



American International University Bangladesh

FACULTY OF SCIENCE & TECHNOLOGY

OBJECT ORIENTED PROGRAMMING – 2

Fall 2023-24

Section: P

HEALTHCARE MANAGEMENT SYSTEM- “MedEase Central”

Supervised by,

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Submitted By:

NAME	ID	Contribution
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Urmi Karmakar	22-47163-1	Homepage, User login, Admin Dashboard
Md. Tamim	22-46918-1	Homepage, User login, Hospital Dashboard
Mahedi Hasan	22-46259-1	Homepage, User login, Doctor Dashboard

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Title : HEALTHCARE MANAGEMENT SYSTEM- "MedEase Central".

Introduction:

"MedEase Central" is a comprehensive Healthcare Management System developed using the C# programming language and the .NET framework. This innovative system is designed to streamline and enhance the efficiency of healthcare facilities, providing a centralized platform for managing various aspects of healthcare administration, patient care, and medical records, streamlining patient management, appointment scheduling, electronic health records, billing, pharmacy management, and robust reporting. With a user-friendly interface, it aims to enhance efficiency, improve patient care, and ensure compliance with healthcare regulations. "MedEase Central" represents a technological leap forward in healthcare administration, contributing to better outcomes and a more effective healthcare ecosystem.

In the "MedEase Central" Healthcare Management System, there are four distinct user roles: Doctor, Patient, Admin, and Hospital. Each role is tailored to meet the specific needs and responsibilities of different stakeholders within the healthcare ecosystem.

1. Doctor: Doctors have access to patient records, enabling them to view medical history, schedule appointments, and prescribe medications.

They can update patient information, input diagnosis details, and communicate with patients through the system.

Access to a personalized dashboard helps doctors manage their appointments and daily tasks efficiently.

2. Patient: Patients can register and log in to access their personal health records, upcoming appointments, and prescription details.

The system allows patients to schedule appointments, receive automated reminders, and communicate with healthcare providers.

Patients can view and download their medical history and test results securely.

3. Admin: Administrators have comprehensive control over the system, managing user accounts, roles, and permissions.

They can generate reports, monitor system usage, and ensure compliance with security and regulatory standards.

Admins oversee the overall functionality of the system, addressing issues and ensuring smooth operation.

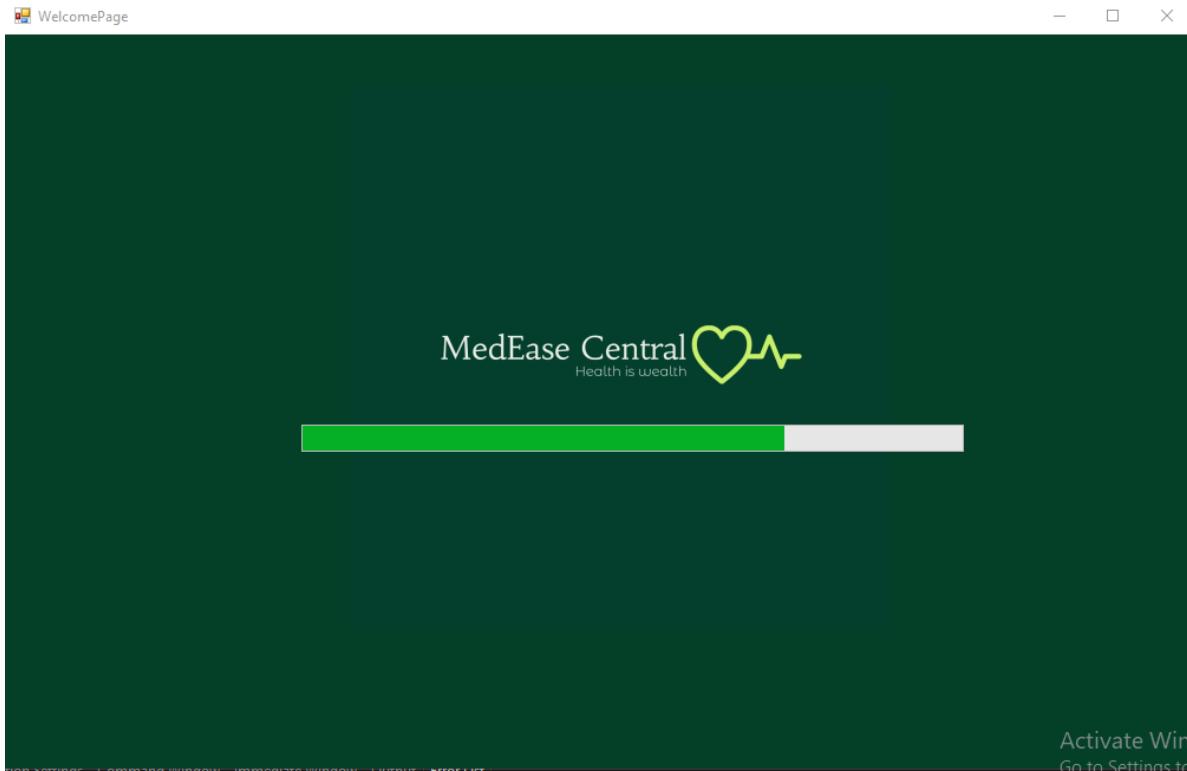
4. Hospital: Hospital users represent a higher-level administrative role, overseeing multiple aspects of the healthcare facility.

They can manage staff roles, resource allocation, and overall system configurations.

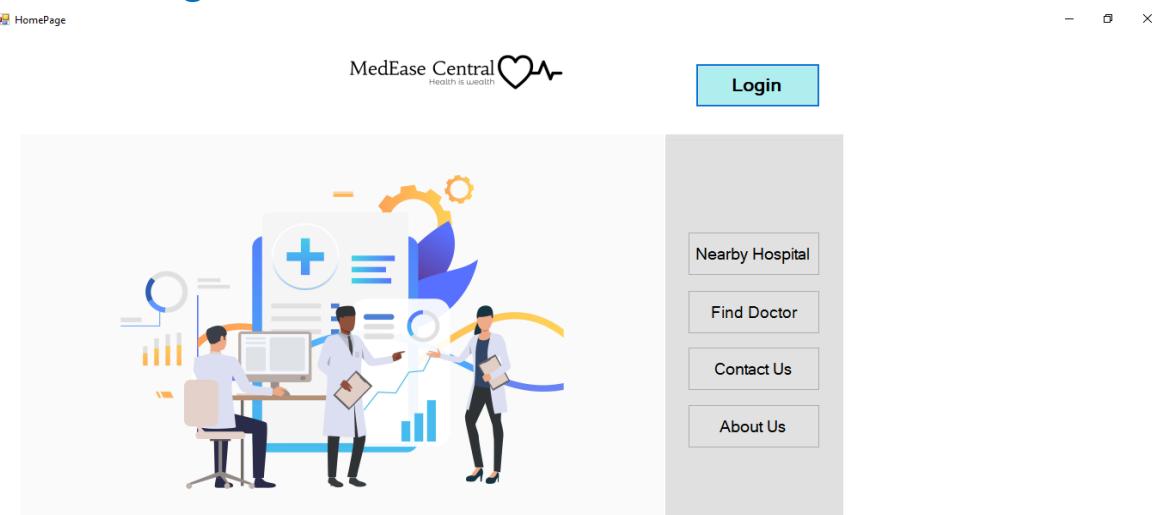
Hospital administrators have access to aggregated data and analytics, aiding strategic decision-making for the entire healthcare institution.

Visualization:

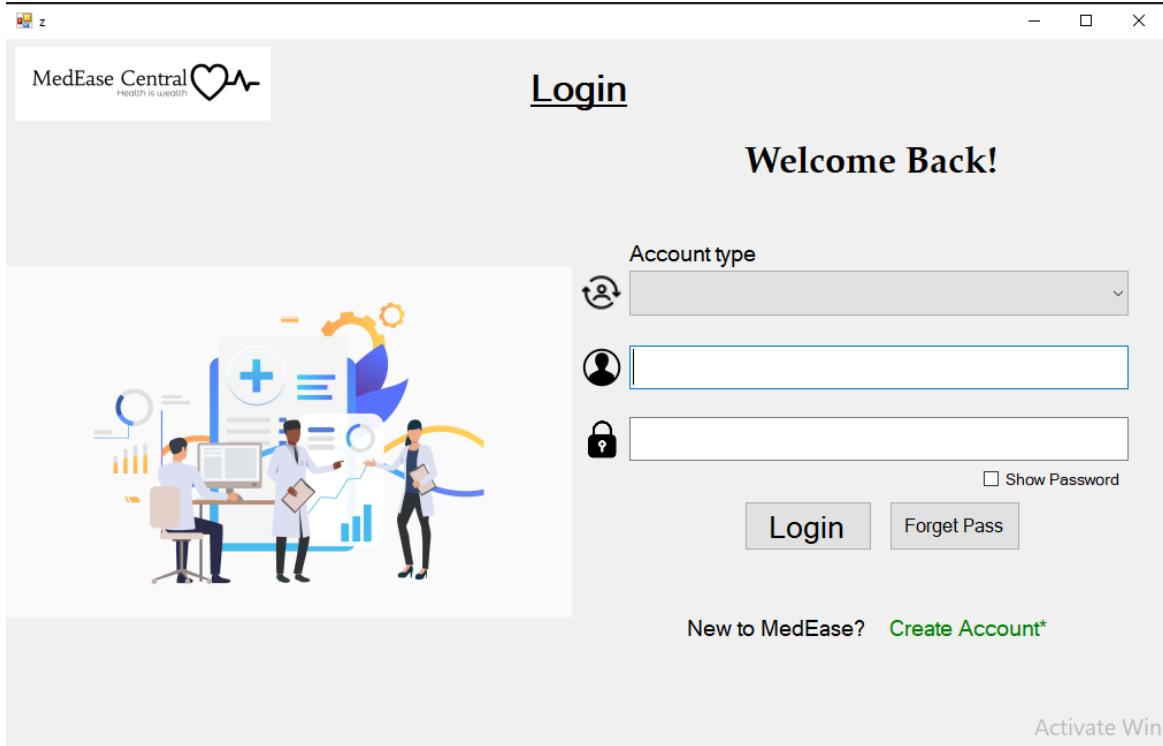
1. Loading Page



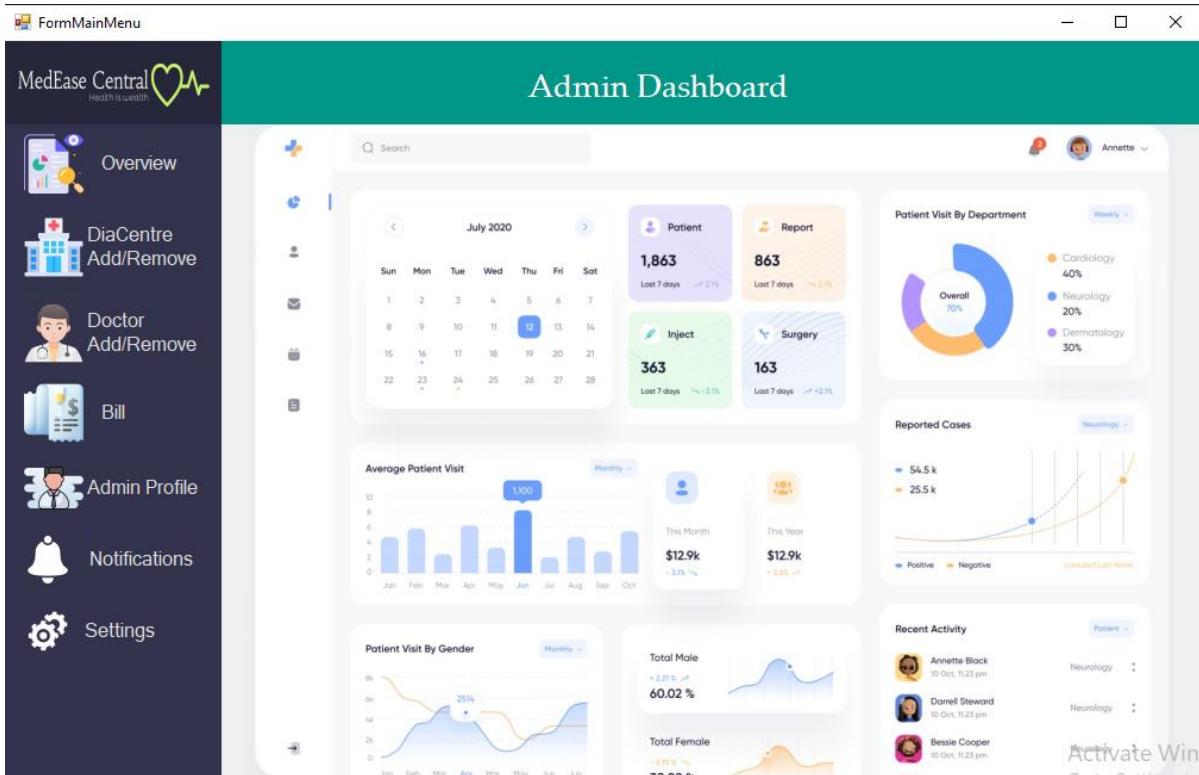
2. Home Page



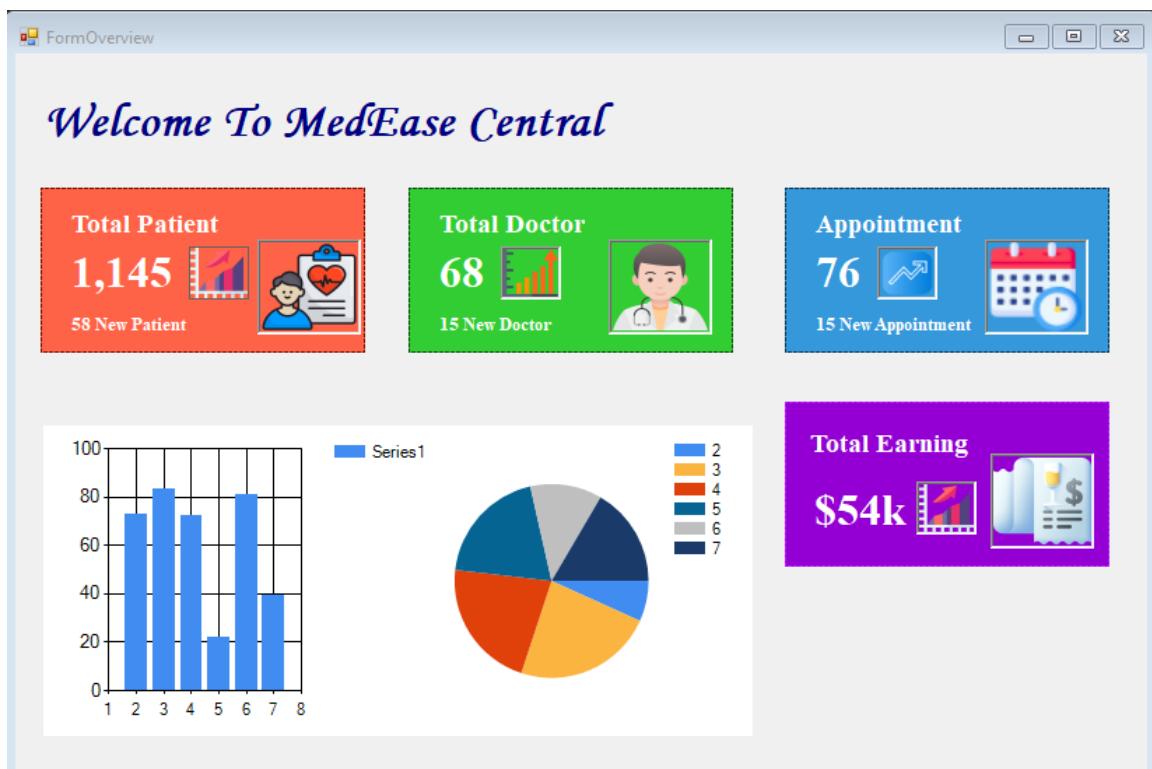
3. Multiple User Log in or Sign-Up process:



4. Admin Dashboard



5. Admin Overview



6. Admin Diagnostic Centre Add/Remove

The form allows users to manage diagnostic centres. It includes fields for DIA ID, DIA NAME, ADDRESS, and IMAGE, along with buttons for INSERT, UPDATE, DELETE, and RESET. A search bar is also present.

Diagnostic Centre Information

MedEase Central Health is wealth

Go Back

Overview

DiaCentre Add/Remove

Doctor Add/Remove

Bill

Admin Profile

Notifications

Settings

DIA ID:

DIA NAME:

ADDRESS:

IMAGE: 

INSERT UPDATE DELETE RESET

Activate Win... Go to Settings to...

