VISVESVARAYA TECHNOLOGICAL UNIVERSITY

'JNANA SANGAMA' BELAGAVI-590 014, KARNATAKA

MINI-PROJECT REPORT

ON

"E - HEALTHCARE MANAGEMENT SYSTEM"

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT
FOR THE V SEMESTER, BE, DBMS LAB WITH MINI-PROJECT-18CSL58**

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DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

<u>CERTIFICATE</u>

This is to certify that the mini project work entitled **"E- HEALTHCARE MANAGEMENT SYSTEM"** has been successfully carried out by **RAKSHITHA SHANKAR [1CG19CS090], NITHYASHAREE C[1CG19CS082],** bonafide students of **CHANNABASAVESHWARAC INSTITUTE OF TECHNOLOGY, GUBBI, TUMAKURU,** under our supervision and guidance and submitted in partial fulfillment for V Semester BE, DBMS Lab with Mini-project-18CSL58 by **Visvesvaraya Technological University, Belagavi** during the academic year of 2021–2022. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements for the above said degree.

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ACKNOWLEDGEMENT

ABSTRACT

The purpose of the project entitled as "Development of Web Portal for Health Center" is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost – effective. It deals with the collection of patient's information like add patient, update patient, delete patient, search patient, view patient diagnosis, etc. Traditionally, it was done manually. The main function 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. The Hospital Management System can be entered using a username and password. It is accessible by an Admin, Doctor & Receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast. Government of India has still aimed at providing medical facilities by establishing hospital. The basic working of various hospitals in India is still on paper as compared to hospitals in European countries where computers have been put in to assist the hospital personals their work. The concept of automation of the administration and management of hospital is now being implemented in India also, with large hospitals like APPOLO and AIIMS in Delhi, ESCORTS in Chennai, having automated their existing system. Computers are not only used to increase the efficiency in all fields ranging from fixing the appointment with the Doctor to keeping the record of the patient.

CONTENTS

CHAPTER 1

INTRODUCTION

Healthcare is a field in which accurate record keeping and communication are critical and yet in which the use of computing and networking technology lags behind other fields. Healthcare professionals and patients are often uncomfortable with computers, and feel that computers are not central to their healthcare mission, even though they agree that accurate record keeping and communication are essential to good healthcare. In current healthcare, information is conveyed from one healthcare professional to another through paper notes or personal communication. For example, in the United States, electronic communication between physicians and pharmacists is not typically employed but, rather, the physician writes a prescription on paper and gives it to the patient. The patient carries the prescription to the pharmacy, waits in line to give it to a pharmacist, and waits for the pharmacist to fill the prescription. To improve this process, the prescriptions could be communicated electronically from the physician to the pharmacist, and the human computer interfaces for the physicians, nurses, pharmacists and other healthcare professionals could be voice enabled.

According to Carmen Catizone of the National Association of Boards of Pharmacy, there are as many as 7,000 deaths from incorrect prescriptions in the United States each year. A Washington Post article indicates that as many as 5% of the 3 billion prescriptions filled each year are incorrect. These numbers indicate that there is an urgent need to reduce the errors in healthcare.

PURPOSE :

This paper describes a distributed e-healthcare system that uses the Service- Oriented Architecture as a means of designing, implementing, and managing healthcare services.

PROJECT SCOPE :

Effective and timely communication between patients, physicians, nurses, pharmacists, and other healthcare professionals is vital to good healthcare. Current communication mechanisms, based largely on paper records and prescriptions, are old-

fashioned, inefficient, and unreliable. When multiple healthcare professionals and facilities are involved in providing healthcare for a patient, the healthcare services provided aren't often coordinated. Typically, a physician writes a prescription on paper and gives it to the patient. The patient carries the prescription to the pharmacy, waits in line to hand the prescription to the pharmacist, and waits for the pharmacist to fill the prescription. The pharmacist might be unable to read the physician's handwriting; the patient could modify or forge the prescription; or the physician might be unaware of medications prescribed by other physicians. These and other problems indicate the need to improve the quality of healthcare.

