# **Hospital Management System**

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### **DECLARATIONS**

We hereby declare that, this project has been done by Abdul Wahid and Ata-E-Elahi under the supervision of Md. Ashraful Islam Talukder, Lecturer, Department of CSE Daffodil International University. We also declare that neither this project nor any part of this project has been stolen or copied from any other websites. We have just took some inspiration and references from various websites and templates.

### ACKNOWLEDGMENT

At First, we want to show gratefulness to almighty ALLAH to make it possible for us to complete this Web Engineering project successfully. We are highly indebted to our Course Teacher **Md.** Ashraful Islam Talukder, Lecturer, Department of CSE Daffodil International University, for the knowledge and facilities provided to accomplish this project. His endless effort, encouragement, motivation and amazing inspirational stories have made it possible to complete this project. Finally we express our heart full thanks to all of our friends who helped us in many ways for successful completion of this project. Finally, with due respect we are grateful to our parents for the constant support.

### **ABSTRACT**

"Good health is a crown on the head of a well person that only a sick person can see." But in our country we feel threatened by the word "Hospital". So here we are with our project "Hospital Management System" where the main purpose is to digitalize the process of a daily hospital related works. Our website will help doctors, patients, and receptionists and also employees to easily maintain their daily tasks. The main function of the system is register and store patient details and doctor details and doctor's availability. A patient can get his reports via hospital website, digital prescriptions, self-booking appointment with specialized doctors etc. A doctor can also write prescription online.by doing this we can avoid the typical paperwork's of any kind of Hospitals. We have made this website vert user friendly and simple. A User can sign in using a username and password and also can sign up by giving some information. Hospital receptionist can get book an appointment with doctor. All the data will be protected in database. These data can be retrieved easily. The data are well protected for personal use and makes the works easier for the patients.

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### 1. Introduction

### 1.1 Introduction:

The project Hospital Management System can be entered using a username and password. It also includes registration and login of patients and stored their details into the system. This website is able to give a unique id for every patient in the hospital and stores their details and the staff's id when they are registered in the website. We also add billing feature where the process is computerized and lab reports will be accessible via patient profile. Hospital Management System is flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. It includes a search function where a user can check the availability of a doctor and it also helps receptionist to check current status of each room. The doctors can check details of a patient using the id. All the information of the patients and doctors are stored in database. The database is accessible either by an administrator. The receptionist can add patient to the empty room and patient will be charge automatically. The doctor can add patient health status into database. The interface is very user-friendly. The website will be developed in such a way that user may not have any difficulty in using this website and further expansion is possible without much effort.

### 1.2 Problems and Motivation:

The health system of our country faced many intractable challenges, it also seems to receive little priority in terms of other sectors. Therefore, some serious problems affecting the health care system. A survey by Bangladesh Health Facility shows that only around 25% of our Hospitals have some basic equipment, like stethoscope, thermometer, blood pressure apparatus, adult weighing scale, child or infant weighing scale. Bangladesh has approximately 60,000 doctors and a deficit of almost 140,000 Nurses. Moreover, the nurse-physician ratio in Bangladesh is one of the worst in the world. There is only one nurse for every three physicians, while the ratio should have been the other way around, which is three nurses for one physicians. Lack of drugs, supplies and other facilities also are rampant in heath complexes. As a result, only 25% of the population can avail Public Hospitals. But there are issues that cannot be solved by money alone.

So we have decide to take this sector to the next level by introducing the digital version of Hospitals which is Elite Hospitals. On our website the patients doesn't have to wait for day long in the serial, they only have to take appointment and rest is easy. We have also build a digital pharmacy where patients can find their medicines online and also parched from its we have tried to overcome every problems of hospitals by adding it on digital platform. In a hospital all this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time. But by using our website all the problems of stuffs and doctors will be disappeared.

### 1.3 Objectives and Outcomes

### **Objective:-**

- 1. Making the hospital platform digital.
- 2. Recording information about the Patients on database so-that if the visit 2<sup>nd</sup> time they doesn't have too much work.
- 3. Recording information of diagnosis given to Patients.
- 4. Generating payments and bills online so that no one have to do the extra paperwork.
- 5. Keeping information about various diseases and medicines available to cure them.

#### **Outcomes:**

- 1. Successfully sifted the hospital platform online.
- 2. Information about Patients is saved in the database by just logging in. So that the patients doesn't have to fill the same form again and again for a simple checkup.
- 3. Bills are generated by recording price for each facility provided to Patient on a separate sheet and at last they all are summed up digitally.
- 4. There are thousands of doctors available in the platform. So anyone can choose according to their diseases.
- 5. Patients can set up appointments with their desirable doctors at any available time.