7. Admin Doctor Add/Remove

FormMainMenu

Doctor Information

Go Back

MedEase Central Health is wealth

Overview

DiaCentre Add/Remove

Doctor Add/Remove

Bill

Admin Profile

Notifications

Settings

DOCTOR ID

DOCTOR NAME

DESIGNATION

SPECIALITIES

IMAGE 

BROWSE

INSERT UPDATE DELETE RESET

Activate Window

Go to Continue

8. Admin Show Bill

FormMainMenu

Bill Information

Go Back

MedEase Central Health is wealth

Overview

DiaCentre Add/Remove

Doctor Add/Remove

Bill

Admin Profile

Notifications

Settings

BILL ID

DOCTOR BILL

DIA BILL

VAT%

DISCOUNT

SERVICE CHARGE

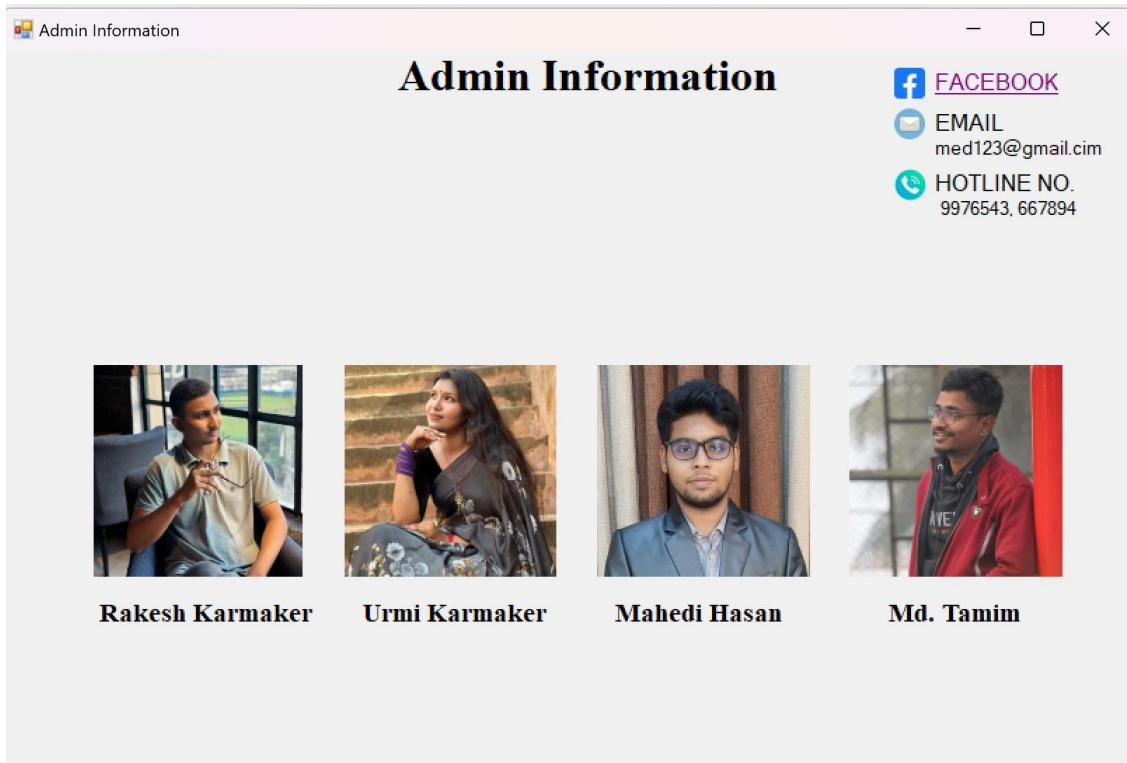
TOTAL BILL

Add Bill Reset

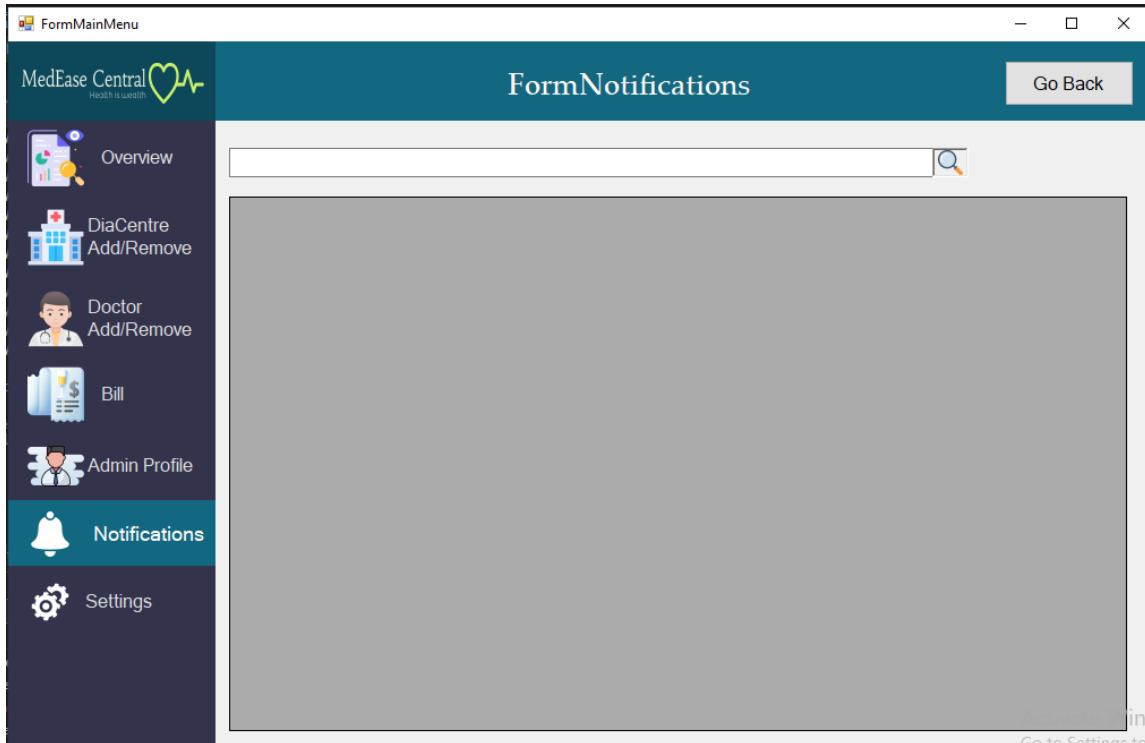
Activate Window

Go to Continue

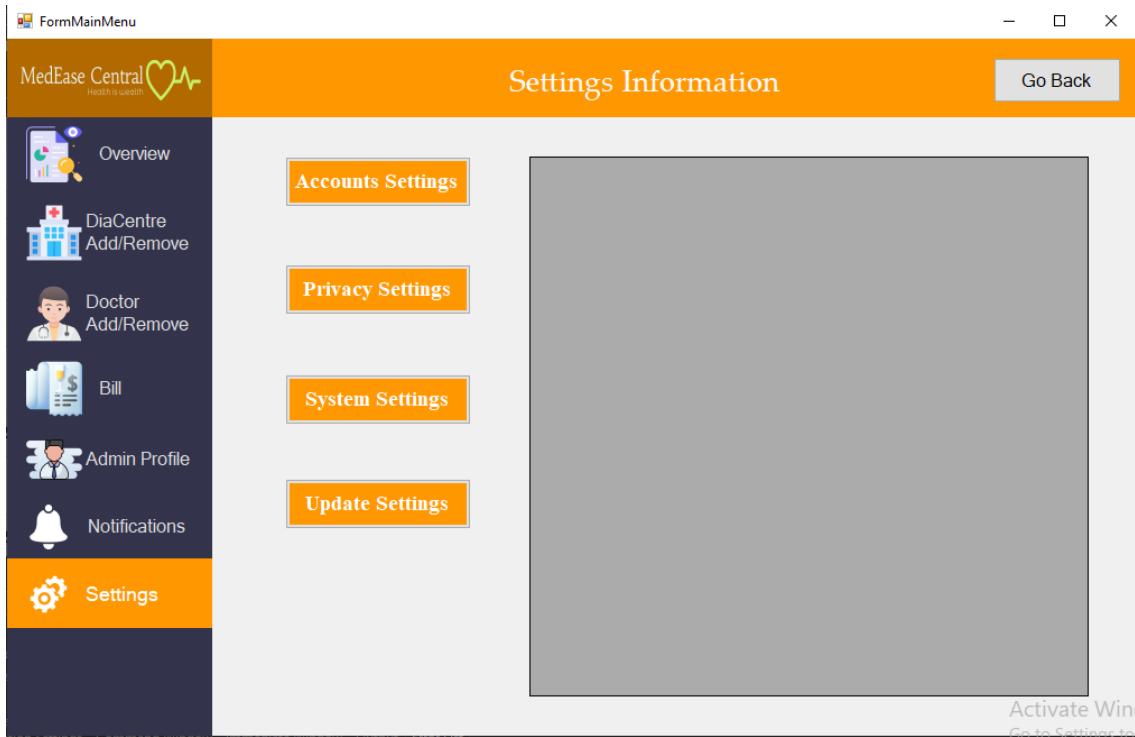
9. Admin Profile



10. Admin Notification



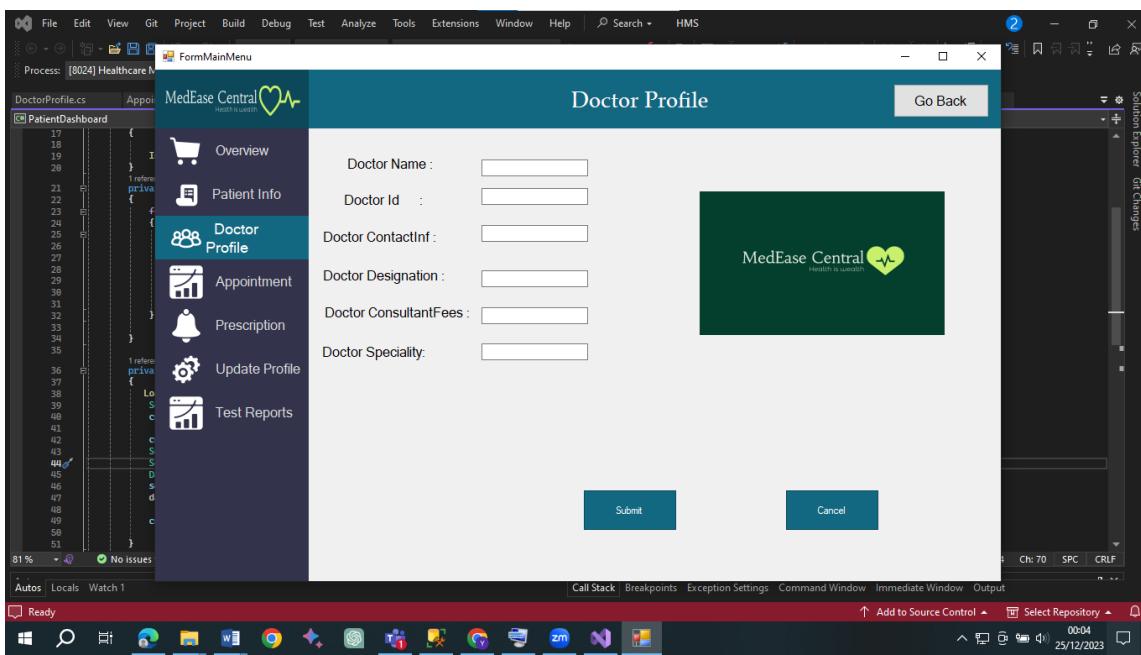
11. Admin Settings



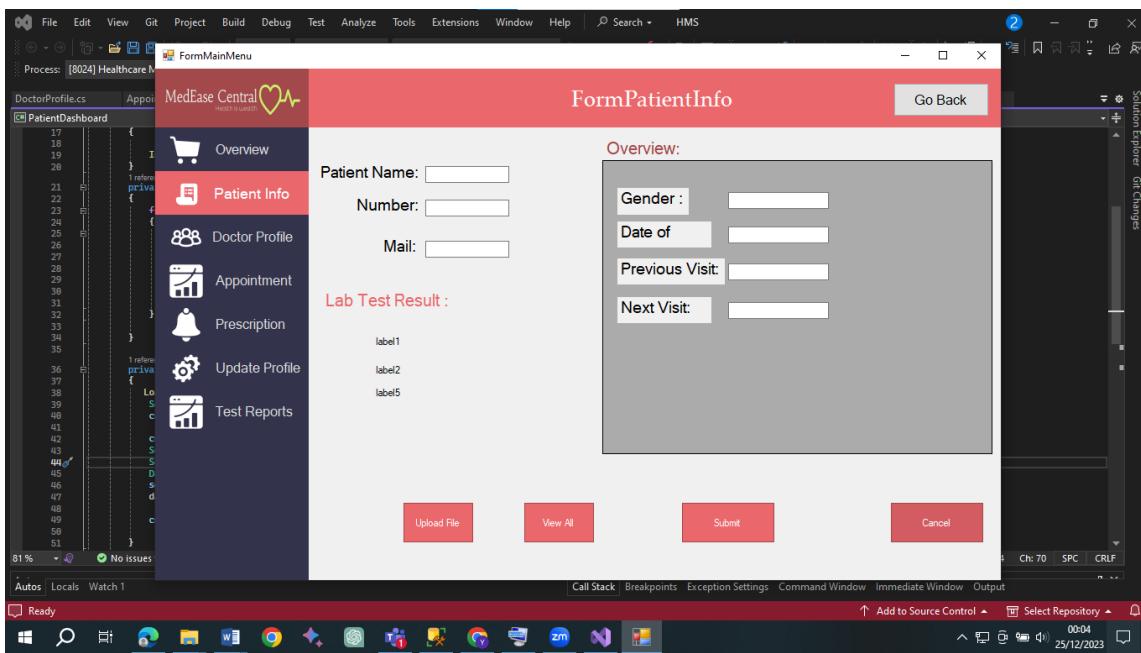
12. Doctor Dashboard

The screenshot shows the Doctor Dashboard. At the top left is a profile picture of Dr. Martin Deo with the text 'Dr. Martin Deo MBBS, FCPS - MD (Medicine), MCPs.' Below the dashboard title 'Dashboard' is a circular donut chart showing patient distribution by category: New Patients (light blue), Old Patients (yellow), and Total Patients (dark blue). To the right of the chart are three summary boxes: 'Total Patient 2000+' (Till Today), 'Today Patient 068' (21 Dec-2021), and 'Today Appointments 085' (21 Dec-2021). The left sidebar includes links for Dashboard, Appointment, Appointment Page, Payment, Profile, Settings, and Logout. The main content area is divided into several sections: 'Patients Summary December 2021' (with the donut chart), 'Today Appointment' (listing patients M.J. Mical, Sanath Deo, Loeara Phanj, and Komala Haris with their appointment details), 'Next Patient Details' (for Sanath Deo, showing he is due for a Health Checkup on 21 Dec-2021, with height 172 cm and weight 59 Kg), 'Patient History' (listing Asthma, Hypertension, and Fever), and 'Last Prescriptions' (with a link to view them). At the bottom are sections for 'Patients Review' (Excellent, Great, Good, Average) and 'Appointment Request' (listing Maria Sarafat and Jhon Deo with their appointment details). A calendar for December 2021 is also present at the bottom right.

