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**FACULTY OF COMPUTER SCIENCE AND  
MATHEMATICS  
BACHELOR OF INFORMATION TECHNOLOGY (CS240)**

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**CSC584: ENTERPRISE PROGRAMMING**

**PROJECT TITLE:  
HEALTHCARE MANAGEMENT SYSTEM**

**GROUP:  
NBGS2404A**

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## 1.0 Introduction

In today's fast-paced and digital-driven world, the healthcare sector is rapidly evolving to meet the growing demands for accessibility, efficiency, and convenience. One of the key areas that require improvement is the process of scheduling appointments between patients and healthcare professionals. Manual appointment systems often lead to miscommunication, delays, and administrative burdens. In response to these challenges, this project introduces a Healthcare Management System designed to streamline appointment booking and enhance the overall interaction between patients, doctors, and administrators.

The Healthcare Management System is a web-based platform that provides a centralized and user-friendly solution for managing healthcare appointments. It allows users (patients) to easily register, log in, and book appointments with their preferred doctors. The admin has the authority to manage doctor profiles by adding or updating their information, including specialties and availability. Meanwhile, doctors can log in to review, approve, or reject appointment requests, ensuring better time management and service delivery.

The main goal of this system is to improve the efficiency of healthcare services by digitizing appointment management and reducing dependency on manual record-keeping. By offering a simple yet effective interface for all users, the system aims to enhance patient satisfaction, support healthcare professionals in organizing their schedules, and assist administrators in maintaining accurate data.

## 2.0 Project Background

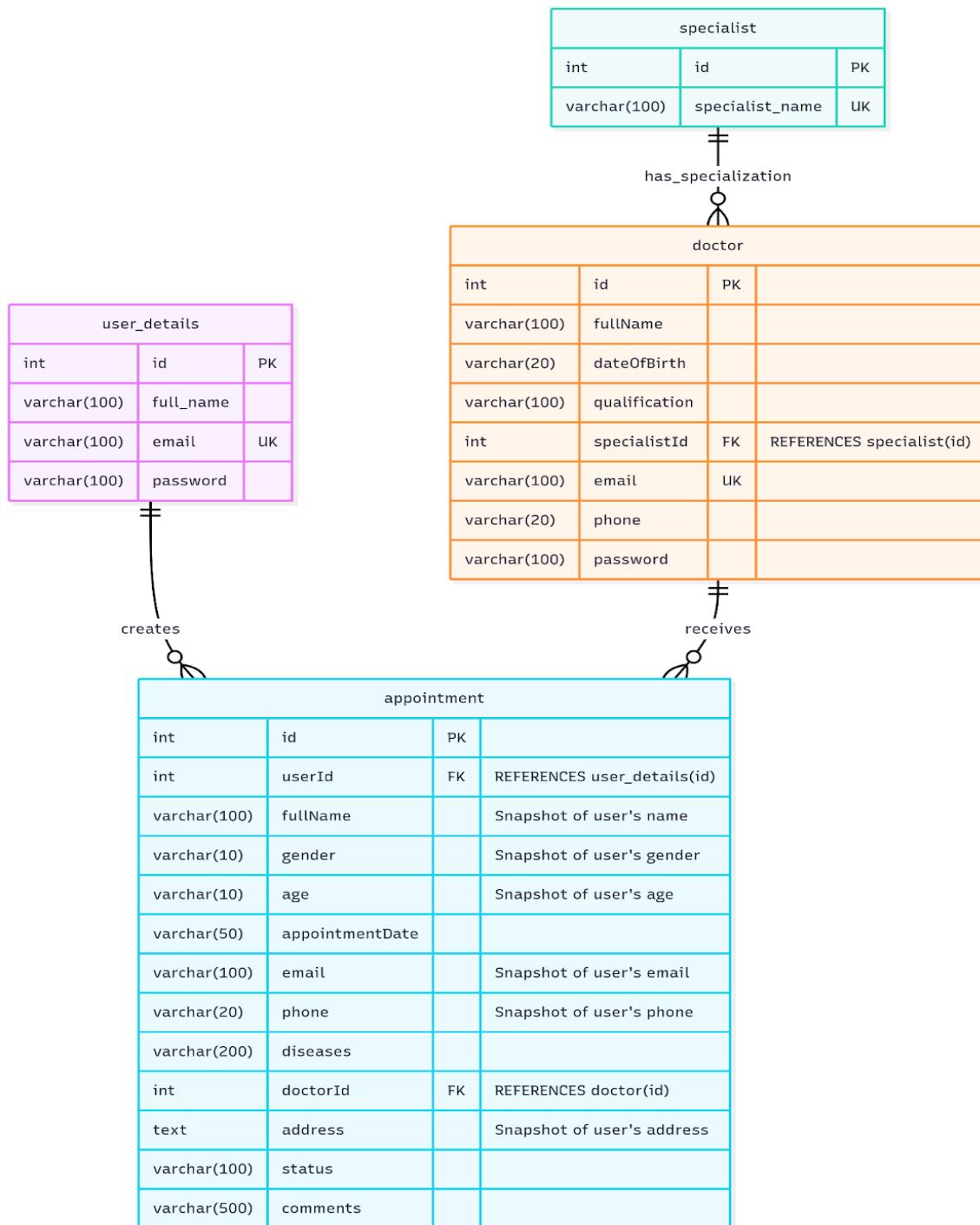
The healthcare industry plays a crucial role in ensuring the well-being of individuals and communities. As technology continues to transform various sectors, the integration of digital solutions into healthcare systems has become increasingly important. One area that remains a common challenge is the manual process of scheduling and managing medical appointments. Traditional methods such as walk-in registrations or phone bookings often lead to inefficiencies, scheduling conflicts, and patient dissatisfaction.

