



Daffodil
International
University

PROJECT TITLE

TRIVA HOSPITAL MANAGEMENT SYSTEM

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APPROVAL

This Project titled “**TRIVA HOSPITAL MANAGEMENT SYSTEM**”, Submitted by ARMAN MAHMUD, ID No: 181-16-275 to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on 19-07-2020.

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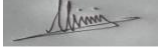
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Executive Summary

My project management program for hospitals covers patient identification, recording of their data in the system, as well as a computerized billing system. The platform has the facility to provide each patient with a specific Id and continuously records the information of each patient and employee. The management system has a search engine that will find out all the data of past and present.

Users can also find out a doctor's availability and a patient's information using this system. Using a username and password, you can access the hospital management program.

This system's Back End can either be accessed by an administrator or a receptionist. Just details can be applied to the database. The data can be easily retrieved. The code is very simple to use. The interface is user-friendly. The data are well protected for personal use and makes the data processing very fast.

Acknowledgement

I would like to express my gratitude to the supervisor 'Md. Minhaj Hosen' sir for supporting me to develop this project and also I would like to thank all of my 'university teachers' for solidifying my foundation. To develop this project, I have learned many new things which is help me in the future.

I also express my special thanks to my 'parents' and my 'friends' for helping me to finish this project.

I have developed this project to enhance my knowledge not just for marks.

Thanks again to all who helped me to develop this project.

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Chapter 1

1. Introduction

1.1. The system developed

I have developed a hospital management system which is Triva Hospital Management System. This project will come in handy for hospital management, hospital employee, and also hospital patient. I developed this project to make an easy hospital daily work. In this project, all the user can do their work properly.

1.2. Justification for the method or framework used

To develop this system, I haven't used any framework. I have developed this software using procedural PHP. Procedural PHP/Raw PHP means solid PHP code. Procedural PHP is a programming language that provides a lot of freedom a lot of space to develop a system.

1.3. The solution that emerged

Developing the system has created a solution that allows every hospital employee to do the job very easily. Admin can easily control the hospital Management. In this hospital management system. Admin can control whole the system, doctors can treat patients, Nurse can provide service to patients, User can see patient details, patient medicine, and also complain throw the system.

1.4. The main aims and objectives of the project

This software will help those hospitals that still follow the manual system. In the village some of the hospital is following the manual system so my target is the village's hospital. The main objective of this project is to develop self-knowledge and digitalization of the organization system.

1.5. A short overview of the remaining chapters

This system is a modern system. This system is portable. Admin can control from anywhere because this software is web-based software. In the remaining chapter, I will discuss how the system was developed. I will show some diagrams, feasibility study, system testing, and many more.

Chapter 2

2. Initial Study

2.1. Project Proposal

Initial Conception

a) Brief Discussion of the concept

My main focus is to develop a new hospital management system for both patients and hospital administrators to enhance hospital experience. The whole system is going to run online and this softer developed by using PHP, JavaScript, jQuery, HTML, and CSS. Users will be able to sign in with internet connection from anywhere. After that, they will be able to various tasks that are designed for them. Users are categorized into three groups. (Admin, Accounts, Others). The primary target is to focus on every user who can get our service and get benefitted. Here are my systems functionalities,

Front Desk Activities

- Patient Registration
- Patient Admission
- Delivery of Investigation Reports

1. Emergency Service

- Record History
- Vital Signs
- Consultant's / Doctor's Visit and Note
- Medicine Given

- Investigation Advised
- Transfer to IPD Admission

2. IPD & Nurse-Station Activities

- Receive Patient
- Record History
- Consultant's Visit and Note
- Diet
- Medicine Advised
- Other Advice
- Investigation Advised
- Request for Final Bill

3. Out-Patient Patient Management

- History of Patient
- Vital Signs
- Diet
- Medicine Advised
- Investigation Advised
- Referred to
- View Investigation Results

4. Cash Counter Operation

- OPD (Out Patient) Consultancy Billing
- OPD (Out Patient) Investigation Billing
- OPD (Out Patient) Procedure and Service Billing

- Final Bill processing of IPD and Emergency Patient

5. User Panel

- Patient Details
- Patient Medicine
- Complain Box
- Ambulance Service

b) Proof of Concept

i) Prototyping

Provide a prototype here so that when this website is complete how it looks,

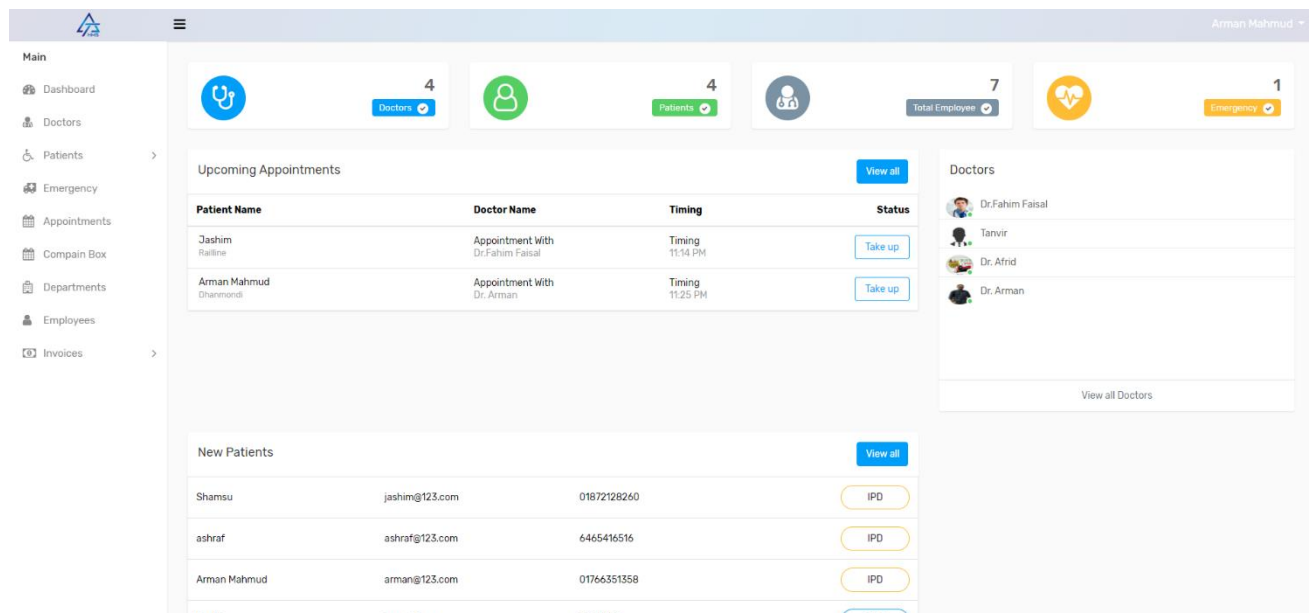


Figure 1: Prototype.

ii) Initial research-

Market viability

Hospital management system is developed to improve the overall quality and control of health care and hospital services and administration. This particular Hospital management technology will bring specific cost-control over-improved patient care and security.

In our country, most of the hospital management system is not user friendly and well functional. Aftermarket research, I have found that some hospital management is not capable to run their system because of heavy functionality which is not so user friendly. For this reason, they are still doing the manual management system. Most of the hospital doesn't have a web-based management system.

Comparative analysis

Triva Hospital management system is a user-friendly web application that can be operated by any kind of device like mobile, tablet, laptop, desktop, etc. And it can be run on online and offline also. In this system, I will develop the most needful features for hospital management. It will be easy to understand and easy to use. Hospitals owner can easily track their hospital workflow from anywhere.

2.2. Background of the project

I have chosen to develop a Hospital Management system for improving Hospital regular tasks and make an easy connection between the user and hospital management. In Bangladesh, there are a lot of hospitals in every district. Many Hospital are still using TALI KHATA to keep patient record and accounts information. My aim is to develop that Hospital which is still using analog methods.

In my country, the Hospital authority does not develop a panel for the user. Users cannot see their accounts information and Patient Medicine. The Hospital authority still using the complaint box on the ground floor by using a box. But in my system User can see patient details and also complain throw system and also upload complain Image.

At last, I want to say that, in the future, I will add more functionality that can benefit user and Hospital authority both.

2.3. Problem Area

I faced many problems while designing the diagram of this system, because I could not relate the diagram with the system. But my respected supervisor helped me a lot. I also took some ideas by analyzing the diagram. After understanding all diagrams, it became easy to relate to the project, and then I drew it.

2.4. Possible solution

I could not maintain the time schedule of the project. For that, at the last moment, I faced a huge pressure to complete the project. But I took pressure and took the workload and finish the project. I think dedicatedly working is the main possible solution.

Chapter 3

3. Literature Review

3.1. Discussion on problem domain based on published articles.

'Noakhali City Hospital' is providing service to patients since 2006 and they run software to keep patient data and manage hospitals. They have no emergency service system and an online ambulance service. They can't assign medicine through software. They have no appointment system in software.

3.2. Discussion on problem solutions based on published articles.

I have collected published articles for the problem domain and try to solve this problem.

Problem. I have solved some problem which is given below:

- > Doctor Can assign Medicine through the system.
- > Sister Can provide medicine from the system.
- > My system 'Triva Hospital management System' has a user panel.
- > User Can see patient Information and medicine.
- > Users can complain from the user panel.
- > Users can take an ambulance service from the user panel.
- > Appointment Management System.

3.3. Comparison of three/four leading solutions-

I have analyzed some existing system which is already in the market and some hospital use that system. Some System are given below:

Saturn Hospital Management System:

It's the strongest patient care system out there. It has all the fresh and really creative technologies that many Hospital Services firms do not provide. It has features such as creating Invoice from Invoice queries. Unlimited number of workers. And they're just the edge of the iceberg. Please take out your busy life to have a peek at this amazing Hospital Management Program.

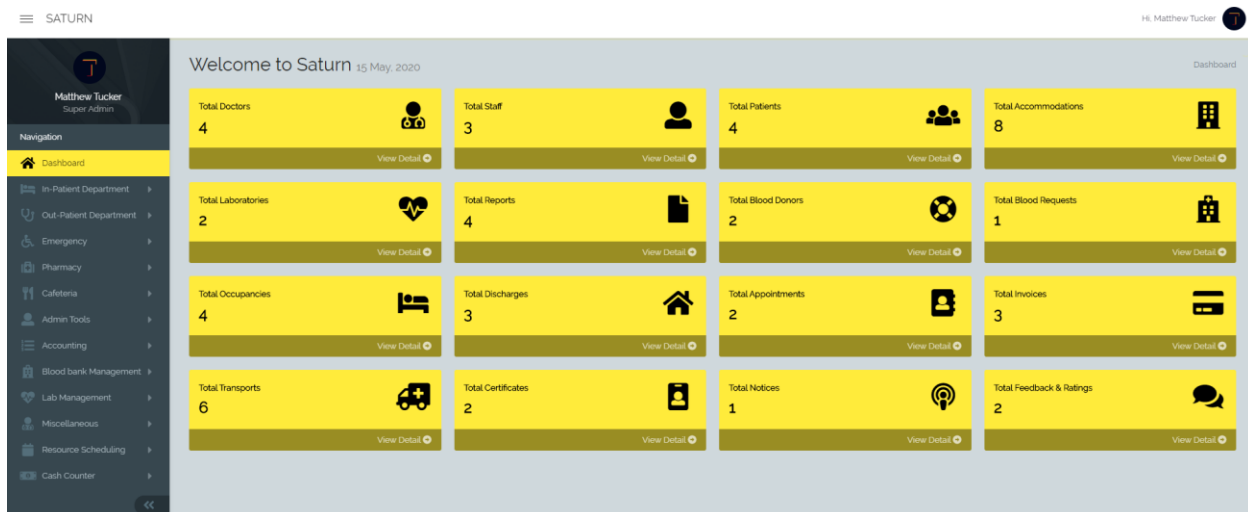


Figure 2: Saturn Hospital Management System.

- **best features**
 1. Creating Invoice
 2. Blood Bank Management

3. Lab Management

- **Limitations**

1. Assign Medicine

2. User Panel

3. Ambulance Service

Bayanno Hospital Management System:

The Bayanno Hospital Management System is the most comprehensive and multi-functional hospital or medical center management program. Admin, staff, physicians, nurses, medical workers, pharmacists, receptionists, accountants operate together such that both documentation and tedious tiresome tasks can be handled quickly and effectively.



Figure 3: Bayanno Hospital Management System.

- **best features**

1. Easiest appointment booking system
2. Private communication with doctors
3. Easiest management of hospital accommodations
4. Tracking of medicines
5. Records of blood donors
6. Records of diagnostics and reports
7. Payroll management
8. User friendly accounting
9. Patient Management

- **Limitations**

1. Assign Medicine
2. User Panel
3. Digital Ambulance service
4. Ambulance Service

3.4. Recommended approach

To analyze market software, we determine that we need to add some functionality on my project 'Triva Hospital Management System' which are given below:

1. User Panel for patient Information and Patient medicine.
2. Digital Complain box
3. Appointment System
4. Assign and view medicine.

Chapter 4

4. Methodology

Methodology is a method that is use before development. Before development we need to choose a methodology. Choosing a methodology depends on project type. There are types of methodology:

1. Qualitative Research
2. Quantitative Methods
3. Mixed Methods

4.1. What to use

In my Hospital Manage System I have used Mixed methods to develop Triva Hospital Management System.

4.2. Why to use

Mixed methodology is a blend of qualitative and quantitative analysis. This style of approach utilizes a variety of specific methods to provide both qualitative knowledge, such as interviews or experiences, as well as evidence or figures. The use of mixed approaches will allow the researcher to examine the topic at various stages, obtain diverse perspectives and take a detailed look at the topic. Mixed methodologies incorporate more than one intellectual viewpoint, enabling the convergence of various theories and ideas.

4.3. Sections of methodology

As I have used Mixed methodology, I have taken interview of my cousin Dr. Shahnewaz Parvez. He is an orthopedic specialist at Dhaka Medical College. I have also taken interview of Labaid Hospital's receptionist and collect some of money receipt and prescription for my project. I have also followed some software from codecanion.com.

Evidence:

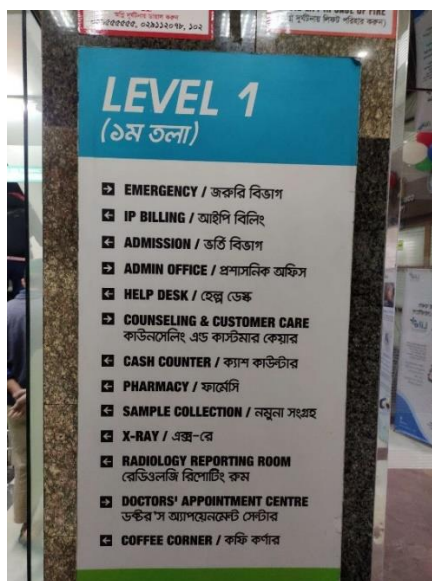


Figure 4: Take Labaid Hospital Department Direction.

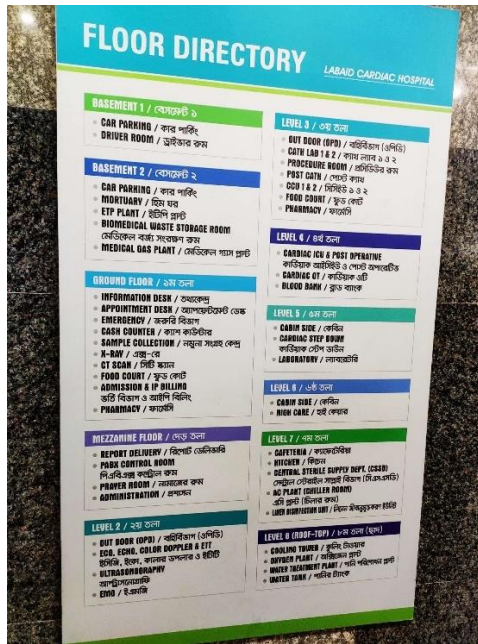


Figure 5: Take Labaid Hospital Floor Direction.

