“E-DOCTOR WEBSITE”

A Project Report under the guidance of

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Submitted By

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Submitted To

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TECHNO ENGINEERING COLLEGE BANIPUR

BACHELOR OF TECHNOLOGY (B.TECH)

BATCH (2020-2024)

Department of Computer Science & Engineering (CSE)

To whom it may concern

This is to certify that the project entitled " E-DOCTOR WEBSITE " is being submitted by SOUNAK DEY SARKAR (24400120042), AIKYAM GHOSH (24400120041), MAINAK DAS (24400220007), RAJ NARAYAN BANERJEE (24400220001), in partial fulfilment of the requirement for the award of the degree of BACHELOR OF TECHNOLOGY in CSE & It from TECHNO ENGINEERING COLLEGE BANIPUR (affiliated to MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY)

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Date: ----------

Student signature:

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Declaration of Originality and Compliance of Academic Ethics

I hereby declare that this thesis contains a literature survey and original research work by the undersigned candidate, as part of my BTech in CSE.

All information in this document has been obtained and presented in accordance with academic rules and ethical conduct.

I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name :

Exam Roll number :

Project Report Title :

Signature With Date:

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Abstract

The E-doctor website is an innovative telemedicine platform designed to bridge the gap between patients and health care providers by offering convenient, efficient, and accessible medical services online. Using secure video consultations, chat, and other digital tools, the website connects patients with doctors and specialists for diagnoses, treatment plans, and follow-up care. This virtual healthcare service saves time and resources by reducing the need for in-person visits while ensuring patients receive quality medical advice from the comfort of their own homes. Key features include secure data management, easy appointment scheduling, and a user-friendly interface. The platform aims to enhance patient care and accessibility, particularly for those in remote areas or with mobility challenges. By prioritizing patient privacy and regulatory compliance, the e-doctor website offers a modern solution for the future of healthcare delivery.

Introduction:

Welcome to E-Doctor[(1)(2)(3)] website, your premier destination for accessible and efficient healthcare services online. In an era where convenience and quality healthcare are paramount, E-Doctor emerges as a beacon of innovation, bridging the gap between patients and medical professionals through cutting-edge digital solutions. Our platform revolutionizes the traditional healthcare experience, offering seamless access to consultations, prescriptions, and medical advice from the comfort of your own home. Join us on a journey where technology meets compassion, empowering you to take control of your health and well-being like never before.

Objective of the project:

- **Virtual Consultations:** Allow patients to schedule and conduct remote video consultations with health-care professionals.
- **Medical Records Management:** Provide a secure platform for patients to upload, store, and access their medical records.
- **Prescription Services:** Enable doctors to electronically prescribe medications and provide dosage instructions.
- **Patient Status:** Checking patient medical status any time , also input medical reports easily.
- **Appointment Scheduling:** Allow patients to book appointments with doctors based on availability.
- **Online Payment:** Facilitate secure online payment for consultation fees and other medical services.
- **Follow-up Messaging:** Allow patients and doctors to communicate via secure messaging for post-consultation queries.

Target Audience:

The E-Doctor[(1)(2)(3)] website caters to:

- Patients seeking online medical consultations and appointment bookings.
- Health-care professionals (doctors, specialists) provide virtual medical services.
- Administrators responsible for managing the platform.

Required Algorithm:

LOG-IN and Registration:

a) **Registration and Login:** Users can register on the E-Doctor[1][2][3] website using their email or social media accounts. Once registered, users can log in to access the platform's features.
b) **User Profiles:** Users can create detailed profiles containing personal information, medical history, and preferences. Healthcare professionals can showcase their qualifications and specialties.
c) **User Roles:** The E-Doctor website has three main user roles: Patient, Doctor, and Administrator. Each role has specific permissions and access levels tailored to their needs.

