5 Validation Testing..... | 37 |
| CHAPTER-XII Code Snippets..... | 38-39 |
| CHAPTER-XIII Screenshots..... | 40-46 |
| 13.1 Home..... | 40 |
| 13.2 Admin Homepage..... | 41 |
| 13.3 Doctor Details..... | 42 |

| | |
|--------------------------------------|--------------|
| 13.4 Doctor Login..... | 42 |
| 13.5 Doctor Homepage..... | 43 |
| 13.6 Doctor List..... | 43 |
| 13.7 Patient Homepage..... | 44 |
| 13.8 Book an Appointment..... | 44 |
| 13.9 Patient Details..... | 45 |
| 13.10 About..... | 46 |
| 13.11 Common Disease..... | 46 |
| CHAPTER-XIV Conclusion..... | 47-49 |
| CHAPTER-XV Future Scope..... | 41 |
| CHAPTER-XVI Bibliography..... | 52 |
| CHAPTER-XVII Reference..... | 53 |

Abstract

“Healthcare Management System” is a web application developed to provide essential medical services online to users irrespective of their location. Users can connect through their home internet to get these services. The motivation to build the system is that very few or no doctors are available at remote locations and people have to travel a long distance to get appointment from doctors. This system provides the power of direct interaction with doctors of our choice. Using this web application, patients will be able to fill online form in just few seconds and can take appointment to the doctors online without visiting them. This system reduces the manual work at Health care centers. This system provides list of doctors along with their details so that user can easily interact with the doctor of particular field or area.

The computerization of the system will help greatly in maintaining of proper information about the patients records and doctors currently available in any particular area. This will also help people to get proper healthcare support from specialist doctor

CHAPTER :- I

Introduction

Health care management system is a web application developed to assist in management of patients and providing users an easy way to take online appointments from doctors. The main aim of developing “*HEALTH CARE MANAGEMENT SYSTEM*” is to computerize the Tradition way of providing health services. This System is designed for people/users and doctors to provide an efficient way for their interaction. The project Healthcare Management system includes registration of patients and doctors, storing their details into the system, and also online appointment of doctors. Healthcare is a field in which accurate record keeping and communication are critical. The software has the facility to give a unique id for every patient and stores the details of every patient automatically. With the increase of demand in hospitals, we need effective data management system for handling patient(s) data, doctor(s) data and treatment details in an effective way. It deals with the collection of patient’s information, diagnosis details, etc. User can search availability of a doctor and the details of their specialization field using their id.

The main intention of introducing this system is to reduce the manual work at Health centers. It would also help in the complexity of maintaining the records manually and thus less time is wasted on paperwork. The system allows doctor to register themselves and enter the details about their health center and the details about the timing at which they are available to take appointments. User can login into the System using a username and password and search doctors in particular area. To develop a Healthcare Management system, we take care of patient registration, doctor’s information and timings at which the doctors are available for treatment of their patients. Admin maintains overall data in the database. The main

functions of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully. System input contains patient details, doctor details, and appointment details while system output is to get these details on to the screen. Every sort of task is performed by the admin, such as registering doctors and patients, enquiries, and complaints etc. it reduces paper work and burden of file storage. Healthcare Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to people.

To develop a Health Center Management system, we take care of patient registration, drug information and concerns such as drug enquiries and complaints.

The current manual system is slow laborious and error prone to computerize the same for quicker efficient results and customer satisfaction

CHAPTER :- II

LITERATURE VIEW

A healthcare Management System based on real-time data capture and intelligent decision making” Author(s): Musa, A. Lancashire Bus. Sch., Univ. of Central Lancashire, Preston, UK Yusuf, Y, Meckel.M. Systems and Informatics (ICSAI), 2012 International

One of the major challenges existing healthcare Management System face is around operational efficiency and wait times between different processes, departments and persons. This paper highlights such limitations of existing systems and proposes a RFID(Radio Frequency ID) and wireless sensor based , location and information management framework that facilitates real time tracking of hospital assets, personnel and patients as they move through pre-set procedures as part of daily activities of the hospitals. The system covers the visual simulation and providing ability to analyse the ongoing

operations so they can be corrected to achieve increased process efficiency and service levels. [1]

“Study on information system of health care services management in hospital” Author(s): Daiping Hu, Antai Sch. of Manage., Shanghai Jiaotong Univ., China Weiguo Xu ; Huizhang Shen ; Mengyu Li. Services Systems and Services Management, 2005. Proceedings of ICSSSM '05.

2005 International Conference This paper reviews the HMS which are widely used in many hospitals in China mainly to provide easier and faster way for daily medical tasks /activities with a GUI And provides for overcoming some of the limitations of HMS , eg. HMS aims at improving quality of health care services but do not have way of evaluating /measuring those. So this paper proposes HSMS (Hospital Services Management System) which aims at improving quality of services, identifying cost reduction areas , analyses and evaluate /rate health care services . The ability

to evaluate the services facilitates hospital achieve higher Customer satisfaction scores and get a competitive edge against those hospitals which score less or use HMS and do not have ways of promoting the quality of their services.[2]

“Specification of a Reference Model for the Domain Layer of a Hospital Information System”**Author(s): Gudrun Hübner-Blodera, Elske Ammenwertha , Birgit Brigl b , Alfred Winter b a Institute for Health Information Systems, UMIT – University for Health Sciences, Medical Informatics and Technology, Hall in Tyrol, Austria b Institute for Medical Informatics, Statistics and Epidemiology, University of Leipzig, Germany, ENMI, 2005. Many enterprise projects get scrapped due to high costs involved in initial planning requirement gathering and design phase. The costs in this phase become unmanageable due to lot of unknown factors.[3]**

“Developing Effective Hospital Management Information Systems: A Technology Ecosystem Perspective”.

DATE OF SUBMISSION: 5 October 2014 PREPARED BY: Dr Christopher Bain MBBS, Master Info. Tech Student No: 10054499

Some of the challenges that this ecosystem needs to work on are high demand pressure, greater customer satisfaction level and low profit margins. This paper more so contributes to Planning, Design and development aspects of any Healthcare Management system by highlighting ESFs that should be considered. The external and internal factors the author mentions are: The public at large, Law and policy makers, Funders.[4]

Defining HMS failure and success is complex, and the current evidence base on HMS success and failure rates was found to be weak. Nonetheless, the best current estimate is that HIS failure is an important problem.[11]

Healthcare Management system has been shown to improve quality by increasing adherence to guidelines, enhancing disease surveillance, and decreasing medication errors.

Much of the evidence on quality improvement relates to primary and secondary preventive care

The major efficiency benefit has been decreased utilization of care. Effect on time utilization is mixed.

Empirically measured cost data are limited and inconclusive.[13]

current efforts aimed at the nationwide deployment of health care IT will not be sufficient to achieve the vision of 21st-century health care, and may even set back the cause if these efforts continue wholly without change from their present course. Specifically, success in this regard will require greater emphasis on providing cognitive support for health care providers and for patients and family caregivers ... This point is the central conclusion of this report.[15]

CHAPTER:- III

ADVANTAGES TO BOTH END USERS & DEVELOPERS

The system is useful in various ways as the information about the patients who are taking the free services from the health center all the details are already stored in the database, so the service is done in no time. All the information about the drugs are also maintained in the database

• GOALS AND OBJECTIVES:

1. Service should be provided to patients in an efficient manner.
2. OPNO number receipt is issued instantly when patient apply for OP receipt.
3. Enquiry details about the drugs are to be maintained in the proper way etc.
4. Daily records are maintained such that the drugs are taken from the MAIN STORES are dispatched in the proper way.
5. Each and every patient record should be maintained in systematic manner so that the searching process will be easy.

CHAPTER:- IV

SYSTEM ANALYSIS

• EXISTING SYSTEM

Under manual system, you have to first wait in line to take appointment for the doctors and wait for your time to have meet with them and discuss on your health problems. People have to face many difficulties in this situation as they have to travel long distances to take appointments and wait for long time to meet doctors. Sometimes people are unable to meet doctors because of long queue of patients waiting before them.

- ❖ In existing e-Healthcare systems has focused on record keeping and databases.
- ❖ It has also focused on access and security for recording and communicating healthcare information
- ❖ Human errors are more by exploiting electronic communication and record keeping.

• PROPOSED SYSTEM

- ❖ This system aims to reduce human errors by exploiting electronic communication and record keeping, and by providing user-friendly input and output capabilities.
- ❖ Modern technology is used to expose the functionality of our e-healthcare system as Web Services based on the Service Oriented Architecture, so that both humans and applications can use the services provided.
- ❖ It provides services that involve patients, physicians, nurses and pharmacists as well as medical monitoring devices, whereas their framework focuses specifically on the use of medical monitoring devices.
- ❖ In order to overcome the drawbacks in existing system, this system has been developed for online appointment of doctors. The proposed system is a web-based application which is available all the time.
- ❖ The system consists of three actors and they are Admin, Patients or Users and Doctors, Admin are the super user that maintains overall record of patients and doctors, Users can register themselves to the system which is validated by admin and then they can access the facilities provided by system. Doctors can also register themselves to system which is further validated by admin.
- ❖ Patients can also know which doctor is best in particular field in any location which helps to get proper treatments and health support.

• **ADVANTAGES OF PROPOSED SYSTEM**

❖ **Better User Interface:**

The proposed system is user fri

endly because the retrieval and storing of data is fast and data is maintained efficiently. Moreover, the graphical user interface is provided in the proposed system, which provides user to deal with the system very easily.

❖ **Online appointments:**

Users can easily search available doctors and take appointments online without visiting them.

❖ **Less paper work required:**

The proposed system requires very less paper work. All the data is stored into the computer immediately. Moreover, work becomes very easy because there is no need to keep data on papers.

❖ **Easy analysis of data:**

Storing and retrieving of information is easy. This results in fast processing of data.

CHAPTER:- V

5. FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential. Three key considerations involved in the feasibility analysis are:

- **Economic Feasibility:**

This study is carried out to check the economic impact will have on the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus, the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products have to be purchased.

- **Technical Feasibility:**

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only

minimal or null changes for the implementing this system.

- **Operational Feasibility:**

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

CHAPTER:-VII

PROBLEM DEFINITION

This system is designed in the favor of solving health related problem. Under manual system, there are lots of problems because lack of information. A patient if he is unaware about any location or he does not have any knowledge regarding where is the hospital nearby to him/her and if the person does not have knowledge about the specialized doctors or hospital so in that condition situation may be in critical and it may be happen that due to lack of information regarding all these he has to suffer from colossal loss.