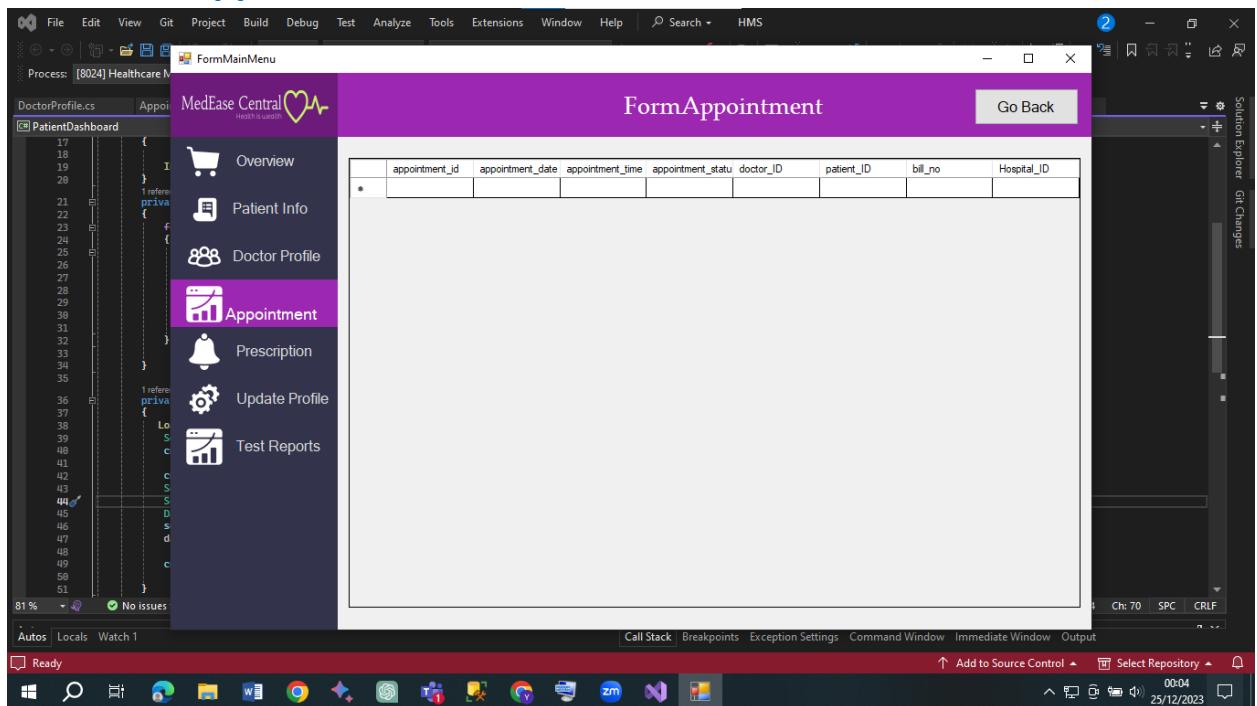
13. Doctor Profile



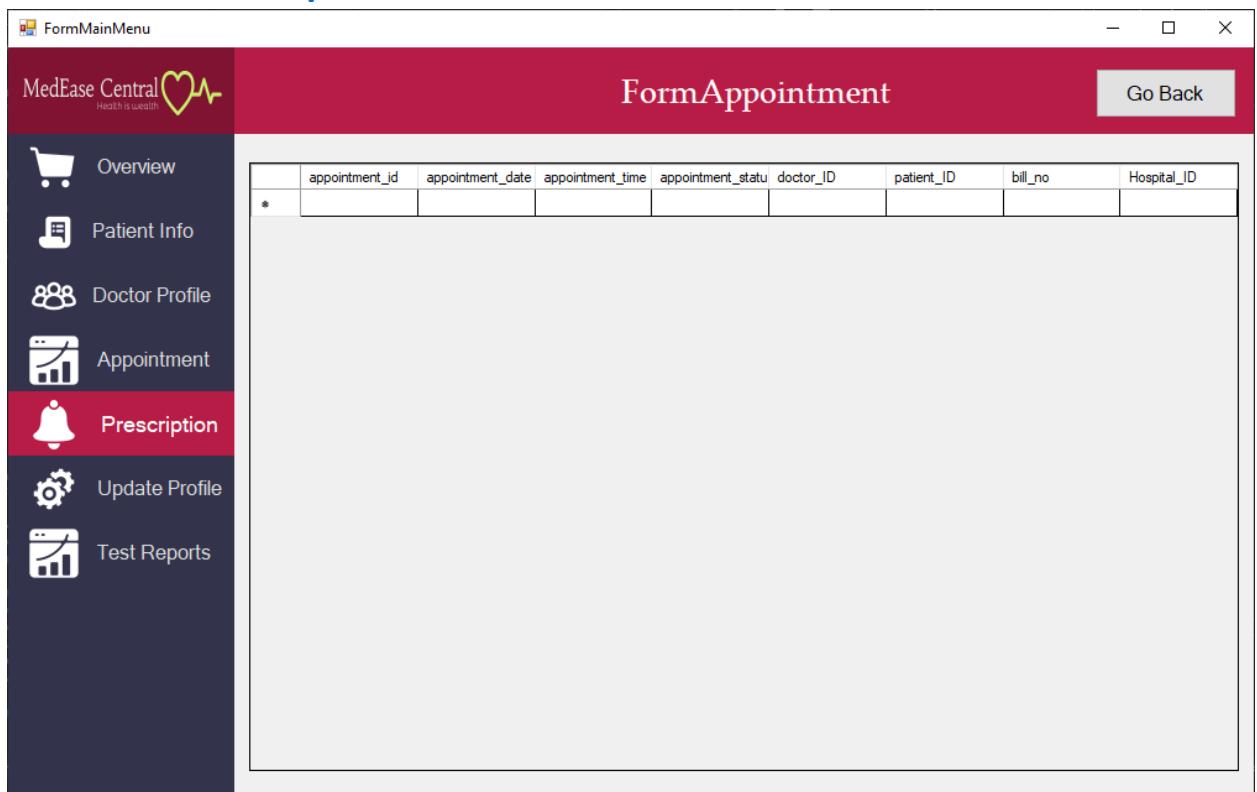
14. Doctor Show Patient Information



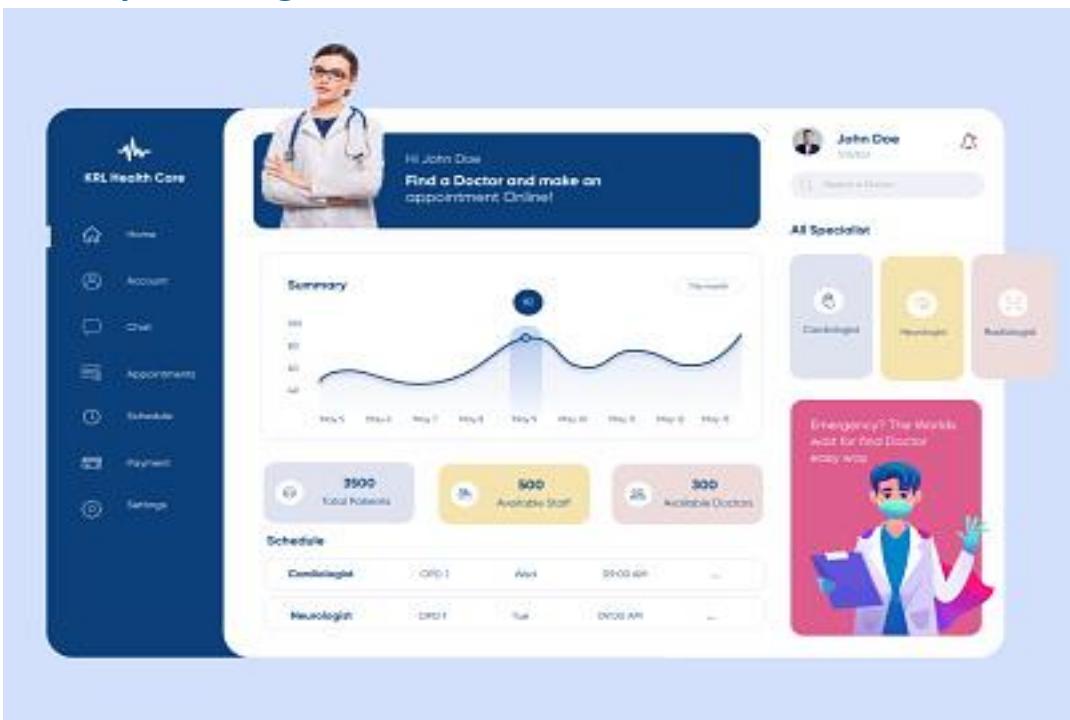
15. Doctor Appointment



16. Doctor Prescription



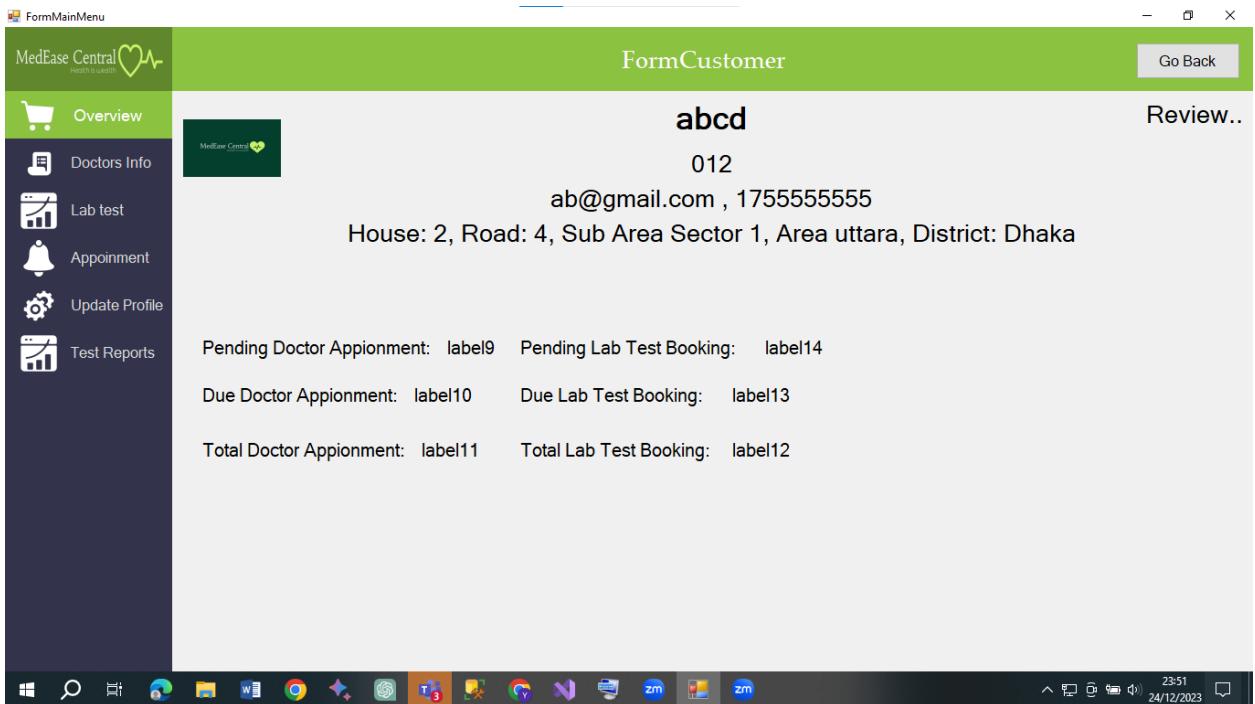
17. Hospital/Diagnostic Centre Dashboard