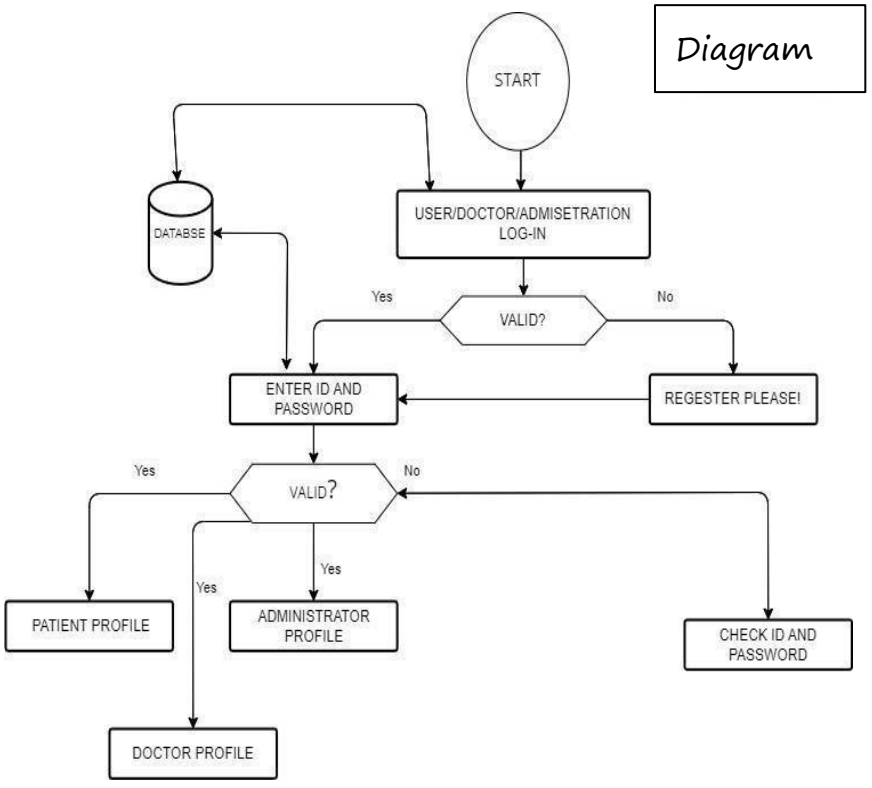


Diagram 1: LOG-IN and Registration

BOOKING APPOINMENTS:

a) **Find Doctors:** Patients can search for doctors based on specialties, location, ratings, and availability.
b) **View Availability:** Doctors' schedules are displayed, allowing patients to select convenient time slots.
c) **Schedule Appointments:** Patients can book appointments with preferred doctors and receive confirmation notifications.