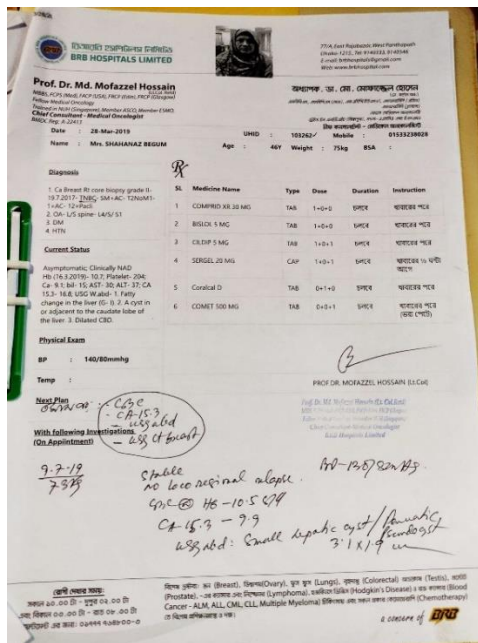


Figure 6: Take My mother medicine prescription.

4.4. Implementation plans

The key innovations in this segment will be introduced. All of the requirements previously collected from Doctor and Hospital's receptionist must be kept in mind during the implementation period of the Hospital Management System. Prototype also Help me to design and develop this project.

Chapter 5

5. Planning

5.1. Project Plan

- **Work Breakdown Structure (WBS)**

I have completed market research and found the problem of a hospital management system. After the acceptance of my project proposal, I will analyse the whole project planning. Collect resources and generate new ideas. After finalizing the project planning, I will design the project. I will design ERD, DFD, Use Case, Class diagram and sequence diagram. Then I will implement the design and the development phase. After development I will test the whole project then make a document for this project.

- **Time Duration**

I have divided this project into some small task with time duration to develop. Time duration is given below:

Task	Start date	End date	Duration
Starting project (Making Idea and market research)	01/01/2020	08/01/2020	8 days
Making project proposal and submit	09/01/2020	13/01/2020	5 days
Analysis	14/01/2020	18/01/2020	5 days
Design	19/01/2020	25/01/2020	6 days
Development	26/01/2020	30/01/2020	5 days
Testing	01/02/2020	12/02/2020	12 days
Documentation	13/02/2020	29/02/2020	17 days
Total=			58 days

- **Gantt Chart**

Gantt chart is a type of bar chart where you can schedule your project. Triva Hospital Management system Gantt chart given below:

THMS Gantt Chart

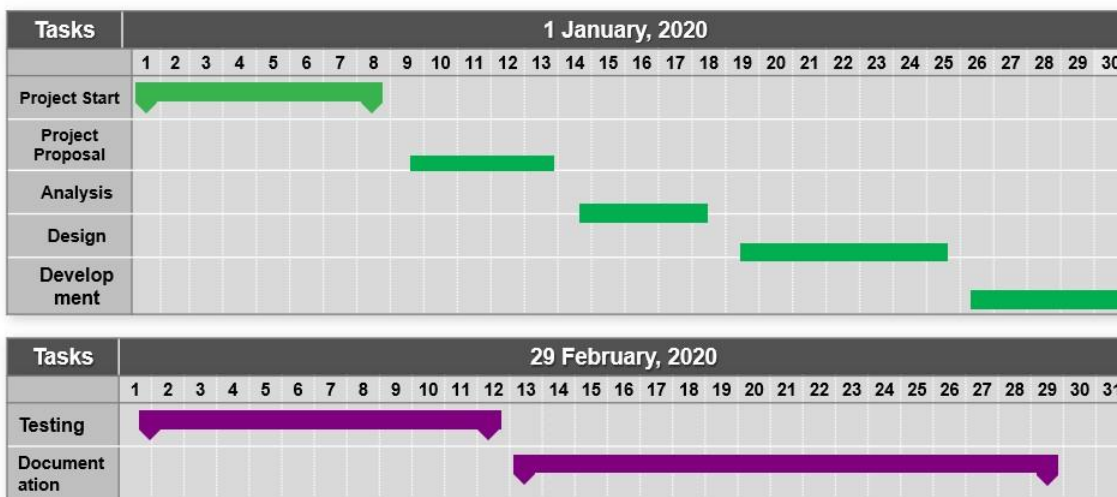


Figure 7: Gantt Chart.

5.2. Test Plan

- **Testing against time boxes**

Timebox is a mutually defined amount of time during which an individual or a team is continuously working towards the achievement of a specific objective. Rather than enabling work to proceed before the target is met and reviewing the time spent, the time-box strategy consists of faltering activity until the time limit is exceeded and assessing what has been done. Every timebox has the deliverables. For this purpose, checking is needed after completion of every time box, which would be able to provide a clearer

interpretation of the outcome. Testing is also required before distribution. Test cases against time boxes is given below:

User Name	Example			Role	Example
Timebox ID					
Timebox Contents					
Test type	Test steps	Expected result	Actual result	Comment	
Unit Testing					
Module Testing					
Integration Testing					
Acceptance Testing					
Security Testing					
Performance Testing					

- **Required tests**

There are different types of testing method. After developing Triva Hospital Management System I have tested my project using some test method which are required for my project. Required test method are given below:

1. Unit Testing
2. Module Testing
3. Integration Testing
4. Acceptance Testing

5. Security Testing
6. Performance testing

- **Test Case**

Test case is a testing method that include positive and negative result both. Writing test cases is a one-off effort that may be included in the future at the point of regression testing. These are performed during the testing phase to verify whether or not the software application executes a function for which it has been created. There are many ways to create Test case. In my project I have created test cases which is given below:

Test case no.	Test case	Test data	Tester	Date	Result

- **User acceptance test plan**

This testing is performed by end-user or the developer to verify the software before the software production. This testing is very important for production a good quality and bug free software.

For my project I have tested my project multiple time and also two of my friend also tested my project.

Chapter 6

6. Feasibility

6.1. All possible type of feasibility

Economic Feasibility

The appraisal usually analyzes the project's economic potential, including revenue and return on investment, as well as the time it would take to meet the target set. Healthcare analysts can help administrators distribute money and spend strategically in the different aspects of the project where the result has a larger scope. (Front Enders, 2018)

This software is feasible with economically because it is a web-based software that is portable and user can use this system anywhere. This software can be controlled through mobile and Tab devices. This software reduce time that's why cost will be deducted.

Technical Feasibility

Focusing on technological issues growth is essential for progress in healthcare. The experts should assist managers in assessing whether the technological services are on line with the market and the capabilities of the staff are adequately capable of making effective use of the technical support. This also includes the evaluation of the medical equipment, the hardware, software and all other electronic communication mechanism and listing the requirements from the perspective. (Front Enders, 2018)

To run this system, we need a computer first for setup this system. Need a printer to print invoice. Need Domain, hosting for live this system and store information.

Operational Feasibility

To make them work smoothly, the analysis includes understanding and streamlining the operations. The professional healthcare experts are researching the feasibility of procedures as to how the processes could be organized efficiently. The plan includes discovering and finding solutions to the problems of bottlenecks, openings, technical differences and internal and external connectivity. (Front Enders, 2018)

6.2. Cost Benefit Analysis

Cost-benefit analysis (CBA) is an empirical method for evaluating the pros and cons of going ahead on a project plan. When a strategy, it is more commonly employed at the outset of a plan or initiative where multiple alternatives or courses of action are analyzed and measured as an opportunity to select the right solution. (Verma, 2016)

Given figure is signify the cost benefit analysis of Triva Hospital Management System,

Project Name: Triva HMS

Date: 16 April, 2020

Hardware	Year 1	Year 2	Year 3	Total
Server	2000	4000	6000	12000
Software	1000	1000	1000	3000
Furniture	5000	0.00	0.00	5000
Labor	360000	360000	360000	1080000
Internet	12000	12000	12000	36000

Training	1500	0.00	0.00	1500
Development	5000	5000	5000	15000
Total	386,500	382,000	384,000	1,152,500

6.3. DSDM – good or not for this project

DSDM is a vendor-independent strategy centered on having individuals work together successfully to meet company goal. It can be used for any project in any industry, in any technological setting.

DSDM good for this project that's why I have used DSDM (Dynamic Systems Development Method) method. DSDM play vital role to successfully develop my project.

Chapter 7

7. Foundation

7.1. Overall Requirement List

Before starting development part, I have analyzed market and my target field. I have collected some major requirement which are functional and non-functional. My project Triva Management System's Overall requirement is given Below:

Functional Requirement:

1. Front Desk Activities
2. Emergency Service
3. IPD & Nurse-Station Activities
4. Out-Patient Patient Management
5. Cash Counter Operation
6. User Panel

Non-functional Requirement:

1. Robust.
2. Secured.
3. Maintainable.
4. Responsive.
5. Smooth and efficient.

7.2. What Technology to be implemented (Client/Web/Standalone)

My project Triva Management System is developed for Client server and Web server both. It can be run both online and offline.

Client Server: The Client / Server architecture is a programming paradigm in which the cloud houses, provides and handles much of the tools and facilities to be accessed by the client. Each form of system involves one or more client computers connecting to a central repository via a network or internet link. This device has common computational capabilities. (Techopedia Inc, 2018)

Web Server: A web server is a program that provides information or resources to end users on the Internet. The site server comprises of a physical computer, an operating system (OS) computer and tools used to enable HTTP communication. (Techopedia Inc, 2018)

7.3. Recommendations and Justifications

Recommendation: I recommend Web server to run my software 'Triva Management System'. Web server costly but its secure all the data and access this software anywhere by using web server.

Justification: I recommend web server because,

1. It improving site performance.
2. It improving software security.
3. Software can be use portable.
4. It interacts between user and authority.
5. Can make online payments.

Chapter 8

8. Exploration

8.1. Old Full System Use Case

My old system Use case given below:

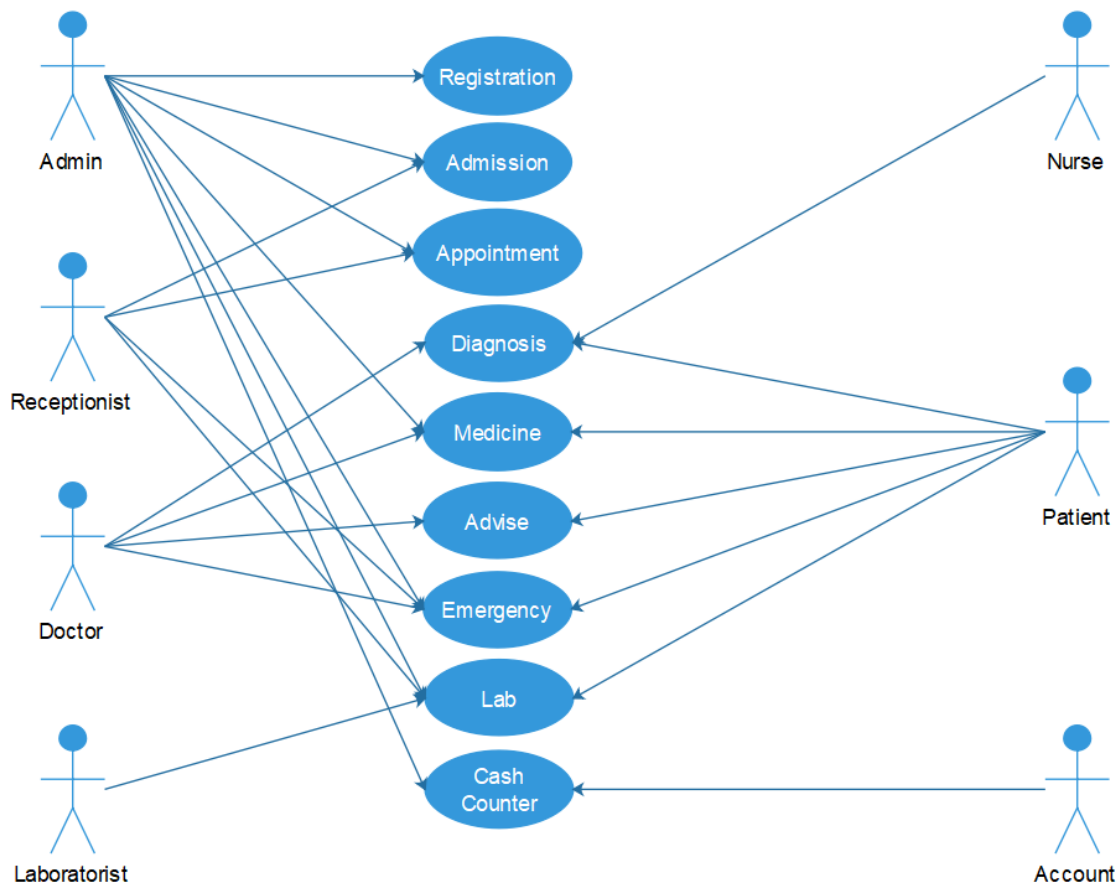


Figure 8: Old Use Case.

8.2. Old Full System Activity Diagram

My old system activity diagram given below:

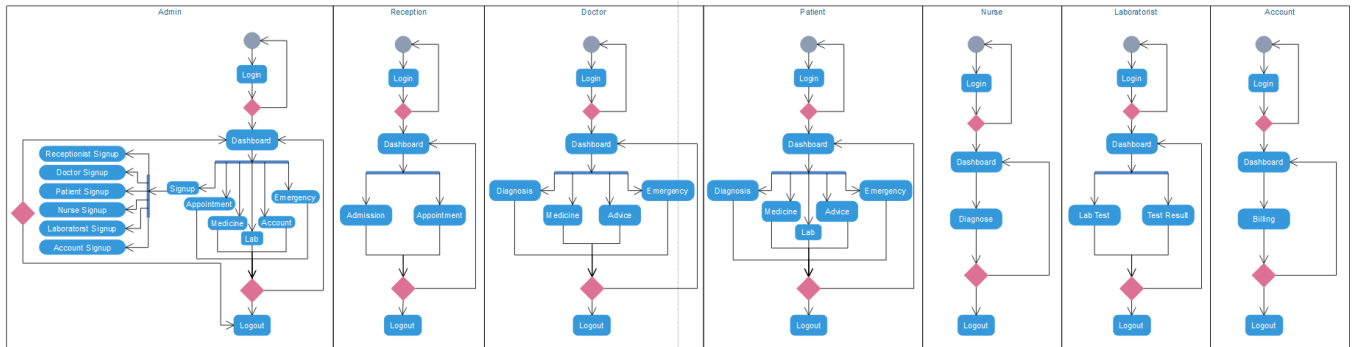


Figure 9: Old Activity Diagram.