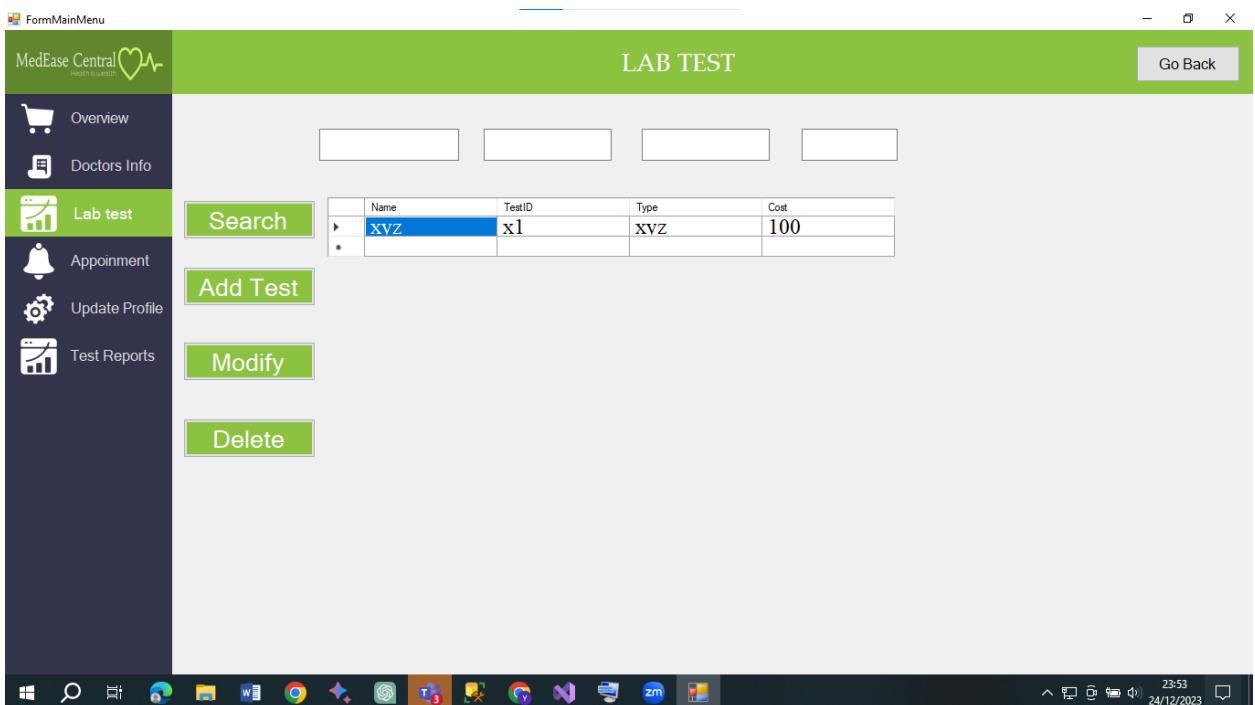
18. Hospital Login

A screenshot of a Windows application window titled "HospitalLogin". The window has a dark green header bar with the "MedEase Central" logo. Below the header, the text "Select LOGO" is displayed. The main form contains several input fields and labels: "Name:" with an input field, "Org. Code:" with an input field, "Address:" with sub-fields for "House:", "Road:", "Sub-Area:", "Area:", and "District:", and "Contract Info:" with fields for "Phone Number:" and "Email:". At the bottom right are two large blue buttons: "SUBMIT" and "CANCEL".