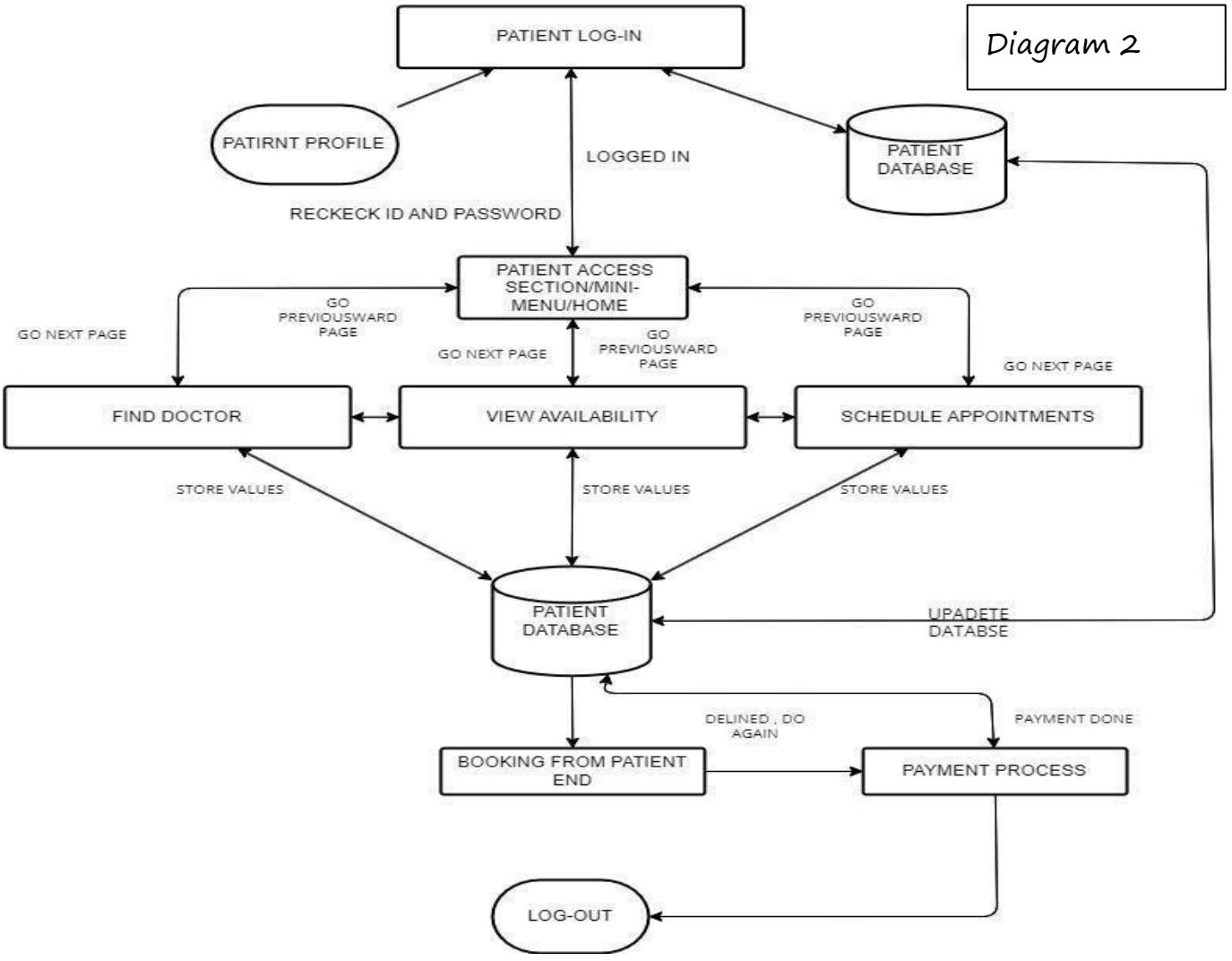


Diagram 2: BOOKING APPOINMENTS

E-D OCTOR COMMUNICATION:

a) **Video Consultations:** Patients can have video consultations with doctors in a secure and private environment.
b) **Chat with Doctors:** Real-time chat functionality allows patients and doctors to communicate quickly.
c) **Prescription Management:** Doctors can digitally issue and manage prescriptions, and patients can access them online.