8.3. Prototype of new system

My New system admin panel and user panel prototype are given below:

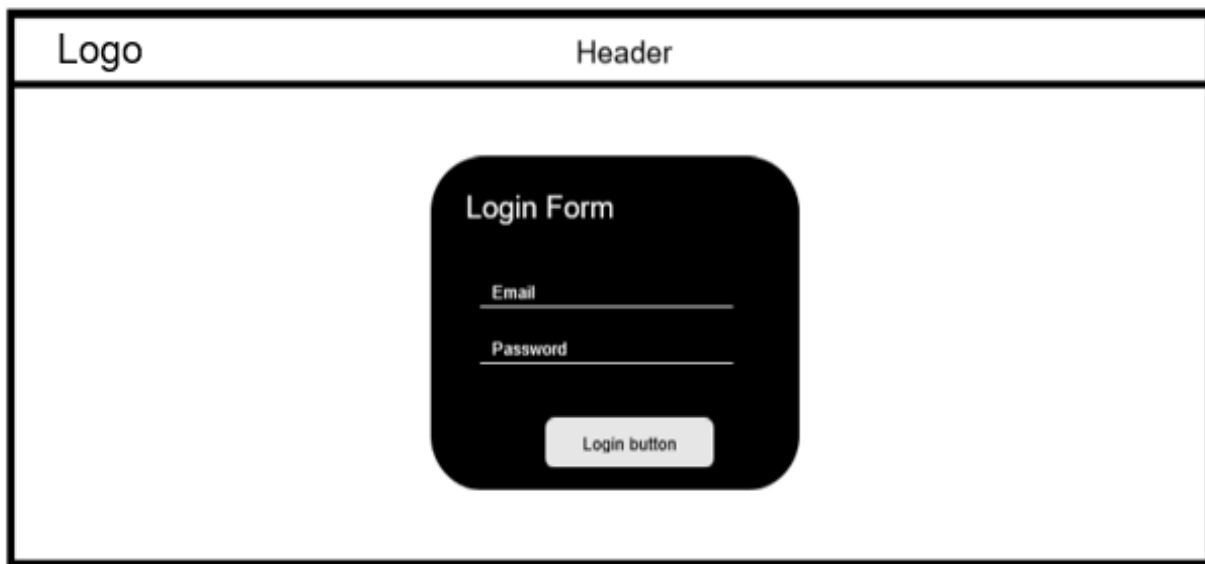


Figure 10: Admin Panel Login Page Prototype for all user.

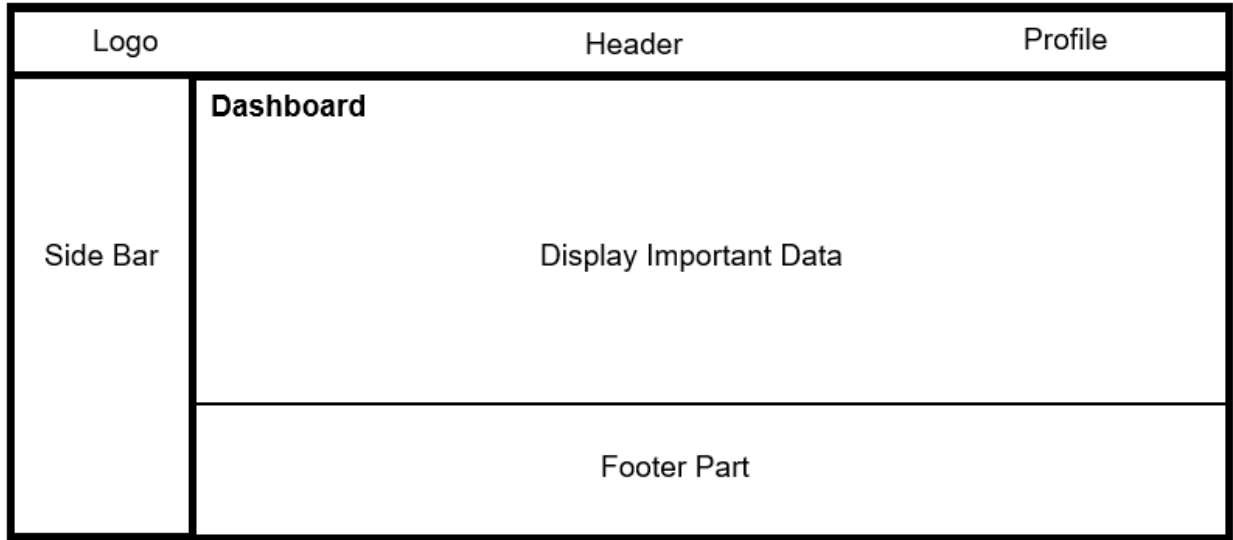


Figure 11: Admin Panel Dashboard prototype for all user.

User Panel:

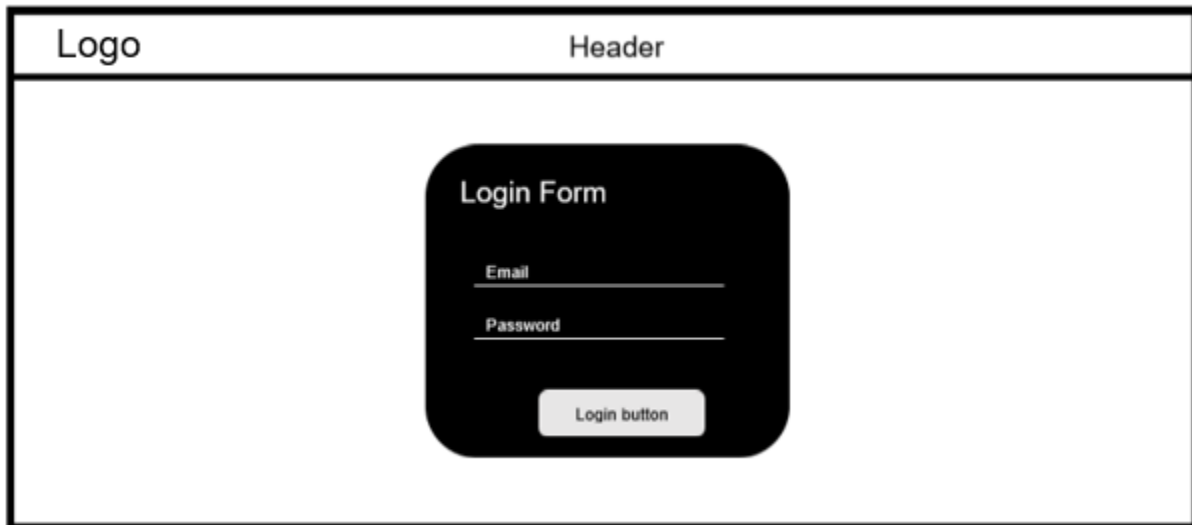


Figure 12: User Panel Login Page Prototype for all user.

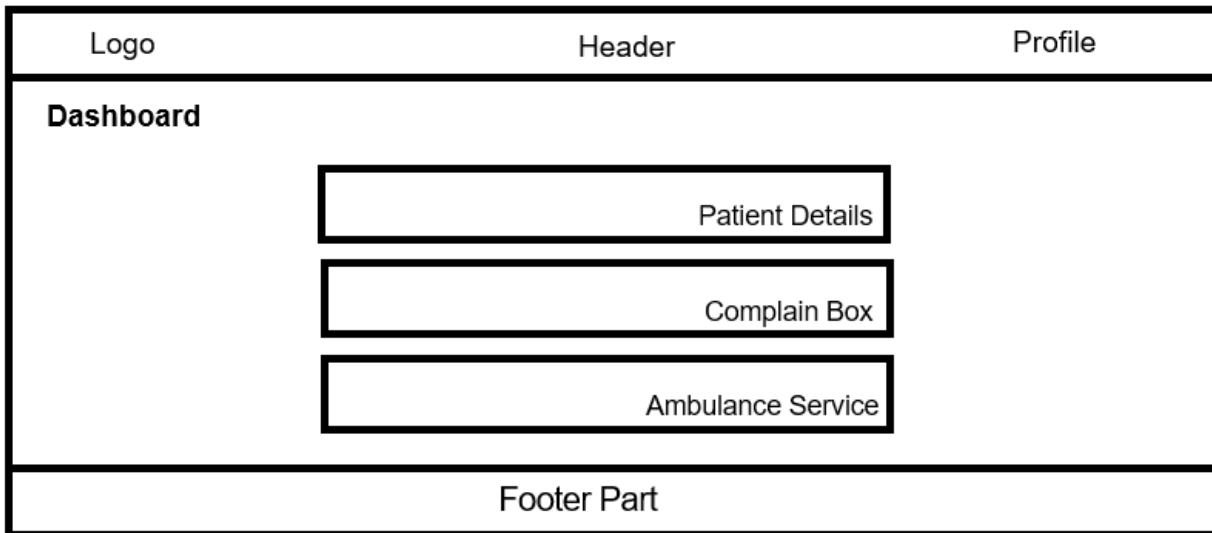


Figure 13: User Panel Dashboard prototype for all user.

Chapter 9

9. Engineering

9.1. New System Modules

New System Modules are given Below:

For Hospital Authority:

1. Improving Assign Medicine.
2. Improving Emergency Service.
3. Increase Security.

For user:

1. User Panel.
2. Patient details and medicine view on user panel.
3. Complain Box.
4. Ambulance Service.

9.2. Use Case

Use Case diagram given below:

Fig

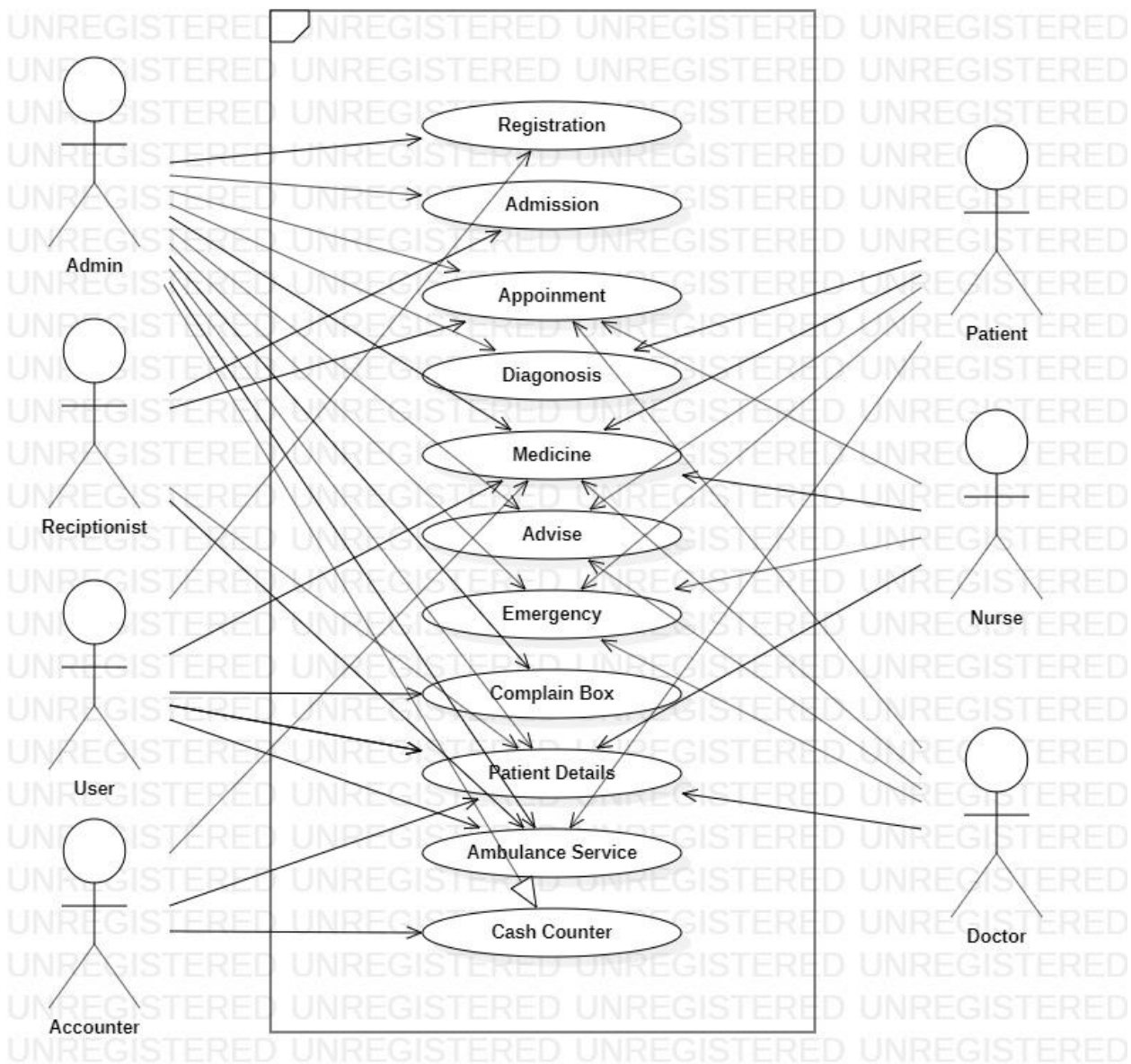


Figure 14: Final Use Case Diagram.

9.3. Class Diagram

Class diagram given below:

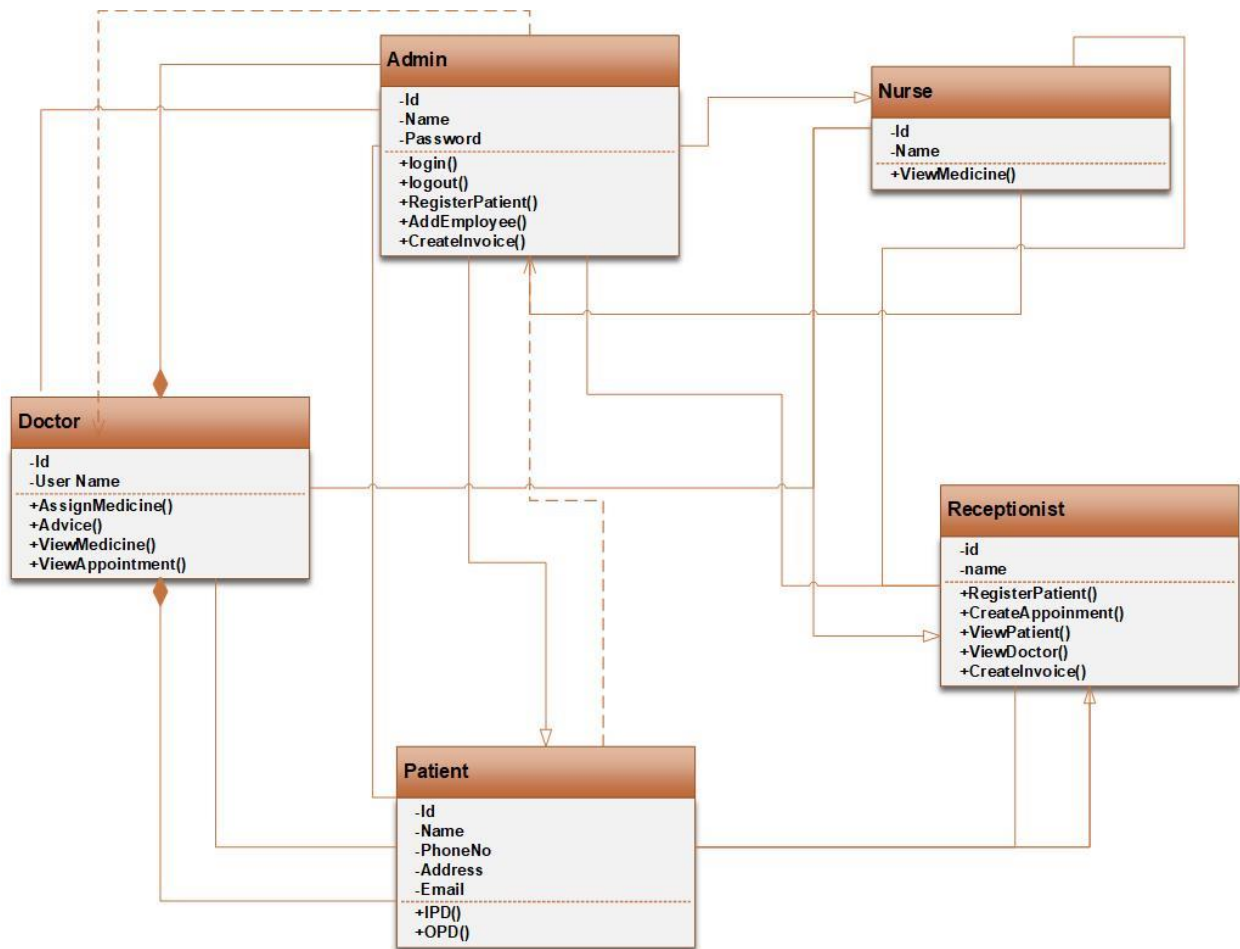


Figure 15: Class Diagram.