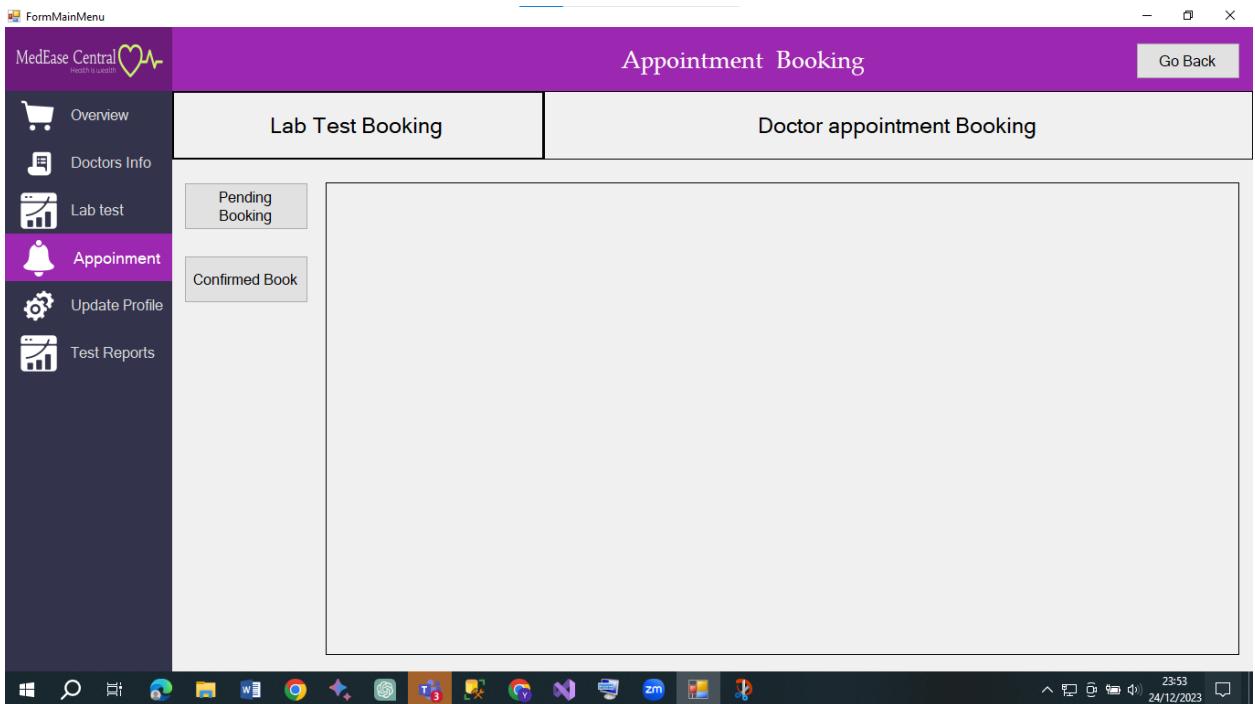
19. Hospital Overview



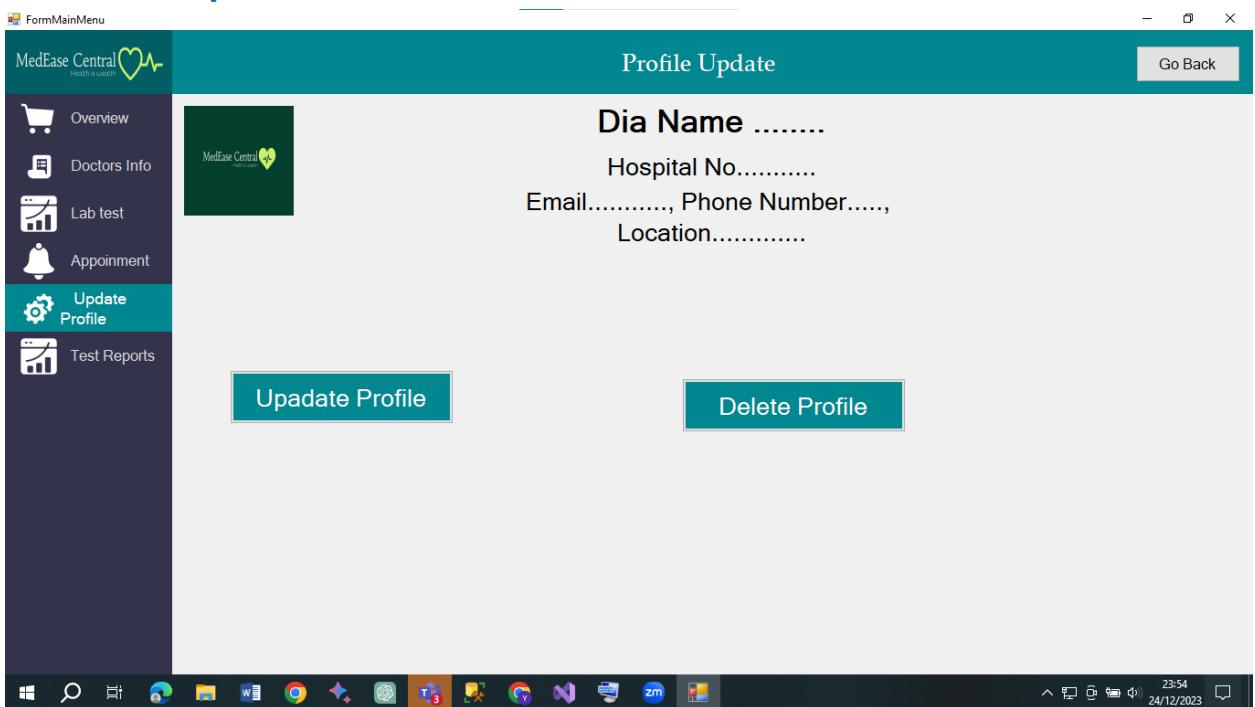
20. Lab Test



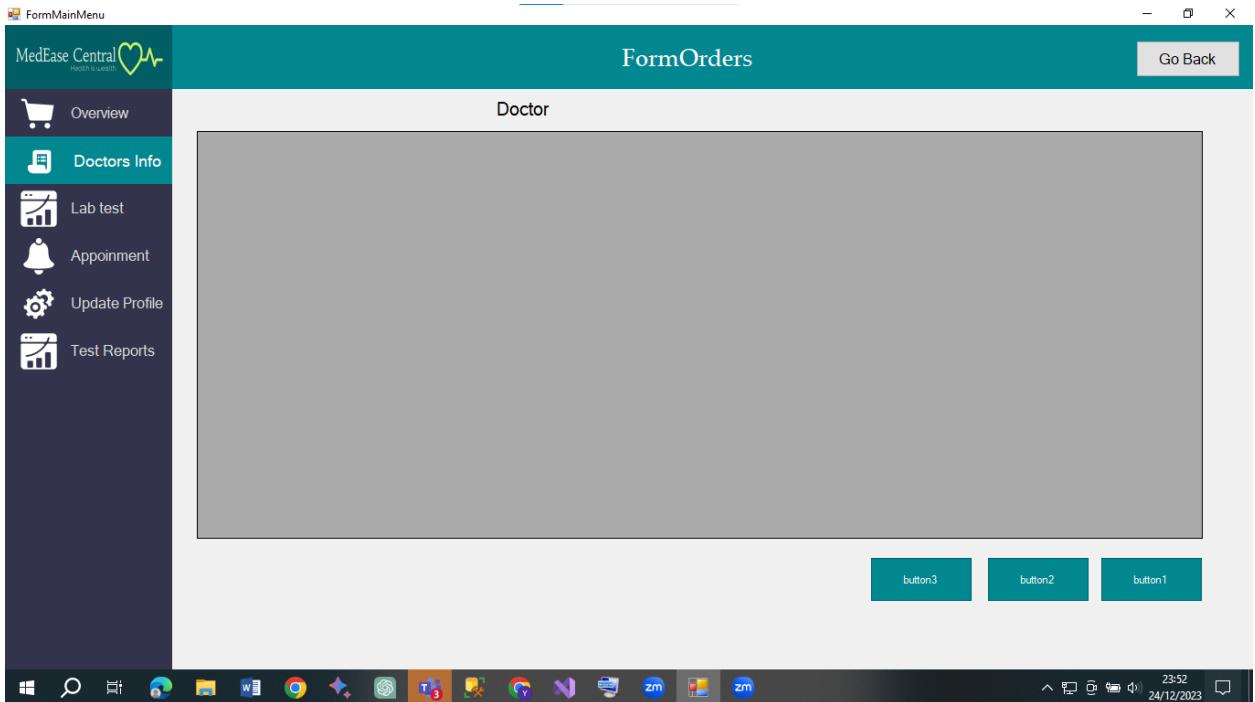
21. Appointment Booking



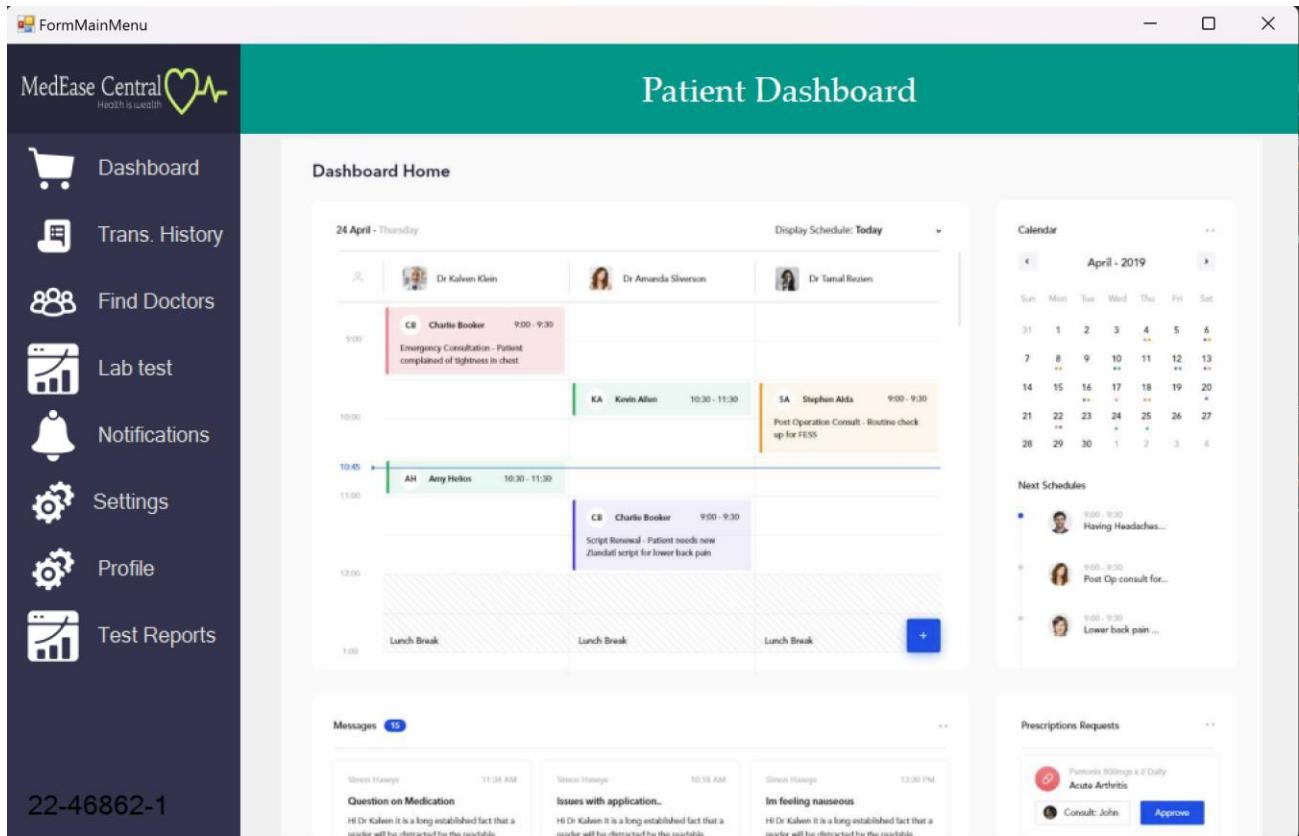
22. Profile Update



23. View Doctor Information



24. Patient Dashboard



25. Find Doctor

FormMainMenu

MedEase Central  Health is wealth

Find Doctor

Back

Filter Options

Location:

Department:

Appointment Hours:

Search by Day: December 2023

	DOCTOR_ID	DOCTOR_NAME	DESIGNATION	SPECIALITIES	DOCTOR_IMG
▶	1234	Urmila K.	MBBS	Surgeon	
	12344	Dr. Tamim	Bsc in CSE	Software	
	234	DR. ANIL	MBBS	SURGEON	

Filter

Add to compare Compare Book Appointment

22-46862-1

26. Test Report History

FormMainMenu

MedEase Central  Health is wealth

Lab Report History

Back

Report History New Report

Dashboard Trans. History Find Doctors Lab test Notifications Settings Profile Test Reports

22-46862-1

27. Patient Profile Information

FormMainMenu

MedEase Central 

Patient Profile Information

Back

Dashboard

Trans. History

Find Doctors

Lab test

Notifications

Settings

Profile

Test Reports

22-46862-1

Patient ID: 22-46862-1

Patient Name: Rakesh Karmaker

Age: 22-46862-1 Date of Birth: Saturday, April 14, 2001

Gender: Male Blood Group:

Contact Info:

Patient Catagory:

Address: 21/3 court house street, Dhaka-1101

Condition: Alive

Update Information Change Password Get Back



28. Update Patient Information

Update Profile Information

Patient ID: 22-46862-1

Patient Name: Rakesh Karmaker

Contact Info:

Age: Blood Group:

Emergency Contact:

Gender: Male Female None

Address: 21/3 court house street, Dhaka-1101

Date of Birth: Saturday , April 14, 2001

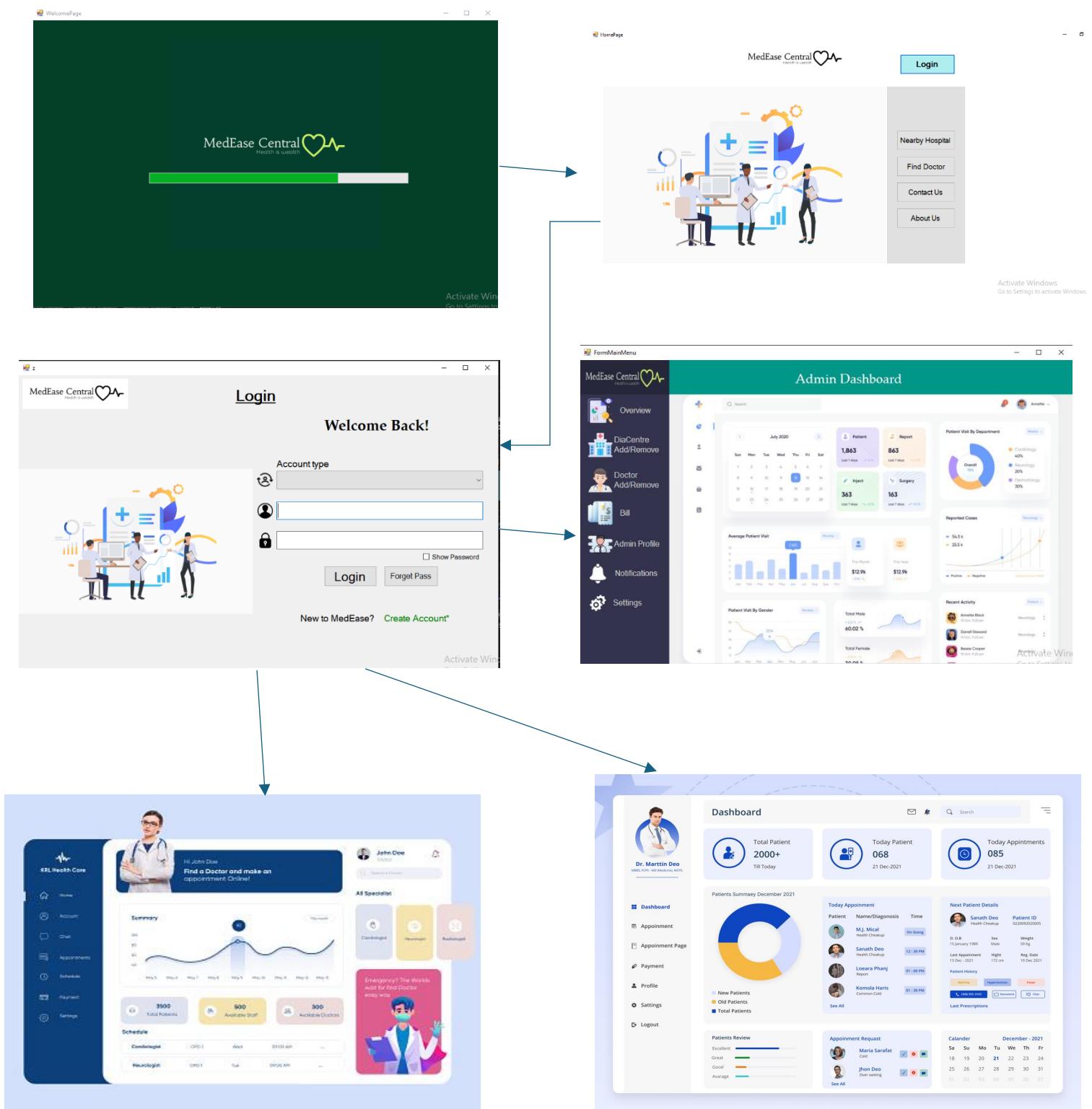
Condition: Alive

Browse Image Delete Image

Reset Save info Cancel



Transition Diagram



Login

Welcome Back!