## 2. Requirement Specification

### 2.1 Introductions

Hospital Management System is a web base product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based

costing. To be used efficiently, all computer software needs certain hardware components or the other software resources to be present on a computer. These pre-requisites are known as(computer) system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. We get the different people opinion what they needed most in the hospital management system. Most of the people said if they can set an appointment with doctor via the hospital website from home that will be easy for them. Another important thing is report delivery system.

### 2.2 Software Requirements:

The software requirements are description of features and functionalities of the target system. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

### Software requirement for this project:

Operating System : Windows 7/8/10

Front End : Html, Css, Java-Script.

Server side Script : Php

Database : Mysql

Application : Visual Studio Code, Xampp

### 2.3 Hardware Requirements:

To be used efficiently, all computer software needs certain hardware components or other software resources to be present on a computer also known as hardware.

### **Hardware Requirements for this Project:**

Processor : Intel dual Core, I3

RAM : 1 GB

Hard Disk : 10 GB

## 3. Methodology

### 3.1 Requirement Analysis and Collections

Hospital Management System is a web base product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based costing. We get the different people opinion what they needed most in the hospital management system. Most of the people said if they can set an appointment with doctor via the hospital website from home that will be easy for them. Another important thing is report delivery system. If a patient can get their reports via website that can save a lot of time for them. To get the clear view of what a hospital wants in this system we contact with some of our local hospital. When we approaching some users, we have gathered some requirements from them. First of all, they want a website that can be easily navigable. Users want a website with automated updated notice. This feature cannot be added at this time. But it will be added in the next phase of development. Built in Live video call is another feature that users want to use. At the current time this features too hard to implement in the website. But we can add an online chat feature in the website. Through that features user can chat with their appointed doctor. We have also faced some technical challenges that fail the implementation of HMS in the healthcare industry includes Networks and computer have different maintenance problems, lack of no standards for Data entry and data retrieval, difficulties in training users technically to use HMS. Shortage of professional healthcare faculty who have in-depth knowledge of HMS is another problem to be solved. We explore some of the ways in which a negotiation lens may be of value to medical professionals, administrators, and other stakeholders in the health care sector. In facing the inevitable tradeoff between breadth and depth of coverage, we have opted to focus on only a handful of core insights from the field of negotiations, while devoting more attention to providing examples of how these insights can be applied to doctors and hospitals.

### 3.2 An Extended Business Process Model:

Hospitals are an essential part of the health-care system, and having a competent online hospital management system is a must in today's environment. Patients, doctors, and hospital administrators can all benefit from this Hospital Management System, which is designed to give a faster and more efficient response to their diverse demands. This HMS will be automated. Patients can schedule doctor visits based on their medical symptoms. They can also place prescriptions, request an emergency admission, and view discharge summaries and bills. Doctors will have access to patient prescriptions and test results. Users can be registered, available doctors can be assigned for consultation, ICU/CCU and doctors can be assigned in case of emergency admission, and so on. The features which will be added in our model are

- The front page contain basic static info about our hospital without signup. To keeping record in the database user must need to signup, the website will automatically assign a unique ID to the users.
- Patients need to select the Specialized Category. Then a list of specialized doctors will be shown according to the category. Patient or receptionist can use this functionality. Users also need to select a time of the selected doctor to get an appointment.
- Patients can choose to see hospitalization details, test reports, prescription etc. Patients can upload test report for ease of consultation or reports can be added by laboratory department. All of these records will be added corresponding to patient username.
- For admission patient need to registered in the system. System will provide a patient username. This patient username be used for further process. If any doctor recommends to admitting in the hospital receptionist will add the patient to a room
- Doctor logs in with his credentials if he/she is an existing user or signs up with needed information. To Search and see patient's prescription from list, Doctors search patient from list using patient username.
- Doctor login with his credentials if he/she is an existing user. Doctor can see list of only those patients currently undergoing treatment under him/her.