A distributed electronic healthcare system based on the service-oriented architecture (SOA) can address some of these issues and problems. We developed a distributed e-healthcare system for use by physicians, nurses, pharmacists, and other professionals, as well as by patients and medical devices used to monitor patients. Multimedia input and output—with text, images, and speech—make the system less computer- like and more attractive to users who aren't computer-oriented.

PRODUCT PERSPECTIVE :

Our prototype distributed e-healthcare system uses SOA to enforce basic software architecture principles and provide interoperability between different computing platforms and applications that communicate with each other. Although our distributed e-healthcare system provides user-friendly interfaces for busy healthcare professionals and patients, security and privacy are particularly important in this area, so we designed the prototype with security and privacy in mind. The system authenticates users and logs session information and attaches resources to the resource creator, so that only privileged users can view or modify the data.

CHAPTER 2

SYSTEM ANALYSIS

Systems analysis is the process of examining a business situation for the purpose of developing a system solution to a problem or devising improvements to such a situation. Before the development of any system can begin, a project proposal is prepared by the users of the potential system and/or by systems analysts and submitted to an appropriate managerial structure within the organization.

2.1 PROPOSED SYSTEM

2.1.1 SCOPE OF THE PROJECT :

The Hospital Management System is designed for any hospital to replace their existing manual paper-based system. The new system is to control the information of patients as well as doctors. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks. The complete set of rules & procedures related to Hospital's day to day activities and generating report is called "Hospital Management System". It is a computerized management system. This system also keeps the records of hardware assets besides software of this organization. The proposed system will keep a track of Doctors, Patients & Receptionist. This project has GUI based software that will help in storing, updating and retrieving the information through various user-friendly menu-driven modules.

2.1.2 AIM OF THE PROJECT :

• The system should be easy to operate.
• The working in the organization will be well planned and organized.
• The level of accuracy in the proposed system will be higher.
• The reliability of the proposed system will be high due to proper storage of information.
• Provide quick and efficient retrieval of information.

ADVANTAGES :

1. Low maintenance cost.

2. Volume of data is not an issue.

3. Data can be converted easily to information.

4. Data cannot be corrupted easily with proper backup.

5. It can be expanded as well as data communication is possible.

DISADVANTAGES:

1. High starting cost requires.

2. Additional manpower is necessary.

3. Data communication system will have an additional cost.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 DETAILS OF SOFTWARE :

3.1.1 Xampp

XAMPP is free and open source cross-platform web server software, released under terms of Apache License 2.0. Apache is maintained by open community of developers under the auspices of Apache Software Foundation. In XAMPPX stands for cross-platform, A stands for Apache, M stands for Maria DB, P stands for PHP, P stands for Perl.

- Developer(s) - Apache Friends
- Initial release - May 22,2002
- Stable release -

    8.1.1-Windows

    8.1.1-Linux

    8.1.1-macOS

- Operating system - Cross-platform

    Linux

    Window

XAMPP is a small and light Apache distribution containing the most common web development technologies in a single package. Its contents, small size, and portability make it the ideal tool for students developing and testing applications in PHP and MySQL. XAMPP is available as a free download in two specific packages: full and lite. While the full package download provides a wide array of development tools, XAMPP Lite contains the necessary technologies that meet the Ontario Skills Competition standards. The light version is a small package containing Apache HTTP Server, PHP, MySQL, phpMyAdmin, and SQLite.

3.1.2 Frontend-HTML

It is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML can embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

3.1.3 Backend-MySQL

It is an open source relational database management system (RDBMS). The MySQL development project has made its source code available under the terms of GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. For proprietary use, several paid editions are available, and offered additional functionality. MySQL is central component of LAMP open-source web application software stack. LAMP is an acronym of "Linux, Apache, MySQL, and Perl/PHP/Python". Applications that use the MySQL database include TTPO3, MODx, Joonal, WordPress, phpBB, MyBB, and Drupal. MySQL is also used in many high profile. Large-scale websites, including Google, Facebook, Twitter, Flick , and YouTube. Operating System Windows 10.

