

DESIGN AND IMPLEMENTATION OF DPIS – DOCTOR PATIENT INFORMATION SYSTEM

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APPROVAL

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DECLARATION

We, hereby, declare that the work presented in this report is the outcome of the project performed by us under the supervision of **Bulbul Ahamed**, Associate Professor & Head, Department of Computer Science and Engineering, Sonargaon University (SU), Dhaka, Bangladesh. We reaffirm that no part of this project and thereof has been or being submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

Doctor Patient Information System – DPIS is an information system of the health ministry of a country, which is designed to streamline the process of health security of a country. It has been architected to mitigate dangerous wrong medical consultancy and wrong medication prescribed by fake doctors. To use this application both doctors and patients required to register within this information system, and all doctor's profiles are required to approved by the respective government authority before they start consultant and prescribe medicine to a patient. This information system is controlled, maintain and supervised by the ministry of health of a country. This system is a web based application consist of HTML, CSS, PHP, MYSQL and JavaScript which is a cross platform accessible information system.

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LIST OF ABBREVIATIONS

CPU	Central Processing Unit
CSS	Cascading Style Sheets
DBMS	Database Management System
HTML	Hypertext Text Markup Language
HTTP	Hyper Text Transfer Protocol
IE	Internet Explorer
IIS	Internet Information Services
JS	Java Script
LAMP	Linux, Apache, MYSQL, PHP/Perl/Python
MySQL	My Structured Query Language
NID	National Identification
OS	Operating System
PC	Personal Computer
PHP	Hypertext Preprocessor
RAM	Random Access Memory
SSL	Secure Socket Layer
VS Code	Visual Studio Code
XAMPP	Multiplatform, Apache Server, MariaDB, Perl, PHP
XHTML	Extensible Hyper Text Markup Language
XML	Extensible Markup Language

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CHAPTER 1

INTRODUCTION TO DOCTOR PATIENT INFORMATION SYSTEM- DPIS

1.1 Introduction

Doctor Patient Information System – DPIS is an information system which is designed to streamline the process of health security of a country. It has been architected to mitigate dangerous wrong medical consultancy and wrong medication prescribed by fake doctors. To use this application both doctors and patients required to register within this information system, and all doctor's profile will be approved by the respective government authority before they start consultant and prescribe medicine to a patient. This information system is controlled and supervised by the respective health division of the ministry of health of a country.

1.2 Objectives

- Building people faith on National Health Security System
- Mitigate Medical Crime
- Lifetime Medication History of a Patient
- Consultancy, Advice, Medication History Prescribed by Doctors
- Medical Offense Auditing Facility for Health Division

1.3 Why DPIS?

DPIS – Doctor Patient Information System is a fully featured integrated solution to streamline the following purposes:

- DPIS will control and keep records of each and every transactions between doctors and their patients in a sophisticated manure.
- Every doctor and every patient will be identified by a unique identifier code.
- Only authorized doctor could prescribe medication for a registered patient.
- Every patient's medication history will be stored in database, which could be accessed when required.

- Any medical offence can be audited by the health division.

1.4 Purpose of the Proposed System

We are proposing this information system to streamline medical crime and to build trust of mass people on National Health Security System. Every doctor must have BMDC registration number to register in this system and their given information will be verified by the respective authority of the government. Upon positive verification the authority of this application will approve a doctor profile, until approval of profile a doctor can not see patients nor prescribe medication.

In many case the patient cannot provide his/her medical history properly. For this reason, sometimes doctor cannot treat the patient properly and quickly nor do they guide them with a narrower path to diagnose the real reason. In this system, a doctor could browse a patient's lifetime medication history if they want. When a doctor see and prescribe a patient the record will be stored in database for future references. To get treatment from the genuinely authorised doctor and get rid of fake doctors is the main purpose of our system.

1.5 Project Scope

Bangladesh health care system, both public and private, is facing serious 'allegations' of wrong treatment of diseases for fake doctors resulting in the death. Casualty or disability of the patient. According to a recent study 75% of the quacks suggest inappropriate medicine while 7% recommend harmful medicine for their patients. In our country 80% medical services in the rural areas are provided by the quacks or quack doctors. The study demonstrates that almost nine out of 10 people are consulted by the quacks who are popular with patients from all socio-economic groups.

In most cases the quacks have no formal training or diploma on medical science but in some cases they may have a few years' experience working as assistants of the registered MBBS doctors and may be many who have no experience except working at medicine dispensaries or may be some others completing merely one or two months

training course. Among the others some may buy fake certificates from unauthorized institutions.

Another concern is, it seems astounding when they are found desperately using the title doctor before their names and carrying on their deceitful business unabatedly. Many of the fraudsters own pharmaceutical stores together with treating and consulting the patients.

According to the BMDC Act 2010, article 29, no one can use the title 'doctor' without having an MBBS or a BDS degree and any violator can be subjected to be sentenced to jail or face a monetary fine.