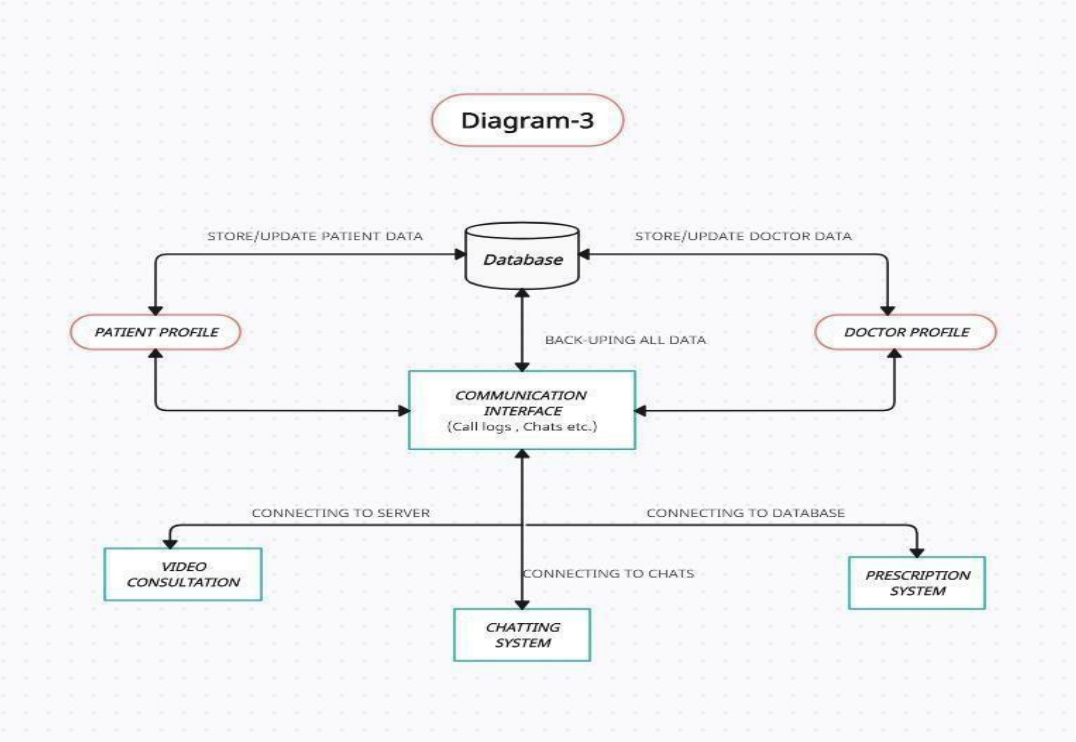


Diagram 3: COMMUNICATION SYSTEM

DIAGNOSTIC PROCESS:

a) **Data Collection and Analysis:** Patients input symptoms and medical history and System analyzes data using algorithms and machine learning.

b) **Diagnostic Decision and Treatment Recommendations:** System generates differential diagnosis and Health care providers make final diagnostic decision and provide tailored treatment recommendations.

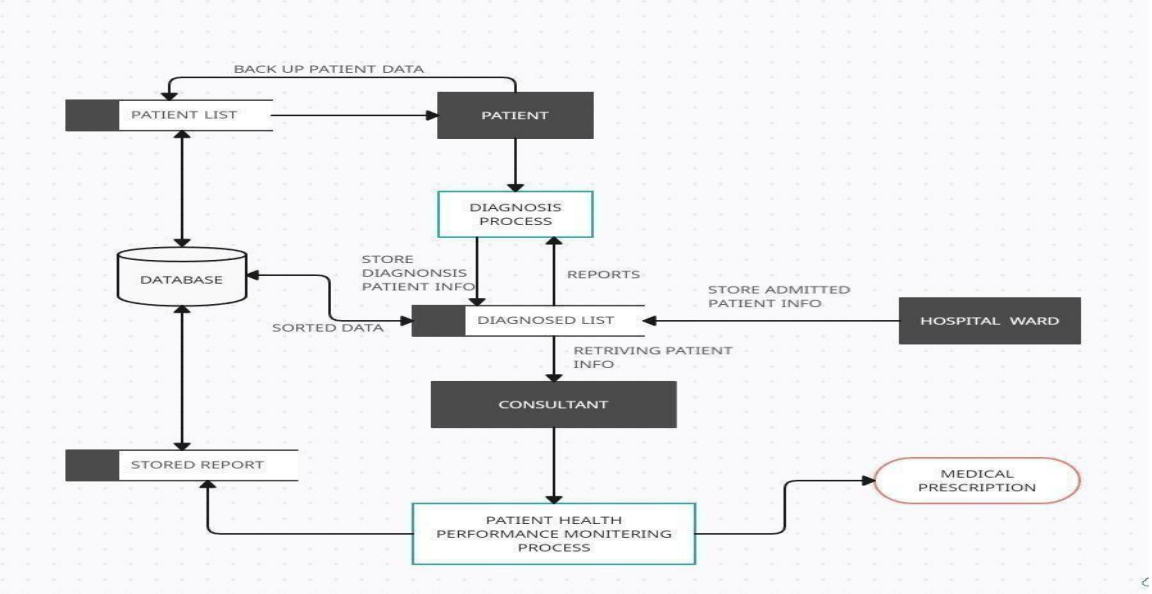


Diagram 4: Diagnostic Process

ADMIN PROFILE:

c) **User Management:** Admins can manage user accounts, including creating, modifying, and deleting accounts for health care providers and staff members. They oversee user permissions, granting appropriate access levels to different functionalists based on roles and responsibilities.

d) **Content Management:** Admins have control over the content displayed on the E-Doctor[(1)(2)(3)] platform, such as medical information, articles, and resources. They can update and curate content to ensure accuracy, relevance, and compliance with medical standards and regulations.

e) **System Configuration and Monitoring:** Admins configure system settings and parameters, such as appointment scheduling, notification preferences, and security measures. They monitor system performance, user activity, and data integrity, addressing any issues or concerns that arise to maintain the platform's functionality and reliability.

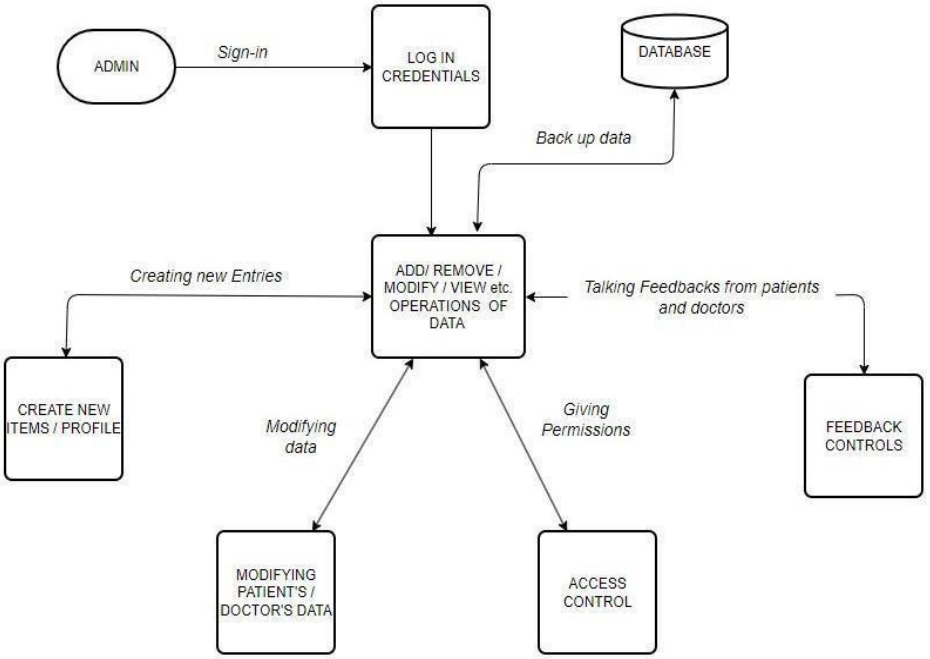


Diagram 5: Admin Profile

Domain of the project:

Dot Net Framework: The .NET Framework is a software development framework developed by Microsoft. It provides a comprehensive and consistent programming model for building Windows applications and web services. .NET[7] Framework includes a run time environment, a class library, and support for multiple programming languages, allowing developers to create a wide variety of applications. For Front-end: HTML CSS JAVASCRIPTFOR, back-end: C#, SQL database[4][5][6].