3.1.4 PHP

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for Personal Home Page, it now stands for PHP: Hypertext Pre-processor, a recursive backronym. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications. PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

3.1.5 APACHE

The Apache HTTP Server is web server software notable for playing a key role in the initial growth of the World Wide Web. In 2009 it became the first web server software to surpass the 100 million website milestone. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. Since April 1996 Apache has been the most popular HTTP server software in use. As of November 2010 Apache served over 59.36% of all websites and over 66.56% of the first one million busiest websites.

3.2 SYSTEM REQUIREMENTS

3.2.1 HARDWARE CONFIGURATION :

Hardware configuration references the details and system resources setting allotted for a specific device. It is the important concept related to the software development, insufficient random access memory may affect adversely on the speed and efficiency of the whole system. The processor should be powerful to handle the entire process.

1GB ram(min)

Either Intel core processor or AMD processor

250GB Space(min)

3.2.2 SOFTWARE CONFIGURATION :

The output of a software process is information that may be divided into three categories:

[a] Computer program (both source level and executable level),

[b]Work products that describes the computer program (targeted at both technical and end user),

[c]Data (contained within the program or external to it).

The items that comprise all the information produced as part of software process are collectively called as software configuration. A major element in building a system is selection of compatible software since the software in market experiencing in geometric progression selected software should be flexible to all system. This document gives the detailed description of the software requirement specification.