This system will be very useful for the patient to prevent treating from the fake doctor and also helps the doctor to get a lifetime case history of a patient to treat him/her genuinely. [1][2]

CHAPTER 2

FEATURES AND FUNCTIONS OF THE PROJECT

2.1 Features of the Project

2.1.1 Registration

This function allows the doctor and patient to register as a user to interact with the system. The system requires the user to login before using this application.

2.1.2 View only information online

- Doctors and patient are allowed to view their records online by login with their account.
- For the system security reason they can not edit their given information.

2.1.3 Prescription

- Only the approved doctors will be allowed to see a patient and create prescription.
- Only doctors can view the previous prescription history of the patient.
- Patient can view their own prescription by login using their account.

2.2 Functions of the Project

User management: In this projects we have three types of users these are:

1. Admin
2. Doctor
3. Patient

2.2.1 Admin

An admin can have these following privileges to the system:

- They can view and edit doctor and information in the system.
- They can approve/reject doctor's account in the system.

2.2.2 Doctor

- They can view self-information in the system.
- They can create prescription in the system for patient.
- They can see or search all the prescriptions they created.
- They can browse a patient's all prescriptions created by other doctors.

2.2.3 Patient

- They can view self-information in the system.
- They can see all the prescription created by all doctors in their life.
- They can retrieve download and print any previous prescription if they want.

CHAPTER 3

Tools and Methodology

3.1 Tools & Technology:

- This project is a web application that is developed for cross platform.
- A Linux webserver Running PHP V>5.4, MariaDB
- Database Design MySQL
- Front end Design (HTML, CSS & JavaScript, Bootstrap Framework)
- Back-end Design (RAW PHP)
- Design purpose Adobe Photoshop, Adobe Illustrator
- Code Editor Sublime Text3

3.2 Server Specifications

- Processor: Intel Xeon 3.4GHz quad core or above
- Ram: 16GB of Memory
- 10G Link Connectivity
- Environment: LAMP Stack
- PHP Version: For MySQL & MariaDB Editions, PHP 5.4 or above
- Database: MariaDB 5.1 or above

The above requirements is for a production purpose. But for development we used **XAMPP**.

3.2.1 What is XAMPP?

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

XAMPP's ease of deployment means a WAMP or LAMP stack can be installed quickly and simply on an operating system by a developer, with the advantage that common add-in applications such as WordPress and Joomla! can also be installed with similar ease using Bitnami.

XAMPP is an abbreviation for cross-platform, Apache, MySQL, PHP and Perl, and it allows you to build WordPress site offline, on a local web server on your computer. This simple and lightweight solution works on Windows, Linux, and Mac – hence the “cross-platform” part.

Since WordPress isn't a stand-alone application, XAMPP provides two essential components for its installation – Apache, which is used to create the local server, and MySQL which you can use as a database for your website. [3]

3.2.2 Components of XAMPP

As defined earlier, XAMPP is used to symbolize the classification of solutions for different technologies. It provides a base for testing of projects based on different technologies through a personal server. XAMPP is an abbreviated form of each alphabet representing each of its major components. This collection of software contains a web server named Apache, a database management system named MariaDB and scripting/ programming languages such as PHP and Perl. X denotes Cross-platform, which means that it can work on different platforms such as Windows, Linux, and macOS.

Many other components are also part of this collection of software and are explained below.

1. Cross-Platform: Different local systems have different configurations of operating systems installed in it. The component of cross-platform has been included to increase the utility and audience for this package of Apache distributions. It supports various platforms such as packages of Windows, Linus, and MAC OS.

2. Apache: It is an HTTP a cross-platform web server. It is used worldwide for delivering web content. The server application has made free for installation and used for the community of developers under the aegis of Apache Software Foundation. The remote server of Apache delivers the requested files, images, and other documents to the user.

3. MariaDB: Originally, MySQL DBMS was a part of XAMPP, but now it has been replaced by MariaDB. It is one of the most widely used relational DBMS, developed by

MySQL. It offers online services of data storage, manipulation, retrieval, arrangement, and deletion.

4. PHP: It is the backend scripting language primarily used for web development. PHP allows users to create dynamic websites and applications. It can be installed on every platform and supports a variety of database management systems. It was implemented using C language. PHP stands for Hypertext Processor. It is said to be derived from Personal Home Page tools, which explains its simplicity and functionality.

5. Perl: It is a combination of two high-level dynamic languages, namely Perl 5 and Perl 6. Perl can be applied for finding solutions for problems based on system administration, web development, and networking. Perl allows its users to program dynamic web applications. It is very flexible and robust.

6. phpMyAdmin: It is a tool used for dealing with MariaDB. Its version 4.0.4 is currently being used in XAMPP. Administration of DBMS is its main role.

7. OpenSSL: It is the open-source implementation of the Secure Socket Layer Protocol and Transport Layer Protocol. Presently version 0.9.8 is a part of XAMPP.

8. XAMPP Control Panel: It is a panel that helps to operate and regulate upon other components of the XAMPP. Version 3.2.1 is the most recent update. A detailed description of the control panel will be done in the next section of the tutorial.