### 3.3 Modules:

The entire project mainly consists of 5 modules, which are

- **❖** Admin module
- User module (patient)
- Doctor module
- \* Nurse module
- Receptionist module

#### 3.3.1 Admin module:

- Manage department of hospitals, user, doctor, nurse, and receptionist.
- watch appointment of doctors
- Watch reports of patient payment.
- Bed, ward, cabin status.
- watch blood group
- watch medicine status of hospital stock

### 3.3.2 User module (Patient):

- View appointment list and status with doctors
- View prescription details
- View medication from doctor
- View doctor list
- Manage own profile

### 3.3.3 Doctor module:

- Manage patient. account opening and updating
- Create, manage appointment with patient
- Create prescription for patient
- Provide medication for patients
- Manage own profile

#### 3.3.4 Nurse module:

- Manage patient. account opening and updating
- Allot bed, ward, cabin for patients
- Provide medication according to patient prescription
- Keep record of patient
- Manage own profile

## 3.3.5 Receptionist module:

- Create payment for patient.
- Give payment to the patient
- Take cash payment
- Watch payment history of patients
- Manage own profile

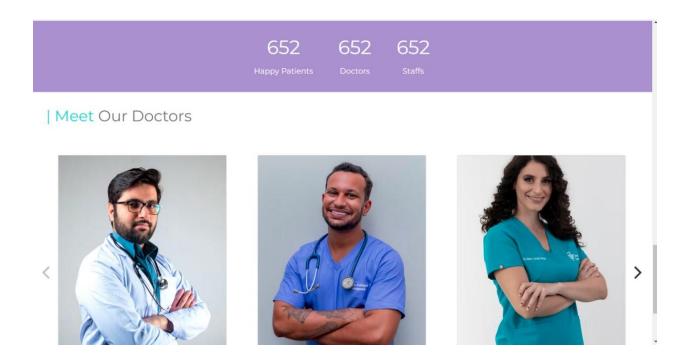
## 4. Design Specification

## 4.1 Front End Design:

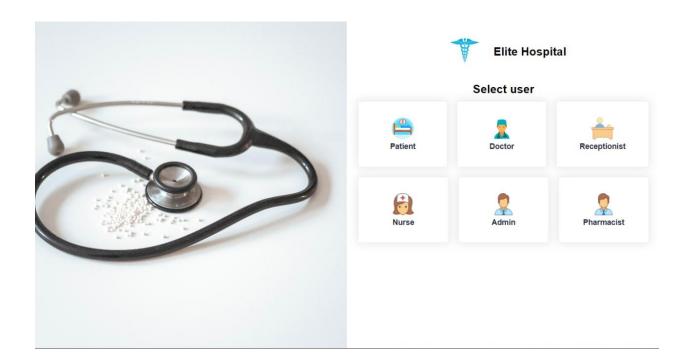
Front end UI of this design is given-

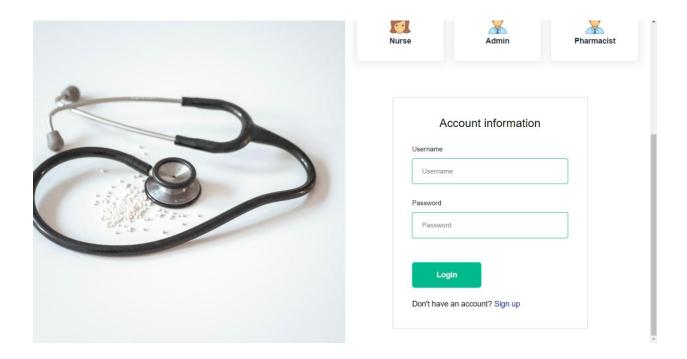
### **Index page:**

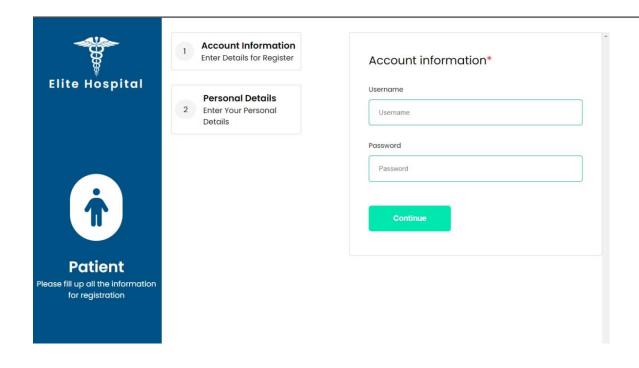




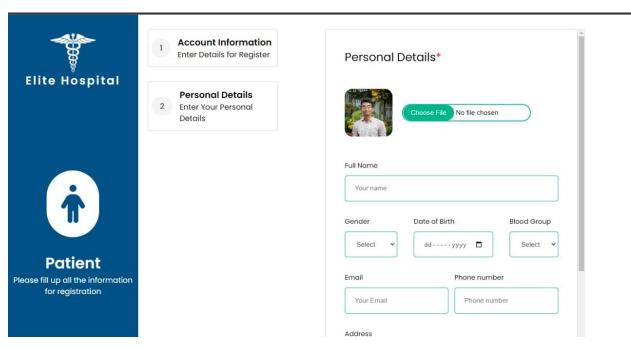
## Login page:



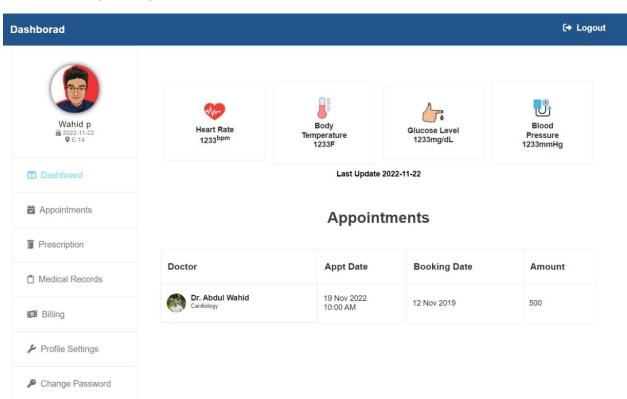


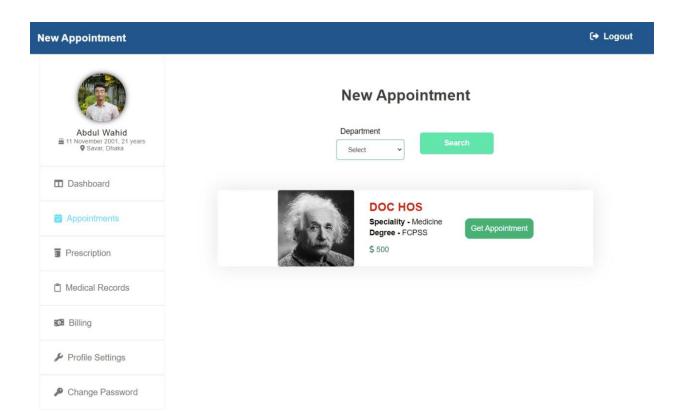


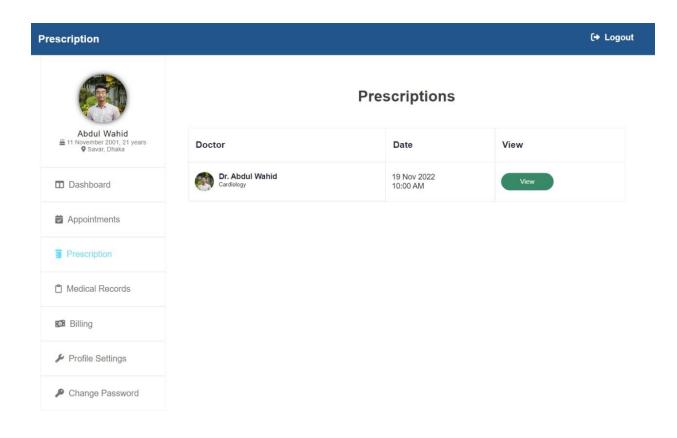
## **Registration Page:**



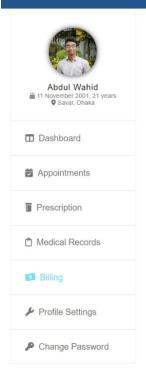
### **User Module (Patient):**











#### Invoice



SL	Description	Amount
1	ECG	370
2	MRI	1200
4	Appointment	500
5	Sonography	400
6	Operation	15000

Gross Amount 17470 Received By Abdul Wahid 0.00 Discount Payment mode: CASH Net Payable 17470 Balance Due 0.00