Front-end Tool – HTML, Python

Back-end Tool – MySQL

Development Tool- Xampp server

Code editor- Visual Studio Code Documentation

Documentation Tool- Microsoft Word

CHAPTER 4

SYSTEM DESIGN

4.1 ER DIAGRAM
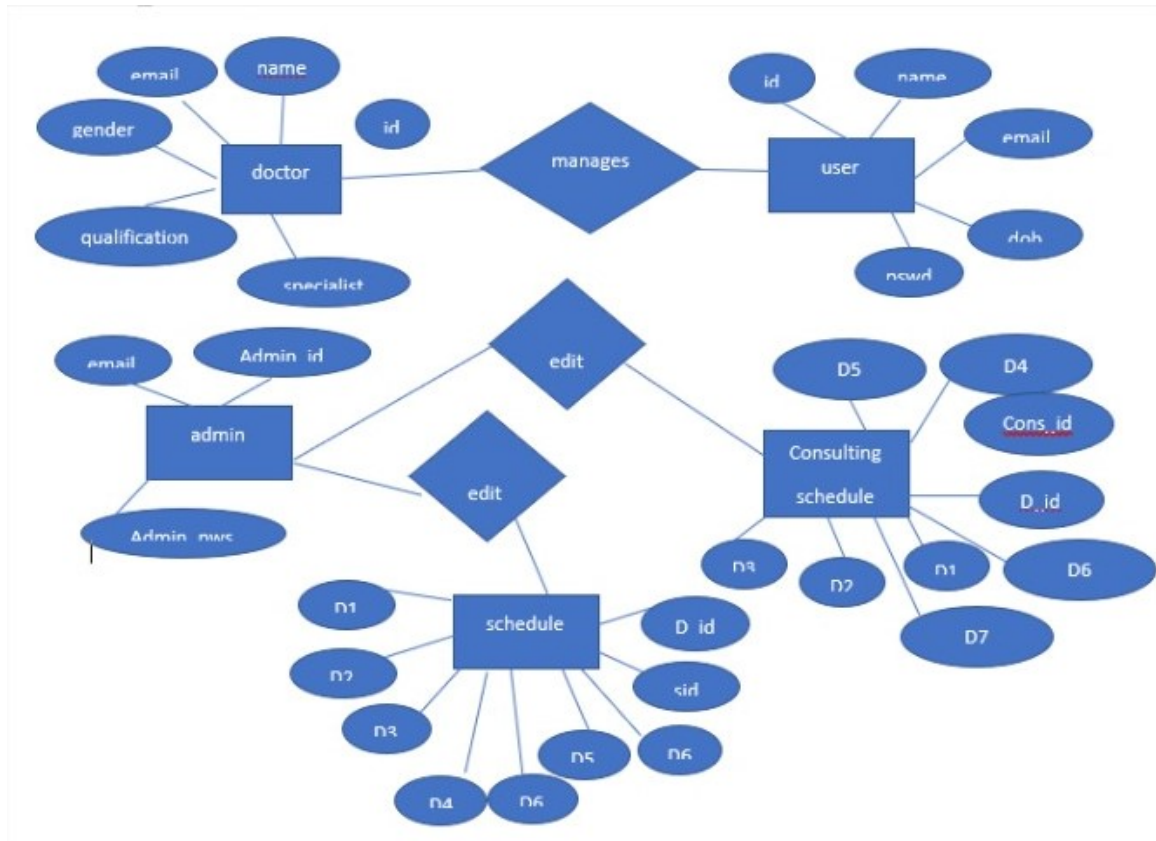
Fig 01: ER DIAGRAM OF Health Center

An entity–relationship model (ER model) a specific domain of knowledge. An ER model is composed of entity types (which classify the things of interest) and specifies relationships that can exist between instances of those entity types. In software engineering an ER model is commonly formed to represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract structure that can be implemented in a health center management SYSTEM DESIGN, Fig 2. E R Diagram of health center database relationship model (ER model) describes inter-related things of interest in a specific domain of Knowledge.

4.3 SCHEMA

Doctor

id	fname	lname	email	contact	specialist	qualification	DOB	gender	Reg_num	address	pswd

User

id	fname	lname	email	contact	address	DOB	gender	Martial status	pswd	date

Admin

Admin_id	email	Admin_pswd

Appointment

App_id	Booking_date	Booking_time	permission	date	pid	sid

Schedule

sid	D1	D2	D3	D4	D5	D6	D7	D_id

Consulting schedule

Cons_id	D1	D2	D3	D4	D5	D6	D7	D_id
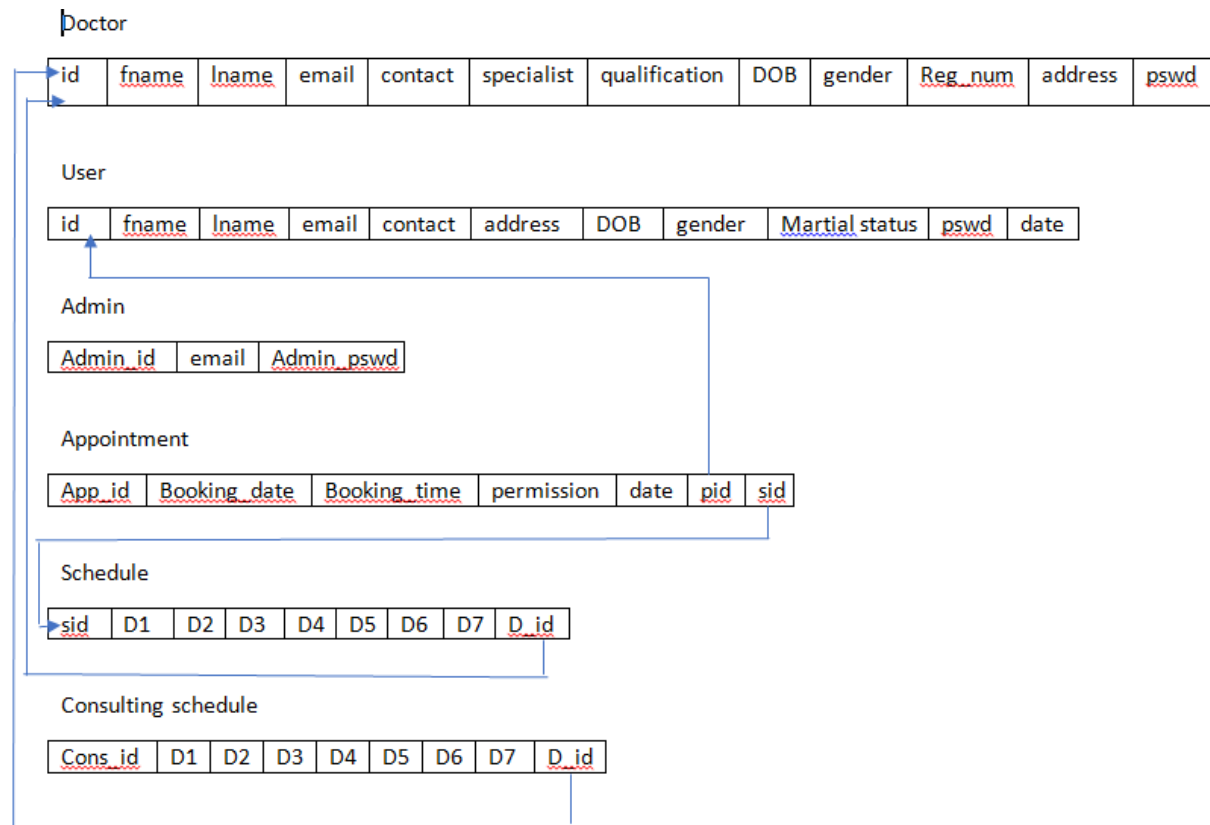
Fig 02: schema diagram