Account type:

- User
- Doctor
- Administrator

Username:

Password: Show Password

Login Forget Pass

New to MedEase? [Create Account*](#)

Activate Win

Patient Dashboard

Dashboard Home

24 April - Pending

Dr. Kalyan Ghosh, Dr. Arunava Bhattacharya, Dr. Tanmoy Bhattacharya

Emergency Consultation - Patient registration completed successfully

Dr. Kalyan Ghosh 10:00 - 11:00

Dr. Arunava Bhattacharya 10:00 - 11:00

Dr. Tanmoy Bhattacharya 10:00 - 11:00

AA - Ang Reba 10:00 - 11:00

CD - Chaitanya Bhattacharya 10:00 - 11:00

EE - Emergency Consultation - Patient registration completed successfully

Lunch Break Lunch Break Lunch Break

Message

Question on Medication

In case of any emergency, please contact the following numbers:

Dr. Kalyan Ghosh: 98333 123456
Dr. Arunava Bhattacharya: 98333 123457
Dr. Tanmoy Bhattacharya: 98333 123458

Next Available:

- Dr. Kalyan Ghosh - 10:00 AM
- Dr. Arunava Bhattacharya - 10:00 AM
- Dr. Tanmoy Bhattacharya - 10:00 AM

Prescription Requests

Dr. Kalyan Ghosh - 98333 123456
Dr. Arunava Bhattacharya - 98333 123457
Dr. Tanmoy Bhattacharya - 98333 123458

Find Doctor

Filter Options

Location:

Department:

Appointment Hours:

Search by Day: December 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Today: 12/23/2023

Filter Add to compare Compare Book Appointment

Lab Report History

Report History New Report

Patient Profile Information

Patient ID: 22-46862-1

Patient Name: Rakesh Karmaker

Age: 22-46862-1 Date of Birth: Saturday, April 14, 2001

Gender: Male Blood Group:

Contact Info:

Patient Category:

Address: 21/3 court house street, Dhaka-1101 Condition: Alive

Update Information Change Password Get Back

Update Profile Information

Patient ID: 22-46862-1

Patient Name: Rakesh Karmaker

Contact Info:

Age: Blood Group:

Emergency Contact:

Gender: Male Female None

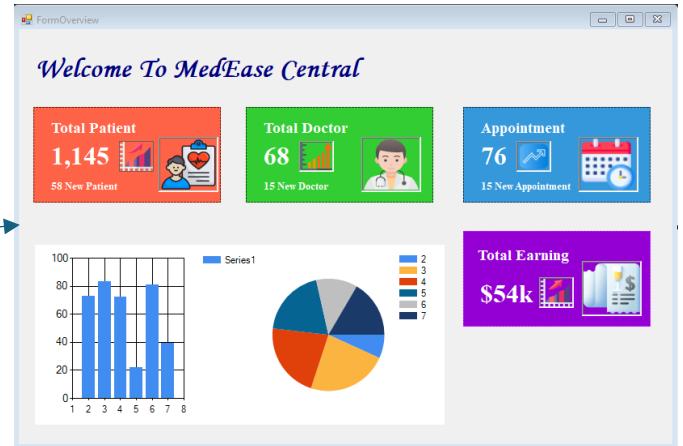
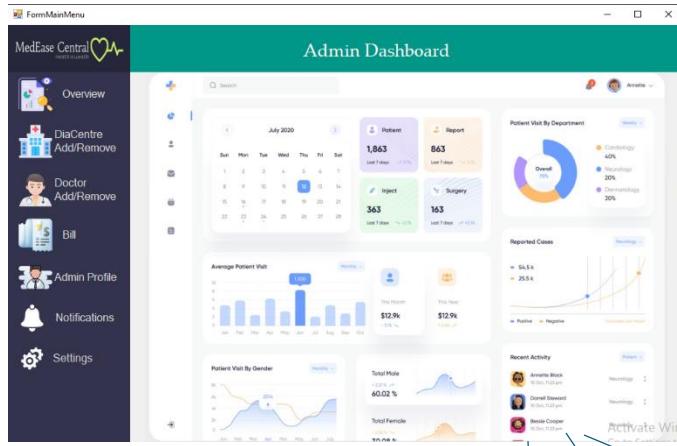
Address: 21/3 court house street, Dhaka-1101

Date of Birth: Saturday, April 14, 2001

Condition: Alive

Browse Image Delete Image

Reset Save info Cancel



Diagnostic Centre Information

DIA_ID	DIA_NAME	DIA_ADDRESS	DIA_IMG
120	Popular	Old Dhaka	
1234	ASDG	ASDDFGHJKL	
*	*	*	

Doctor Information

DOCTOR_ID	DOCTOR_NAME	DESIGNATION	SPECIALITIES	DOCTOR_IMG
250	Dr.Umi	MBBS	Medicine	
123	Mr.DR	MBBS	Medicine	
250	Dr.Umi	MBBS	Medicine	

Bill Information

BILL_ID	<input type="text"/>
DOCTOR BILL	<input type="text"/>
DIA BILL	<input type="text"/>
VAT%	<input type="text"/>
DISCOUNT	<input type="text"/>
SERVICE CHARGE	<input type="text"/>
TOTAL BILL	<input type="text"/>

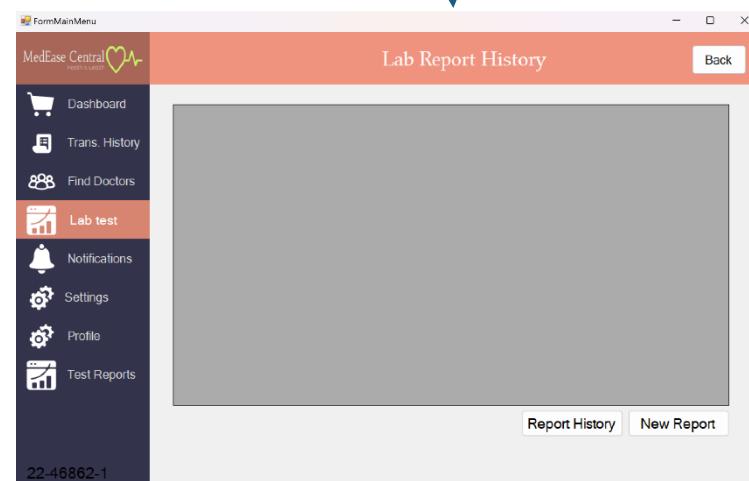
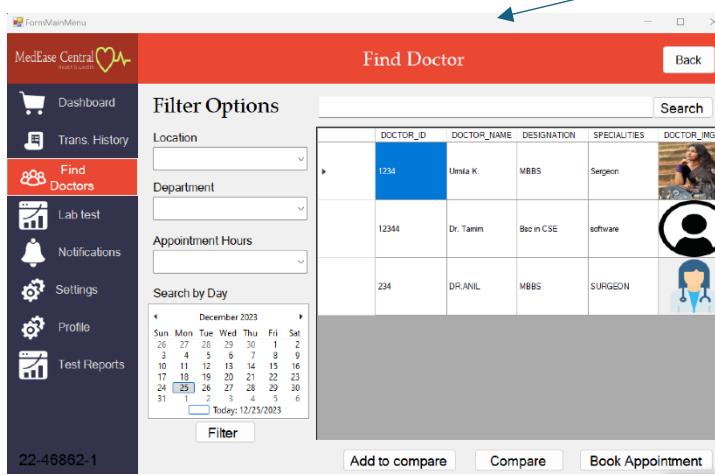
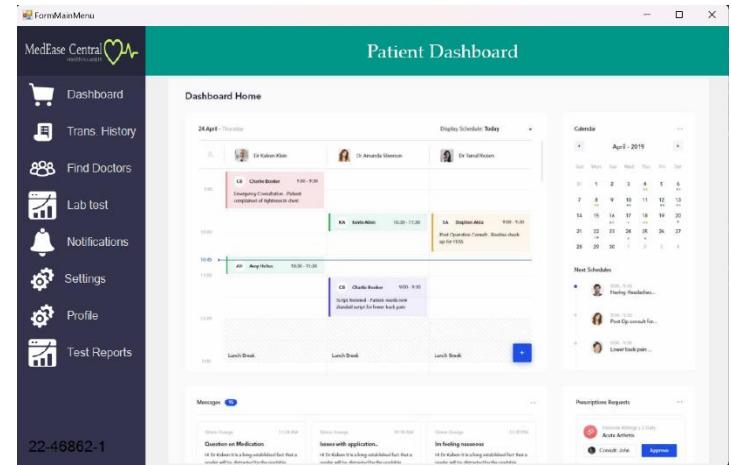
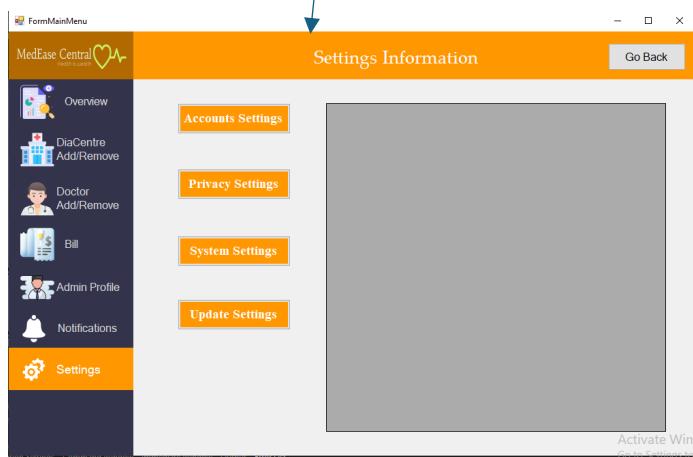
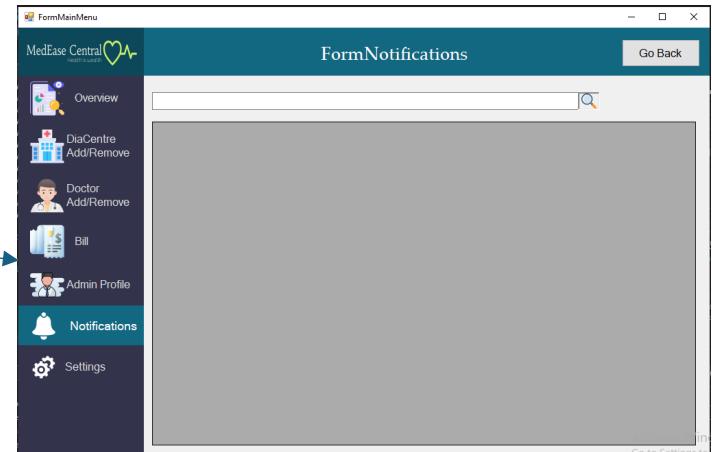
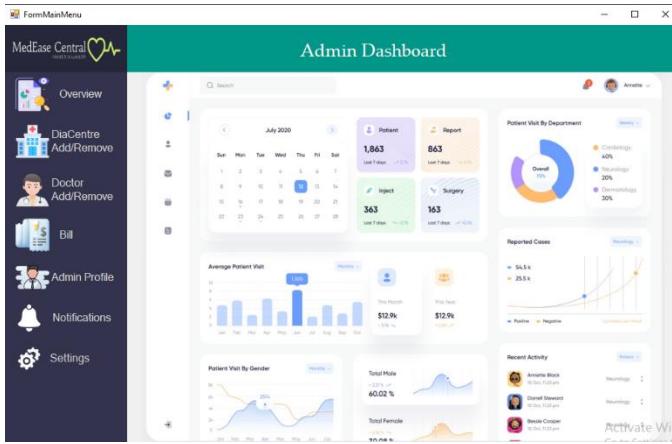
Admin Information