**Print** 

#### 〔→ Logout Medical Records



#### ■ Dashboard

**Appointments** 

Prescription

Medical Records

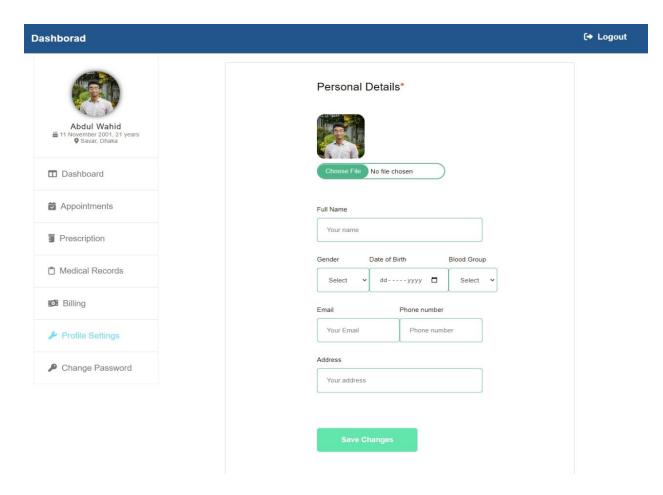
Billing

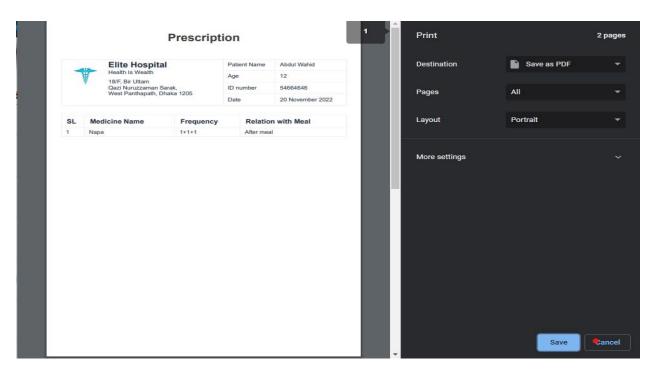
Profile Settings

Change Password

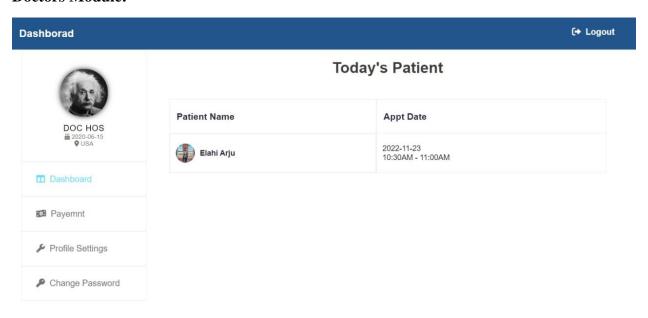
#### **Medical Records**

Doctor	Heart Rate	Body Temperature	Glucose Level	Blood Pressure	Weight
Dr. Abdul Wahid Cardiology	12	98	70-90	90/60	50