Recognizing these issues, the idea for the Healthcare Management System was developed. This project aims to create a platform where appointments can be managed in a more systematic, automated, and user-friendly manner. The system not only benefits patients by allowing them to book appointments at their convenience but also assists doctors in organizing their daily schedules and gives administrators full control over managing doctor profiles and availability.

The need for such a system became more apparent especially in the post-pandemic era, where minimizing physical contact and reducing waiting times in clinics are essential. By digitizing the appointment process and providing role-based access for users, doctors, and administrators, the system helps to improve operational efficiency, accuracy of records, and patient satisfaction.

Ultimately, the Healthcare Management System was developed as a response to real-world challenges in healthcare appointment management, with the goal of delivering a solution that is accessible, reliable, and adaptable for future enhancements.

## 2.1 Entity Relationship Diagram (ERD)



## 4.0 User Manual

### Home page

Welcome to ICEPS Health Portal

11000+ Healing Hands  
Largest network of the world's finest and brightest medical experts who provide compassionate care using outstanding expertise.

Most Advance Healthcare Technology  
E-Hospitals has been the pioneer in bringing ground-breaking health care technologies to Bangladesh.

Best Clinical Outcomes  
500+ Pharmacies

### 4.1 User Interface

By default, the system is always asking to enter the login details. There is an option to create an account by clicking on the “create one” link.

User Login

Email address  
Enter Email

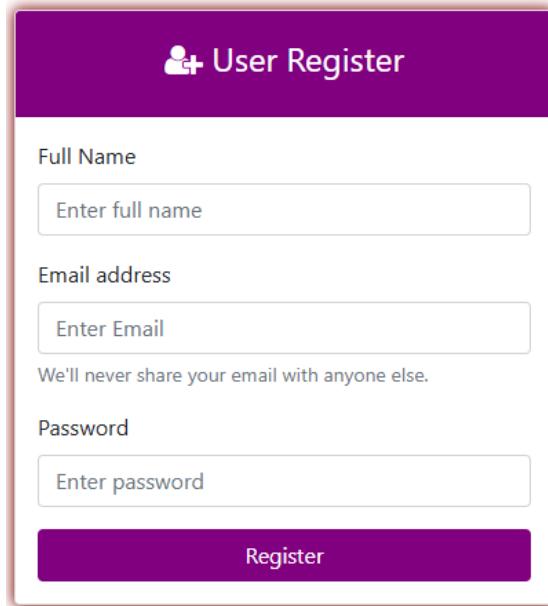
We'll never share your email with anyone else.

Password  
Enter password

Submit

Don't have an account? [create one](#)

#### 4.1.1 User Registration



The image shows a user registration form titled "User Register". It features a purple header with the title and a purple footer with a "Register" button. The main body contains fields for "Full Name", "Email address", and "Password", each with an input box and placeholder text. A small note below the email field states, "We'll never share your email with anyone else."

**User Register**

Full Name  
Enter full name

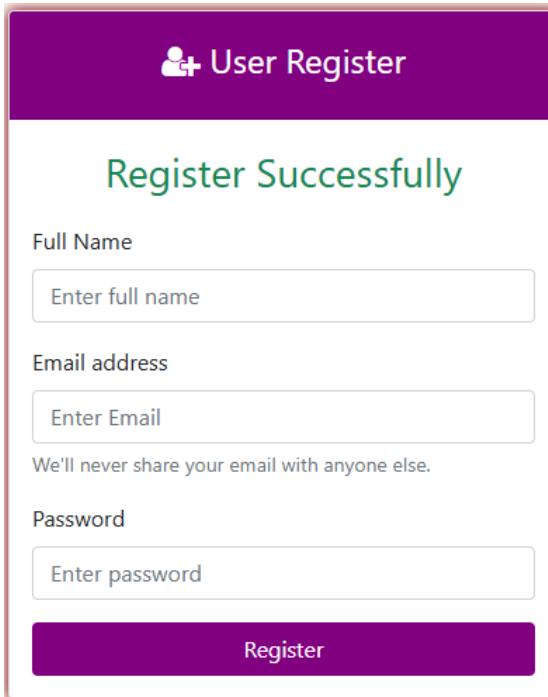
Email address  
Enter Email

We'll never share your email with anyone else.

Password  
Enter password

Register

#### 4.1.2 User Successfully Registered



The image shows a confirmation message "Register Successfully" displayed above the original registration form. The rest of the form is identical to the one in section 4.1.1, including the fields for "Full Name", "Email address", "Password", and the "Register" button.

**User Register**

Register Successfully

Full Name  
Enter full name

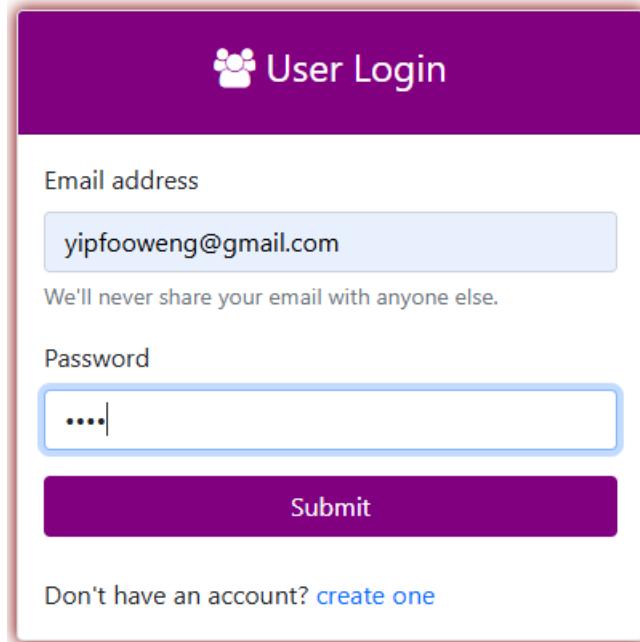
Email address  
Enter Email

We'll never share your email with anyone else.