The database schema of a formal language supported by the term "schema" refers to constructed (divided into database tables in the case of formal definition of a database constraints imposed on a database. Fig 3 Schema Diagram gym management database DIAGRAM The database schema of a database system is its structure described in a supported by the database management system (DBMS). The organization of data as a blueprint of how the constructed (divided into database tables in the case of relational databases database schema is a set of formulas (sentences) called database.

CHAPTER 5

SYSTEM IMPLEMENTATION

5.1 MODULES DESCRIPTION

Create, create table statement is used to create table to store data. Integrity constraints like primary key, foreign key, unique key, can be defined while creating the table.

CREATE CODE FOR EVERY TABLE :

USER Table :

```sql
CREATE TABLE `user` (
  `id` int(11) NOT NULL,
  `f_name` varchar(500) NOT NULL,
  `l_name` varchar(500) NOT NULL,
  `email` varchar(500) NOT NULL,
  `contact` varchar(500) NOT NULL,
  `address` text NOT NULL,
  `DOB` date NOT NULL,
  `gender` varchar(500) NOT NULL,
  `maritialstatus` varchar(500) NOT NULL,
  `pswd` varchar(500) NOT NULL,
  `date` date NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```


Fig 03: USER table description

DOCTOR Table :

```
CREATE TABLE `doctor` (
  `id` int(11) NOT NULL,
  `f_name` varchar(500) NOT NULL,
  `l_name` varchar(500) NOT NULL,
  `email` varchar(500) NOT NULL,
  `contact` varchar(500) NOT NULL,
  `specialist` varchar(500) NOT NULL,
  `qualification` varchar(500) NOT NULL,
  `DOB` date NOT NULL,
  `gender` varchar(500) NOT NULL,
  `bmdc_reg_num` int(11) NOT NULL,
  `address` text NOT NULL,
  `pswd` varchar(500) NOT NULL,
  `date` date NOT NULL,
  `permission` varchar(500) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```