9. Webalizer: It is a Web Analytics software solution used for User logs and provide details about the usage.

10. Mercury: It is a mail transport system, and its latest version is 4.62. It is a mail server, which helps to manage the mails across the web.

11. Tomcat: Version 7.0.42 is currently being used in XAMPP. It is a servlet based on JAVA to provide JAVA functionalities.

12. Filezilla: It is a File Transfer Protocol Server, which supports and eases the transfer operations performed on files. Its recently updated version is 0.9.41. [3]

3.2.3 XAMPP Format Support

XAMPP is supported in three file formats:

- .EXE- It is an extension used to denote executable files making it accessible to install because an executable file can run on a computer as any normal program.
- .7z - 7zip file- This extension is used to denote compressed files that support multiple data compression and encryption algorithms. It is more favoured by a formalist, although it requires working with more complex files.
- .ZIP- This extension supports lossless compression of files. A Zipped file may contain multiple compressed files. The Deflate algorithm is mainly used for compression of files supported by this format. The .ZIP files are quite tricky to install as compared to .EXE

Thus .EXE is the most straightforward format to install, while the other two formats are quite complicated and complex to install. [3]

3.2.5 Audience

Our XAMPP tutorial is designed for the aspirants who want to test their website or application on a localhost webserver. This tutorial will help those who want to build their career as a front end or web developer. [3]

3.2.6 Problem

We assure you that it will resolve all your queries related to XAMPP, and you will not find any problem in this tutorial. Still, if there is any mistake or discrepancy, please post the problem in the contact form.

3.2.7 XAMPP Control Panel

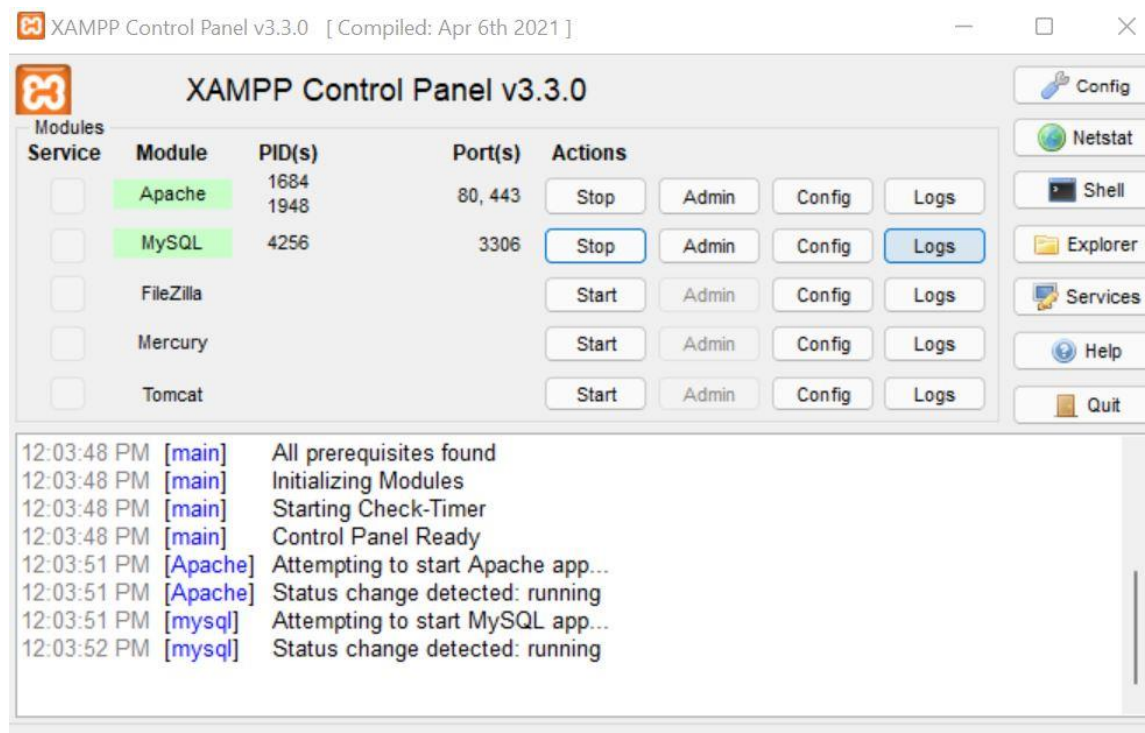


Fig 3.2.7.1: XAMPP control Panel

3.2.8 Why XAMPP?

XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself.

3.3 JavaScript

JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive. Where HTML and CSS are languages that give structure and style to web pages, JavaScript gives web pages interactive elements that engage a user.