Password  
Enter password

Register

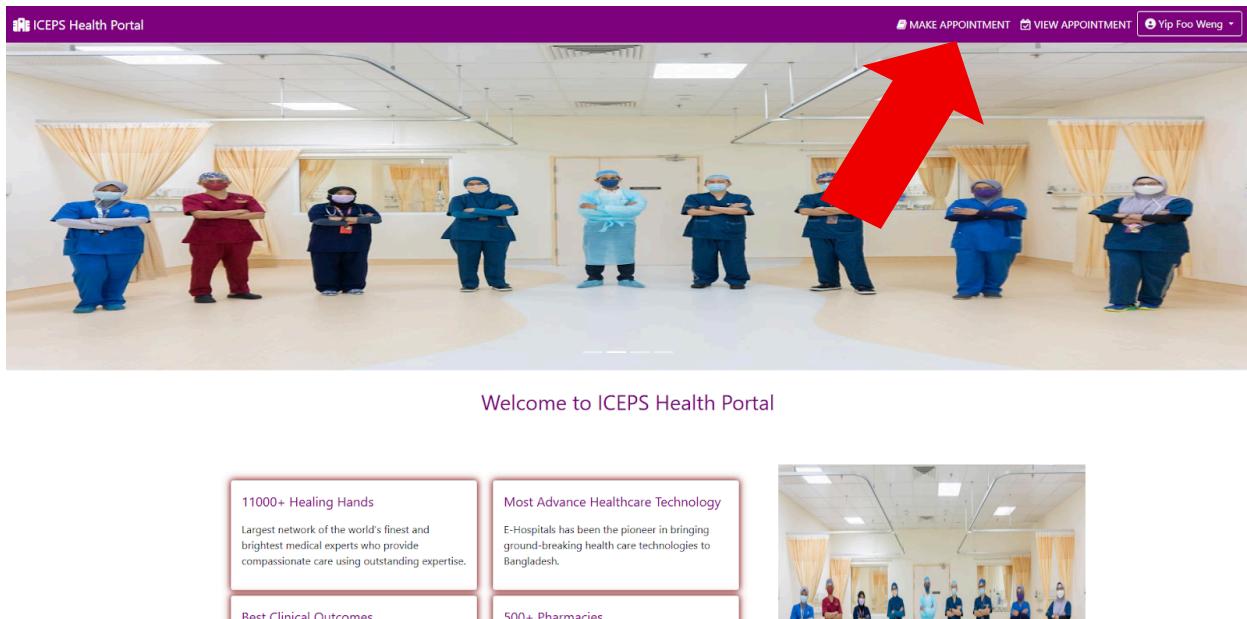
#### 4.1.3 User Login (Using registered email and password)



The image shows a user login form titled "User Login". It features a purple header with a user icon and the text "User Login". Below the header is a field labeled "Email address" containing the value "yipfooweng@gmail.com". A note below the field states, "We'll never share your email with anyone else." Next is a "Password" field with four dots visible. At the bottom is a purple "Submit" button. Below the form is a link "Don't have an account? [create one](#)".

#### 4.1.4 User make appointment

By clicking the “Make Appointment” button on the navbar, the user will be redirected to the page for them to make an appointment.



The image shows the homepage of the ICEPS Health Portal. At the top, there is a navigation bar with icons for "HOME", "ABOUT US", "SERVICES", "APPOINTMENT", "PHARMACY", "CONTACT US", and "LOGOUT". A red arrow points to the "APPOINTMENT" button. The main content area features a photograph of several healthcare professionals in scrubs standing in a hallway. Below the photo is the text "Welcome to ICEPS Health Portal". There are three callout boxes: "11000+ Healing Hands" (Largest network of the world's finest and brightest medical experts who provide compassionate care using outstanding expertise.), "Most Advance Healthcare Technology" (E-Hospitals has been the pioneer in bringing ground-breaking health care technologies to Bangladesh.), and "Best Clinical Outcomes". To the right of these boxes is a smaller image showing a group of healthcare professionals in a room.

4.1.5 Fill the form required

User Appointment

Full Name	Gender
Yip Foo Weng	Male
Age	Appointment Date
62	30/07/2025
Email	Phone
yipfooweng@gmail.com	0133122408
Diseases	Doctor
Diabetes	Dr Aidil Adha (GENERAL PAEDIATRICS)
Full Address	
No1 Jalan Belakang Sekolah, 42787 Kota Kinabalu, Negeri Sembilan	
<input type="button" value="Submit"/>	