Technology Used:

a) **Hardware:** Servers, Computers, Mobile Devices

b) **Software:**

Current Status –	*Minimum Requirements –*
Dot NET 8.0	Dot NET 8.0
MY SQL 5.7	MY SQL 5.5
HTML 5	HTML 5
RAM 8gb	RAM 6gb
ROM 1tb	ROM 512gb
OS Windows 10	OS Windows 10

We have been used so far - Web Development Tools (HTML, CSS, JavaScript), Back-end Framework (Node.js, Dot Net[7]), Database[4][5][6] (MySQL), Video Conferencing App link (e.g. Google- meet, MS-Team etc.), Hosting Services (AWS, Microsoft Edge server etc.).

Proposed architecture:

A. High-Level Architecture: Client-Server Model architecture.

B. Components: User Interface, User Authentication, Appointment Booking, Video Conferencing, Doctor Profiles, Database Management.

C. In this architecture:

a) **Client:** The client initiates requests to the server for specific resources or services. It could be a user's computer, a mobile device, or a software application.

b) **Server:** The server receives requests from clients, processes them, and provides the requested resources or services. Servers are typically more powerful machines designed to handle multiple client requests simultaneously.

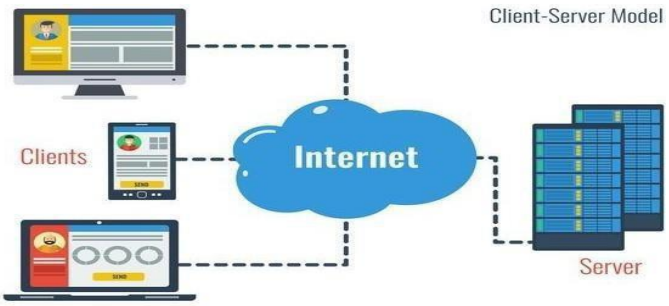


Figure 1: Client-Server Mode

This architecture promotes scalability, as servers can be upgraded to handle increased load. It also allows for centralized management and control of data and resources. Communication between clients and servers can occur over various protocols such as HTTP, TCP/IP, or custom protocols.

Architecture:

Client-Server architecture is a model used in computing where tasks are divided between clients and servers. Clients are devices or applications that make requests for resources or services, while servers are devices or applications that provide those resources or services.

OUTCOMES:

a) Improved Accessibility:

In traditional healthcare settings, patients often need to travel to physical clinics or hospitals for medical consultations. Now with the help of E-Doctor[(1)(2)(3)] website, patients have the advantage of receiving medical consultations without leaving their homes. This is particularly making the whole things more beneficial in terms of mobility issues, chronic illnesses, or those residing in remote locations, where accessing healthcare facilities might be challenging. By offering virtual consultations, the platform greatly improves accessibility to medical care, ensuring that healthcare services are available to a wider range of patients.

b) Efficient Appointment Management:

For healthcare professionals, managing appointments efficiently can be a significant challenge in traditional settings. The E-Doctor[(1)(2)(3)] website provides a platform for doctors with tools, which helps them to easily manage their schedules and availability. Doctors can update their calendars, block off time for personal commitments, and set their consultation hours. This streamlines the appointment booking process and reduces the problem of overbooking. It enables them to dedicate their full attention to patient care, by ensuring more organized and efficient workflow for health care providers.

c) Reduced Waiting Times:

Long waiting times are a common frustration for patients seeking medical care. With the help of E-Doctor[(1)(2)(3)] website, the patient may be sent off to the waiting room. Virtual consultations eliminate the frustration for patients to wait in line, as they can simply log in to the platform at their appointed time. This reduction of waiting times enhances patient satisfaction and allows doctors to adhere more closely to their schedules. As a result, both patients and doctors got benefit from optimized time management, providing more seamless health care experience.

d) Secure Communication:

Privacy and security are paramount in health care interactions. The E-Doctor website employs encryption and authentication protocols to ensure that all patient-doctor communications remain private and secure. This level of data protection helps build trust between patients and health care providers. Patients can openly discuss their medical concerns without worrying about breaches of confidentiality. By offering a secure communication platform, the E-Doctor website maintains the integrity of health care interactions and protects sensitive medical information.

e) Enhanced Health Care Delivery:

One of the most significant advantages of the E-Doctor website is its ability to extend health care services beyond geographical boundaries. In remote or undeserved areas where access to medical facilities is limited, the platform bridges the gap by connecting patients with doctors from different locations. This extends the reach of health care services to areas that might not have had easy access to specialized medical expertise before. The platform empowers doctors to serve a broader audience and contribute to improving the overall health outcomes of underserved populations.