There may be some condition arises when the Patient have to wait in queue for longer time to take appointment of the doctors. People have to face many difficulties in this situation as they have to travel long distances to take appointments and wait for long time to meet doctors. Sometimes people are unable to meet doctors or unable to take appointment because of long queue or he/she can't reach on time due to long distance or do not know the exact time that when the booking for appointment will be going to start.

By using our “HEALTHCARE MANAGEMENT SYSTEM” a web-based application this problem will be resolved with a higher efficiency rate with the help of online appointment and information regarding nearest hospital, doctors in their locality and also info about specialized disease is easily available

“HEALTHCARE MANAGEMENT SYSTEM” web application is supremacy over traditional patterns to finding a doctor and waiting for longer period for

appointments to meet a doctor. In this system we are providing easier and informative user interface.

It is a web application so the person who is suffering is able to book his appointments from a remote area. They must have an active internet connection and a basic knowledge of the computer device. In this system there the person is able to find the information about which doctor/Hospital is in his location.

There is also feedback form in which a beneficiary can give their feedback according to their own experience .one more important feature is a doctor can also provide their details from a specific area so that admin is able to verify the Information and add that details to this website so that it helps more patients for their treatment in that specified area.

CHAPTER:- VIII

SYSTEM REQUIREMENTS

• HARDWARE REQUIREMENTS:

The section of hardware configuration is an important task related to the software development insufficient random-access memory may affect adversely on the speed and efficiency of the entire system. The process should be powerful to handle the entire operations. The hard disk should have sufficient capacity to store the file and application.

| | |
|-----------------|-----------------------|
| Processor | : Dual core and above |
| Processor speed | : 1.4 GHz Onwards |
| Cache size | : 512 KB |
| RAM | : 4 GB (Minimum) |
| Hard disk | : Minimum (50 GB) |
| Monitor | : SVGA Color 15" |

• SOFTWARE REQUIREMENTS

A major element in building a system is the section of compatible software since the software in the market is experiencing in geometric progression. Selected software should be acceptable by the firm and one user as well as it should be feasible for the system. This document gives a detailed description of the software requirement specification. The study of requirement specification is focused specially on the functioning of the system. It allow the developer or analyst to

understand the system, function to be carried out the performance level to be obtained and corresponding interfaces to be established.

| | |
|------------------|--|
| Front end tool | : JSP, HTML, CSS as scripting language |
| Backend | : JAVA(Servlet), MY-SQL |
| Operating system | : Windows 7-10 |
| Client Side | : HTML, CSS, JSP |
| IDE | : Eclipse, NetBeans |

• **DESIGN CONSTRAINTS:**

This Health Center Management System require huge resources as Hundreds of the patients will require the services instantly, quick response time are needed. The database should also be very large and robust to maintain very huge patients and drugs data.

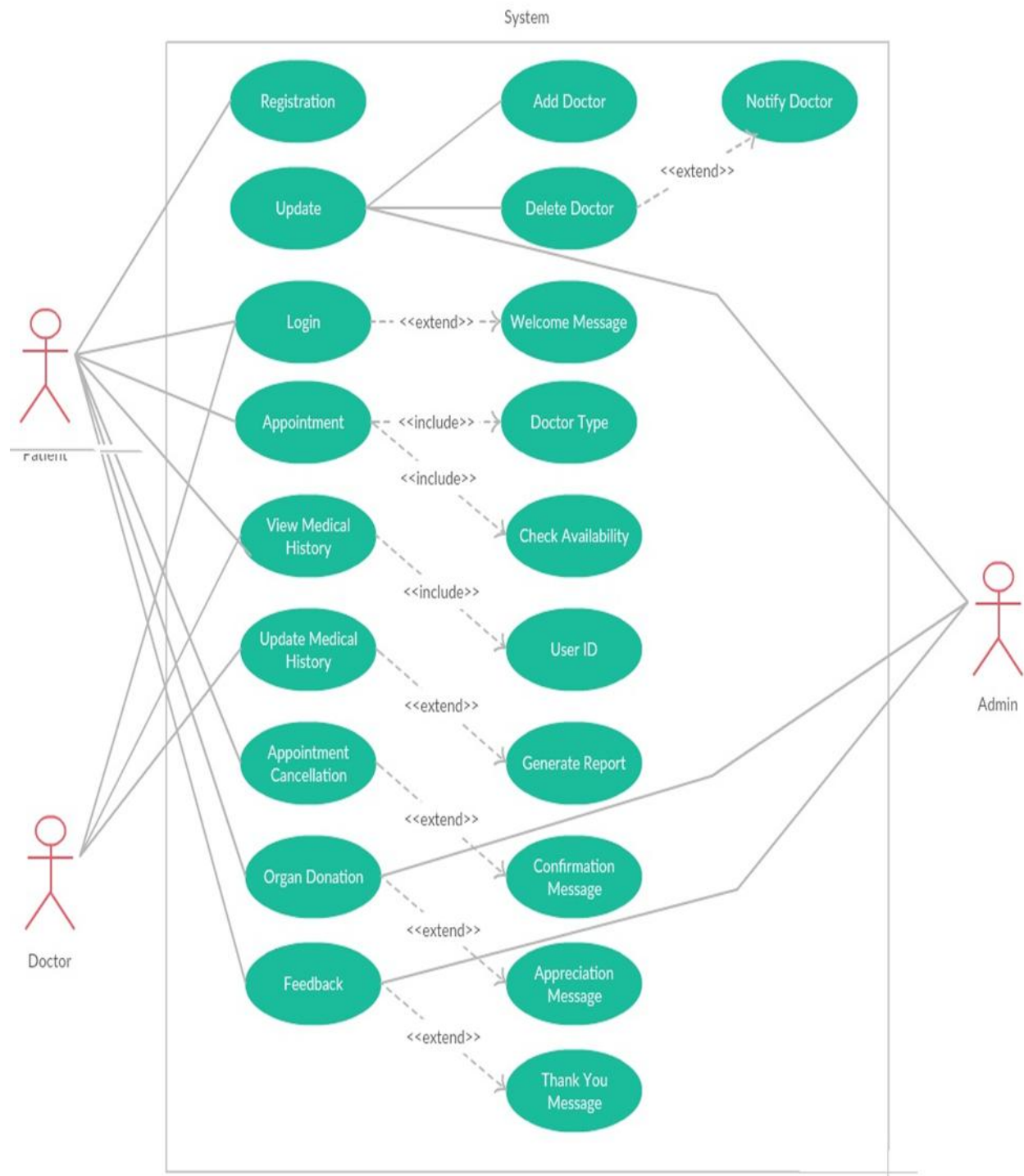
• **SYSTEM FEATURES:**

A distributed e-healthcare system can help solve this conundrum. Medical monitoring devices worn by the patient, and frequent electronic communication between the patient and a nurse, can ensure that the prescribed treatment is being followed and that the patient is making good progress.