Fig 04: DOCTORS table description

ADMIN Table :

```
CREATE TABLE `admin` (
  `admin_id` int(11) NOT NULL,
  `email` varchar(500) NOT NULL,
  `admin_pswd` varchar(500) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```
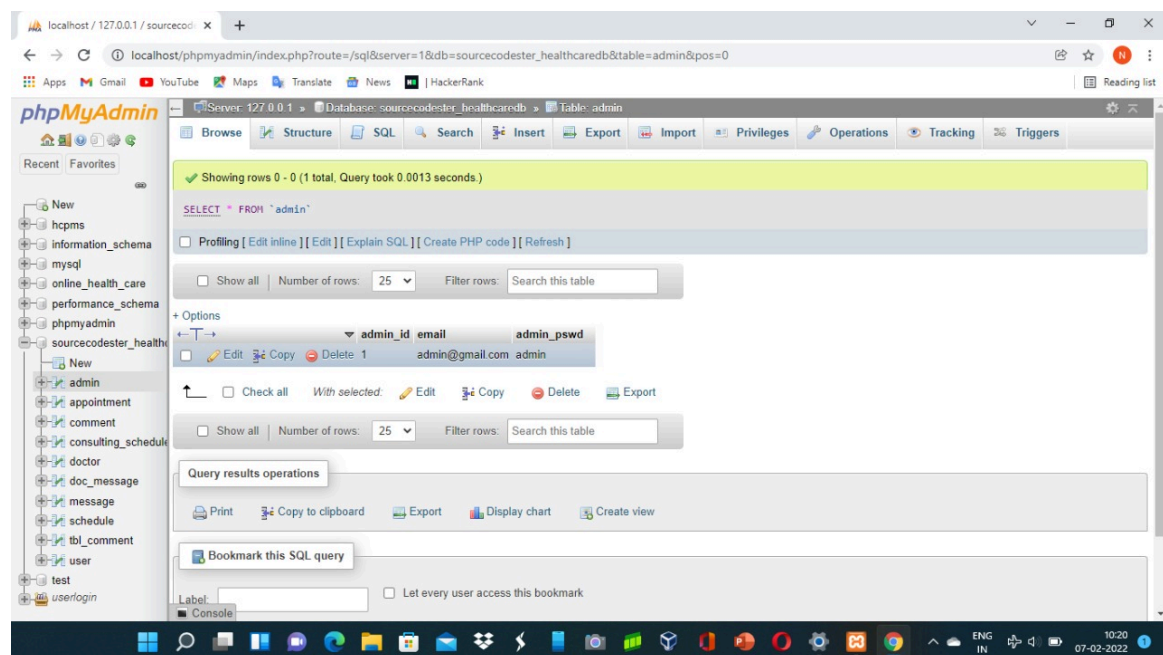

Fig 05: ADMIN table description

SCHEDULE Table :

```
CREATE TABLE `schedule` (
  `s_id` int(11) NOT NULL,
  `Day_Time1` varchar(500) NOT NULL,
  `Day_Time2` varchar(500) NOT NULL,
  `Day_Time3` varchar(500) NOT NULL,
  `Day_Time4` varchar(500) NOT NULL,
  `Day_Time5` varchar(5000) NOT NULL,
  `Day_Time6` varchar(5000) NOT NULL,
  `Day_Time7` varchar(5000) NOT NULL,
  `d_id` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

Fig 05: SCHEDULE table description

CONSULTING SCHEDULE Table :

```
CREATE TABLE `consulting_schedule` (
  `consulting_id` int(11) NOT NULL,
  `Day_Time1` text NOT NULL,
  `Day_Time2` text NOT NULL,
  `Day_Time3` text NOT NULL,
  `Day_Time4` text NOT NULL,
  `Day_Time5` text NOT NULL,
  `Day_Time6` text NOT NULL,
  `Day_Time7` text NOT NULL,
  `d_id` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```


Fig 06 : CONSULTING_SCHEDULE table description

ADDING PRIMARY KEYS :

```sql
ALTER TABLE `admin`
  ADD PRIMARY KEY (`admin_id`);

ALTER TABLE `consulting_schedule`
  ADD PRIMARY KEY (`consulting_id`),
  ADD KEY `d_id` (`d_id`);

ALTER TABLE `doctor`
  ADD PRIMARY KEY (`id`);

ALTER TABLE `schedule`
  ADD PRIMARY KEY (`s_id`),
  ADD KEY `d_id` (`d_id`);

ALTER TABLE `user`
  ADD PRIMARY KEY (`id`);