3.4 HTML

HTML is used to create the structure of the website. The User Interface part of the website constructed by HTML5. So that, it becomes more user friendly. The extended reach of information and services to users that the Internet has enabled, has created a new challenge for the developer. The developer should develop a user interface that is distributable, available on multiple platforms and supports a wide range of client environments from handheld wireless devices to high-end workstations. So to maintain a broad reach to client environments and to achieve greatest compatibility with all browsers, this system uses standard HTML. Hyper Text Markup Language is the standard language for creating documents for the World Wide Web. An HTML document is a text file, which contains the elements, in the form of tags that a web browser uses to display text, multimedia objects, and hyperlinks using HTML; we can format a document for display and add hyperlinks to other documents. The user interface has been designed in HTML hence can be browsed in any web browser. [4]

3.5 CSS

CSS is used to provide the attractive design of the HTML structure. So that, user can catch the required things easily. It has been used to separate data from presentation. By using these style sheets throughout the project, a uniform look and feel can be maintained for all the HTML elements and tags that have been used in the project. If there is any revamp the way the content has been presented in the website.

3.6 PHP

3.6.1 What is PHP?

- PHP is an acronym for "PHP: Hypertext Pre-processor"
- PHP is a widely-used, open source scripting language
- PHP scripts are executed on the server
- PHP is free to download and use [5]

3.6.2 What Can PHP Do?

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect form data
- PHP can send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

With PHP you are not limited to output HTML. You can output images, PDF files, and even Flash movies. You can also output any text, such as XHTML and XML. [5]

3.6.3 Why PHP?

- PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- PHP is compatible with almost all servers used today (Apache, IIS, etc.)
- PHP supports a wide range of databases
- PHP is free. Download it from the official PHP resource: www.php.net
- PHP is easy to learn and runs efficiently on the server side [5]

3.7 Adobe Photoshop & Illustrator

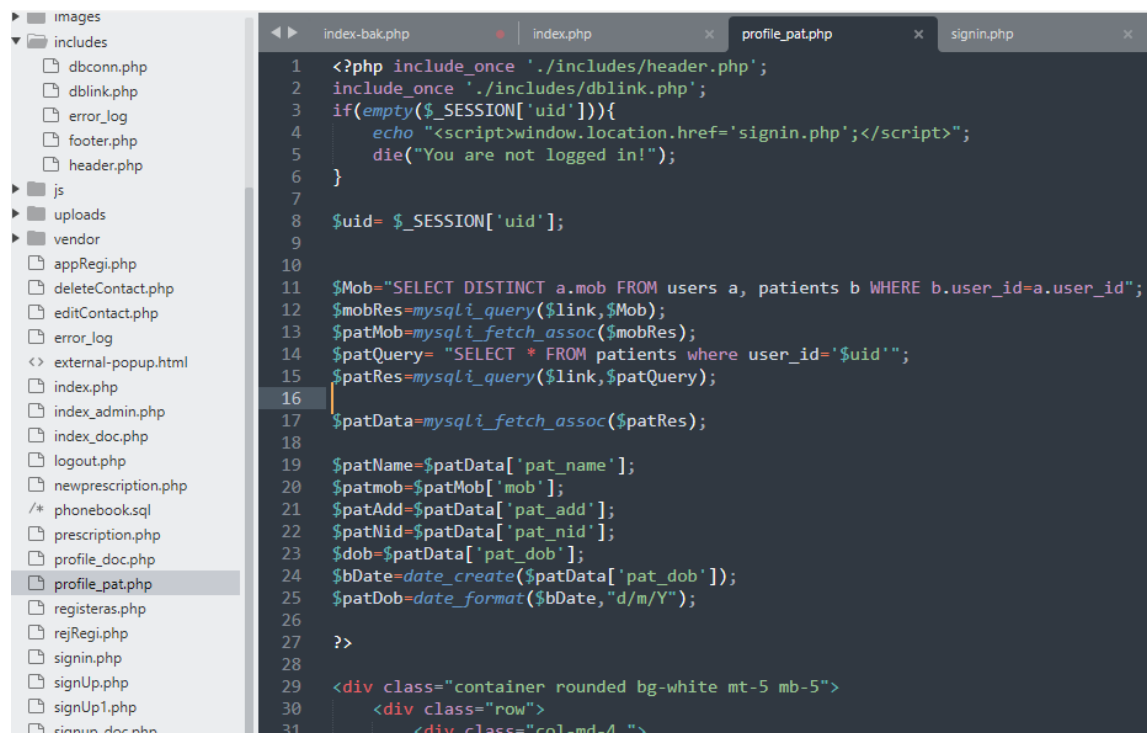
Adobe Photoshop Illustrator is a professional vector-based design and drawing program. Used as part of a larger design workflow, Illustrator allows for the creation of everything from single design elements to entire compositions. Designers use Illustrator to create posters, symbols, logos, patterns, icons, etc.

3.8 Sublime Text3

3.8.1 What is Sublime Text3?

Sublime Text 3 (ST3) is a lightweight, cross-platform code editor known for its speed, ease of use, and strong community support. It's an incredible editor right out of the box, but the real power comes from the ability to enhance its functionality using Package Control and creating custom settings.