9.4. ERD Diagram

ERD Diagram Given Below:

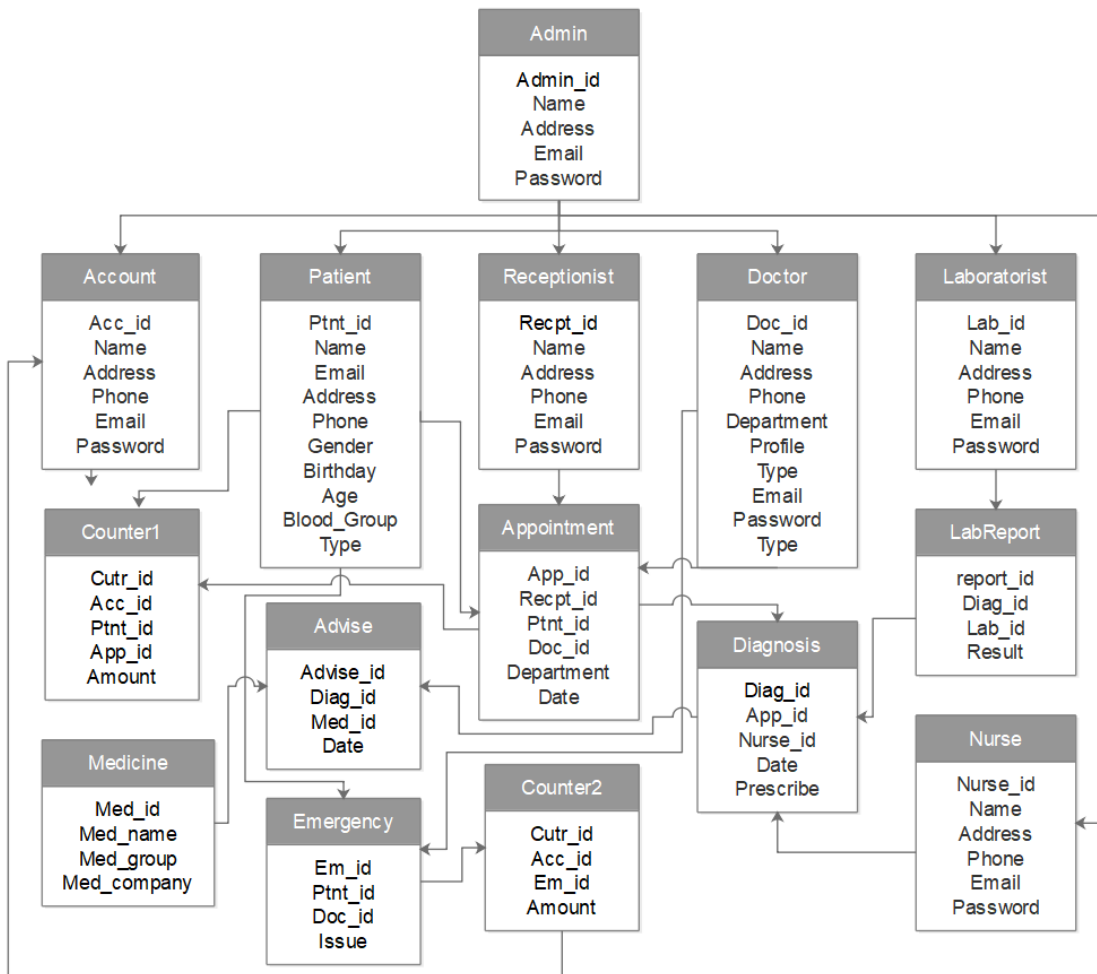


Figure 16: ERD Diagram.

9.5. Sequence Diagram

Sequence Diagram Given Below:

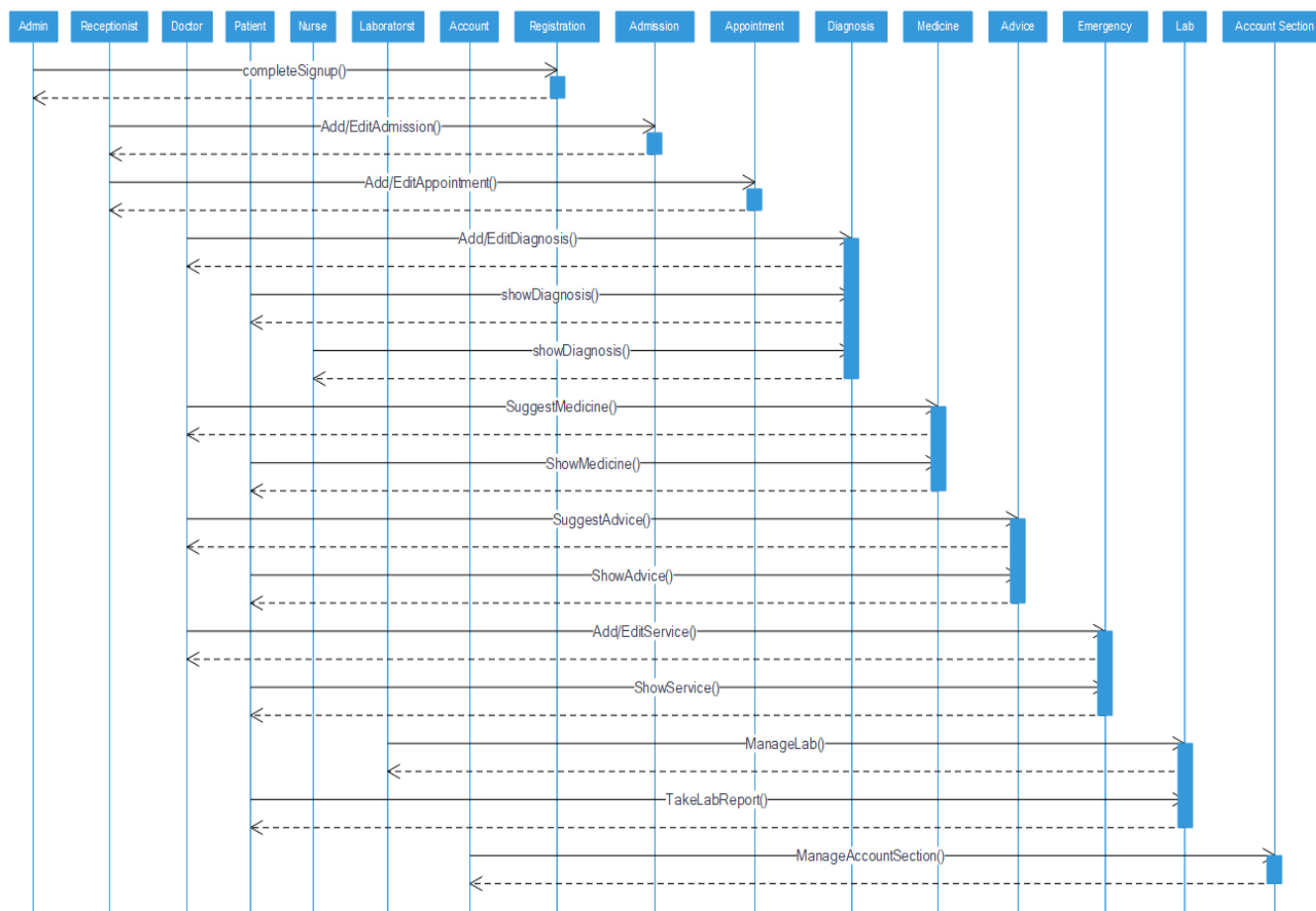


Figure 17: Sequence Diagram.

9.6. System Interface Design

My New System Interface Design Given Below:

Admin Panel:

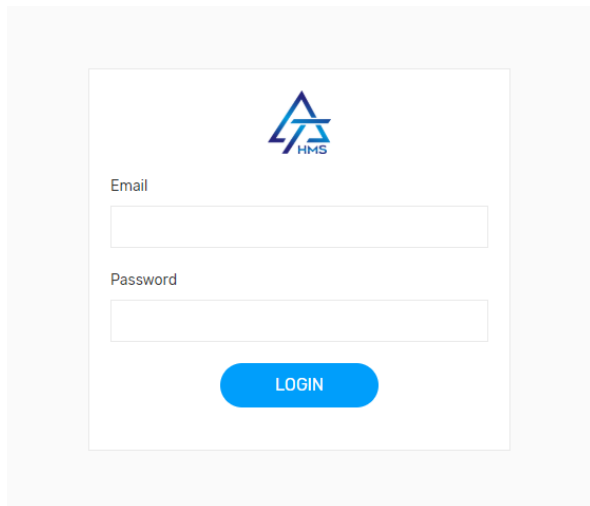


Figure 18: Login Page Interface.

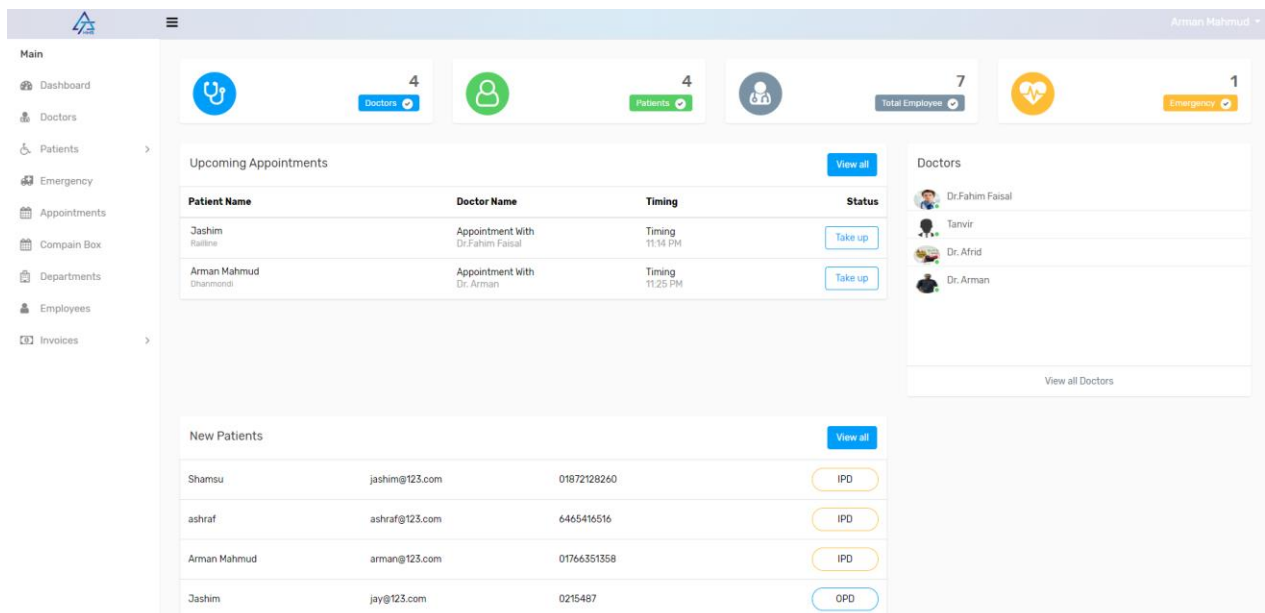


Figure 19: Admin Dashboard interface.

User Panel:

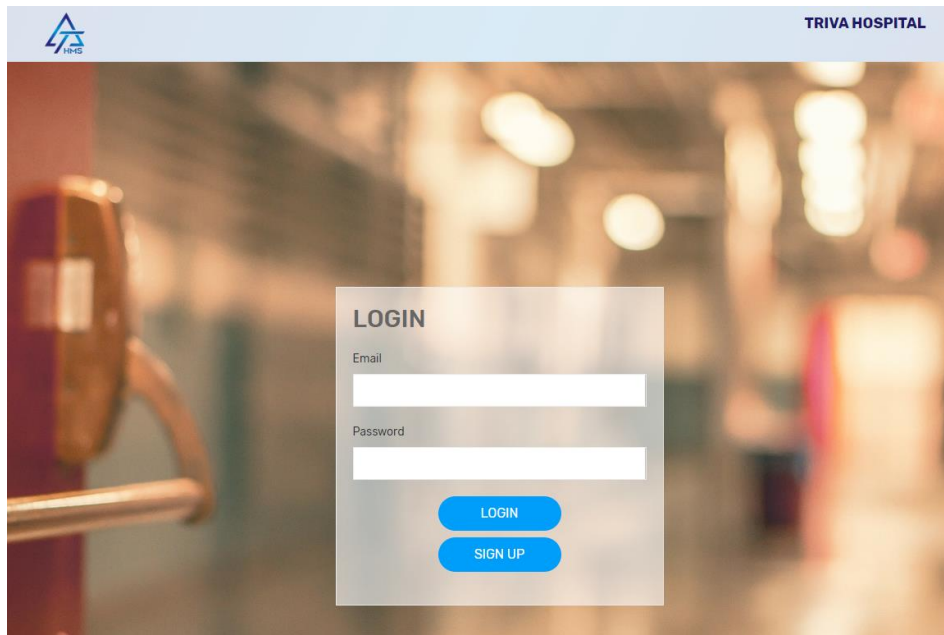


Figure 20: User Panel Login Interface.

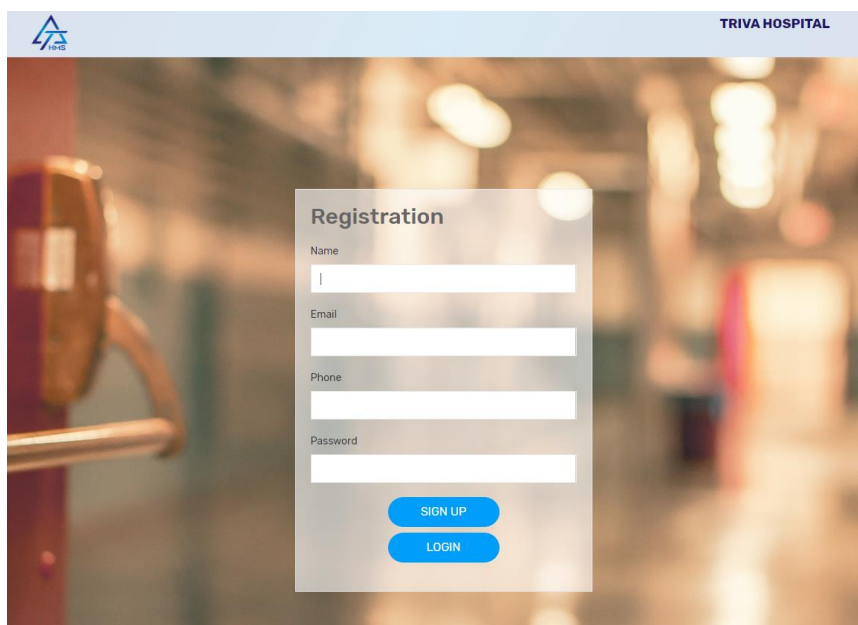


Figure 21: User Panel Registration Interface.