ALTER TABLE `admin`
  MODIFY `admin_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=2;
```

OPERATIONS PERFORMED :

Insertion:

Insertion is used to insert the tuple or row to the table. We insert value from frontend by making use HTTP the value inserted from to frontend will be going to store in backend database in XAMPP Server.

Update:

update will help to edit the tables in the database. In this project we have given update option for all tables to update the attributes values.

Delete:

delete will help us to delete a tuple or row from the table. In this project we have delete option for table to delete the particular row from that table. We have delete operation for all tables which deletes particular tuple or row.

HOME.PHP Code :

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<title>Home</title>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<head>
</head>
<link href='https://fonts.googleapis.com/css?family=Aclonica'
rel='stylesheet'>
<style>
h1{
font-size:50px;
padding-left:590px;
padding-top:60px;
}
img
{ float: left;
width: 77px;
}

body {margin:0;
padding:0;
font-family:"Bahnschrift Light", "Bernard MT Condensed", "Berlin Sans FB
Demi", "Bell MT";
width:100%;
height:100vh;
background-image:url(pic/healthcare-banner.jpg);
background-size:cover;
}
</style>

<body background="pic/healthcare-banner.jpg">

<div>

<a href="#" class="brand"><img src="pic/icn-nav-healthcare2.png"> </a>
<h1>Home</h1>
<p>write paragraph.
<a target="_blank" href="login.php?filename=login">"Register"</a> now .

<h2><a target="_blank" href="index.php?filename=index">Back</a></h2> </p>
</div>

<?php
include 'translate.php';
?>
</body>
</html>
```

CHAPTER 6

SAMPLE OUTPUT

SCREENSHOTS :

Fig 07: HOME page

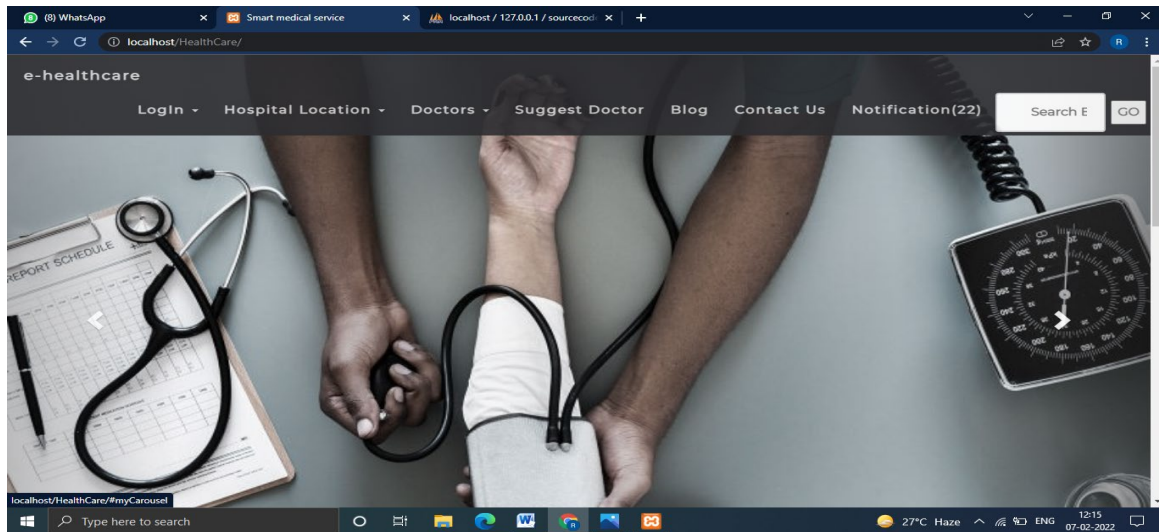Home page which can be also called as Welcome page gives the path.
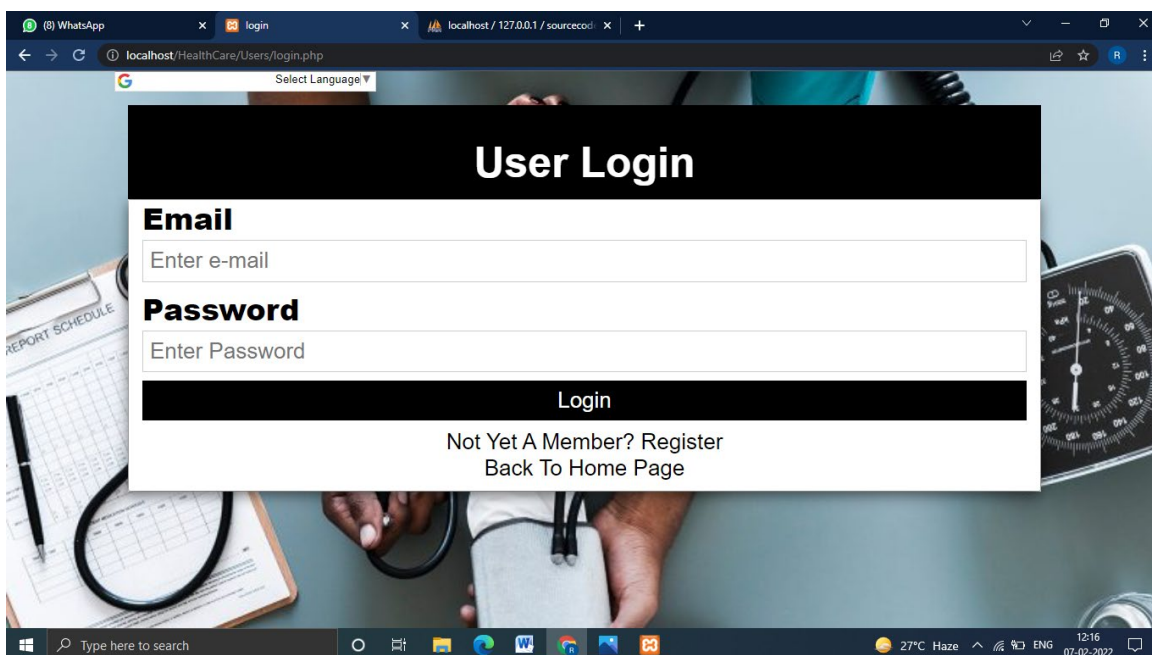