3.8.2 Sublime Text3 in Action



```
1 <?php include_once './includes/header.php';
2 include_once './includes/dblink.php';
3 if(empty($_SESSION['uid'])){
4     echo "<script>>window.location.href='signin.php';</script>";
5     die("You are not logged in!");
6 }
7
8 $uid= $_SESSION['uid'];
9
10
11 $Mob="SELECT DISTINCT a.mob FROM users a, patients b WHERE b.user_id=a.user_id";
12 $mobRes=mysqli_query($link,$Mob);
13 $patMob=mysqli_fetch_assoc($mobRes);
14 $patQuery= "SELECT * FROM patients where user_id='$uid'";
15 $patRes=mysqli_query($link,$patQuery);
16
17 $patData=mysqli_fetch_assoc($patRes);
18
19 $patName=$patData['pat_name'];
20 $patmob=$patMob['mob'];
21 $patAdd=$patData['pat_add'];
22 $patNid=$patData['pat_nid'];
23 $dob=$patData['pat_dob'];
24 $bDate=date_create($patData['pat_dob']);
25 $patDob=date_format($bDate,"d/m/Y");
26
27 ?>
28
29 <div class="container rounded bg-white mt-5 mb-5">
30     <div class="row">
31         <div class="col-md-4 ">
```

Fig 3.8.2.1: Sublime Text3 in Action

3.8.3 Why Sublime Text3

Sublime Text 3.0 is out! Compared to the last beta, 3.0 brings a refreshed UI theme, new color schemes, and a new icon. Some of the other highlights are big syntax highlighting improvements, touch input support on Windows, Touch Bar support on macOS, and apt/yum/pacman repositories for Linux.

CHAPTER 4

LOGICAL DESIGN AND SYSTEM WORK FLOW

4.1 Work Flow Diagram

The following diagram can describe how work flow from one step to another

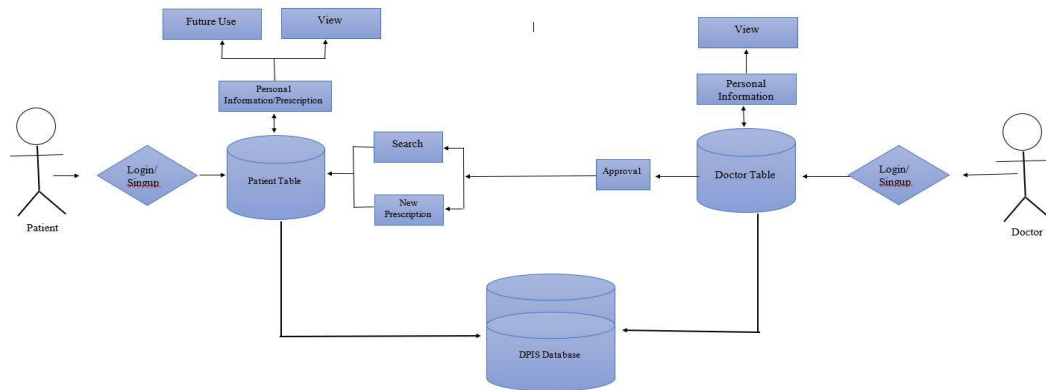


Fig 4.1.1: Work Flow Diagram of DPIS

4.2 Database Schema Relationship

The following diagram shows the various relationships such as one to many, many to one and one to one relationship. The user table's user_id field has relationship with doctor's user_id and patients user_id fields. The prescription table's doctor_cd has two relationships with doctor_cd in doctors table and pat_cd of patient's table.

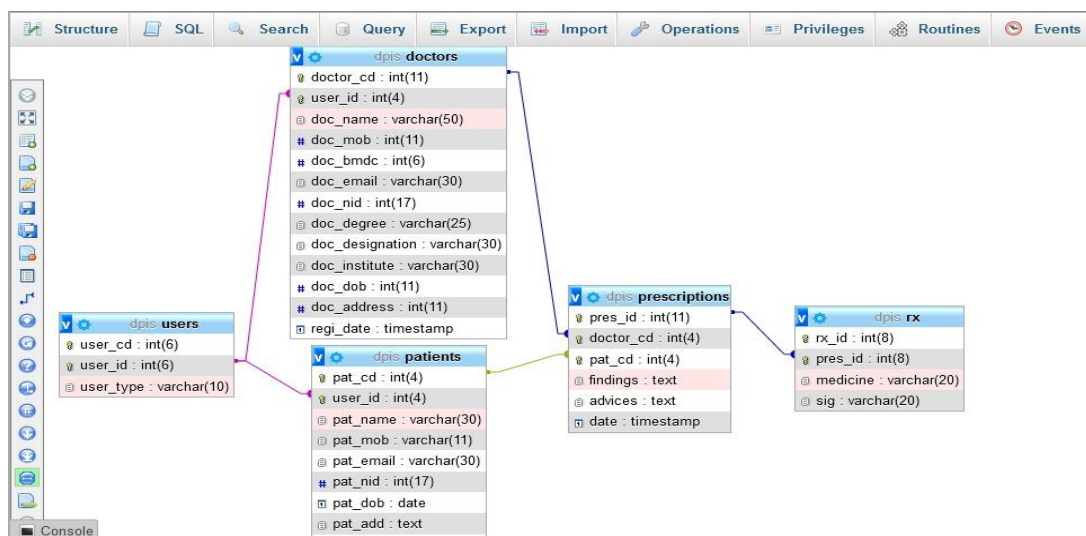


Fig 4.2.1: Database Schema Relationship

4.3 Database Tables

	Field	Type	Comment
DPIS	doctor	InnoDB	
	patients	InnoDB	
	prescriptions	InnoDB	
	rx	InnoDB	
	users	InnoDB	