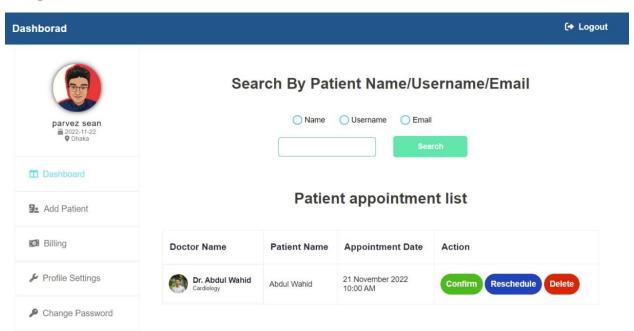




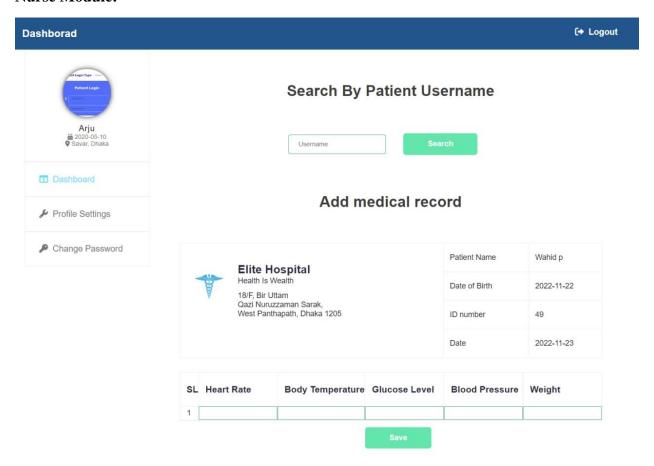
### **Doctors Module:**



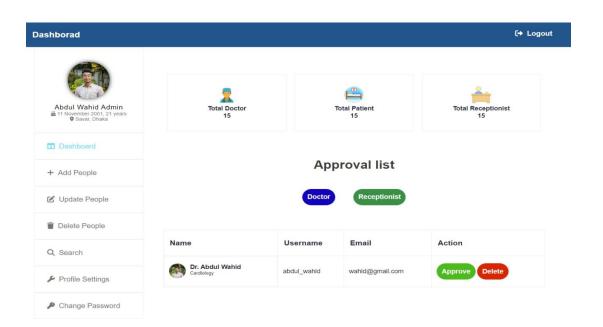
### **Receptionist Module:**

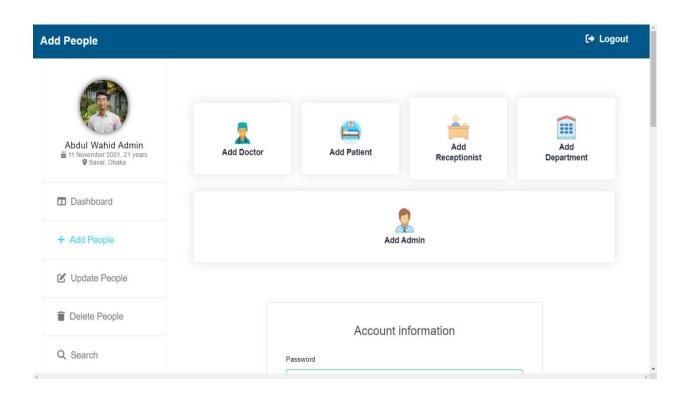


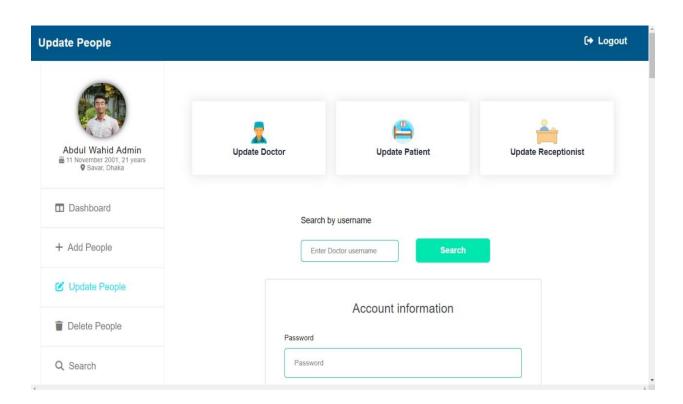
#### **Nurse Module:**

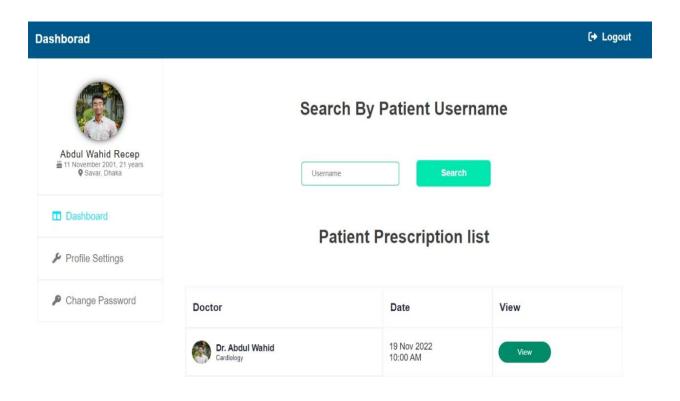


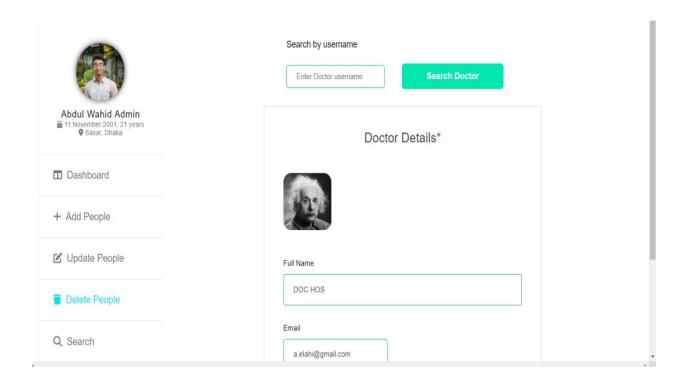
#### **Admin Module:**





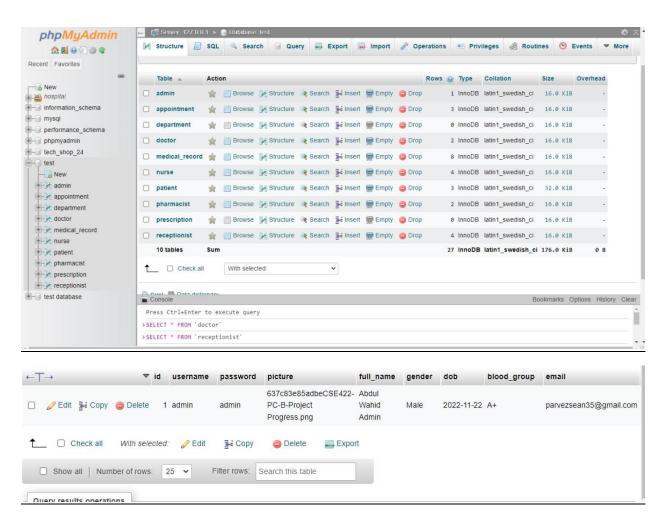






### 4.2 Back End Design

#### **Database**



C	ck the drop-	doum as		id	patient_id	nurse_id	heart_rate	body_temp	glue_lev	blood_p	date	time
100000	toggle colun		AND DESCRIPTION OF THE PERSON	8	49	3	222	22	22	12	2022-11-22	07:06
	Ø Edit }	с Сору	Delete	9	49	3	1212	12	212	212	2022-11-22	07:07
	Ø Edit ፮	<b>č</b> Сору	Delete	10	49	3	1212	12	212	212	2022-11-22	07:09
	Ø Edit ⅓	<b>с</b> Сору	Delete	11	49	3	1212	12	212	212	2022-11-22	07:09
	Ø Edit ፮	<b>с</b> Сору	Delete	12	49	3	1212	12	212	212	2022-11-22	07:09
	Ø Edit ⅓	<b>с</b> Сору	Delete	13	49	3	123	123	3123	123	2022-11-22	07:11
	Ø Edit ፮	<b>с</b> Сору	Delete	14	49	3	1233	1233	1233	1233	2022-11-22	09:08
	Ø Edit ⅓	<b>с</b> Сору	Delete	15	58	4	11	22	33	44	2022-11-23	06:59

## 5. Implementation of Code

### 5.1 Implementation of code

#### **Front End**

```
<div class="logout">
          <div class="container_2";</pre>
           <div class="profile">
                <img src="images/pic/my_pic.jpg" alt="">
                 ch3>Abdul Wahid</h3>
                      11 November 2001, 21 years
                        <i class="fa-solid fa-location-dot"></i></i>
                       Savar, Dhaka
           class="menu">

<a href="patient-dashboard.php"><i class="fa-solid fa-table-columns"></i>Dashboard</a>
di><a href="patient-appoinment-new.php"><i class="fa-solid fa-calendar-check"></i>Dashboard</a>
di><a href="patient-appoinment-new.php"><i class="fa-solid fa-calendar-check"></i>Dashboard</a>
di><a href="patient-prescription.php"><i class="fa-solid fa-prescription-bottle"></i>Prescription</a>
di><a href="patient-medical-record.php"><i class="fa-solid fa-money-bill-1-wave"></i>Destalling</a>