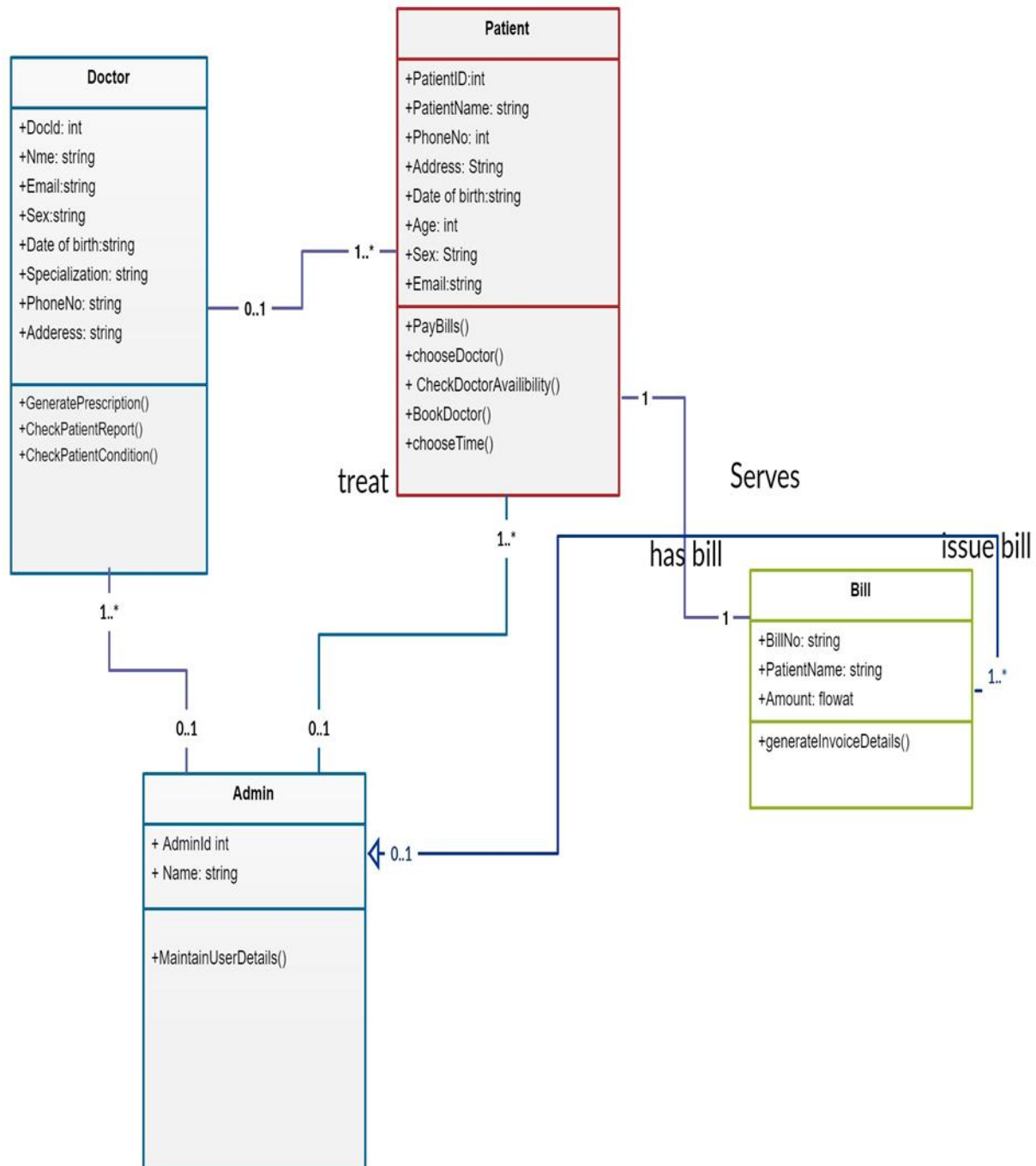
CHAPTER:- IX

SYSTEM OVERVIEW

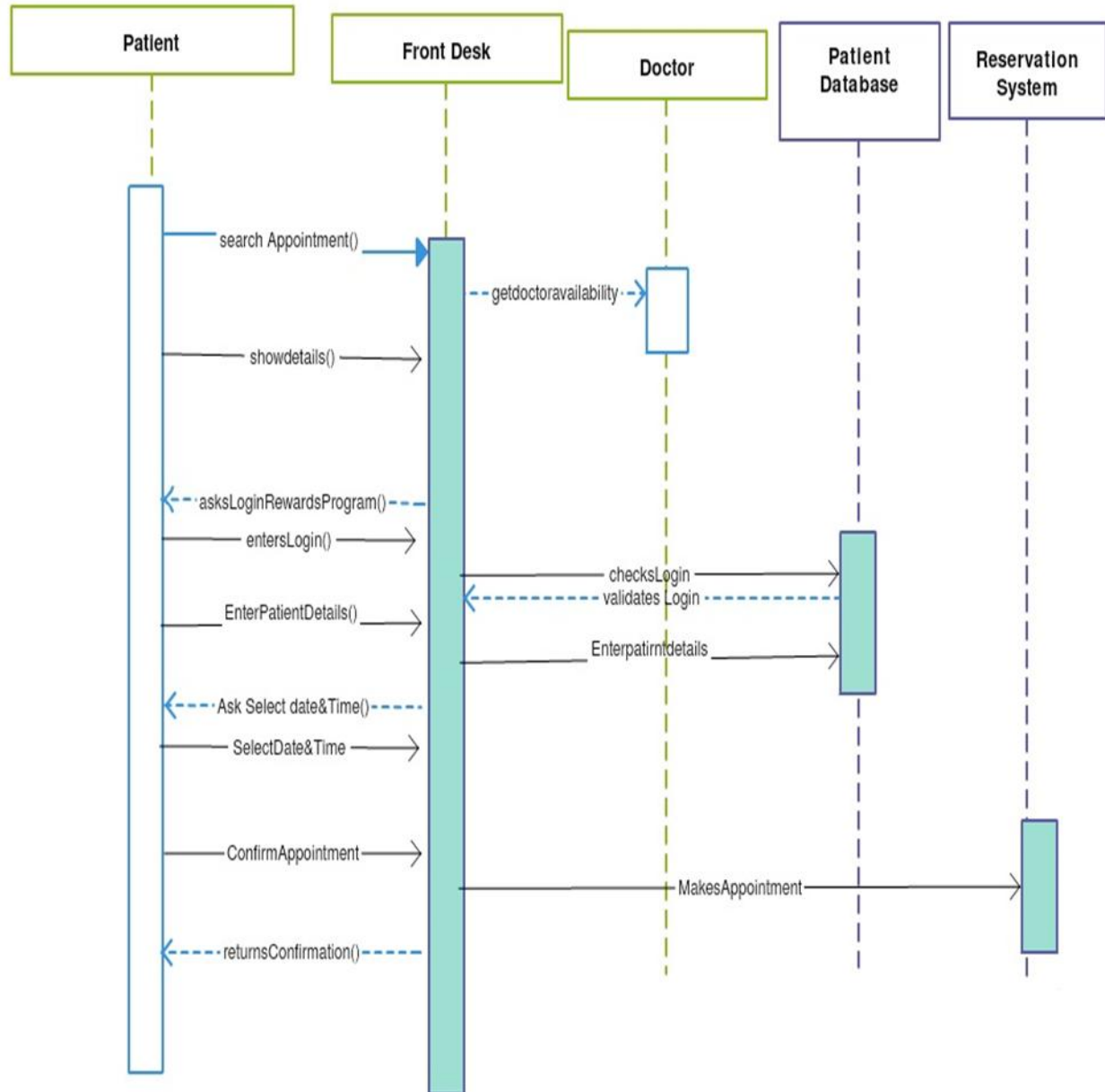
• USE CASE DIAGRAM:



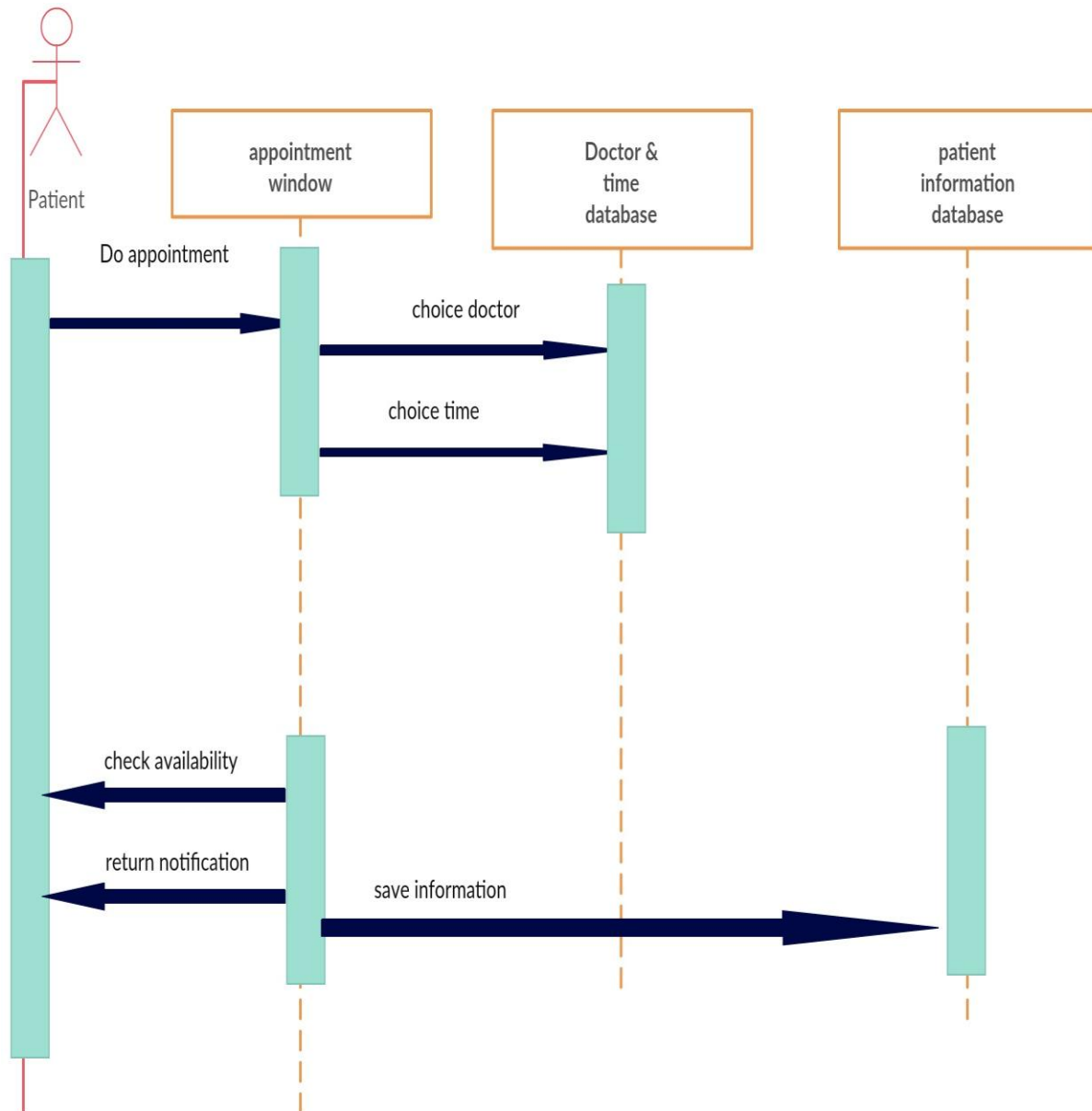
• **CLASS DIAGRAM:**



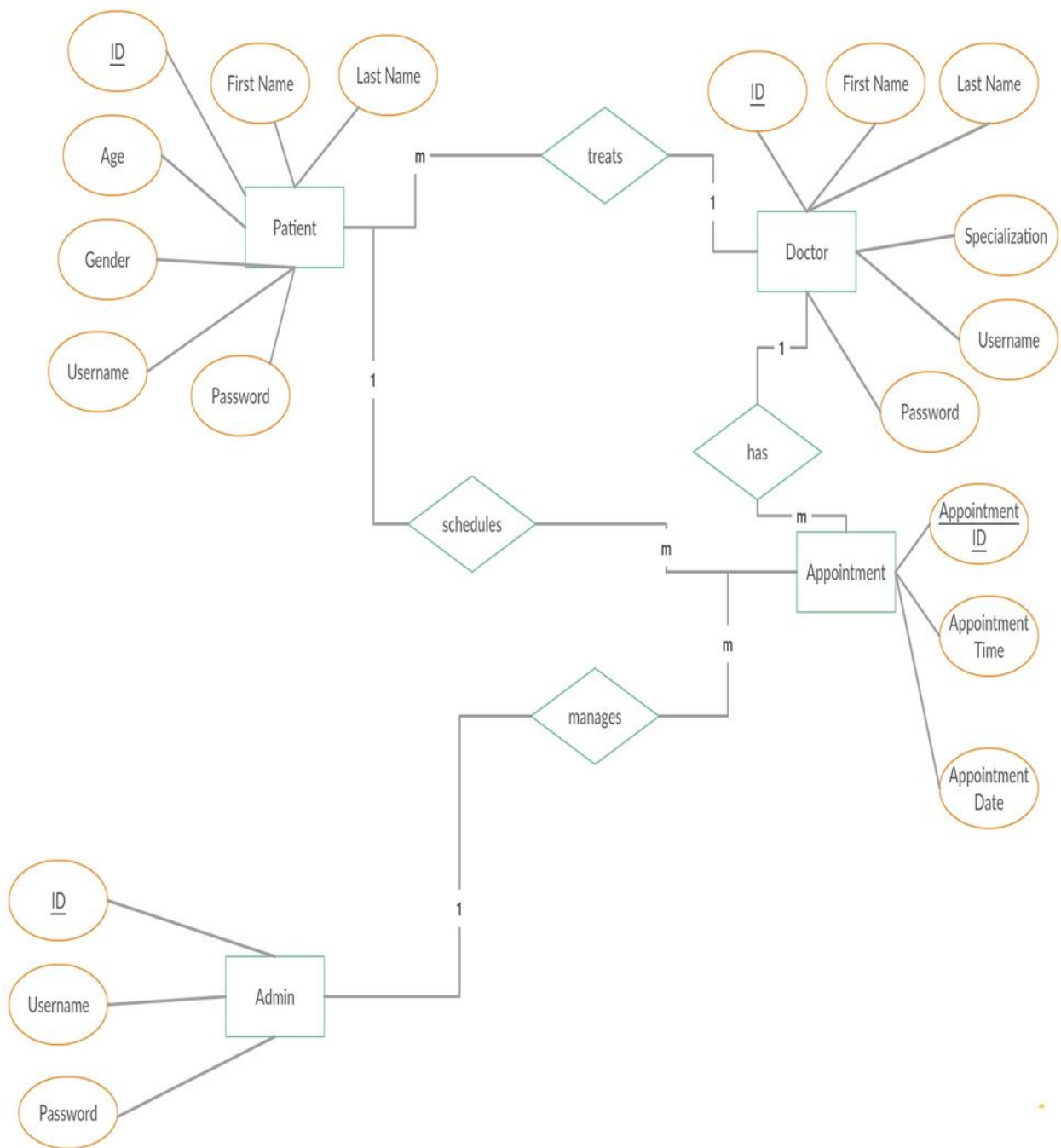
- **SEQUENCE DIAGRAM (1):**



- **SEQUENCE DIAGRAM (2):**



• **ER DIAGRAM:**



• **USE CASE DEFINITION AND DIAGRAM:**

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well. The purpose of use case diagram is to capture the dynamic aspect of a system. However, this definition is too generic to describe the purpose, as other four diagrams (activity, sequence, collaboration, and State chart) also have the same purpose. We will look into some specific purpose, which will distinguish it from other four diagrams. Use case diagrams are used to gather the requirements of a system including internal and external aspects. These requirements are mostly design requirements. Hence, when a system is analyzed to gather its functionalities, use cases are prepared and actors are identified. When the initial task is complete, use case diagrams are modelled to present the outside view.

• **Purpose of Use Case Diagrams:**

The purpose of use case diagram is to capture the dynamic aspect of a system. However, this definition is too generic to describe the purpose, as other four diagrams (activity, sequence, collaboration, and state chart) also have the same purpose. We will look into some specific purpose, which will distinguish it from other four diagrams.

Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. Hence, when a system is analyzed to gather its functionalities, use cases are prepared and actors are identified.

When the initial task is complete, use case diagrams are modelled to present the outside view.

In brief, the purposes of use case diagrams can be said to be as follows –

- ❖ Used to gather the requirements of a system.
- ❖ Used to get an outside view of a system.
- ❖ Identify the external and internal factors influencing the system.

• **Use case Symbols:**

- ❖ Shows the interaction among the actors of system



Actor specifies a role played by a user or any other system that interacts with the subject.

- ❖ Use case is a list of steps, typically defining interactions between an actor and a system, to achieve a goal.



- ❖ Package is used to group elements, and to provide a namespace for the grouped elements.



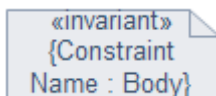
- ❖ Objects are model elements that represent instances of a class or of classes.



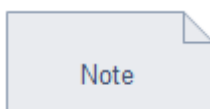
- ❖ Interfaces are model elements that define sets of operations that other model elements, such as classes, or components must implement.



- ❖ Constraint is an extension mechanism that enables you to refine the semantics of a UML model element.



- ❖ **Note:** contains comments or textual information.



CHAPTER:-X

MODULE DESCRIPTION

• MODULE DESCRIPTION:

The system is proposed to have the following modules along with the functional requirements.

• ADMINISTRATOR MODULE:

Administrator should login with email id and password to maintain and update all details of system. Administrator can add or delete doctors in system. Administrator is responsible for verifying doctor credentials before adding them in system. Administrator is also responsible for maintaining all patient and doctor records. Administrator can view all doctors, patients and also feedback provided by the patients using the system.

• DOCTOR MODULE:

A doctor must register with the system through admin. Doctors can manage or update their profiles. Doctors can view their current appointments to patients, e-prescriptions, and view patient's history. Doctor can also cancel any appointment of their patients.

• APPOINTMENT & FEEDBACK MODULE:

❖ APPOINTMENT:

module allows patients to search doctors in the particular location and book appointments to them. Patients can also view their previous appointments records

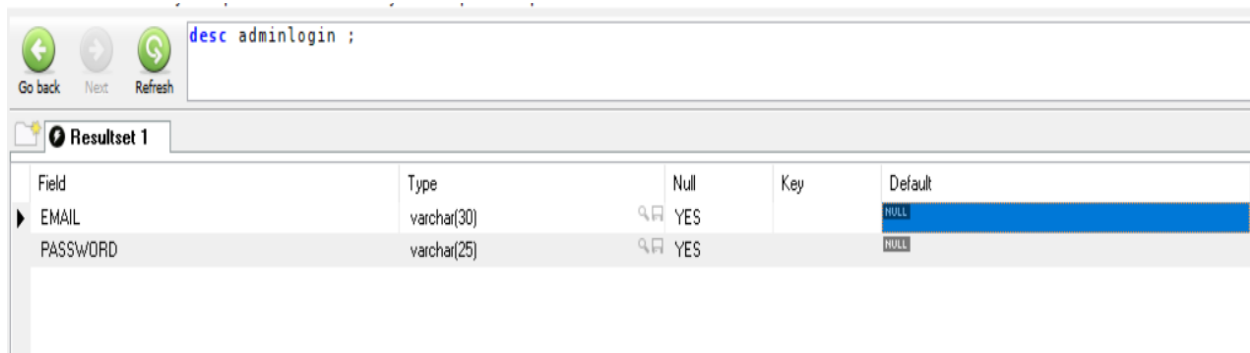
❖ **FEEDBACK:**

module allows patients to send their feedback to system so that admin can improve system according to feedbacks received.

CHAPTER:- XI

DATABASE STRUCTURE

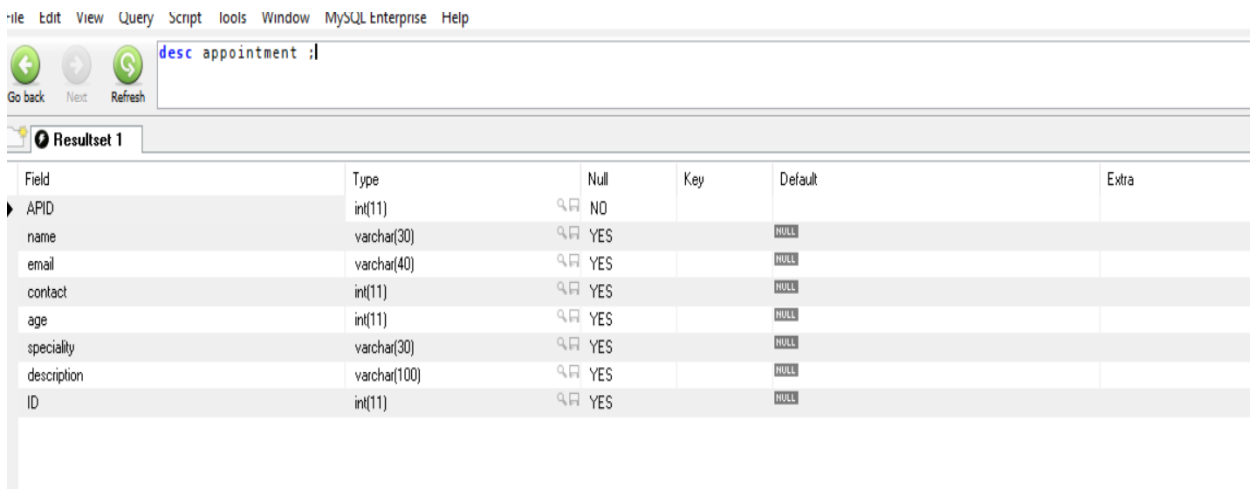
• ADMIN LOGIN:



The screenshot shows the MySQL Enterprise interface with the query `desc adminlogin ;` entered in the query editor. The result set, titled "Resultset 1", displays the table structure for `adminlogin`.

| Field | Type | Null | Key | Default |
|----------|-------------|------|-----|---------|
| EMAIL | varchar(30) | YES | | NULL |
| PASSWORD | varchar(25) | YES | | NULL |

• APPOINTMENT:



The screenshot shows the MySQL Enterprise interface with the query `desc appointment ;` entered in the query editor. The result set, titled "Resultset 1", displays the table structure for `appointment`.

| Field | Type | Null | Key | Default | Extra |
|-------------|--------------|------|-----|---------|-------|
| APID | int(11) | NO | | | |
| name | varchar(30) | YES | | NULL | |
| email | varchar(40) | YES | | NULL | |
| contact | int(11) | YES | | NULL | |
| age | int(11) | YES | | NULL | |
| specialty | varchar(30) | YES | | NULL | |
| description | varchar(100) | YES | | NULL | |
| ID | int(11) | YES | | NULL | |

• DOCTOR:

back Next Refresh

```
desc doctors;
```

Resultset 1

| Field | Type | Null | Key | Default | Extra |
|------------|-------------|------|-----|---------|----------------|
| id | int(11) | NO | PRI | NULL | auto_increment |
| DOCNAME | varchar(30) | YES | | NULL | |
| EMAIL | varchar(30) | YES | | NULL | |
| PWD | varchar(30) | YES | | NULL | |
| SPECIALITY | varchar(30) | YES | | NULL | |
| CONTACT | varchar(10) | YES | | NULL | |
| DISTRICT | varchar(30) | YES | | NULL | |

• FEEDBACK:




back Next Refresh

```
desc feedback;
```

Resultset 1

| Field | Type | Null | Key | Default |
|------------|-------------|------|-----|---------|
| name | varchar(30) | YES | | NULL |
| email | varchar(30) | YES | | NULL |
| contact | varchar(20) | YES | | NULL |
| suggestion | varchar(20) | YES | | NULL |

• PATIENTS:

desc patients;

Resultset 1

| Field | Type | Null | Key | Default |
|---------|-------------|------|-----|---------|
| dob | date | YES | | NULL |
| name | varchar(30) | YES | | NULL |
| address | varchar(50) | YES | | NULL |
| gender | varchar(10) | YES | | NULL |
| contact | varchar(11) | YES | | NULL |
| email | varchar(30) | YES | | NULL |
| pwd | varchar(20) | YES | | NULL |
| ID | int(11) | NO | PRI | NULL |

CHAPTER:- XII

SYSTEM IMPLEMENTATION AND TESTING

• SYSTEM IMPLEMENTATION:

Implementation is the stage in the project where the theoretical design is turned into a working system and is giving confidence on the new system for the users that it will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, an evaluation of change over methods.