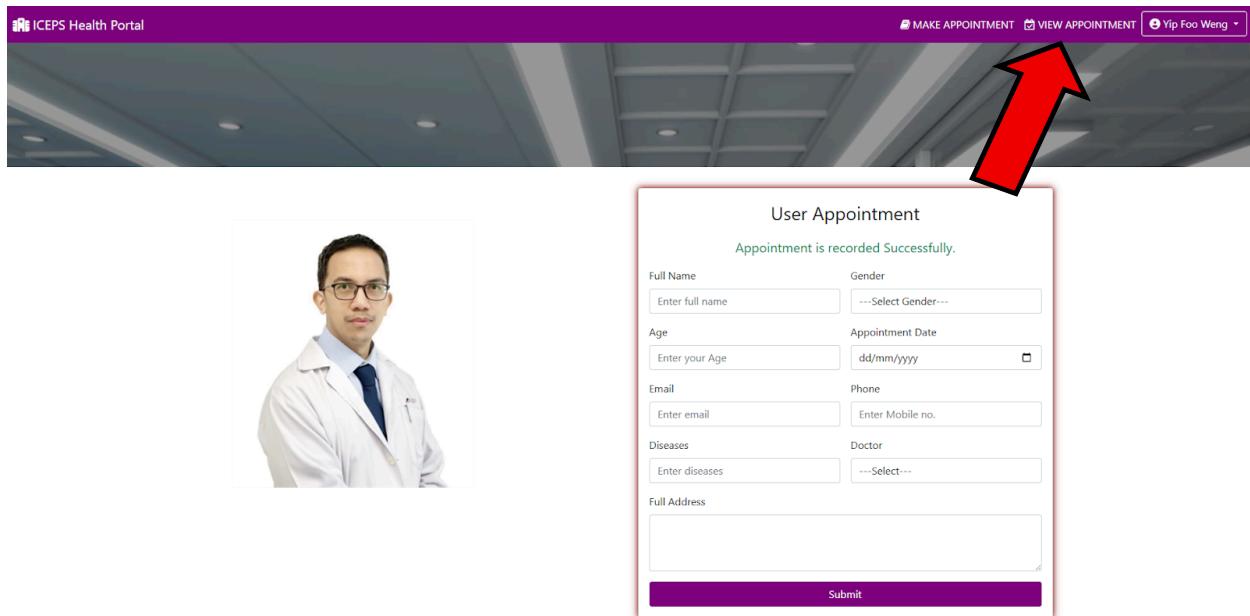
4.1.6 “Appointment is recorded successfully”

User Appointment

Appointment is recorded Successfully.

Full Name	Gender
Enter full name	---Select Gender---
Age	Appointment Date
Enter your Age	dd/mm/yyyy
Email	Phone
Enter email	Enter Mobile no.
Diseases	Doctor
Enter diseases	---Select---
Full Address	
<input type="button" value="Submit"/>	

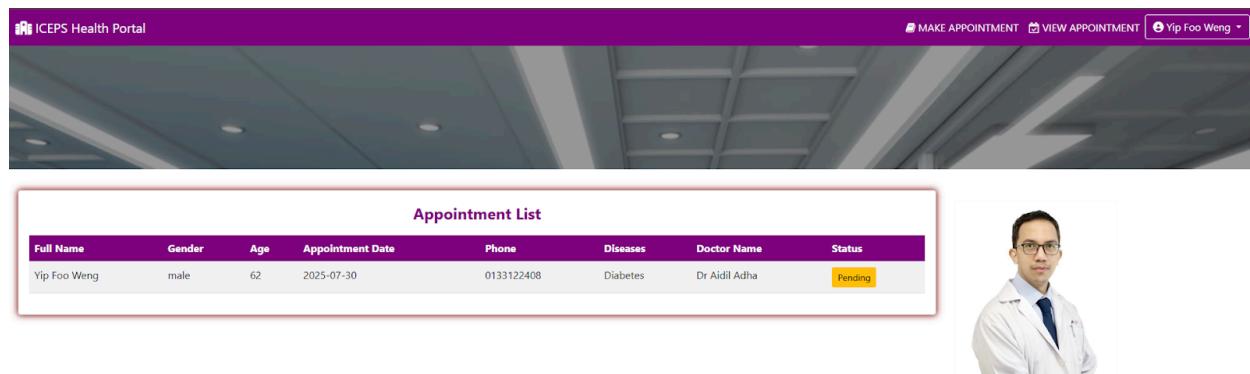
#### 4.1.7 View appointment after fill the user appointment



The screenshot shows the ICEPS Health Portal interface. At the top, there is a purple header bar with the portal's logo and name. Below the header, a large image of a doctor in a white coat is displayed. To the right of the doctor is a modal window titled "User Appointment". Inside the modal, a success message says "Appointment is recorded Successfully." Below the message are several input fields: "Full Name" (with placeholder "Enter full name"), "Gender" (with placeholder "...Select Gender..."), "Age" (with placeholder "Enter your Age" and a date input field "dd/mm/yyyy"), "Email" (with placeholder "Enter email"), "Phone" (with placeholder "Enter Mobile no."), "Diseases" (with placeholder "Enter diseases"), "Doctor" (with placeholder "...Select..."), and "Full Address" (with a large text input field). At the bottom of the modal is a purple "Submit" button.

#### 4.1.8 Appointment recorded on the list

Users can view the details and status of the appointment made on this page.



The screenshot shows the ICEPS Health Portal interface. At the top, there is a purple header bar with the portal's logo and name. Below the header, a table titled "Appointment List" displays a single row of appointment details. The columns are: Full Name, Gender, Age, Appointment Date, Phone, Diseases, Doctor Name, and Status. The data in the table is as follows:

Full Name	Gender	Age	Appointment Date	Phone	Diseases	Doctor Name	Status
Yip Foo Weng	male	62	2025-07-30	0133122408	Diabetes	Dr Aidil Adha	Pending

To the right of the table is a portrait photo of a doctor wearing a white coat and glasses.

## 4.2. Doctor interface

By default, the system is always asking to enter the login details.

The screenshot shows the ICEPS Health Portal Doctor Login page. At the top, there is a purple header bar with the ICEPS logo and the text "ICEPS Health Portal". On the right side of the header, there are three navigation items: "ADMIN", "DOCTOR", and "USER", each preceded by a small icon. The main content area has a white background with a purple header titled "Doctor Login". Below the title are two input fields: "Email address" and "Password", both with placeholder text ("Enter Email" and "Enter password" respectively). A small note below the email field states, "We'll never share your email with anyone else." At the bottom of the form is a purple "Submit" button.