di><a href="patient-bill.php"><< class="fa-solid fa-money-bill-1-wave"></i>Dilling</a>
di class="active_menu"><a href="patient-edit-profile.php"><i class="fa-solid fa-weney-bill-1-wave"></a>
di><a href="patient-patient-passumed_change.php"></a></a></a>
</a>
                  <a href="patient-password-change.php"><i class="fa-solid fa-key"></i>Change Password</a>
      <div class="dashboard_items">
           <div class="container_information" id="container_information_2";</pre>
                  <h1>Personal Details<span style="color: red;">*</span></h1>
                 <label for="full_name">Full Name</label>
                  <input type="text" name="name" id="" required placeholder="Your name">
                             <label for="gender">Gender</label>
                              <select name="gender" id=""</pre>
                                 <option value="null">Select</option>
                                   <option value="male">Male</option>
<option value="female">Female</option>
                            <label for="dob">Date of Birth</label>
<input type="date" name="dob" id="">
```

```
background-color: 0#15558d;
   color: White;
   padding: 3vh 15px;
   display: flex;
   justify-content: space-between;
.header a{
   font-size: 22px;
   font-weight: 700;
   line-height: 1.2;
.header .logout a h3{
   font-size: 18px;
   margin-right: 30px;
.header .logout i{
   padding-right: 10px;
.container_2{
   display: flex;
aside .profile{
   text-align: center;
   padding-bottom: 30px;
   border: 1px solid ■rgb(240, 240, 240);
aside .profile img{
   height: 100px;
   width: 100px;
   object-fit: cover;
   border-radius: 3em;
   margin-top: 40px;
   background-color: ■#757575;
   box-shadow: 0px 0px 10px □rgba(1,1,1, 0.8);
aside .profile h3{
   margin-top: 10px;
   letter-spacing: 1px;
   font-weight: 500;
   font-size: 17px;
aside .profile p{
   color: □#757575;
   font-size: 13px;
aside{
   width: 20%;
   margin-left: 20px;
aside .menu{
   list-style: none;
.active_menu{
   color: ■#0de0fe !important;
```