Apart from planning major task of preparing the implementation are education and training of users. The implementation process begins with preparing a plan for the implementation of the system. According to this plan, the activities are to be carried out, discussions made regarding the equipment and resources and the additional equipment has to be acquired to implement the new system. In network backup system no additional resources are needed. Implementation is the final and the most important phase. The most critical stage in achieving a successful new system is giving the users confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and if it is found to be working according to the specification. This method also offers the greatest security since the old system can take over the errors are found or inability to handle certain type of transactions while using the new system.

- **SYSTEM TESTING:**

As the part of system testing, we execute the program with the intent of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. The ultimate aim is quality assurance. Tests are carried out and the results are compared with the expected document. In the case of erroneous results, debugging is done. Using detailed testing strategies, a test plan is carried out on each module. The various tests performed are unit testing, integration testing and user acceptance testing.

- **UNIT TESTING:**

The software units in the system are modules and routines that are assembled and integrated to perform a specific function. As a part of unit testing, we executed the program for individual modules independently. This enables, to detect errors in coding and logic that are contained within each of the three modules. This testing includes entering data that is filling forms and ascertaining if the value matches to the type and entered into the database. The various controls are tested to ensure that each performs its action as required.

- **INTEGRATION TESTING:**

Data can be lost across any interface, one module can have an adverse effect on another, sub functions when combined, may not produce the desired major functions. Integration testing is a systematic testing to discover errors associated within the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested as a whole. Here the admin module, doctor module and patient module options are integrated and tested.

This testing provides the assurance that the application is well integrated functional unit with smooth transition of data.

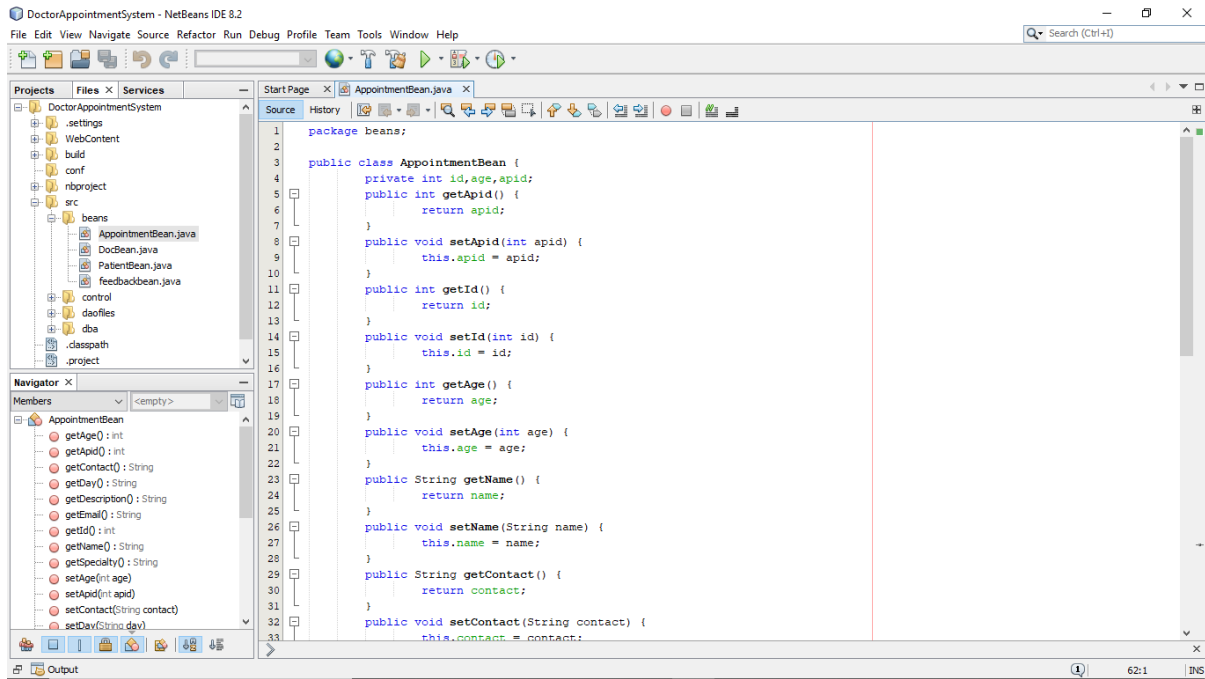
• **VALIDATION TESTING:**

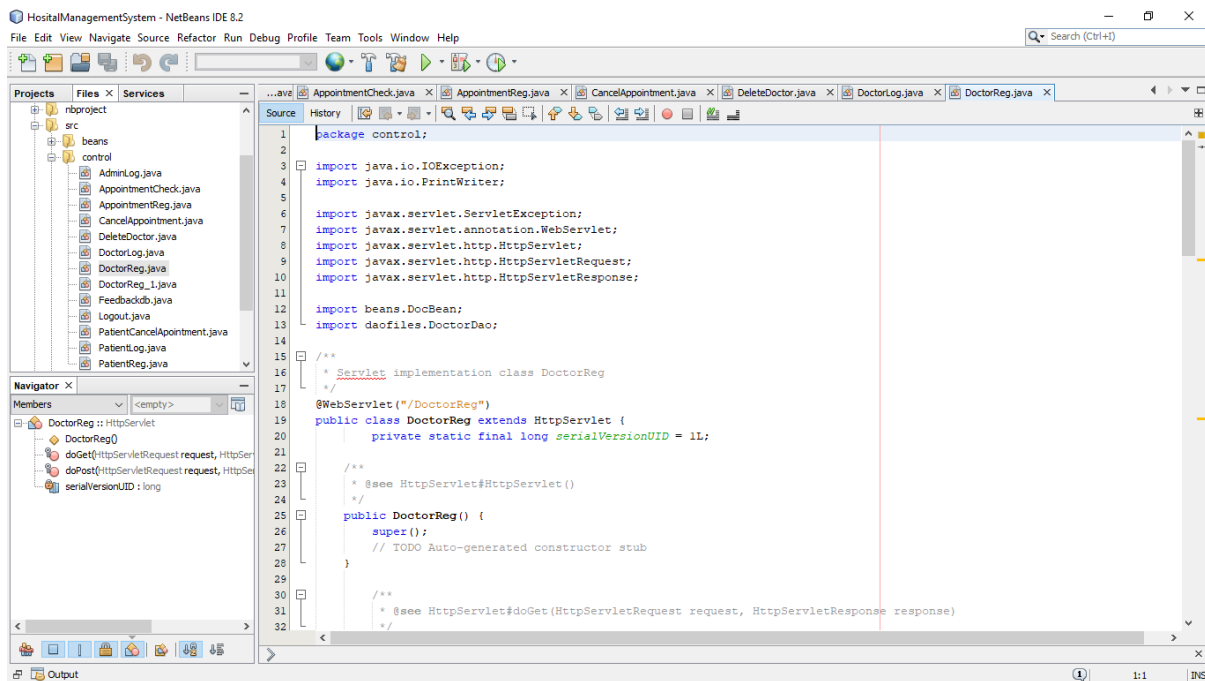
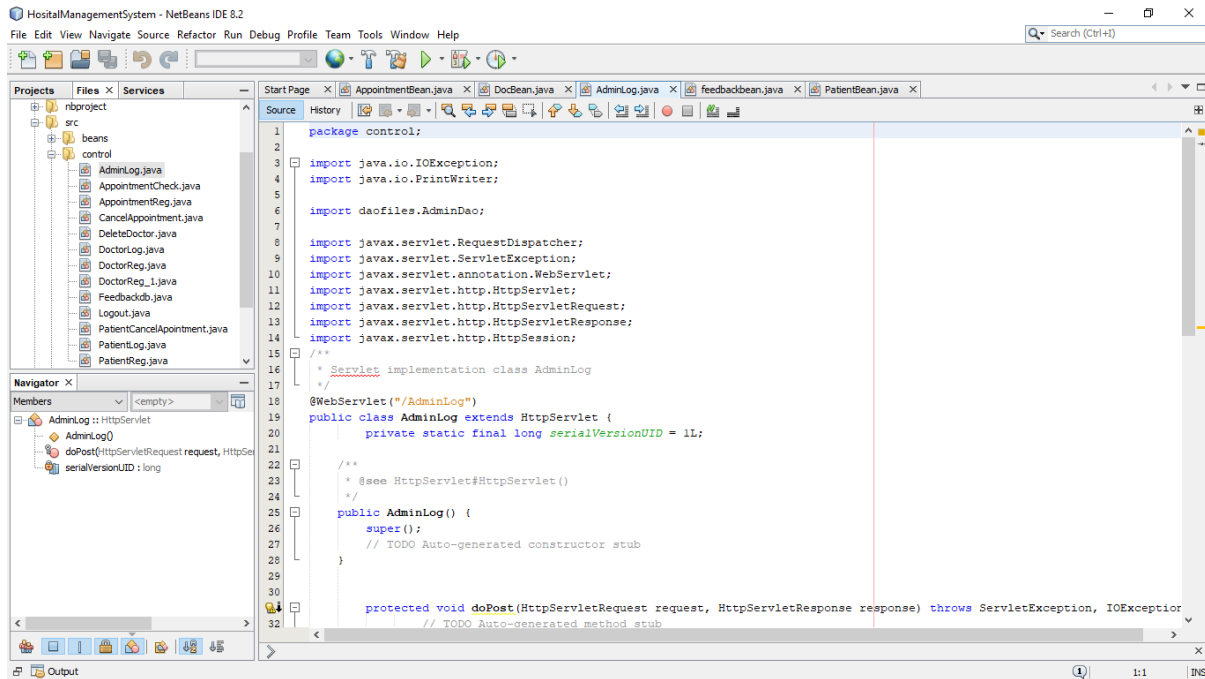
The process of evaluating software during the development process or at the end of the development process to determine whether it satisfies specified business requirements. Testing ensures that the product actually meets the client's needs. It can also be defined as to demonstrate that the product fulfills its intended use when deployed on appropriate environment.