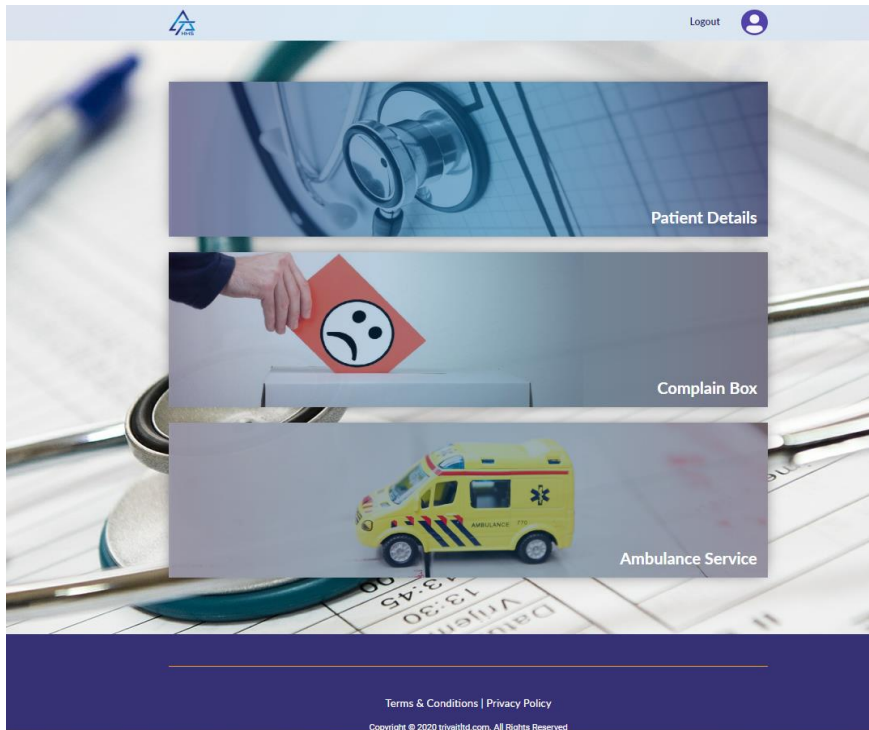


Figure 22: User Panel Dashboard.

Chapter 10

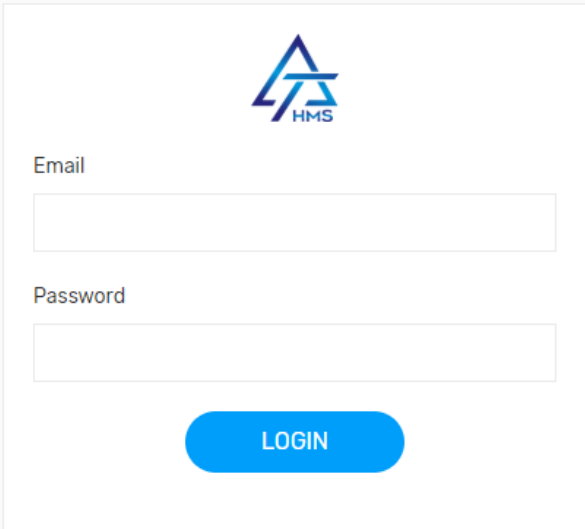
10. Deployment / Development

10.1. Core Module Coding Samples

Triva Management System build with some basic module and also some Core module.

Core Modules with code are given below:

1. Login



The image shows a login interface for the HMS system. At the top center is the HMS logo, which consists of a stylized blue 'A' shape with the letters 'HMS' below it. Below the logo are two input fields: the first is labeled 'Email' and the second is labeled 'Password'. Both fields are empty. Below the password field is a blue button with the word 'LOGIN' in white capital letters.

Figure 23: Login Interface.

```

<?php
if (isset($_POST["submit"])) {

    $email = $_POST['email'];
    $password = md5($_POST['password']);

    $sql1 = "select * from admin";
    $r1 = mysqli_query($conn, $sql1);

    $sql2 = "select * from doctor";
    $r2 = mysqli_query($conn, $sql2);

    $sql3 = "select * from laboratorist";
    $r3 = mysqli_query($conn, $sql3);

    $sql4 = "select * from nurse";
    $r4 = mysqli_query($conn, $sql4);

    $sql5 = "select * from receptionist";
    $r5 = mysqli_query($conn, $sql5);

    if ($r1) {
        while ($row = mysqli_fetch_array($r1)) {
            $mail = $row['Email'];
            $pass = $row['Password'];
            $adID = $row['Adm_id'];
            $name = $row['Name'];

            if ($email == $mail && $password == $pass) {
                $_SESSION['userID'] = $adID;
                $_SESSION['userName'] = $name;
                $_SESSION['role'] = 'admin';

                header("location: index.php?admin");
            }
        }
    }

    if ($r4) {
        while ($row4 = mysqli_fetch_array($r4)) {
            $mail = $row4['Email'];
            $pass = $row4['Password'];
            $nurID = $row4['Nurse_id'];
            $name = $row4['Name'];

            if ($email == $mail && $password == $pass) {
                $_SESSION['userID'] = $nurID;
                $_SESSION['userName'] = $name;
                $_SESSION['role'] = 'nurse';

                header("location: index.php?nurse");
            }
        }
    }

    if ($r5) {
        while ($row5 = mysqli_fetch_array($r5)) {
            $mail = $row5['Email'];
            $pass = $row5['Password'];
            $recID = $row5['Recpt_id'];
            $name = $row5['Name'];

            if ($email == $mail && $password == $pass) {
                $_SESSION['userID'] = $recID;
                $_SESSION['userName'] = $name;
                $_SESSION['role'] = 'receptionist';

                header("location: index.php?receptionist");
            }
        }
    }

    if(!($email == $mail && $password == $pass)) {
        ?>
        <script>
            alert("Invalid Credentials.");
        </script>
    }
}
?>

```

Figure 24: Login Module Code.

2. Registration

The screenshot shows a web form titled "Add Doctor". It contains the following fields and controls:

- Name ***: Text input field.
- Email ***: Text input field.
- Password ***: Text input field.
- Phone ***: Text input field.
- Gender ***: Radio buttons for "Male" and "Female".
- Age ***: Text input field.
- Department ***: Dropdown menu with "Select" as the current value.
- Address ***: Text input field.
- Country ***: Dropdown menu with "Select" as the current value.
- Postal Code**: Text input field.
- Avatar**: A file upload control with a "Choose File" button and the text "No file chosen".

At the bottom center of the form is a blue button labeled "CREATE DOCTOR".

Figure 25: Doctor Registration Module.

```

if ($uploadOk == 0) {
    // if everything is ok, try to upload file
} else {
    $target_file = " . $target_file;
    if (move_uploaded_file($_FILES["fileToUpload"]["tmp_name"], $target_file)) {
        "The file " . basename($_FILES["fileToUpload"]["name"]) . " has been uploaded.";
    } else {
    }
}
}
$pic_src = "uploads/" . basename($_FILES["fileToUpload"]["name"]);

//script for uploading image end

$name = $_POST['name'];
$email = $_POST['email'];
$password = md5($_POST['password']);
$phone = $_POST['phone'];
$gender = $_POST['gender'];
$age = $_POST['age'];
$department = $_POST['department'];
$address = $_POST['address'];
$country = $_POST['Country'];
$postalCode = $_POST['postalCode'];
$image = $_FILES['image']['tmp_name'];
$img = file_get_contents($image);

$query = mysqli_query($conn, "INSERT INTO `doctor`(`Doc_id`, `Name`, `Email`, `Password`, `Phone`, `Gender`, `Age`, `Department`, `Address`, `Country`, `PostalCode`, `Image`) VALUES ('', '$name', '$email', '$password', '$phone', '$gender', '$age', '$department', '$address', '$country', '$postalCode', '$pic_src')");

// if (mysqli_query($conn, $query)) {
header("Location: doctors.php");
ob_end_flush();
}
}
?>

```

Figure 26: Doctor Registration Module Code.

3. Assign Medicine

Prescribe Medicines

Patient	Doctor
<input style="width: 95%;" type="text" value="Arman Mahmud"/>	<input style="width: 95%;" type="text" value="Dr.Fahim Faisal"/>
Medicine Type*	Date *
<input style="width: 95%;" type="text" value="Select"/>	<input style="width: 95%;" type="text"/>
Medicine name *	Time & Quantity *
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="0+0+0, Before/After Meal/Days"/>

Figure 27: Assign Medicine Interface.

```

<?php
if (isset($_POST['submit'])) {
    $dName = $nName = "";
    $pName = $_POST['pName'];
    $mName = $_POST['mName'];
    $dName = $_POST['dName'];
    $nName = $_POST['nName'];
    $date = $_POST['date'];
    $medy_name = $_POST['medy_name'];
    $quantity = $_POST['quantity'];

    /* $quan = (explode("+", $quantity));
    $qy1 = $quan[0];
    $qy2 = $quan[1];
    $qy3 = $quan[2];

    $qy = $qy1 + $qy2 + $qy3 ;*/

    $q2 = mysqli_query($conn, "SELECT `Ptnt_id` from `patient` where `Name` = '$pName'");
    $spatID = mysqli_fetch_object($q2);
    $pID = ($spatID->Ptnt_id);

    $q3 = mysqli_query($conn, "SELECT `Med_id` from `medicine` where `Med_Name` = '$mName'");
    $medID = mysqli_fetch_object($q3);
    $mID = ($medID->Med_id);

    if ($UserRole == 'nurse') {
        $query = "INSERT INTO `prescribed_medicines` (`pMed_id`, `Ptnt_id`, `Nurse_id`, `Med_id`, `Quantity`, `Date`, `medy_name`) VALUES ('', $pID, $userID, $mID, $quantity, '$date', '$medy_name')";

        if (mysqli_query($conn, $query)) {
            header("location: medicines-prescribed.php");
            ob_end_flush();
        } else {
            echo "NOT HERE!!" . mysqli_error($conn);
        }
    } else {
        $query = "INSERT INTO `prescribed_medicines` (`pMed_id`, `Ptnt_id`, `Doc_id`, `Med_id`, `Quantity`, `Date`, `medy_name`) VALUES ('', $pID, $userID, $mID, $quantity, '$date', '$medy_name')";

        if (mysqli_query($conn, $query)) {
            header("location: medicines-prescribed.php");
            ob_end_flush();
        } else {
            echo "NOT HERE!!" . mysqli_error($conn);
        }
    }
}

```

Figure 28: Assign Medicine Module Code.

4. Transfer to IPD from Emergency

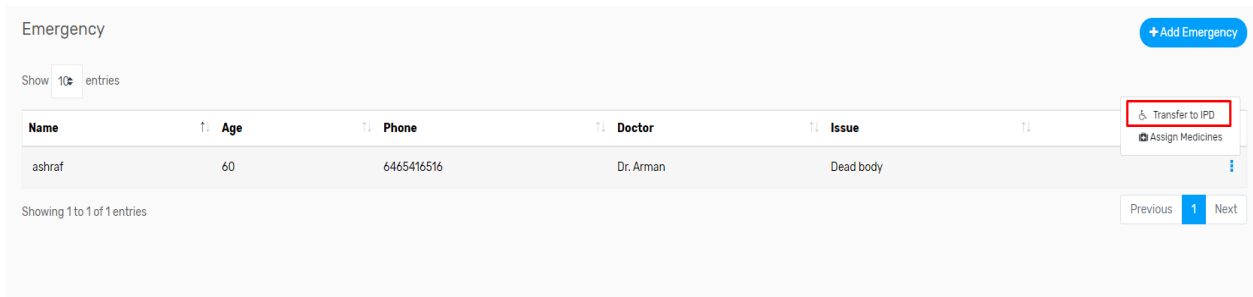


Figure 29: Transfer to IPD action interface.

```
<?php
include "connection.php";

if (isset($_GET['emergency_id'])) {
    echo $emID = $_GET['emergency_id'];

    $query = "delete from `emergency` where Em_id = $emID ";
    $result = mysqli_query($conn, $query);

    if ($result) {
        header("Location: ipd-patients.php");
    } else {
        echo mysqli_error($conn);
    }
}
?>
```

Figure 30: Transfer to IPD action code.

5. User Registration by patient phone number matching.

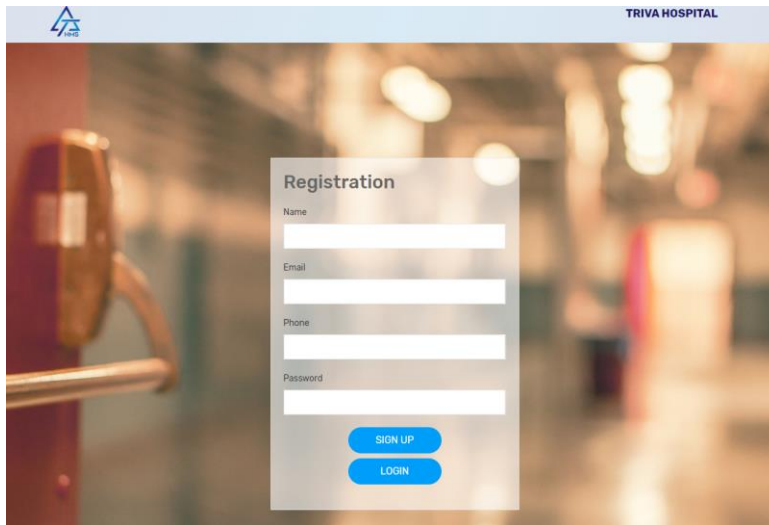


Figure 31: Transfer to IPD action code.

```

if(isset($_POST['registration'])) {
    $email = $_POST['Uemail'];

    $db_check="SELECT * FROM user_registration WHERE user_email='$email'";
    $db_query=mysqli_query($conn,$db_check);
    $check_mail=mysqli_num_rows($db_query);

    if($check_mail==0){
        $phone = $_POST['Uphone'];

        $sql = "SELECT * FROM patient WHERE Phone='$phone'";
        $Q = mysqli_query($conn,$sql);
        $row = mysqli_num_rows($Q);

        if($row==1){
            $db_check="SELECT * FROM user_registration WHERE user_phone='$phone'";
            $db_query=mysqli_query($conn,$db_check);
            $check_phone=mysqli_num_rows($db_query);

            if($check_phone==0){
                $name = $_POST['Uname'];
                $pass = md5($_POST['Upass']);

                $query = mysqli_query($conn, "INSERT INTO user_registration (user_name, user_email, user_phone, user_password) VALUES ('$name', '$email', '$phone', '$pass')");
                header("Location: login.php");
                ob_end_flush();
            }
            else{
                $_SESSION['message_war'] = "Phone Number already Exist";
                echo "<script>javascript:document.location='registration.php'</script>";
            }
        }
        else {
            $_SESSION['message_war'] = "Phone Number Doesn't Match With The Record!!!";
            echo "<script>javascript:document.location='registration.php'</script>";
        }
    }
    else{
        $_SESSION['message_war'] = "Email already Exist";
        echo "<script>javascript:document.location='registration.php'</script>";
    }
}
else {
    echo "<script>javascript:document.location='logout.php'</script>";
}
?>

```

Figure 32: User Registration module code.