### 4.2.1 Doctor login email and password

This is a detailed view of the "Doctor Login" form. The title "Doctor Login" is at the top in a large, white, sans-serif font. Below it is a section labeled "Email address" with a placeholder "aidil@medical.com". A note below the email field says, "We'll never share your email with anyone else." Next is a "Password" field containing five dots ("....."). At the bottom is a large, white "Submit" button.

#### 4.2.2 Doctor Dashboard

The dashboard will display the number of appointments for the doctor.

The screenshot shows the ICEPS Health Portal Doctor Dashboard. At the top, there is a purple header bar with the portal logo, 'ICEPS Health Portal', and navigation links for 'HOME' and 'PATIENT'. On the right side of the header is a user profile for 'Dr Aidiil Adha'. Below the header, the main title 'Doctor Dashboard' is centered. In the center of the dashboard is a rounded rectangular box with a light gray background and a thin red border. Inside this box, there is a small purple calendar icon followed by the text 'Total Appointment' and the number '3' below it.

#### 4.2.3 Patient Appointment Details

Details will show the list of patients and the details of the patient that is up for the appointment.

The screenshot shows the ICEPS Health Portal Patient Details page. At the top, there is a purple header bar with the portal logo, 'ICEPS Health Portal', and navigation links for 'HOME' and 'PATIENT'. On the right side of the header is a user profile for 'Dr Aidiil Adha'. Below the header, the main title 'Patient Details' is centered. The page displays a table with three rows of patient information. Each row includes columns for Full Name, Gender, Age, Appointment Date, Email, Phone, Diseases, Status, Comment / Prescription, and Approval buttons. The first two patients have their status listed as 'Approved', while the third patient's status is 'Pending'. Each row also features a green 'Add Comment / Prescription' button and a blue 'Approve' button or a red 'Reject' button.

Full Name	Gender	Age	Appointment Date	Email	Phone	Diseases	Status	Comment / Prescription	Approval
Hafiz	male	34	1991-03-04	apitduden@gmail.com	0102528532	Vomit	Approved	Add Comment / Prescription	<span style="color: blue;">Approve</span> <span style="color: red;">Reject</span>
SOFIA BINTI ABDULAH	female	34	1991-03-04	sofian@gmail.com	0146550585	Vomit	Pending	Add Comment / Prescription	<span style="color: blue;">Approve</span> <span style="color: red;">Reject</span>
Yip Foo Weng	male	62	2025-07-30	yipfoooweng@gmail.com	0133122408	Diabetes	Pending	Add Comment / Prescription	<span style="color: blue;">Approve</span> <span style="color: red;">Reject</span>

## 4.2.4 “Comment/Prescription” button to leave a treatment comment

Patient Details									
Full Name	Gender	Age	Appointment Date	Email	Phone	Diseases	Status	Comment / Prescription	Approval
Hafiz	male	34	1991-03-04	apitduden@gmail.com	0102528532	Vomit	Approved	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>
SOFIA BINTI ABDULLAH	female	34	1991-03-04	sofian@gmail.com	0146550585	Vomit	Pending	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>
Yip Foo Weng	male	62	2025-07-30	yipfooweng@gmail.com	0133122408	Diabetes	Pending	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>

## 4.2.5 Leave a comment

Doctor can leave a comment or prescription during the consultation with the patient.

### Leave a Treatment Comment

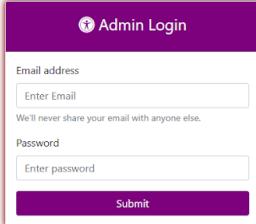
Full Name	Age
Hafiz	34
Phone	Diseases
0102528532	Vomit
Leave a Comment / Prescription	
<input type="text" value="Leave a comment"/>	
<input type="button" value="Submit"/>	

4.2.6 “Approve” and “Reject” button is to accept or reject patient appointment.

Patient Details									
Full Name	Gender	Age	Appointment Date	Email	Phone	Diseases	Status	Comment / Prescription	Approval
Hafiz	male	34	1991-03-04	apitduden@gmail.com	0102528532	Vomit	Approved	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>
SOFIA BINTI ABDULLAH	female	34	1991-03-04	sofian@gmail.com	0146550585	Vomit	Pending	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>
Yip Foo Weng	male	62	2025-07-30	yipfooweng@gmail.com	0133122408	Diabetes	Pending	<button>Add Comment / Prescription</button>	<button>Approve</button> <button>Reject</button>

### 4.3. Admin interface

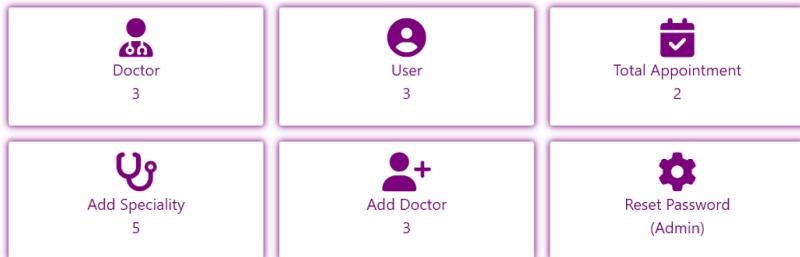
System asking to login into the system using the admin credentials.



The screenshot shows the 'Admin Login' page of the ICEPS Health Portal. At the top, there is a purple header bar with the portal logo and navigation links for 'ADMIN', 'DOCTOR', and 'USER'. Below the header is a white form titled 'Admin Login' with a lock icon. It contains two input fields: 'Email address' (placeholder 'Enter Email') and 'Password' (placeholder 'Enter password'). Below these fields is a small note: 'We'll never share your email with anyone else.' At the bottom of the form is a purple 'Submit' button.