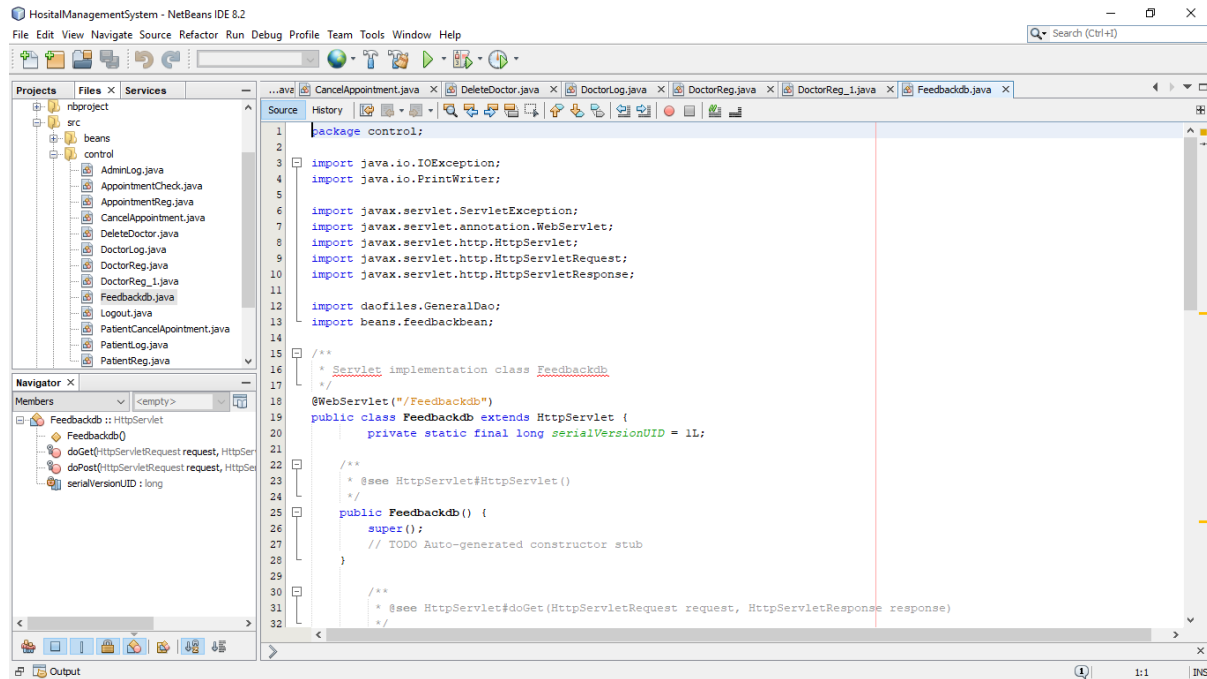
- ❖ Validation is the process of evaluating software at the end of the development process to determine whether software meets the customer expectations and requirements.
- ❖ Execution of code is coming under Validation.
- ❖ Validation activity is carried out just after the Verification.
- ❖ It determines whether the software is fit for use and satisfies the business need.
- ❖ Includes all the dynamic testing techniques.
- ❖ It is basically checking of developed program based on the requirement specifications documents & files.

CHAPTER:- XIII

12. CODE SNIIPPETS



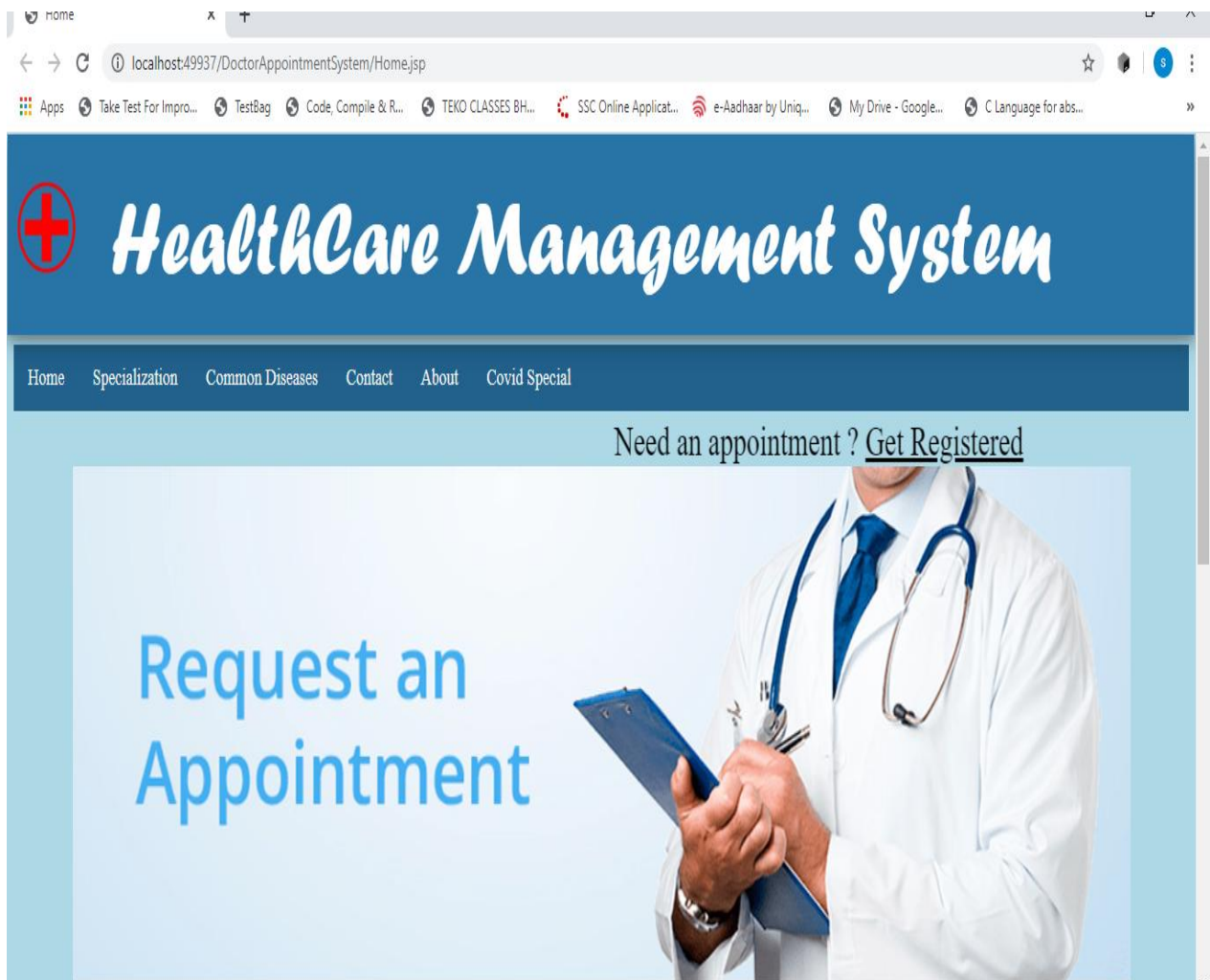




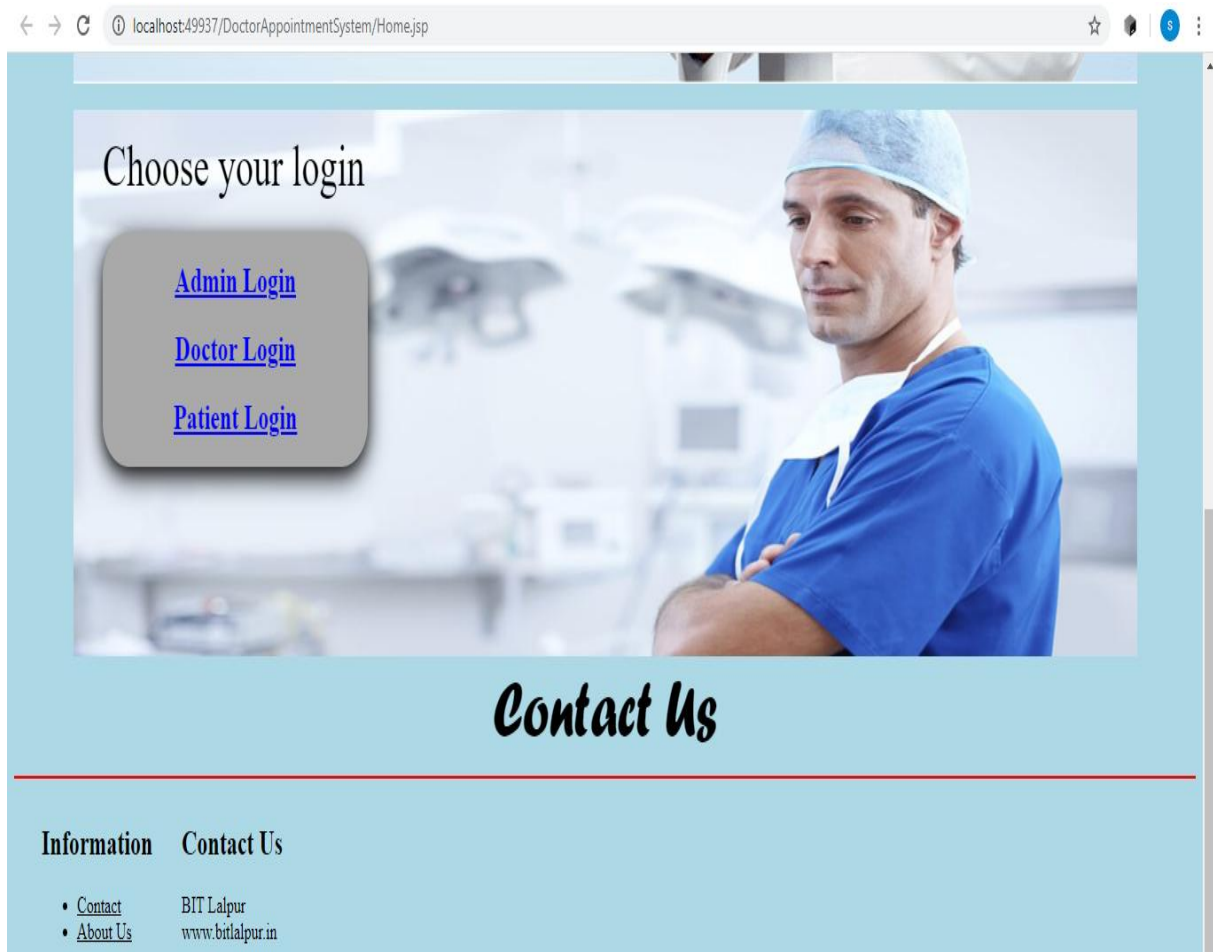
CHAPTER:- XIV

SCREENSHOTS

• HOMEPAGE:



- **ADMIN HOMEPAGE:**



• DOCTOR DETAILS:

The screenshot shows the 'Admin Home' page of the HealthCare Management System. The page has a blue header with the system name and a red cross icon. Below the header, there are navigation buttons: 'Doctor's Details' (active), 'Add Doctor', 'Patient Details', 'Feedback View', and 'Logout'. A greeting 'Hello , admin@gmail.com' is displayed on the right. The main content area is titled 'Doctor Detail's' and contains a table with the following data:

| Id | Doctor Name | Email | Password | Specialty | Contact | District | Delete |
|-----|--------------------|----------------|----------|--------------|------------|----------|------------------------|
| 101 | Kartik Aryan | raj@gmail.com | doctors | cardiologist | 9876584321 | gaya | Delete |
| 102 | SanjayGupta | sajj@gmail.com | doctors | neurologist | 9876584121 | gaya | Delete |
| 103 | Sanjay kumar Gupta | shiv@gmail.com | shiv47 | neurologist | 9876584021 | gaya | Delete |

Below the table, there is a 'Contact Us' section with a heading and a sub-section 'Information Contact Us'.