6. Fetch patient details on user panel by matching user and patient phone number.

Patient Information:

Name	Age	Gender	Address	Country	Postal Code	Phone	Email	Blood Group	Type
Arman Mahmud	26	male	Dhanmondi	Bangladesh	1200	01766351358	arman@123.com	B+	IPD

Patient Medicine:

Medicine Name	Quantity	Date
Iventi	0+0+1, After Meal/5 Days	21/04/2020
Iventi	0+0+0, Before/After Meal/Days	21/04/2020
napa	0+0+1, After Meal/7Days	22/04/2020
Creame	0+0+0, Before/After Meal/Days	21/04/2020
Creame	0+0+0, Before/After Meal/Days	21/04/2020
Tuska	1+1+1, After Meal/30Days	21/04/2020
Krimi	0+0+0, Before/After Meal/Days	22/04/2020
Krimi	0+0+0, Before/After Meal/Days	22/04/2020
Creame	0+0+0, Before/After Meal/Days	22/04/2020
Napa	1+0+1, After Meal/7 Days	08/05/2020

Figure 33: Patient Info Page in User panel.

```
<?php
//including the database
include 'connection.php';

$phn = $_SESSION['phone'];
$sql = "SELECT * FROM patient WHERE Phone='$phn'";

$Q = mysqli_query($conn,$sql);
$info = mysqli_fetch_assoc($Q);

$ptnt_id = $info['Ptnt_id'];

$sql2 = "SELECT * FROM prescribed_medicines WHERE Ptnt_id='$ptnt_id'";

$Q2 = mysqli_query($conn,$sql2);
?>
```

Figure 34: Patient Info fetching code.

10.2. Possible problem breaks down

Every software occurs some common problem that's why I have divided my project into some small task. Some common problem is given below:

1. Poorly Scheduling.
2. Poor Requirements.
3. Lack of Software Testing.
4. Data Redundancy.
5. Bad Interface.
6. Incorrect file and data handling.

My steps to reduce this common problem are given below:

1. Realtime analyze and get existing software feedback from customer.
2. PSD Design from a graphics designer for better design.
3. PSD to Responsive HTML that can be use any device.
4. Collect accurate requirement from some hospital and user feedback.
5. After analyze and plan whole the project I have designed database with correct relation.
6. Test every single task and get user feedback for my project

Chapter 11

11. Testing

I have tested my project software 'Triva Management System'. Test results are given below:

11.1. Test Case

Login Module Test:

Test case no.1	Test case	Test data	Tester	Date	Result	
					Actual	Expected
1.	Login: Check login button action for correct data	Email: test@gmail.com Password: 12345	Arman	13 Dec 2019	Login successful	Login successful
2.	Login: Check login button action for incorrect data	Email: test@gmail.com Password: 123#3M	Arman	13 Dec 2019	Login failed	Login failed

Registration Module Test Case:

Test case no.2	Test case	Test data	Tester	Date	Result	
1.	Registration: Check registration button action for correct data	Email: test@gmail.com Password: 12345	Arman	13 Dec 2019	Registration successful	Registration successful
2.	Login: Check registration button action for incorrect data	Email: test@gmail.com Password: 123#3M	Arman	13 Dec 2019	Registration failed	Registration failed

11.2. Unit Testing

```

1  <?php
2  include "connection.php";
3
4  if (isset($_GET['emergency_id'])) {
5      echo $emID = $_GET['emergency_id'];
6
7      $query = "delete from `emergency` where Em_id = $emID ";
8      $result = mysqli_query($conn, $query);
9
10     if ($result) {
11         header("Location: ipd-patients.php");
12     } else {
13         echo mysqli_error($conn);
14     }
15 }
16 ?>

```

Figure 35: Transfer patient IPD from Emergency.

Emergency

Show 10 entries

Name	Age	Phone	Doctor	Issue
ashraf	60	6465416516	Dr. Arman	Dead body

Showing 1 to 1 of 1 entries

Transfer to IPD

Assign Medicines

Fig: Emergency Page and Click on Transfer to IPD.

IPD Patients

Show 10 entries

Search:

Name	Id	Age	Gender	Address	Country	Postal Code	Phone	Email	Blood Group	Type	Action
Arman Mahmud	9	26	male	Dhanmondi	Bangladesh	1200	01766351358	arman@123.com	B+	IPD	
Arman Mahmud	19	26	male	Dhaka	Bangladesh	1209	0155484616	armanmahmud16275@gmail.com	B+	IPD	
ashraf	17	60	male	khulna	Albania	500258	6465416516	ashraf@123.com	E+	IPD	
Shamsu	18	20	male	Mongolgroho	Bangladesh	111	01872128260	jashim@123.com	A+	IPD	

Showing 1 to 4 of 4 entries

Figure 36: Transfer to IPD Working properly.

```

1  <?php
2  include "connection.php";
3  ob_start();
4
5  ▼ if (isset($_GET['appointment_id'])) {
6      echo $appID = $_GET['appointment_id'];
7
8      $query = "delete from `appointment` where App_id = $appID ";
9      $result = mysqli_query($conn, $query);
10 ▼   if ($result) {
11       header("Location: appointments.php");
12       ob_end_flush();
13 ▼   } else {
14       echo "false";
15   }
16 }
17
18 ?>|

```

Figure 37: Appointment code delete code.

Appointments + Add Appointment

Appointment ID	Patient Name	Age	Doctor Name	Department	Phone	Appointment Date	Appointment Time	Status	
APT4	Jashim	18	Dr.Fahim Faisal	neurology	01669325456	22/04/2020	11:14 PM	Inactive	Edit Delete
APT5	Arman Mahmud	26	Dr. Jay	Ophthalmology	01766351358	22/04/2020	11:25 PM	Active	⋮

Figure 38: Click on appointment delete action.

Appointments + Add Appointment

Appointment ID	Patient Name	Age	Doctor Name	Department	Phone	Appointment Date	Appointment Time	Status	Action
APT5	Arman Mahmud	26	Dr. Jay	Ophthalmology	01766351358	22/04/2020	11:25 PM	Active	⋮

Figure 39: Appointment successfully deleted.

11.3. Module Testing

Invoice Module Total amount accuracy testing:

Module Test: 1 Action Base Testing

Objectives

Test Objectives TO 01 Invoice total amount working correctly.

Initial Setting Up

Browse Software Open a browser and browse softer

Login Enter Login Credential.

Test Case TC 01 Check Invoice Total

	Name	Department	Email	Item	Amount
Discharge a Patient	Arman	Oncology	arman@123.com	Single Bed	3600
Discharge a Patient	Arman	Oncology	arman@123.com	Medicine	6000
Discharge a Patient	Arman	Oncology	arman@123.com	Other cost	1800

Invoice Total Result (TK) Invoice Total Result (TK)

11400 11400

5/15/2020		TRIVA - INVOICE			
Invoice Id	Patient	Tax	Invoice date	Due Date	
15	Arman Mahmud	No Tax	15/05/2020	16/05/2020	
#	Item	Description	Unit Cost	Qty	Amount(TAKA)
1	Single Bed	Single AC Cabin	1200	3	3600
2	Medicine	Patient Total Medic	2000	3	6000
3	Other Cost	Other service charge	600	3	1800
				Total	11400
				Tax	0
				Discount %	0
				Grand Total	11400 Taka

Figure 40: Invoice total amount calculate accurately.

Assign Medicine accuracy testing:

Module Test: 2	Action Base Testing
-----------------------	----------------------------

Objectives

Test Objectives	TO 02	Assign Medicine working correctly.
-----------------	-------	------------------------------------

Initial	Setting Up
----------------	-------------------

Browse Software	Open a browser and browse softer
-----------------	----------------------------------

Login	Enter Login Credential.
-------	-------------------------

Test Case	TC 02	Check Assign Medicine
------------------	--------------	------------------------------

	Name	Doctor	Medicine Type	Medicine Name	Time and Qty.
Assign Medicine	Arman	Dr. Fahim	Tab	Napa	1+0+1, After Meal/3 Days

Invoice Total Result (TK)

1+0+1, After Meal/3 Days

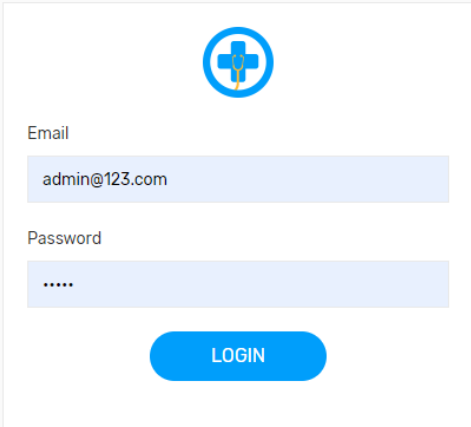
Invoice Total Result (TK)

1+0+1, After Meal/3 Days

Krimi	0+0+0, Before/After Meal/Days	22/04/2020
Creame	0+0+0, Before/After Meal/Days	22/04/2020
Napa	1+0+1, After Meal/7 Days	08/05/2020
Napa	1+0+0, Before/After Meal/Days	13/05/2020
Napa	1+0+1, After Meal/3 Days	15/05/2020
Napa	1+0+1,After Meal/3 Days	15/05/2020
Napa	1+0+1,After Meal/3 Days	15/05/2020

Figure 41: Medicine Assign accurately.

11.4. Integration Testing



The image shows a login form with a blue medical cross icon at the top. Below the icon are two input fields: 'Email' containing 'admin@123.com' and 'Password' containing masked characters '.....'. A blue 'LOGIN' button is positioned below the password field.

Figure 42: Login testing with correct data.

Preclinic Arman Mahmud

Main

- Dashboard
- Doctors
- Patients
- Emergency
- Appointments
- Departments
- Employees
- Invoices

Doctors: 2

Patients: 4

Total Employee: 4

Emergency: 1

Upcoming Appointments

Patient Name	Doctor Name	Timing	Status
jashim Jigatola Dhaka 1215	Appointment With Dr. Dr. Fahim Faisal	Timing 2:20 PM	Take up

Doctors


- Dr. Fahim Faisal pick
- Jashim Cardiologist

View all Doctors

New Patients

anik	anik@t23.com	0187815316	IPD
jashim	jay@t23.com	0187815316	IPD

Figure 43: Login Successful with correct data



Email

admin@.com

Password

.....

LOGIN

Figure 44: Login Successful with correct data

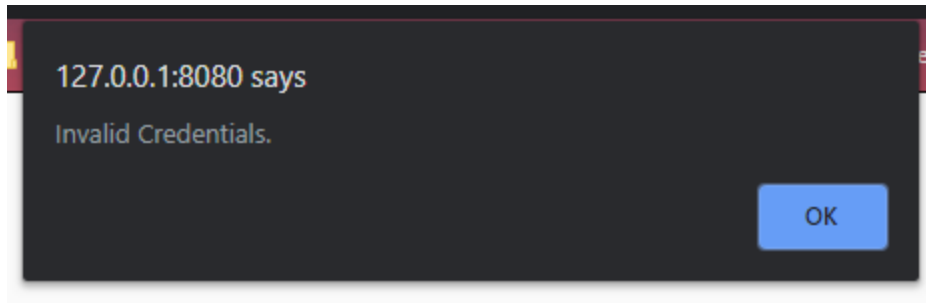


Figure 45: Login failed with incorrect data.

Registration:

Add Employee

Name * Username

Email * Password *

Address * Joining Date

Phone * Role *

Status
 Active Inactive

[CREATE EMPLOYEE](#)




Figure 46: Registration testing with correct data.

Employee [+ Add Employee](#)

Name	Employee ID	Email	Mobile	Address	Role	Action
Dr.Fahim Faisal	DR-2	fahim@123.com	01963845470	Hajaribag Dhaka-1211	Doctor	
Jashim	DR-3	jay@123.com	187815316	Jigatola Dhaka 1215	Doctor	
anika rahman	NS-7	anik@123.com	0187815316	Jigatola Dhaka 1215	Nurse	
Shahzaib	LB-1	shahzaib@g.c	98012	grw	Laboratorist	
laboratorist2	LB-3	seclab@g.c	73412	dgk	Laboratorist	
Kuddus Ali	LB-4	kuddus@gmail.com	0186532255	Mohammadpur	Laboratorist	
ABC	RP-1	abc@123.com	+465165	Jigatola Dhaka 1215	Receptionist	

Figure 47: Registration successful with correct data.

Add Employee

Name *	Kuddus Ali	Username	kuddus
Email *	asdad64651	Password *	
A  Please include an '@' in the email address. 'asdad64651' is missing an '@'.		Joining Date	10/12/2019 
Address	Mohammadpur	Role *	Laboratorist 
Phone *	0186532255	Status	
		<input checked="" type="radio"/> Active <input type="radio"/> Inactive	

[CREATE EMPLOYEE](#)

Figure 48: Registration Failed with incorrect data.

Chapter 12

12. Implementation

12.1. Training

There is no use of creating a project if the user cannot use it properly. So, we need to train everyone related to the project.

We have to train the admin. So that admins can do everything of the system. On my project admin can check all the features (admission, diagnosis, Medicine, advice, emergency, lab and cash counter also.). Admin also need to know to add receptionist, doctors, laboratorian, accountants' nurses etc. In one sentence, admin need to trained to do or manage everything of the project.

Then we have train to do admission of patients, to do appointment, check emergency, and lab reports properly.

Laboratorian need to train to generate the lab reports on the systems.

Nurses have to train to diagnosis and generate reports of diagnosis to the server properly.

Doctors are the heart of a hospital. So, doctor need to know to generate the prescription on the server, to check the reports of patients through the server

The accountants need to know the use of debit and credit through the system. So, accountants need to train for it.

So, to use the Triva Hospital Management System, it is must to train the management and every one of a hospital who will use the software so that, they can properly use the software and achieve the expected outcomes.

12.2. Big Bang (no pilot, parallel implementation scheme)

Big Bang is a method of replacing new project with old project. It is a slower method that insert data in my system. I haven't included any option for importing data from other software or database. All the past data have to insert in my system manually. I will bring this feature in the next version of my system.

Chapter 13

13. Critical Appraisal and Evaluation

13.1. Objective that could be met

I have completed some major objectives to fulfil develop this project. I have divided objectives in three method which are given below:

1. Academic Objective.

The Academic objective is a target established either by the instructional system or by you as an instructor. It will be brief and straightforward, so that user hold the goal and will collaborate with you to accomplish it. In this objective I have used a software development methodology. First, I have collected the requirement and analyze the feasibility study then make database design with accurate relation.

2. Business Objective.

Business goal is the outcome that the organization is trying to accomplish. It also contains tactics that people are likely to use to get there. The company goal typically involves a time line and outlines the necessary capital. I have developed digital ambulance service and appointment system in this objective.

3. Personal Objective.

Personal objective shall apply to the job-specific priorities of each particular staff. They are problematic as they explain to staff what is relevant and what they need from them. I

have met all my personal requirement in this objective. I have made clear documentation for this project.

13.2. Success rate against each objective

The performance rate is very appropriate for this objective. Information on all the patient, Doctors and Employee is included inside the program. All the services like patient medicine, ambulance service is included in the user panel.

13.3. How much better could have been done

This system is developed by raw PHP. If the software is developed by using Laravel and View Js then then the software would have been faster. Laboratory management need developed in this system and more service need to include for the user.

13.4. How better are the features of the solution?

I have done my project for Hospital management because now a days many hospitals are not using specific well-structured management system. So, the management department of hospital and user face various problems to manage the hospital.

13.5. Which features could not be touched?

I have developed this Hospital Management System 'Triva IT Limited' where hospital administrator does their regular work like patient management, Doctor management, appointment system, user panel, digital complain box and ambulance service. Laboratory management system could not be touched in my system.