#### 4.3.1 Admin dashboard

The dashboard will display the overall details.



The screenshot shows the 'Dashboard' page of the ICEPS Health Portal. At the top, there is a purple header bar with the portal logo and navigation links for 'HOME', 'DOCTOR', 'VIEW DOCTOR', 'PATIENT', and a dropdown menu for 'Admin'. Below the header is a white dashboard area with six cards arranged in a 2x3 grid. The cards are labeled: 'Doctor' (3), 'User' (3), 'Total Appointment' (2), 'Add Speciality' (5), 'Add Doctor' (3), and 'Reset Password (Admin)'. Each card has a corresponding icon: a person icon for Doctor and User, a calendar icon for Total Appointment, a plus sign icon for Add Speciality and Add Doctor, and a gear icon for Reset Password.

#### 4.3.2 Doctor details

To view the details of the available doctors in the system.

**Dashboard**

- Doctor 3
- User 3
- Total Appointment 2
- Add Speciality 5
- Add Doctor 3
- Reset Password (Admin)

#### 4.3.3 List of doctor

Button “Edit” for edit doctors details

Button “Delete” for delete doctors details

**List of Doctors**

Full Name	DOB	Qualification	Specialist	Email	Phone	Action
Dr Amar	1878-03-04	Medical Bachelor	PSYCHIATRY	amar@medical.com	0174926086	<a href="#">Edit</a> <a href="#">Delete</a>
Dr Aidil Adha	1989-03-05	Medical Bachelor	GENERAL PAEDIATRICS	aidil@medical.com	0174926086	<a href="#">Edit</a> <a href="#">Delete</a>
Dr Nazmi	1987-03-03	Medical Bachelor	PSYCHIATRY	nazmi@medical.com	0199084839	<a href="#">Edit</a> <a href="#">Delete</a>

#### 4.3.4 User details

To view the details of the available users in the system.

The screenshot shows the ICEPS Health Portal dashboard. At the top, there is a purple header bar with the portal logo, the text "ICEPS Health Portal", and navigation links for "HOME", "DOCTOR", "VIEW DOCTOR", "PATIENT", and "Admin". Below the header is a title "Dashboard". The dashboard features six cards arranged in a grid:

- Doctor:** 3 (Icon: Doctor)
- User:** 3 (Icon: Person)
- Total Appointment:** 2 (Icon: Calendar with checkmark)
- Add Speciality:** 5 (Icon: Stethoscope)
- Add Doctor:** 3 (Icon: Person with plus)
- Reset Password (Admin):** (Icon: Gear)

A large red arrow points from the text "To view the details of the available users in the system." towards the "User" card on the dashboard.

#### 4.3.5 List of user

Button “Edit” is for edit full name,email and password list of user  
Button “Delete” is for delete list of users.

The screenshot shows the "List of Users" page of the ICEPS Health Portal. At the top, there is a purple header bar with the portal logo, the text "ICEPS Health Portal", and navigation links for "HOME", "DOCTOR", "VIEW DOCTOR", "PATIENT", and "Admin". Below the header is a title "List of Users". The page displays a table with the following data:

ID	Full Name	Email	Password	Action
5	Yip Foo Weng	yipfoooweng@gmail.com	user	<a href="#">Edit</a> <a href="#">Delete</a>
3	Nurul Nasriah	nurul@gmail.com	admin	<a href="#">Edit</a> <a href="#">Delete</a>
2	Administrator	admin@gmail.com	admin	<a href="#">Edit</a> <a href="#">Delete</a>
1	Mohd Hafizuddin	apitduen@gmail.com	admin	<a href="#">Edit</a> <a href="#">Delete</a>

#### 4.3.6 List of appointment

To view the details of the available appointments in the system.

The screenshot shows the ICEPS Health Portal dashboard. At the top, there is a purple header bar with the portal logo, navigation links for HOME, DOCTOR, VIEW DOCTOR, and PATIENT, and a user dropdown labeled 'Admin'. Below the header is a title 'Dashboard' in a light blue box. The dashboard features six cards arranged in a grid:

- Doctor:** 3 (Icon: Doctor)
- User:** 3 (Icon: User)
- Total Appointment:** 2 (Icon: Calendar with checkmark) - This card is highlighted with a red arrow pointing to it.
- Add Speciality:** 5 (Icon: Speciality)
- Add Doctor:** 3 (Icon: Doctor with plus)
- Reset Password (Admin):** (Icon: Gear)

#### 4.3.7 Patient details

Button “Approve” is to accept an appointment.

Button “Reject” is to reject an appointment with reason.

Button “Cancel” is to reject an appointment without reason.