#### **Back End**

```
require_once("connection.php");
$username = $_POST["username"];
$password = $_POST["password"];
$imagename = $_FILES["image"]["name"];
$tmpname = $_FILES['image']['tmp_name'];
$uploc = 'images/pic/' . $imagename;
$full_name = $_POST["full_name"];
$gender = $_POST["gender"];
$dob = $_POST["dob"];
$blood_group = $_POST["blood_group"];
$email = $_POST["email"];
$phone = $_POST["phone"];
$address = $_POST["address"];
$table_name = $_POST["table_name"];
$unique_img = uniqid() . $imagename;
move_uploaded_file($tmpname, "images/pic/" . $unique_img);
$uniqueUser = "SELECT * FROM $table_name WHERE username='$username';";
if (mysqli_num_rows(mysqli_query($con, $uniqueUser)) == 0) {
    $query = "insert into $table_name(
            username,
        password.
        picture,
        full_name,
        gender,
        dob,
        blood_group,
        email,
        phone,
        address)
                values('$username','$password','$unique_img','$full_name'
                            ,'$gender','$dob','$blood_group',
                            '$email','$phone','$address')";
    if (!mysqli_query($con, $query)) {
        $path = $table_name . '-registration.php?failed';
        header('location:' . $path);
        $path = $table_name . '-registration.php?successfull';
        header('location:' . $path);
} else {
```

```
require_once("connection.php"); //if not include
     $username = $ POST["username"];
     $password = $_POST["password"];
     $table_name = $_POST["table_name"];
     mysqli_select_db($con, $dbname);
     $query = "SELECT * FROM $table_name WHERE username='$username'";
     $query_res = mysqli_query($con, $query); //query executed if(true)
     if (!$query res | mysqli num rows($query res)==0) {
         header('location:login.html');
     } else {
         $data = mysqli_fetch_assoc($query_res); //retrun a row
         if ($data['username'] == $username && $data['password'] == $password) {
             setcookie("$table_name", $data['username'], time() + 86400 * 60); //tablename = user
19
             $path = $table_name . '-dashboard.php'; //string add
             header('location:' . $path);
             header('location:login.html');
```

### 6. Impact on Society and Environment

### **Impact on Society:**

Health is the basic need for the people of our country. In this situation if they have to run everywhere for a single doctor's appointment or a medicine or for an operations information then the situation will be quite bizarre so by building this website we want to take this health sector to another level for an easy way of receiving treatment and want also want to ensure everyone's safety. Health care-associated infections and antimicrobial resistance threaten the safety of hospitalized patients. But by using it online the threat will be less. We are also creating more job opportunities by creating this website because to maintain a website we have to hire more people.

### Impact on Society and Environment

For getting a report or to fix an appointment with a doctor a patient have to go to the hospital which is time consuming and costly work but by using our website the patient can do all these works on home. So, we are also saving everyone's time and money. In the process of healing patients, hospitals use a vast amount of natural resources, generate tons of waste every single day and consume huge amounts of electricity. But by making it online we are reducing its paperwork's which helps to generate less waste and also saving much electricity.

### **Ethical Aspect**

With the proper authority the system will be monitored and maintained. So no data of patients will be used without the permission of the user. All the information of a patient will be secured in the database and we will ensure his/her data will not be compromised in any situation. So we can say that there is no ethical problem on this system. We guarantees accurate maintenance of Patient details.

## 7. Conclusion and Future Scope

### Conclusion

Without a hospital management system every hospital follows manual procedures to keep track of its day to day activities. When scenarios such as patient information handling, employee handling, report handling, financial analysis and report generation is taken into consideration there exists many issues with regard to different factors such as efficiency, security, accuracy and reliability. Using this website we can retrieve patient's history with a single click. Thus processing information will be faster. It easily reduces the book keeping task and thus reduces the human effort and increases accuracy speed. Hospital management system is of great importance in modern hospitals.

## Future Scope

In future we want to add a chat box that will help a patient to have little conversation with the doctors and we also want to add live sessions of doctors where there will be a specific topic and specialized doctors to handle everything.

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