Table: 4.3.1 DPIS

	Field	Type	Comment
DPIS	doctor_cd	int(6)	
	user_id	int(4)	
	doc_name	varchar(50)	
	doc_bmdc	int(6)	
	doc_nid	int(17)	
	doc_degree	varchar(50)	
	doc_designation	varchar(30)	
	doc_institute	varchar(30)	
	doc_dob	date	
	doc_address	text	
	regi_date	timestamp	
	flag_verify	int(1)	

Table: 4.3.2 Doctor Information

	Field	Type	Comment
DPIS	pat_cd	int(6)	
	user_id	int(6)	
	pat_name	varchar(30)	
	pat_nid	int(17)	
	pat_dob	date	

pat_add	text
regi_date	timestamp

Table: 4.3.3 Patient Information

	Field	Type	Comment
DPIS	pres_id	Int(8)	
	doctor_cd	int(6)	
	pat_cd	int(6)	
	findings	text	
	advices	text	
	date	timestamp	

Table: 4.3.4 Prescriptions Information

	Field	Type	Comment
DPIS	pres_id	int(8)	
	medicine	varchar(20)	
	sig	varchar(20)	
	days	varchar(2)	

Table: 4.3.5 Medicine (rx) information

	Field	Type	Comment
DPIS	user_id	int(6)	
	mob	varchar(11)	
	email	varchar(30)	
	user_type	varchar(12)	
	password	char(32)	

Table: 4.3.6 User Information

4.4 Database Fields Attributes

The Functions using in this database:

- `date_default_timezone_set()`: Sets the default timezone used by all date/time functions in the script.
- `die()` : Prints a message and exits the current script.
- `header()` : Sends a raw HTTP header to a client or browser.
- `max()` : Returns the largest value of the selected column.
- `md5()` : Uses the RSA Data Security, Inc. MD5 Message-Digest Algorithm.
- `mysqli_error()` : Returns the last error description for the most recent function call, if any.
- `mysqli_fetch_assoc()` : Fetches a result row as an associative array.
- `mysqli_fetch_row()` : Fetches one row from a result-set and returns it as an enumerated array.
- `mysqli_query()` : Performs a query against a database.
- `session_destroy()`: Destroys all of the data associated with the current session.
- `session_start()` : Creates a session or resumes the current one based on a session identifier passed via a GET or POST request, or passed via a cookie.
- `setTimeout()`: Executes a block of code after the specified time
- `strtolower()`: Converts a string to lowercase
- `substr()` : Returns a part of a string.

CHAPTER 5

SYSTEM AND INTERFACE DESIGN

5.1 System Design

Our entire system has been developed in RAW PHP, HTML, CSS & JavaScript languages. Through data collection and research studies, we have seen a variety of challenges in the current doctor patient information system, which often affect its good performance and efficiency. I have described the current system below.

5.2 File and Folder path

5.2.1 DPIS

- dpis/css: This folder contains all types of css files that have been used in this project
- dpis/images: This folder contains all types of image files that have been used in this project.
- dpis/includes: This folder contains all types of common files used in throughout the project files, like database and other file links.
- dpis/js: This folder contains all types of JavaScript files that have been used in this project.
- dpis/uploads: This folder contains all upload images like NID and profile images that have been upload during the registration.
- dpis/*.php files: All independent PHP files used for respective distinct purpose.

5.3 System Menu

❖ Doctor

- View Profile
- Search Patient ID
- View Existing Prescription
- Add Prescription


❖ Patient

- View Profile
- View Prescription

❖ Admin

- Approve Doctor Profile
- Reject Doctor Profile
- Update Doctor Profile

5.4 System Home Page



Sign in to continue

Enter Mobile No.

Password

[Sign In](#)

[Do not have an account? Register Now](#)

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Fig 5.4.1 : Home Page

5.5 System Design Snapshots


Some important form snapshots are given below

Select Registration Type

DoctorPatient

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Fig 5.5.1 Registration Type



DPIS Doctor Registraton

Dr. Full Name

Mobile Number

BMDC Number

Email Address

NID

Degrees (Use comma to separate)

Designation

Institute

Date of Birth

Address

Password

Retype Password

Upload Photograph (300px X 300px)

No file chosen

Upload NID (560px X 350px)

No file chosen

Already have an account? [Sign In](#)

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Fig 5.5.2 Doctor Registration



DPIS Patients Registraton

Full Name

Mobile Number

Email Address

NID Number

Date of Birth

Address

Password

Retype Password

Upload Photograph (300px X 300px)
 No file chosen

Upload NID (560px X 350px)
 No file chosen

Already have an account? [Sign In](#)