Fig 08: USER Login page

Login page is the web page/entry page that requires user identification and authentication, regularly performed by entering email address and password combination. Login provides access for both doctor and patient to an entire site. Without logging in the users cannot access or modify their information.

Fig 09: SIGN-UP

Sign up page also known as registration page enables users to independently register and gain access to view the information of S.H.C.C website. Registration process in our website include the following: Registration process is initiated whenever a visitor clicks on the 'Sign Up' located on the website. Clicking 'Sign Up' button will invoke a pop-up Sign Up form. Sign Up form consists of fields like:

• Username which specifies the name of the user

• Usertype which is used to indicate the category of user i.e doctor or patient

• Email address for user identification

• Password for authentication.

Fig 10: DOCTOR Login Page

Chapter 7

CONCLUSION

To conclude the description about the project the project, developed using XAMPP Server with PHP & MySQL is based on the requirement specification of the users and analysis of the existing system, with flexibility for future enhancement. The "Development of Web Portal for Health Center" is successfully designed and developed to fulfilling the necessary requirements, as identified in the requirements analysis phase, such as the system is very much user friendly, form level validation and field level validation are performing very efficiently. Since we are entering details of the patients electronically the data will be secured. Using this application, we can retrieve patient's history with a single click. Thus, processing information will be faster. It guarantees accurate maintenance of Patient details. It easily reduces the book keeping task and thus reduces the human effort and increases accuracy speed. Hospital Management System is essential for maintaining detail about the Doctor, Patient, Hospital staff etc. we understand that by using of Hospital Management System project the work became very easy and we save lot of time. Hospital administrators would be able to significantly improve the operational control and thus streamline operations. This would enable to improve the response time to the demands of patient care because it automates the process of collecting, collating and retrieving patient information.

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