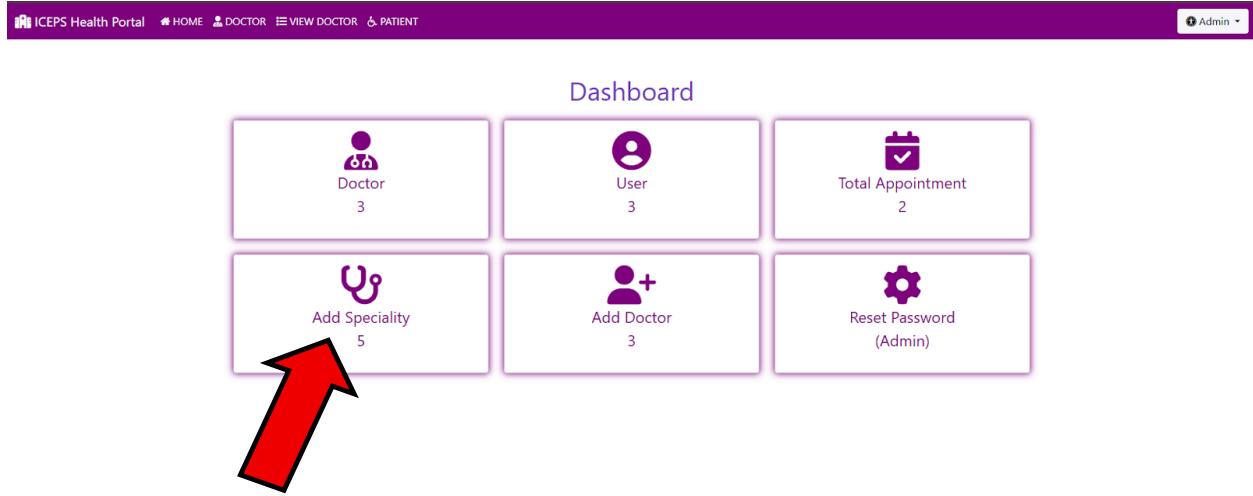
Button “Delete” is to delete appointments without reason.

The screenshot shows the ICEPS Health Portal Patient Details page. At the top, there is a purple header bar with the portal logo, navigation links for HOME, DOCTOR, VIEW DOCTOR, and PATIENT, and a user dropdown labeled 'Admin'. Below the header is a title 'Patient Details' in a light blue box. The page displays a table of patient information:

ID	Full Name	Gender	Age	Appointment Date	Email	Phone	Diseases	Doctor Name	Address	Status	Comments	Actions
10	Yip Foo Weng	male	62	2025-07-30	yipfooeweng@gmail.com	0133122408	Diabetes	Dr Aidil Adha	No1 Jalan Belkang Sekolah 42787 Kota Kinabalu,Negeri Sembilan	Pending	N/A	<a href="#">Approve</a> <a href="#">Reject</a> <a href="#">Cancel</a> <a href="#">Delete</a>
9	SOFIA BINTI ABDULLAH	female	34	1991-03-04	sofian@gmail.com	0146550585	Vomit	Dr Aidil Adha	kampung masjid lama,mukim tekai kiri	Pending	N/A	<a href="#">Approve</a> <a href="#">Reject</a> <a href="#">Cancel</a> <a href="#">Delete</a>
8	Hafiz	male	34	1991-03-04	apitduden@gmail.com	0102528532	Vomit	Dr Aidil Adha	kampung masjid lama,mukim tekai kiri	Approved	N/A	<a href="#">Approve</a> <a href="#">Reject</a> <a href="#">Cancel</a> <a href="#">Delete</a>

#### 4.3.8 Add Specialist

This function is to add the speciality for the doctor.

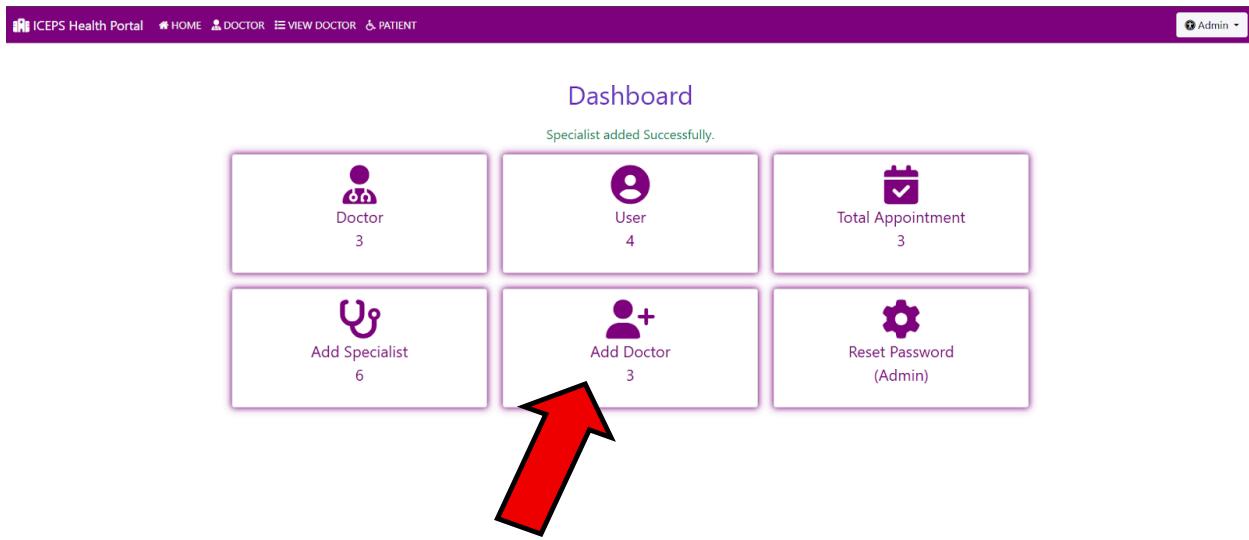


#### 4.3.9 Enter the speciality Name (to add new a speciality).

The screenshot shows a modal dialog box titled "Add Speciality" with a close button "X" in the top right corner. The main area contains a label "Enter Speciality Name" above a text input field. Below the input field is a red-bordered "Add" button. In the bottom right corner of the modal is a "Close" button.

#### 4.3.10 Add Doctor

This function is to add and register the doctor.