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Fig 5.5.3 Patient Registration

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh

[Log Out](#)

Welcome Admin

Registered Doctors List

Sl#	Doctor Name	NID No	BMDC No	Registration ID	Status	Action
1	Mosharraf Hossain	5656567	5656567	000001	Verified	Approve Reject Update
2	Tomal Sarker	143344432	556657	100002	Verified	Approve Reject Update
3	Nasim Uddin	123454434	4454323	100003	Verified	Approve Reject Update
4	Israt Jahan	123454445	7654311	100004	Verified	Approve Reject Update
5	Jibon Kumar	1233432323	21234322	100005	Verified	Approve Reject Update

Fig 5.5.4 Admin Panel

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh

Profile Update for Dr. Mosharraf Hossain(BMDC# 5656567)

Name:

BMDC NO.:

NID NO.:

Degrees:

Designation:

Institute:

Date of Birth:

Address:

Fig 5.5.5 Profile Update Page for Admin

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh


Welcome Mosharraf Hossain

Profile Status: Verified

S#	Prescrip ID	Patient Name	Date of Creation
1	00000001	Jakiya Sultana	2022-09-06 02:19:40

Fig 5.5.6 Doctor Dashboard

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh



Dr. Mosharraf Hossain
MBBS, FCPS, MD (Nephrology)
Profile Status: Verified

Doctor Detail Information

Name: Dr. Mosharraf Hossain
 Degrees: MBBS, FCPS, MD (Nephrology)
 BMDC Registration Number: 5656567
 NID Number: 5656567
 Contact Number: 01833333341
 Residence Address: Vill-Anandapur, P.O- Kalkapur, Burichong
 Date of Birth: 26/09/1988
 Number of Prescription:

We won't allow doctors to update any piece of profile information for security reason. If you want to update your profile information please email us to info@dpis.gov.bd with proper documents. Thank You.

[Go Home](#)

Fig 5.5.7 Doctor Profile View

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh

Welcome Jakiya Sultana

[View Profile](#)
Log Out

Sl#	Prescrip ID	Doctor Name	Date of Creation

Fig 5.5.8 Patient Dashboard



Jakiya Sultana
Monipur, Dhaka

Patient Detail Information

Name: Jakiya Sultana
Registration ID: 1003
Contact No: 01746993443
NID Number: 454545
Residence Address: Monipur, Dhaka
Date of Birth: 21/09/1998

We won't allow patients to update any piece of profile information for security reason. If you want to update your profile information please email us to info@dpis.gov.bd with proper documents. Thank You.

[Go Home](#)

Fig 5.5.9 Patient Profile View

5.6 Report Snapshots

Some important report snapshots given below

DPIS Doctors Patients Information System Department of Health Security | Ministry of Health
Government of the Peoples Republic of Bangladesh

Prescription: 00000001

Date: 2022-09-06 02:19:40

Doctor Information
Mosharraf Hossain
MBBS, FCPS, MD (Nephrology)
BMDC No :5656567
Mob :01833333341
Address :Vill-Anandapur, P.O- Kalikapur, Burichong

Patient Information:
Name: Jakiya Sultana
Age: 23
Contact: 01746993443
Address: Monipur, Dhaka

Findings:-
BP:120/80

Advise:-
CSR

Rx

1.	Napa	1+0+1	5
2.	Entacyd	1+1+1	3

[Go Back](#)

Fig 5.6.1 Existing Prescription Page

New Prescription

Doctor Information

Mosharraf Hossain
MBBS, FCPS, MD (Nephrology)
BMDC No :5656567
Mob :01833333341
Address :Vill-Anandapur, P.O- Kalikapur, Burichong

Patient Information

Name: Jakiya Sultana
NID Number: 454545
Age: 23
Contact: 01746993443
Address: Monipur, Dhaka

General Findings

Rx

1.

Advise

Fig 5.6.2 New Prescription Page

CHAPTER 6

SECURITY AND IMPLEMENTATION

6.1 System Security

6.1.1 User Management

Server level system admin can modify users account.

6.1.2 User Authentication

Users need to provide their username and Password every time as they need to access the system.

6.1.3 Admin Authentication

Administrator need to provide administrator username and Password every time as they need to access the system.

6.1.4 Pages Permission

- Admin: Admin can almost all pages.
- User: User can access their permitted pages

6.1.5 Change Password

Each of the users can update their account's password by the admin if they feel their password is not secure anymore.

6.2 System Requirements in detail:

The term system requirements means the minimum hardware and software requirement of a computer. If the computer full fill this minimum requirement then the system will run smoothly from this computer. The requirement specification given below.