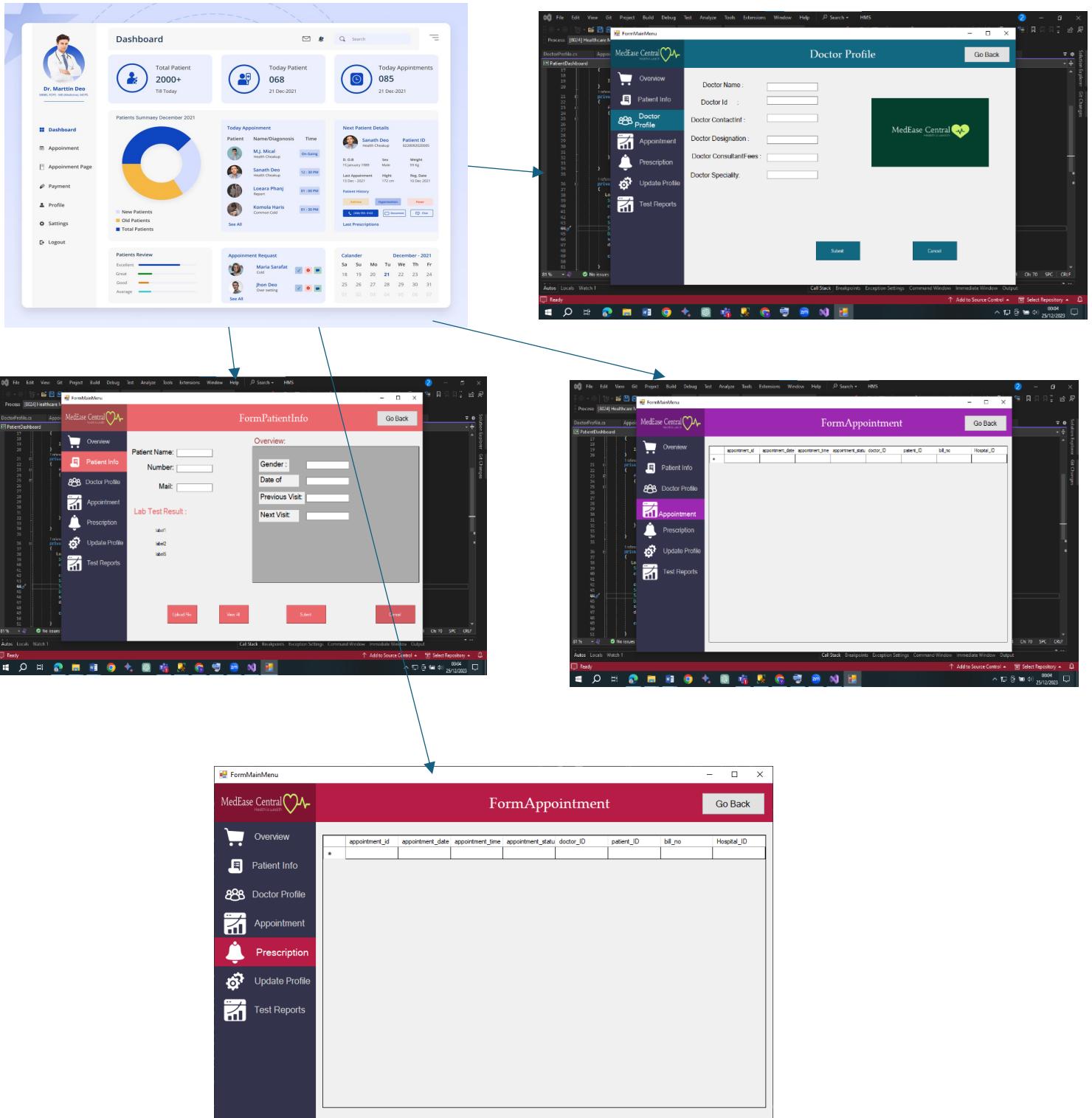
FACEBOOK: [Facebook Link](#)

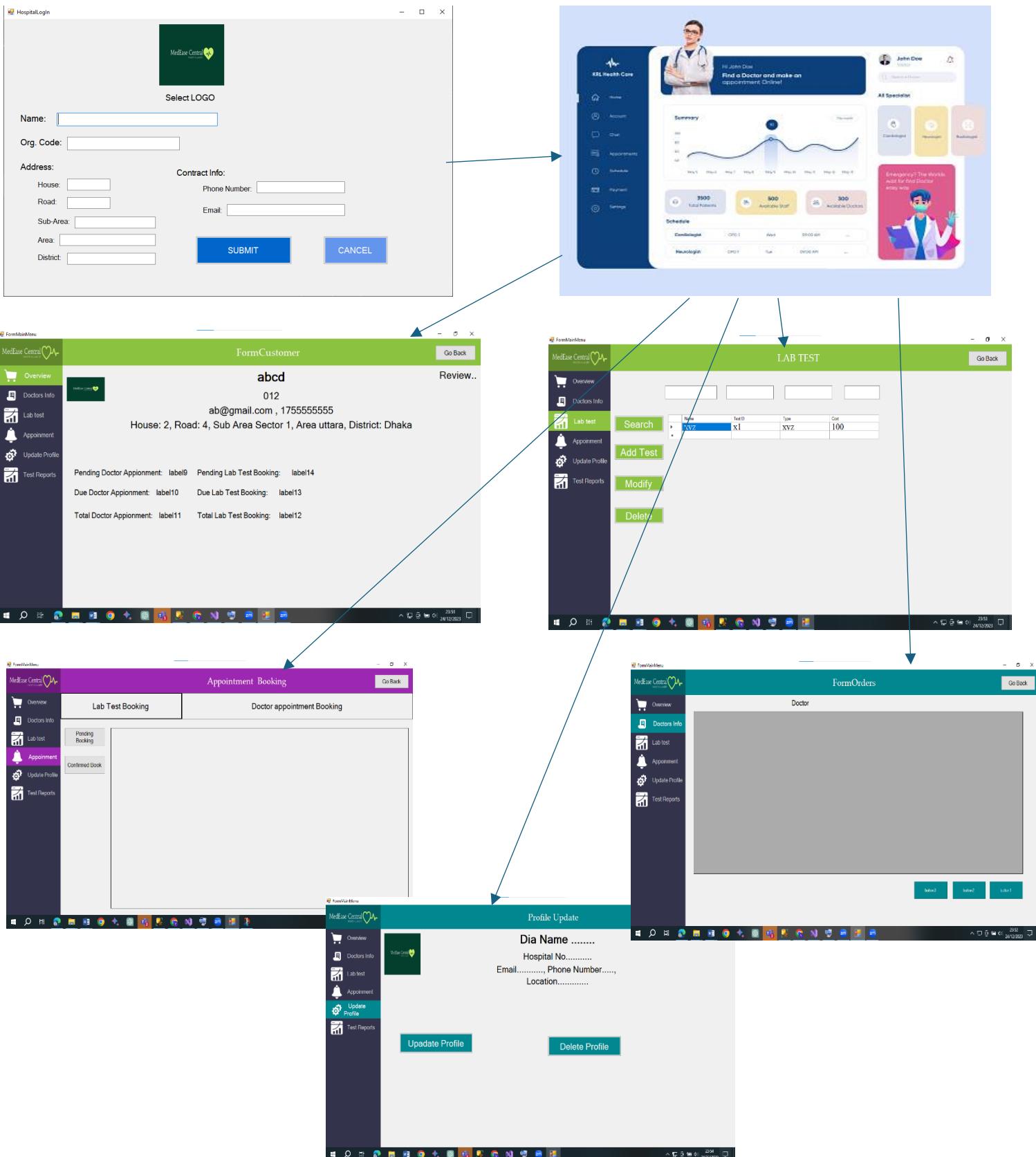
EMAIL: med123@gmail.com

HOTLINE NO.: 9976543, 667894

Rakesh Karmaker	Urmi Karmaker	Mahedi Hasan	Md. Tamim







Schema Diagram:



Features and Function:

1. Comprehensive User:

There are 4 types of users in our System- Doctor, Patient, Admin and Hospital.

2. Doctor Dashboard:

- Patient Overview
- Appointment Management
- Prescription and Medication Management
- Diagnostic Test Results
- Communication Tools
- Task and Workflow Management
- Alerts and Notifications
- Analytics and Reporting
- Security and Access Control
- User-Friendly Interface

3. Patient Dashboard:

- Create Patient Profile
- Update Patient Profile
- Personal Health Summary
- Upcoming Appointments
- Medical History
- Prescriptions and Medications
- Appointment Scheduling
- Communication Center
- Diagnostic Test Results
- Health Alerts and Reminders
- Educational Resources
- Billing and Insurance Information
- User-Friendly Interface
- Security and Privacy

4. Admin Dashboard

- User Management
- Admin Profile
- Patient and Doctor Analytics
- Appointment Scheduling and Resource Allocation
- Financial Management
- Healthcare Facility Overview
- Security and Compliance
- System Configuration and Customization
- Report Generation
- Task and Workflow Management
- Communication Hub
- Emergency and Alert Management
- User-Friendly Interface

5. Hospital / Diagnostic Centre Dashboard

- Patient Admission and Discharge
- Resource Management
- Appointment and Schedule Management
- Diagnostic Test Results and Imaging
- Billing and Invoicing
- Staff Management
- Inventory Management
- Emergency Response and Incident Management
- Analytics and Reporting
- Patient Satisfaction Monitoring
- Integration with External Systems
- Security and Compliance
- User-Friendly Interface

6. Review and Complain:

The Review and Complaint feature in "MedEase Central" enables patients to easily share their healthcare experiences and concerns. With a user-friendly interface allowing anonymous feedback, patients can provide ratings and detailed comments. The system ensures immediate acknowledgment of submitted feedback and establishes a streamlined workflow for addressing and resolving complaints. The data collected is analyzed for insights into patient satisfaction, supporting continuous improvement initiatives. The feature promotes two-way communication between patients and healthcare providers, fostering transparency and trust. Integrated with patient records, it enhances the patient-centered approach and adheres to strict security measures for confidentiality and regulatory compliance. Overall, this feature contributes to a healthcare environment focused on responsiveness, quality improvement, and patient satisfaction.

Conclusion:

In conclusion, "MedEase Central" stands as a comprehensive and innovative Healthcare Management System developed using C# and .NET, designed to transform the landscape of healthcare administration. With its tailored user roles for Doctors, Patients, Admins, and Hospital management, the system addresses the diverse needs of stakeholders within the healthcare ecosystem.

This project not only streamlines patient management, appointment scheduling, and electronic health records but also prioritizes security and compliance. The user-friendly interface enhances accessibility, facilitating seamless interaction between healthcare professionals, patients, and administrators. The integration of billing and pharmacy management ensures a holistic approach to healthcare services.

"MedEase Central" is not just a technological solution; it represents a commitment to improving patient outcomes, operational efficiency, and decision-making through data-driven insights. By leveraging the power of C# and .NET, the project sets a new standard for healthcare systems, embracing advancements in digital health to create a robust, secure, and user-centric platform.

As we move forward, "MedEase Central" is poised to make a significant impact on healthcare organizations, fostering collaboration, reducing administrative burdens, and ultimately contributing to a more effective and patient-centric healthcare ecosystem. The successful implementation of this project promises a future where technology plays a pivotal role in enhancing the quality of healthcare delivery and administration.