13.6. Why these features could not be touched

I couldn't touch laboratory management system because I couldn't gather enough knowledge of laboratory management system and I couldn't take interview from laboratorian because of CORONA Virus pandemic situation.

13.7. Objectives totally not met / touched

There is no online transaction system in Triva Management System. I couldn't touch payment system for some reason.

13.8. Why it could not be touched

It couldn't touch because online transaction is not good enough in Bangladesh. The online transaction is not secured. We could have included the online transaction. But considering the hassle and problem that will be faced by Both the user and authority to use the online transaction, I decided not to include the online transaction.

13.9. What could have been done

I could have included online payment gateway in the user panel and also admin panel where user would have paid bill through mobile banking and bank account.

Chapter 14

14. Conclusion

14.1. Summary of the project

Triva Hospital Management System is a Web based system. It will be easy to use by internet. So, there will be no data loss by the system, if there is any unusual situation like crash the whole system is occurred. So, it is safe to use the project for any hospital because there is no possibility of data loss. This is important because, in a hospital there are very important information about patients and others also.

Triva Hospital Management System is a well secured system. I have used a secured process to login in the system. There is authentication in the system. There is a encryption method for password creating system. So, the information is secured and very hard to steal the data or hack the system.

It is a Low Budget System. It decreases the cost of a lot of employee because if any hospital uses the system, there will be needed less manpower in management because of the system. So, It's a low budget management system.

There is no data redundancy or duplication of data in Triva Hospital management system. So, it will save the storage as well as the cost also. So, the management of the hospital will be benefited.

The software or the system is responsive. It can be used in computer, smartphones and tablets also. So, the management can manage the system through any device they have. So, it will be easier to manage the system.

14.2. Goal of the project

Developing the system has created a solution that allows every hospital employee to do the job very easily. Admin can easily control the hospital. In this hospital management system admin can control whole the system, doctor can treat patient, Nurse can service to patient and many works.

14.3. Success of the project

Performance in project is characterized as the degree of productivity attained by the team in order to meet the goals of the team. Efficiency is linked to how the project uses its scarce capital to achieve the goals and at the same time maintaining good ties with internal and external stakeholders. This software success will come when the users are satisfying.

My success is that I can bring this software to those hospital who have not yet come to the structure software.

14.4. Value of the project

Project value is described as the maximum amount of capital of the company that most senior leader of the corporation will be able to compensate for the effects of the project without having to account for the costs of the project, including the risk analysis.

14.5. My experience

I have gathered many experienced by developed this software 'Hospital Management System'. I have gained a lot of experience about hospital and hospital authority. I have visited many hospitals in Bangladesh. There are lots of fraud activities happening in the govt. hospitals. There are also many third party involved in each step. One has to face those unnecessary third parties in order to avail the medical service. So, this unnecessary fraud activities became a huge problem in times of emergency. By using the hospital management system, these unnecessary frauds activities can easily be avoided.

Appendices

➤ Test Scripts

Unit test 1		Tests function:	Designed by	
Data Source: Self Entry		Objective: Test Basic Functionality	Tester: Arman Mahmud	
Test Case	Description	Task	Expected Result	Actual Result
1.1	Test for basic functionality	Add Doctor: Name: Dr. Fahim Faisal Email: faisal@gmail.com Password: 123	Doctor Added Successfully	Doctor Added Successfully

Unit test 2		Tests function:	Designed by	
Data Source: Self Entry		Objective: Test Basic Functionality	Tester: Arman Mahmud	
Test Case	Description	Task	Expected Result	Actual Result
2.1	Test for basic functionality	Add Patient: Name: Hablu Phone:01232443 Address: Dhanmondi	Patient Added Successfully	Patient Added Successfully

Unit test 3		Tests function:	Designed by	
Data Source: Self Entry		Objective: Test Basic Functionality	Tester: Arman Mahmud	
Test Case	Description	Task	Expected Result	Actual Result
3.1	Test for basic functionality	Assign Medicine: Medicine Name: Napa Medicine type: Tablet	Assign Medicine Successfully	Assign medicine Successfully

➤ User Guide

User Guide for Admin:

The screenshot shows the Preclinic Admin Dashboard. The top navigation bar includes the Preclinic logo, a menu icon, and the user name 'Arman Mahmud'. The main content area is divided into several sections:

- Left Sidebar (Main):** A vertical menu with items: Dashboard (1), Doctors (2), Patients (3), Emergency (4), Appointments (5), Departments (6), Employees (7), and Invoices (8).
- Dashboard Header:** A row of five cards showing: Doctors (2), Patients (4), Total Employee (5), and Emergency (1).
- Upcoming Appointments (9):** A table with columns: Patient Name, Doctor Name, Timing, and Status. It shows one appointment for 'jashim' at 'Jigatola Dhaka 1215' with 'Dr. Dr.Fahim Faisal' at 'Timing 2:20 PM'.
- Doctors (11):** A list of doctors, including 'Dr.Fahim Faisal' and 'Jashim Cardiologist'.
- New Patients (12):** A table with columns: Patient Name, Email, Phone Number, and Status. It lists four patients: 'anik', 'jashim', 'anik', and 'jashim'.

1. In dashboard we can see some important data from the system.
2. Click on Doctor menu to add new Doctor and also see doctor list.
3. Click on patient menu to register patient and also see patient list.
4. Click on Emergency menu to see emergency patient.
5. Click on appointment menu to see appointment history and can add appointment.
6. Click on Department menu to add department and see department list.
7. Click on employee menu to add employee by role.
8. Click on invoice to create invoice for patient.
9. In dashboard menu we can see the number of Doctor, Patient, Total employee and emergency patient.

10. In dash board we can see upcoming appointment.

11. In dash board we can see some doctor list.

12. In dash board we can see some new patient list.

13. It's a dropdown menu. In this menu user can update their profile and logout from this system.

User Guide for Doctor:

The screenshot shows the 'Preclinic' dashboard for a doctor named 'Adminj Dr.Fahim Faisal'. The sidebar menu on the left has five items highlighted with red boxes and numbered 1 to 5: Dashboard (1), Doctors (2), Patients (3), Emergency (4), and Appointments (5). The main dashboard area is also outlined in red and contains several key sections:

- Top Navigation:** Includes icons for Doctors (2), Patients (4), Total Employee (5), and Emergency (1).
- Upcoming Appointments:** A table with columns for Patient Name, Doctor Name, Timing, and Status. A 'View all' button is present. A red number '6' is placed over the table area.
- Doctors:** A list of doctors including 'Dr.Fahim Faisal pick' and 'Jashim Cardiologist'. A 'View all Doctors' link is at the bottom.
- New Patients:** A table with columns for patient name, email, and phone number, along with 'IPD' buttons. A 'View all' button is present.

1. Doctor see important data from Dashboard.

2. Click on Doctor menu we can see another doctor list and their profile.

3. Click on patient menu doctor see all patient list and can assign medicine, advice and diagnosis.

4. Click on Emergency menu to treat emergency patient.

5. Click on Appointment menu to see appointment history.

6. In dashboard we can see some important data.

User Guide for Nurse:

The screenshot shows the Preclinic dashboard interface. On the left, a navigation menu is visible with the following items: Dashboard (1), Doctors (2), Patients (3), Emergency (4), and Appointments (5). The main content area is divided into several sections:

- Upcoming Appointments (6):** A table with columns: Patient Name, Doctor Name, Timing, and Status. The table contains one row for a patient named 'jashim' with an appointment with 'Dr. Dr.Fahim Faisal' at 'Timing 2:20 PM'. A 'Take up' button is present in the Status column.
- New Patients:** A table with columns: Patient Name, Email, and Phone Number. It lists three patients: 'anik', 'jashim', and 'anik'. Each row has a button for appointment type: 'IPD', 'IPD', and 'OPD' respectively.
- Doctors:** A list of doctors, including 'Dr.Fahim Faisal' and 'Jashim Cardiologist'. A 'View all Doctors' link is at the bottom.

The dashboard also features a top navigation bar with icons for Doctors (2), Patients (4), and Emergency (1).

1. In dashboard Nurse see some necessary data.
2. Click on Doctor to see available doctor list.
3. Click on patient to see patient list and view their medicine.
4. Click on emergency to see emergency patient.
5. Click on appointment to create appointment for IPD patient.
6. In dashboard we can see some necessary data.

User Guide for Receptionist:

The screenshot shows the Preclinic software interface. On the left is a sidebar menu with five items: Dashboard (1), Doctors (2), Patients (3), Emergency (4), and Appointments (5). The main content area is enclosed in a red border and contains a dashboard with three cards: Doctors (2), Patients (4), and Emergency (1). Below the dashboard are three sections: 'Upcoming Appointments' with a table, 'Doctors' list, and 'New Patients' list. A red number '6' is placed in the center of the appointments table.

Patient Name	Doctor Name	Timing	Status
jashim Jigatola Dhaka 1215	Appointment With Dr. Dr.Fahim Faisal	Timing 2:20 PM	Take up

New Patients			View all
anik	anik@123.com	0187815316	IPD
jashim	jay@123.com	0187815316	IPD
anik	anik@123.com	0187815316	OPD

1. Click on Dashboard we can see some necessary data.
2. Click on Doctor to see available doctor list.
3. Click on patient to see patient list and register patient.
4. Click on emergency to see emergency patient.
5. Click on appointment to create appointment for OPD patient.
6. In dashboard we can see some necessary data.

➤ System Code

```
<?php
    $conn = mysqli_connect('localhost', 'root', '', 'hms');
    if (!$conn) {
        echo "error" . mysqli_connect_error();
    } else {
        // echo "successful";
    }
}
```

Figure 49: Connection Code.

```
<?php
if (isset($_POST['submit'])) {
    $rName = $_POST['rName'];
    $pName = $_POST['pName'];
    $dName = $_POST['dName'];
    $date = $_POST['date'];
    $depName = $_POST['depName'];
    $time = $_POST['time'];
    $status = $_POST['status'];

    $q1 = mysqli_query($conn, "SELECT `Recpt_id` from `receptionist` where `Name` = '$rName'");
    $recID = mysqli_fetch_object($q1);
    $rID = ($recID -> Recpt_id);

    $q2 = mysqli_query($conn, "SELECT `Ptnt_id` from `patient` where `Name` = '$pName'");
    $patID = mysqli_fetch_object($q2);
    $pID = ($patID -> Ptnt_id);

    $q3 = mysqli_query($conn, "SELECT `Doc_id` from `doctor` where `Name` = '$dName'");
    $docID = mysqli_fetch_object($q3);
    $dID = ($docID -> Doc_id);

    $query = "INSERT INTO `appointment` (`App_id`, `Recpt_id`, `Ptnt_id`, `Doc_id`, `Department`, `Date`, `Time`, `Status`) VALUES ('', $rID, $pID, $dID, '$depName', '$date', '$time', '$status')";

    if (mysqli_query($conn, $query)) {
        header("Location: appointments.php");
        ob_end_flush();
    } else {
        echo "NOT HERE!!" . mysqli_error($conn);
    }
}
?>
</body>
```

Figure 50: Add Appointment Code.

```

<?php
if (isset($_POST['submit'])) {
    $name = $_POST['Name'];
    $status = $_POST['status'];

    $query = mysqli_query($conn, "INSERT INTO `department` (`Dep_id`, `Name`, `Status`) VALUES ('', '$name', '$status')");
    echo "<script>javascript:document.location='departments.php'</script>";
}
?>
body>

```

Figure 51: Add Department Code.

```

<?php
if (isset($_POST['submit'])) {

    //script for uploading image start

    $target_dir = "uploads/";
    $target_file = $target_dir . basename($_FILES["fileToUpload"]["name"]);
    $uploadOk = 1;
    $imageFileType = strtolower(pathinfo($target_file, PATHINFO_EXTENSION));

    if ($_FILES["fileToUpload"]["name"] == ""){
        ?>
        <script>
            alert("You forgot to attach any picture. Kindly attach picture and update form.");
        </script>
    }
    <?php
    }

    // Check file size
    if ($_FILES["fileToUpload"]["size"] > 1000000) {
        ?>
        <script>
            alert("Sorry, your file is too large.");
        </script>
    }
    <?php
    $uploadOk = 0;
    }
    // Allow certain file formats
    if ($imageFileType != "jpg" && $imageFileType != "png" && $imageFileType != "jpeg"
    && $imageFileType != "gif") {
        ?>
        <script>
            alert("Sorry, only JPG, JPEG, PNG & GIF files are allowed.");
        </script>
    }
    <?php
    $uploadOk = 0;
    }

    // Check if $uploadOk is set to 0 by an error
    if ($uploadOk == 0) {
        // if everything is ok, try to upload file
    } else {
        $target_file = " . $target_file;
        if (move_uploaded_file($_FILES["fileToUpload"]["tmp_name"], $target_file)) {
            "The file " . basename($_FILES["fileToUpload"]["name"]) . " has been uploaded.";
        } else {
        }
    }
    $pic_src = "uploads/" . basename($_FILES["fileToUpload"]["name"]);

    //script for uploading image end

```

Figure 52: Add Doctor Code.

```

// Check file size
if ($_FILES["fileToUpload"]["size"] > 1000000) {
?>
  <script>
    alert("Sorry, your file is too large.");
  </script>
<?php
$uploadOk = 0;
}
// Allow certain file formats
if ($imageFileType != "jpg" && $imageFileType != "png" && $imageFileType != "jpeg"
&& $imageFileType != "gif") {
?>
  <script>
    alert("Sorry, only JPG, JPEG, PNG & GIF files are allowed.");
  </script>
<?php
$uploadOk = 0;
}
// Check if $uploadOk is set to 0 by an error
if ($uploadOk == 0) {
  // If everything is ok, try to upload file
} else {
  $target_file = $_target_file;
  if (move_uploaded_file($_FILES["fileToUpload"]["tmp_name"], $target_file)) {
    "The file " . basename($_FILES["fileToUpload"]["name"]) . " has been uploaded.";
  } else {
  }
}
$pic_src = "uploads/" . basename($_FILES["fileToUpload"]["name"]);
//script for uploading image end

$query = mysqli_query($conn, "INSERT INTO patient ('Ptnt_id', 'Name', 'Email', 'Address', 'Phone', 'Gender', 'Birthday', 'Age', 'Blood_Group', 'Type', 'Image') VALUES ('', '$name', '$email', '$address', '$phone', '$gender', '$dob', '$age', '$b_group', 'IPD', '$pic_src')");
if ($query) {
  $q2 = mysqli_query($conn, "SELECT 'Ptnt_id' from 'patient' where 'Name' = '$name'");
  $patID = mysqli_fetch_object($q2);
  echo $pID = ($patID->Ptnt_id);

  $q3 = mysqli_query($conn, "SELECT 'Doc_id' from 'doctor' where 'Name' = '$dName'");
  $docID = mysqli_fetch_object($q3);
  echo $dID = ($docID->Doc_id);

  $sql = mysqli_query($conn, "INSERT INTO 'emergency' ('Em_id', 'Ptnt_id', 'Doc_id', 'Issue') VALUES ('', $pID, $dID, '$issue')");
  if($sql) {
    header("Location: emergency.php");
    ob_end_flush();
  } else {
    echo mysqli_error($conn);
  }
} else {
  echo "fail";
}
?>echo
</body>