6.2.1 Minimum Hardware Requirements:

Hardware	Minimum Requirement	Reason
Processor Speed	2.0 GHz	Accommodate most PCs
Memory Of User PC	1GB RAM	Relatively fast
Disk of User PC	100 GB	Adequate storage capacity
Bandwidth (Network Connection)	15 MBps	Relatively Good
Disk Space Of Server (Not Essential)	200 GB	Adequate Storage for Database and Application

Table: 6.2.1.1 Minimum Hardware Requirements

A fast processor is required because there is need to handle large amounts of data queries. 8 GB memory is required on the server for faster performance because it runs many processes simultaneously, while the memory in the computer should be relatively fast so as to run the processes required. 200 GB storage capacity in the server's hard disk is necessary for storage of huge amounts of data while the disk space in a user computer should be modest enough. Good network connection is vital because the application is majorly internet based and there is need for faster communication and retrieval of information.

6.2.2 Minimum Software Requirements:

Software	Minimum Requirement	Reason
Operating System for computer	Window 7, Windows 8.1, Windows 8, windows XP, Linux, MAC OS	Globally distributed and widely accessed
Database Management System	MySQL	Easy to use and scalable
Browser	Opera, Google Chrome, IE, Mozilla Firefox	Standard browser

Table 6.2.2: Minimum Software Requirements

Shows the software requirements for the web application that define the prerequisites needed for the optimal functioning of the web application. Each of the following operating system can handle the application, windows 7, windows 8, windows 8.1, Linux, those operating systems were chosen because they are affordable and readily available. MySQL was used in the development of the databases and is relatively cheap, easy to use and scalable. Browsers: any browser including opera, Google chrome, Microsoft Internet explorer and Mozilla Firefox.

6.3 Result of Analysis:

It shows overall progress of a project. The analysis result focus on Results of Implementation, Results of Testing, Achievements of the project, and Limitations of the project. By this analysis we may able to know how much a project efficient or not.

6.3.1 Results of Implementation:

It demonstrates that it will have a web interface where user of the system (User /system admin) can login, where customer parking a vehicle and parking out vehicle also payment daily, monthly and yearly.

6.3.2 Results of Testing:

Cross browser testing was done to ensure that the web application looks the same in major browsers that is Google chrome, Mozilla Firefox, Opera and Internet explorer. The web project is consistent (looks exactly the same) in Google chrome, Mozilla Firefox and Opera but the looks vary slightly in internet explorer.

6.3.3 Achievements of the Project:

- Admin control across all aspects of the application.
- Admin can approve, reject or update a profile.
- Doctor can prescribe patient and note down the findings and advise.
- Doctor can see the previous prescription and history of patients.
- Patient can see the prescription and the findings.

CHAPTER 7

CONCLUSION AND FUTURE WORKS

7.1 Introduction

This chapter discusses about what has been done, recommendations on the system's operations, future scope of this system and the conclusions that are to be made regarding the system's functioning in the current status and that of the future where some improvements are to be made on the system.

7.2 Recommendations:

- I recommend that the system be used by other peoples because I believes that the system can effectively and efficiently works.
- I recommend that more research should be done such that the doctor and patient detail information should able to be scanned to reduce the scam.
- More research should also be done to extend this project to include online appointment of patient with doctor.
- I recommend that through making the web application more responsive the patient will be able to choosing his doctor for treatment.

7.3 Scope of Further Development

- Enabling Two Factor Authentication for secured account and approve doctor to create prescription for a patients by providing received OTP.
- OTP will be required when a doctor tries to enter a patient's history page.
- Load Balancing facility to handle extreme traffic.
- Automatic server level system backup sync with another server with round robin DNS and active backup.
- Email Automation for sending notifications.

7.4 Conclusion

With the theatrical inclination of our syllabus it becomes very essential to take the advantages of any opportunity of gaining practical experience that comes along. The building blocks of this major project “Doctor Patient Information System - DPIS” was one of this opportunities. It gave us the required practical knowledge to supplement the already taught theoretical concepts thus making more competent as a computer engineer. This is to make sure that the management of the blood stock became effective, systematic and meeting user requirements. The functional services provided in the current version are profile management, Prescription Management. This project has given me an ample opportunity to design, code, test and implements an application. This has helped in putting into practice of various Software Engineering principles and Database Management concepts like maintaining integrity and consistency of data. The project from personal point of view also helped us in understanding the following aspects of project development:

- ❖ The planning that goes into implementing a project.
- ❖ The importance of proper planning and an organized methodology.
- ❖ The key element of team spirit and co-ordination in a successful project.

The project also provided us the opportunity with interacting with our teachers and to gain from their best experience.

REFERENCES

- [1] Akter. F, “Wrong Treatment or Negligence”, 2017, [Online]. Available: <https://ubing.org/index.php/home/showArticle/179/english/Farida-Akter>
- [2] “fraudulent quacks putting patients’ life at risk”, 2019, [Online]. Available: <https://m.theindependentbd.com/home/printnews/252957>
- [3] “XAMPP installation and download”, [Online]. Available: <https://www.apachefriends.org>
- [4] W3Schools, “HTML Styles”, 2019, [Online]. Available: https://www.w3schools.com/html/html_styles.asp
- [5] php.net, “PHP: Hypertext Preprocessor”, [Online]. Available: <https://www.php.net>