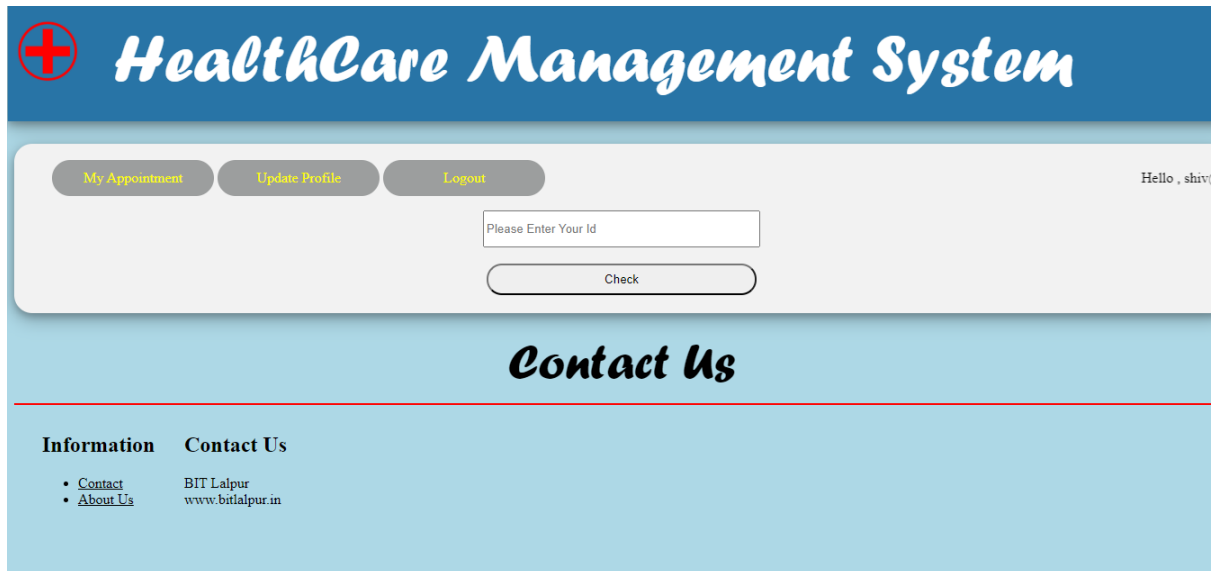
• DOCTOR LOGIN:

The screenshot shows the 'Doctor Login' page of the HealthCare Management System. The page has a blue header with the system name and a red cross icon. Below the header, there is a navigation bar with links: 'Home', 'Specialization', 'Contact', and 'About'. The main content area is titled 'Doctor Login' and contains a login form with the following fields and buttons:

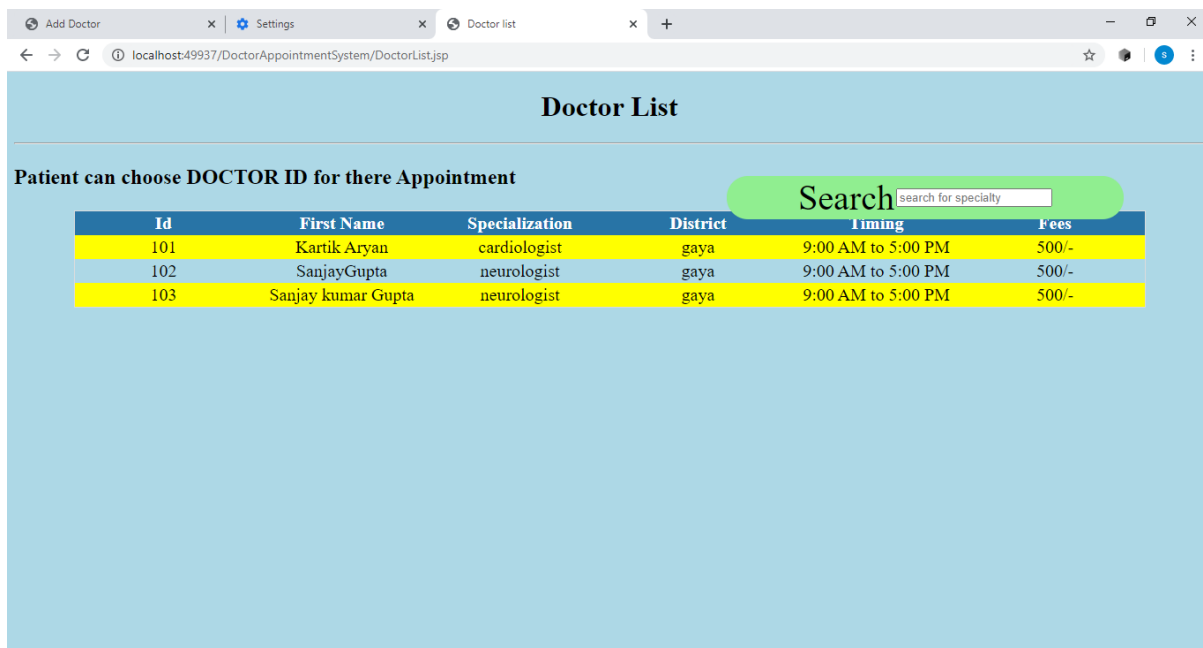
- Email:
- Password:
- Login:
- Get Registered:

Below the login form, there is a 'Contact Us' section with a heading.

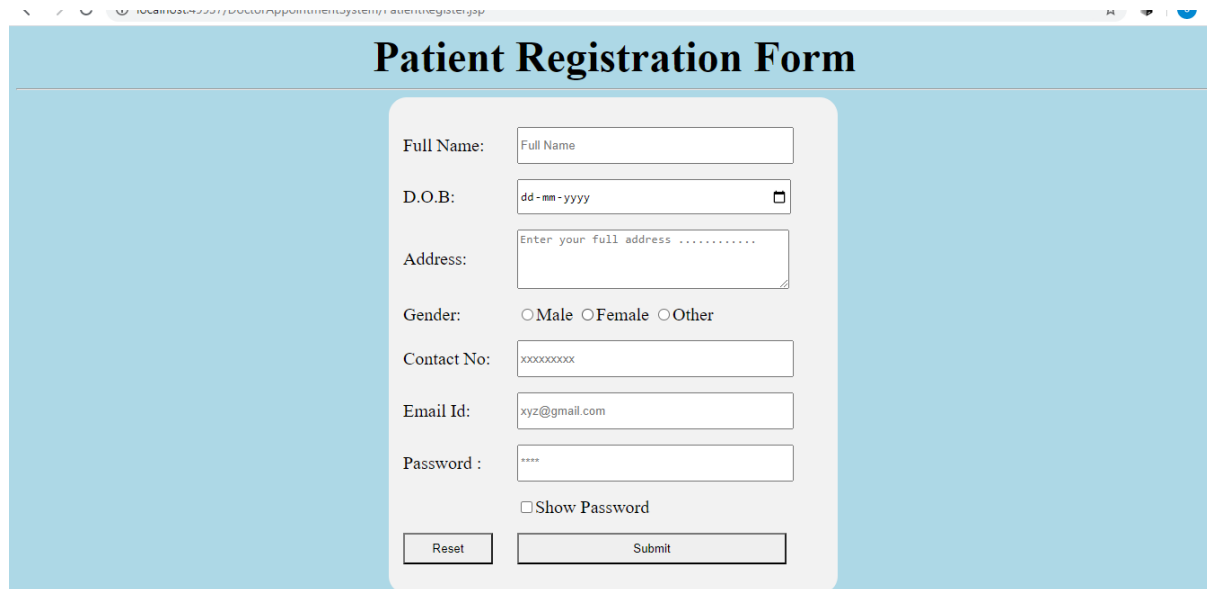
• DOCTOR HOMEPAGE:



• DOCTOR LIST:



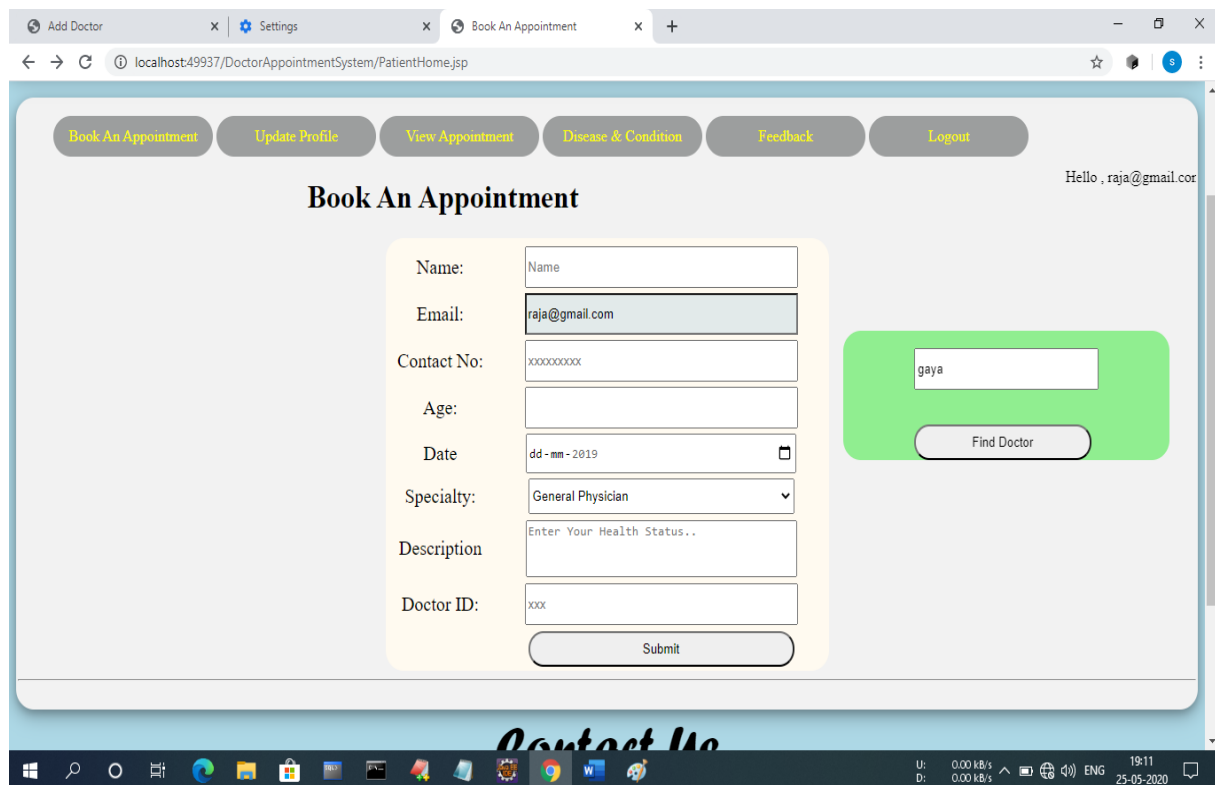
• PATIENT HOMEPAGE:



The screenshot shows a web browser window displaying a "Patient Registration Form". The form is centered on a light blue background. It contains the following fields and controls:

- Full Name:** A text input field with the placeholder "Full Name".
- D.O.B:** A date input field with the placeholder "dd-mm-yyyy" and a calendar icon.
- Address:** A text input field with the placeholder "Enter your full address" and a small icon at the bottom right.
- Gender:** Three radio buttons labeled "Male", "Female", and "Other".
- Contact No:** A text input field with the placeholder "xxxxxxxxxx".
- Email Id:** A text input field with the placeholder "xyz@gmail.com".
- Password:** A text input field with the placeholder "****".
- Show Password:** A checkbox labeled "Show Password".
- Reset:** A button located at the bottom left of the form.
- Submit:** A button located at the bottom right of the form.

• BOOK AN APPOINTMENT:



The screenshot shows a web browser window displaying the "Book An Appointment" page. The browser's address bar shows the URL "localhost:49937/DoctorAppointmentSystem/PatientHome.jsp". The page has a navigation bar with the following buttons: "Book An Appointment", "Update Profile", "View Appointment", "Disease & Condition", "Feedback", and "Logout". The user is logged in as "Hello, raja@gmail.com".

The main content area is titled "Book An Appointment" and contains a form with the following fields and controls:

- Name:** A text input field with the placeholder "Name".
- Email:** A text input field with the placeholder "raja@gmail.com".
- Contact No:** A text input field with the placeholder "xxxxxxxxxx".
- Age:** A text input field.
- Date:** A date input field with the placeholder "dd-mm-2019" and a calendar icon.
- Specialty:** A dropdown menu with "General Physician" selected.
- Description:** A text input field with the placeholder "Enter Your Health Status..".
- Doctor ID:** A text input field with the placeholder "xxxx".
- Submit:** A button located at the bottom of the form.

On the right side of the form, there is a green box containing a text input field with the placeholder "gaya" and a "Find Doctor" button.

• PATIENT DETAILS:



localhost:49937/DoctorAppointmentSystem/AdPatientDetails.jsp

HealthCare Management System

Doctor's Details Add Doctor Patient Details Feedback View Logout admin@gmail.com

Patient Detail's

| Id | Name | Dob | Address | Gender | Contact | Email |
|----|--------|------------|---------|--------|------------|------------------|
| 1 | raja | 04-05-1995 | Gaya | male | 9876584321 | raja@gmail.com |
| 2 | sanjay | 11-05-1975 | Ranchi | male | 9876584311 | sanjay@gmail.com |

Contact Us

• ABOUT:



HealthCare Management System

[Home](#)
[Specialization](#)
[Contact](#)
[About](#)

Introduction

Health Care Management System is a web application developed to provide essential medical services online at patient's location. Patients/ Medical seekers can connect through their home Internet to get these services. The motivation to build the system is that very few or no doctors are available at remote locations and people have to travel a long distance to get appointment from doctors which results in expense of unnecessary time and money. This system provides the power of direct interaction with doctors of our choice. Using this web application, patients will be able to fill online form in just few seconds and can take appointment to the doctors online without visiting them. This system reduces the manual work at Health care centers also. This system provides list of doctors along with their details so that patients can easily interact with the doctor of particular field or area. The computerization of the system will help greatly in maintaining of proper information about the patients records and doctors currently available in any particular area. This will also help people to get proper Health Care support from specialist doctor

Contact Us


Information

- [Contact](#)
- [About Us](#)

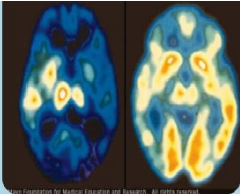
Contact Us

BIT Lalpur
www.bitlalpur.in


• COMMON DISEASE:



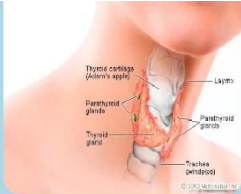
Cold And Flu




Depression




Diabetes




Thyroid



Migraine



Cataract



Influenza

CHAPTER:- XV

CONCLUSION

The whole systems activities are divided into three major parts like patients, doctors, and admin. Each one has their own role to perform and system respond accordingly. Several agents have been created using web services and inter agent communication is done. Ontologies in form of xml are used for storing information. Different ontologies have been created for different purpose. For implementing the system .Net technologies like ASP.Net, C#, jQuery, Ajax, CSS are used. Current Dialog patient conversation and News part are dynamic and it is a part of Content Management System (CMS). Some parts used CMS concept and works exactly like them. In CMS also xml files are used for managing the states and information. In this system ontology plays similar role.

The system comprises of following features:

- Management of Doctors
- Management of Patients
- Management of Schedules of Doctor

- Management of Patients Appointments
- Management of Patient – Doctor Dialogs

- Services supported by hospitals
- Managing Reports
- Feedbacks Management
- Inquiry Management
- Specialty Management
- Searching Information
- Managing useful information in form of News
- Management of Patient's previous visit and its information

CHAPTER:- XVI

FUTURE SCOPE

There are also few features which can be integrated with this system to make it more flexible. Below list shows the future points to be consider.

- Directly getting the images for CT Scan or X-Rays from connected device
- Mapped with Insurance Companies for claim processing
- Billing of patient
- Blood Bank Information Management
- Producing ECG using connected device
- Video Conferencing facility for remote areas for treatments
- Hangout for different doctors and patients at different locations

CHAPTER:-XVII

16. BIBLIOGRAPHY

1. www.webreference.com/programming/soa/
2. www.java.sun.com/developer/technicalArticles/WebServices/soa2/
3. www.research.ibm.com/journal/sj/444/niblett.html
4. www.java.sun.com
5. www.JavaGalaxys.com
6. www.oreilly.com

REFERENCES

- [1] [A healthcare Management System based on real-time data capture and intelligent decision making”](#)
[Author\(s\): Musa, A. Lancashire Bus. Sch., Univ. of Central Lancashire, Preston, UK Yusuf, Y, Meckel.M.](#)
[Systems and Informatics \(ICSAD\), 2012 International](#)
- [2] [“Study on information system of health care services management in hospital”](#) Author(s): Daiping Hu,
[Antai Sch. of Manage., Shanghai Jiaotong Univ., China Weiguo Xu ; Huizhang Shen ; Mengyu Li.](#)
[Services Systems and Services Management, 2005. Proceedings of ICSSSM '05. 2005](#)
- [3] [“Specification of a Reference Model for the Domain Layer of a Hospital Information System”](#)Author(s):
[Gudrun Hübner-Blodera , Elske Ammenwertha , Birgit Brigl b , Alfred Winter b a Institute for Health](#)
[Information Systems,UMIT](#)
- [4] [“Developing Effective Hospital Management Information Systems: A Technology Ecosystem Perspective”.](#)
[DATE OF SUBMISSION: 5 October 2014 PREPARED BY: Dr Christopher Bain MBBS, Master Info.](#)
[Tech Student No: 10054499](#)
- [5] [S.R.Bharamagoudar et al , “Web Based Student Information Presidency System ,International Journal of](#)
[Advanced Research in Computer and Communication Engineering Vol. 2, Issue 6, June 2013](#)
- [6] [Matthew David, " HTML5 Designing Rich Internet Applications" issue 15 September 2012 Pub location](#)
[london](#)
- [7] [Iztok Fajfar "Start Programming Using HTML, CSS, and JavaScript" issue 21 October 2015 Pub. Location](#)
[New York](#)
- [8] [Preston Zhang "Practical Guide to Oracle SQL, T-SQL and MySQL " issue 21 November 2017 Pub.](#)
[Location Boca Raton](#)
- [9] [R. Heeks, Health information systems: failure, success and improvisation, Int. J. Med. Inf. 75 \(2\) \(2006\)](#)
[125–137.](#)
- [10] [P. Littlejohns, J.C. Wyatt, L. Garvican, Evaluating computerised health information systems: hard lessons](#)
[still to be learnt, BMJ 326 \(7394\) \(2003\) 860–863.](#)
- [11] [M. Berg, Implementing information systems in health care organizations: myths and challenges, Int. J.](#)
[Med. Inf. 64 \(2–3\) \(2001\) 143–156](#)
- [12] [M.B. Buntin, et al., The benefits of health information technology: a review of the recent literature shows](#)
[predominantly positive results, Health Aff. \(Millwood\) 30 \(3\) \(2011\) 464–471.](#)
- [13] [B. Chaudhry, et al., Systematic review: impact of health information technology on quality, efficiency, and](#)
[costs of medical care, Ann. Intern. Med. 144 \(10\) \(2006\) 742–752.](#)
- [14] [E. Ammenwerth, et al., Evaluation of health information systems—problems and challenges, Int. J. Med.](#)
[Inf. 71 \(2–3\) \(2003\) 125–135.](#)
- [15] [B.-T. Karsh, et al., Health information technology: fallacies and sober realities, J. Am. Med. Inform. Assoc.](#)
[17 \(6\) \(2010\) 617–623.](#)