```

Figure 53: Add Emergency Code.

```

</html>
<?php
if (isset($_POST['submit'])) {
  $name = $_POST['name'];
  $email = $_POST['email'];
  $role = $_POST['role'];
  $phone = $_POST['phone'];
  $password = md5($_POST['password']);
  $address = $_POST['address'];

  if ($role == 'admin') {
    $newID = 'Adm_id';
  }
  if ($role == 'doctor') {
    $newID = 'Doc_id';
  }
  if ($role == 'nurse') {
    $newID = 'Nurse_id';
  }
  if ($role == 'laboratorist') {
    $newID = 'Lab_id';
  }
  if ($role == 'receptionist') {
    $newID = 'Recept_id';
  }

  $query = mysqli_query($conn, "INSERT INTO `role` (`newID`, 'Name', 'Phone', 'Email', 'Password', 'Address') VALUES ('', '$name', '$phone', '$email', '$password', '$address')");

  header("Location: employees.php");
  ob_end_flush();
}
?>

```

Figure 54: Add employee code.

```

<?php
if (isset($_POST['submit'])) {
    $name = $_POST['name'];
    $email = $_POST['email'];
    $b_group = $_POST['b_group'];
    $type = $_POST['type'];
    $dob = $_POST['dob'];
    $gender = $_POST['gender'];
    $address = $_POST['address'];
    $phone = $_POST['phone'];
    $age = $_POST['age'];

    //script for uploading image start

    $target_dir = "uploads/";
    $target_file = $target_dir . basename($_FILES["fileToUpload"]["name"]);
    $uploadOk = 1;
    $imageFileType = strtolower(pathinfo($target_file, PATHINFO_EXTENSION));

if ($_FILES["fileToUpload"]["name"] == ""){
    ?>
    <script>
        alert("You forgot to attach any picture. Kindly attach picture and update form.");
    </script>
<?php
}

// Check file size
if ($_FILES["fileToUpload"]["size"] > 1000000) {
    ?>
    <script>
        alert("Sorry, your file is too large.");
    </script>
<?php
    $uploadOk = 0;
}
// Allow certain file formats
if ($imageFileType != "jpg" && $imageFileType != "png" && $imageFileType != "jpeg"
&& $imageFileType != "gif") {
    ?>
    <script>
        alert("Sorry, only JPG, JPEG, PNG & GIF files are allowed.");
    </script>
<?php
    $uploadOk = 0;
}

// Check if $uploadOk is set to 0 by an error
if ($uploadOk == 0) {

```

Figure 55: Add Patient Code.

```

<?php
$sql = "SELECT * FROM advice";

if ($result = mysqli_query($conn, $sql)) {
if (mysqli_num_rows($result) > 0) {
while ($row = mysqli_fetch_array($result)) {

$patID = $row['Ptnt_id'];
$docID = $row['Doc_id'];

$sql2 = "select * from patient where `Ptnt_id` = $patID ";

if ($result2 = mysqli_query($conn, $sql2)) {
if (mysqli_num_rows($result2) > 0) {
while ($row2 = mysqli_fetch_array($result2)) {
echo "<td><img width=\"28\" height=\"28\" src=\"assets/img/user.jpg\" class=\"rounded-circle m-r-5\"
alt=\"\>\" . $row2['Name'] . "</td>";
}
}
}

$sql3 = "select * from doctor where `Doc_id` = $docID ";
if ($result3 = mysqli_query($conn, $sql3)) {
if (mysqli_num_rows($result3) > 0) {
while ($row3 = mysqli_fetch_array($result3)) {
echo "<td> . $row3['Name'] . "</td>";
}
}
}

echo "<td>\" . $row['Date'] . "</td>";
echo "<td>\" . $row['Type'] . "</td>";
echo "<td>\" . $row['Description'] . "</td>";
?>
</td>
</tr>

<?php
}
}
echo "</table>";
// Free result set
mysqli_free_result($result);
} else {
echo "No records matching your query were found.";
}
} else {
echo "ERROR: Could not able to execute $sql. " . mysqli_error($conn);
}
}
}
?>

```

Figure 56: Advice Code.

```

<?php
if (isset($_POST['submit'])) {
    $pName = $_POST['pName'];
    $dName = $_POST['dName'];
    $date = $_POST['date'];
    $advice = $_POST['advice'];
    $aType = $_POST['aType'];

    $q2 = mysqli_query($conn, "SELECT `Ptnt_id` from `patient` where `Name` = '$pName'");
    $patID = mysqli_fetch_object($q2);
    $pID = ($patID->Ptnt_id);

    $query = "INSERT INTO `advice` (`Advice_id`, `Ptnt_id`, `Doc_id`, `Date`, `Type`, `Description`) VALUES ('', $pID, $userID, '$date', '$aType', '$advice')";

    if (mysqli_query($conn, $query)) {
        header("Location: advice.php");
        ob_end_flush();
    } else {
        echo "NOT HERE!!" . mysqli_error($conn);
    }
}
?>

```

Figure 57: Advice Patient Code.


```

$sql = "SELECT * FROM appointment";

if ($result = mysqli_query($conn, $sql)) {
if (mysqli_num_rows($result) > 0) {
while ($row = mysqli_fetch_array($result)) {
echo "<td> APT" . $row['App_id'] . "</td>";

$patID = $row['Ptnt_id'];
$docID = $row['Doc_id'];

$sql2 = "select * from patient where `Ptnt_id` = $patID ";

if ($result2 = mysqli_query($conn, $sql2)) {
if (mysqli_num_rows($result2) > 0) {
while ($row2 = mysqli_fetch_array($result2)) {
?>
<td><?= $row2['Name'] ?></td>
<?php
echo "<td>" . $row2['Age'] . "</td>";
}
}
}

$sql3 = "select * from doctor where `Doc_id` = $docID ";
if ($result3 = mysqli_query($conn, $sql3)) {
if (mysqli_num_rows($result3) > 0) {
while ($row3 = mysqli_fetch_array($result3)) {
echo "<td>" . $row3['Name'] . "</td>";
}
}
}

echo "<td>" . $row['Department'] . "</td>";
echo "<td>" . $row['Date'] . "</td>";
echo "<td>" . $row['Time'] . "</td>";

$status = $row['Status'];
if ($status == 'Inactive') {
?>
<td><span class="custom-badge status-red">Inactive</span></td>
}
}
}

```

Figure 58: Appointment Code.

```

<div class="row" >
<div class="col-sm-12">
<h4 class="page-title">Create Invoice</h4>
</div>
</div>
<div class="row">
<div class="col-sm-12">
<!-- <form>-->
<div class="row">
<div class="col-sm-6 col-md-3">
<div class="form-group">
<label>Patient <span class="text-danger">*</span></label>
<select required name="pName" id="select-patient" class="select">
<option value="pick">Select</option>
<?php
require_once 'connection.php';
$sql = mysqli_query($conn, "select * from patient");
$row = mysqli_num_rows($sql);
while ($row = mysqli_fetch_array($sql)) {
?>
<option value="<?php echo $row['Name']; ?>"><?php echo $row['Name']; ?></option>
<?php
}
?>
</select>
</div>
</div>
<div class="col-sm-6 col-md-3">
<div class="form-group">
<label>Department <span class="text-danger">*</span></label>
<select required name="depName" id="select-department" class="select">
<option value="pick">Select</option>
<?php
$sql = mysqli_query($conn, "select * from department");
$row = mysqli_num_rows($sql);
while ($row = mysqli_fetch_array($sql)) {
?>
<option value="<?php echo $row['Name']; ?>"><?php echo $row['Name']; ?></option>
<?php
}
?>
</select>

```

Figure 59: Create Invoice Code.

```

<?php
if (isset($_POST['submit'])) {
    $dName = $nName = "";
    $pName = $_POST['pName'];
    $sName = $_POST['sName'];
    $dName = $_POST['dName'];
    $nName = $_POST['nName'];
    $date = $_POST['date'];
    $medy_name = $_POST['medy_name'];
    $quantity = $_POST['quantity'];

    $quan = (explode("++", $quantity));
    $qy1 = $quan[0];
    $qy2 = $quan[1];
    $qy3 = $quan[2];

    $qy = $qy1 + $qy2 + $qy3 ;

    $q2 = mysqli_query($conn, "SELECT 'Ptnt_id' from 'patient' where 'Name' = '$pName'");
    $patID = mysqli_fetch_object($q2);
    $pID = ($patID->Ptnt_id);

    $q3 = mysqli_query($conn, "SELECT 'Med_id' from 'medicine' where 'Med_Name' = '$nName'");
    $medID = mysqli_fetch_object($q3);
    $mID = ($medID->Med_id);

    if ($userRole == 'nurse') {
        $query = "INSERT INTO 'prescribed_medicines' ('pMed_id', 'Ptnt_id', 'Nurse_id', 'Med_id', 'Quantity', 'Date', 'medy_name') VALUES ('', $pID, $userID, $mID, '$qy', '$date', '$medy_name')";

        if (mysqli_query($conn, $query)) {
            header("Location: medicines-prescribed.php");
            ob_end_flush();
        } else {
            echo "NOT HERE!!" . mysqli_error($conn);
        }
    } else {
        $query = "INSERT INTO 'prescribed_medicines' ('pMed_id', 'Ptnt_id', 'Doc_id', 'Med_id', 'Quantity', 'Date', 'medy_name') VALUES ('', $pID, $userID, $mID, '$qy', '$date', '$medy_name')";

        if (mysqli_query($conn, $query)) {
            header("Location: medicines-prescribed.php");
            ob_end_flush();
        } else {
            echo "NOT HERE!!" . mysqli_error($conn);
        }
    }
}
?>

```

Figure 60: Assign Medicine Code.

```

<?php
include "connection.php";

if(isset($_GET['doctor_id'])) {

    $docID = $_GET['doctor_id'];

    $query = "DELETE FROM doctor WHERE doctor.Doc_id = $docID";

    $result = mysqli_query($conn,$query);

    if ($result) {
        echo "yes";
    } else {
        echo "false";
    }
    header("Location: doctors.php");
}
?>

```

Figure 61: Delete Code.

```

<?php
if (isset($_POST['submit'])) {
    echo "kjdfksdjflskdnmlskfjsdljfkdsjflksdjflksdjflksdjflksdjflksdjflksdjflkdsjflkdfjldskjflksdjfds";

    echo $sup_name = $_POST['name'];
    echo $sup_status = $_POST['status'];

    $sql = "UPDATE `department` SET
        `Name` = '$sup_name',
        `Status` = '$sup_status'
    where Dep_id = $depID ";

    if (mysqli_query($conn, $sql)) {
        header("Location: departments.php");
        ob_end_flush();
    } else {
        echo "kjdfksdjflskdnmlskfjsdljfkdsjflksdjflksdjflksdjflksdjflksdjflkdsjflkdfjldskjflksdjfds";
    }
}
?>
</body>

```

Figure 62: Edit Code.

```

<?php
$sql = "SELECT * FROM department";
if ($result = mysqli_query($conn, $sql)) {
    if (mysqli_num_rows($result) > 0) {
        while ($row = mysqli_fetch_array($result)) {
            echo "<tr>";
            echo "<td>" . $row['Dep_id'] . "</td>";
            echo "<td>" . $row['Name'] . "</td>";
            $status = $row['Status'];
            if ($status == 'Active') {
                echo "<td><span class=\"custom-badge status-green\">Active</span></td>";
            } else {
                echo "<td><span class=\"custom-badge status-red\">Inactive</span></td>";
            }
        }
    }
    <td <?php if (!($userRole == 'admin')) {
        echo "hidden";
    } ?> class="text-right">
        <div class="dropdown dropdown-action">
            <a href="#" class="action-icon dropdown-toggle"
                data-toggle="dropdown" aria-expanded="false"><i
                    class="fa fa-ellipsis-v"></i></a>
            <div class="dropdown-menu dropdown-menu-right">
                <a class="dropdown-item"
                    href="edit-department.php?department_id=?php echo $row['Dep_id'] ?>"><i
                        class="fa fa-pencil m-r-5"></i> Edit</a>
                <a class="dropdown-item"
                    href="delete-department.php?department_id=?php echo $row['Dep_id'] ?>"><i
                        class="fa fa-trash-o m-r-5"></i> Delete</a>
            </div>

```

Figure 63: Department Code.

```

<?php
include "connection.php";

if (isset($_GET['emergency_id'])) {
    echo $emID = $_GET['emergency_id'];

    $query = "delete from `emergency` where Em_id = $emID ";
    $result = mysqli_query($conn, $query);

    if ($result) {
        header("Location: ipd-patients.php");
    } else {
        echo mysqli_error($conn);
    }
}

?>

```

Figure 64: Emergency to IPD Code.

```

</li><a href="patients.php">All Patients</a></li>
</li><a href="ipd-patients.php">IPD Patients</a></li>
</li><a href="opd-patients.php">OPD Patients</a></li>
</li><a href="medicines-prescribed.php">Medicine Requisition and Receipt</li>-->
</ul>
</li>
</li>
<a href="emergency.php"><i class="fa fa-ambulance"></i> <span>Emergency</span></a>
</li>
<li><?php if (!($userRole == 'Laboratorist') || ($userRole == 'receptionist')) {
    echo "hidden";
} ?> class="submenu">
<?php if ($userRole == 'receptionist') { echo " ";} else { ?>
<a href="#"><i class="fa fa-heartbeat"></i> <span>Laboratory</span> <span
class="menu-arrow"></span></a>
<?php } ?>
<ul style="display: none;">
<li><a href="ipd-investigation-request-receipt.php">IPD Investigation Request Receipt</a></li>
<li><?php if (!($userRole == 'receptionist')) {
    echo "hidden";
} ?><a href="sample-receipt.php">Sample Receipt</a></li>
<li><a href="print-test-result.php">Print Test Result</a></li>
</ul>
</li>
</li>
<a href="appointments.php"><i class="fa fa-calendar"></i> <span>Appointments</span></a>
</li>
<?php if (($userRole == 'doctor') || ($userRole == 'nurse') || ($userRole == 'receptionist')) { echo " ";} else { ?>
</li>
<a href="departments.php"><i class="fa fa-hospital-o"></i> <span>Departments</span></a>
</li>
<?php if (($userRole == 'receptionist') || ($userRole == 'nurse')) { echo " ";} else { ?>
</li>
<a href="employees.php"><i class="fa fa-user"></i> <span> Employees </span> </a>
</li>
<?php } ?>
<?php if ($userRole == 'nurse') { echo " ";} else { ?>
<li class="submenu">
<a href="#"><i class="fa fa-money"></i> <span> Invoices </span> <span class="menu-arrow"></span></a>
<ul style="display: none;">
<li><a href="create-ipd-invoice.php"> In Patient Invoice</a></li>
<li><a href="create-opd-invoice.php"> Out Patient Invoice</a></li>
<li><a href="view-invoice.php"> View Invoices</a></li>
</ul>
</li>
</li>
<?php } ?>

```

Figure 65 Side Bar Code.

References

- Front Enders. (2018, 05 23). *feasibility study of a hospital project*. Retrieved from [www.frontenders.in: https://www.frontenders.in/blog/feasibility-study-of-a-hospital-project.html](https://www.frontenders.in/blog/feasibility-study-of-a-hospital-project.html)
- Techopedia Inc. (2018, 02 5). *clientserver-architecture*. Retrieved from [https://www.techopedia.com/:](https://www.techopedia.com/definition/438/clientserver-architecture)
<https://www.techopedia.com/definition/438/clientserver-architecture>
- Verma, N. (2016, 5 8). *cost-benefit-analysis*. Retrieved from [http://pmdesire.com/:](http://pmdesire.com/http://pmdesire.com/2016/05/cost-benefit-analysis/)
<http://pmdesire.com/2016/05/cost-benefit-analysis/>

Plagiarism Report:



Figure 66: Plagiarism report of this project documentation.