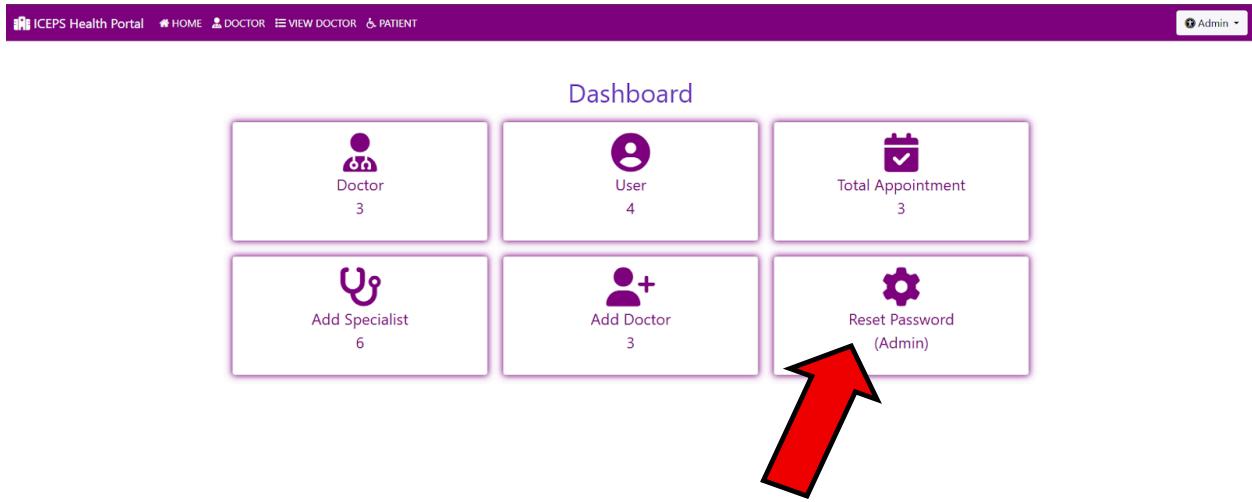
#### 4.3.11 Fill in the form to add a doctor.

The screenshot shows the 'Add Doctor' form. The title 'Add Doctor' is at the top. The form contains the following fields:

- Full Name: Input field placeholder 'Enter full name'
- Date of Birth: Input field placeholder 'dd/mm/yyyy' with a clear icon
- Qualification: Input field placeholder 'Enter qualification'
- Specialist: Select dropdown placeholder '---Select---
- Email address: Input field placeholder 'Enter Email'
- Phone: Input field placeholder 'Enter mobile number'
- Password: Input field placeholder 'Enter password'

At the bottom are two buttons: 'Register' (grey) and 'Cancel' (red).

4.3.12 Reset password.



4.3.13 Enter the new and old password to change the admin password.

### Admin Change Password

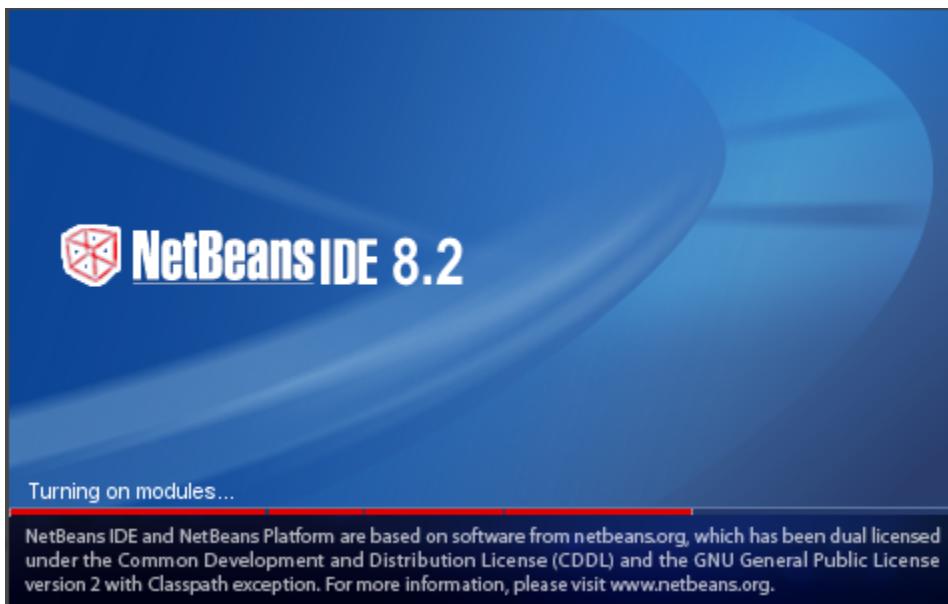
Enter New Password

Enter Old Password

**Change Password**

## 6.0 Tools Used

Netbeans IDE 8.2



MySQL 8.0



## 7.0 Conclusion

In conclusion, the development of the **Healthcare Management System** addresses a critical need within the healthcare sector for more efficient and accessible appointment management. By integrating digital solutions, the system enhances communication between patients, doctors, and administrators, reduces manual errors, and improves the overall quality of healthcare services.

The system offers essential functionalities such as appointment booking for patients, doctor profile management by administrators, and appointment approval or rejection by doctors. These role-based features ensure a smooth and organized workflow, making it easier for all users to interact with the system effectively.

This project not only demonstrates the potential of technology to solve real-world problems but also provides a foundation for future improvements. Features such as automated notifications, teleconsultation, and patient medical record integration can be implemented to further expand the system. Ultimately, the Healthcare Management System serves as a practical step toward digital transformation in healthcare and contributes to better service delivery and patient satisfaction.

## 8.0 References

System Project Link: <https://iceps-medical-appointment.kacangsoya.com/>

Storyboard Link: <https://malaysiakini.site/UiT-M-Health-Consultation/home-main-page.html>

Project GitHub Repository: <https://github.com/deen992/Doctor-Patient-Portal.git>