- ***Git Hub Link for this Project--*** You can check the project from given Git Hub link -
  - *https://github.com/SAZzzDe*
  - *https://github.com/Mai123627272828283838383838383838*
  - *https://github.com/aikyamGithub*
  - *https://github.com/raj-N-Banerjee*

DATABASE AND TABLE :

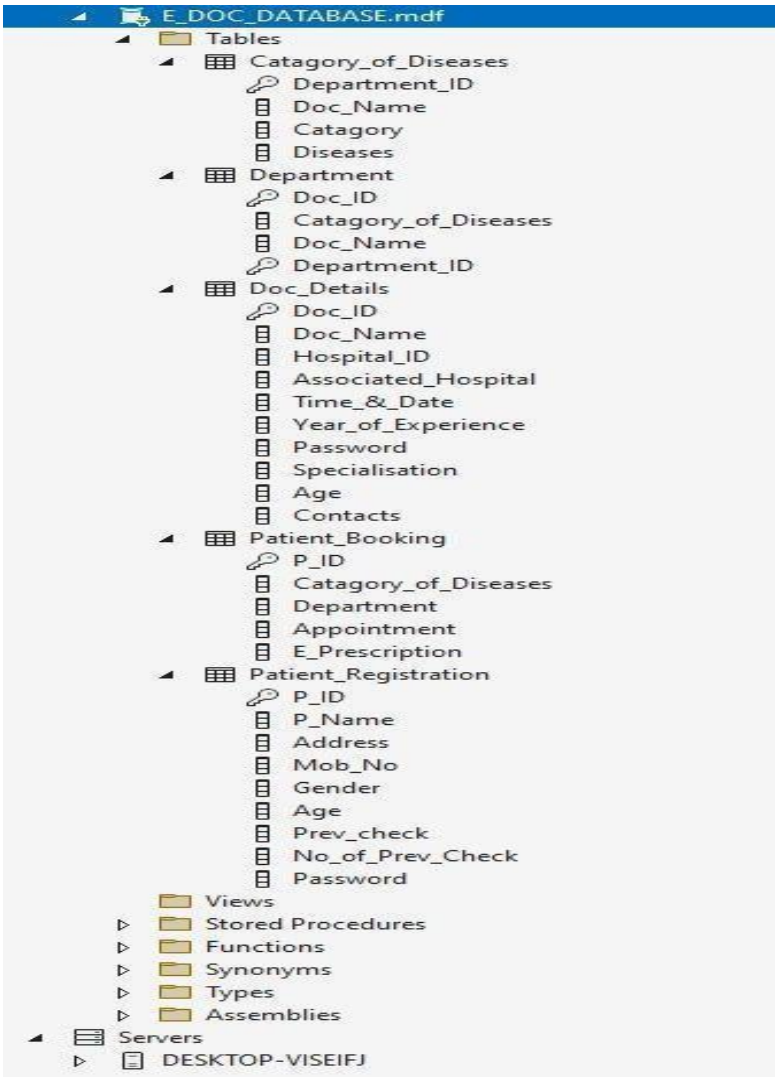


Figure 2: DATABASE

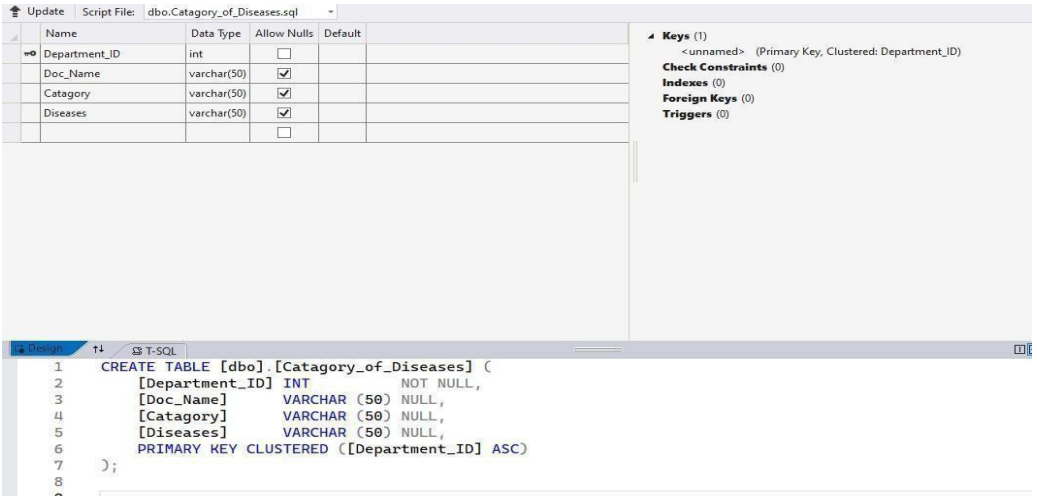


Figure 3: Category of Diseases

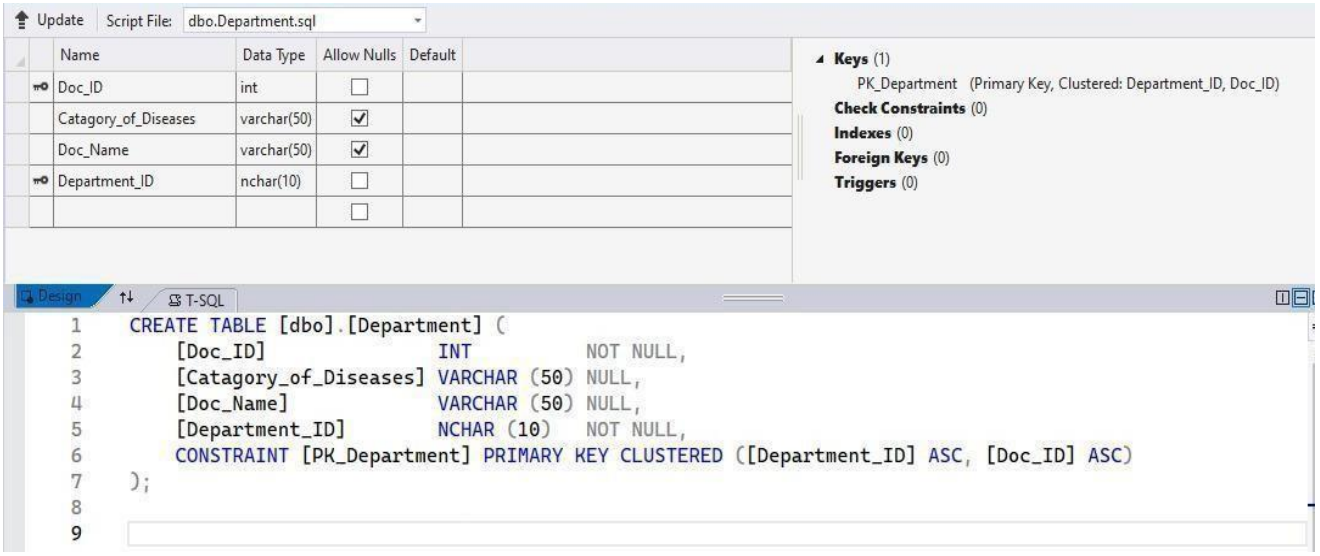


Figure 4: Department

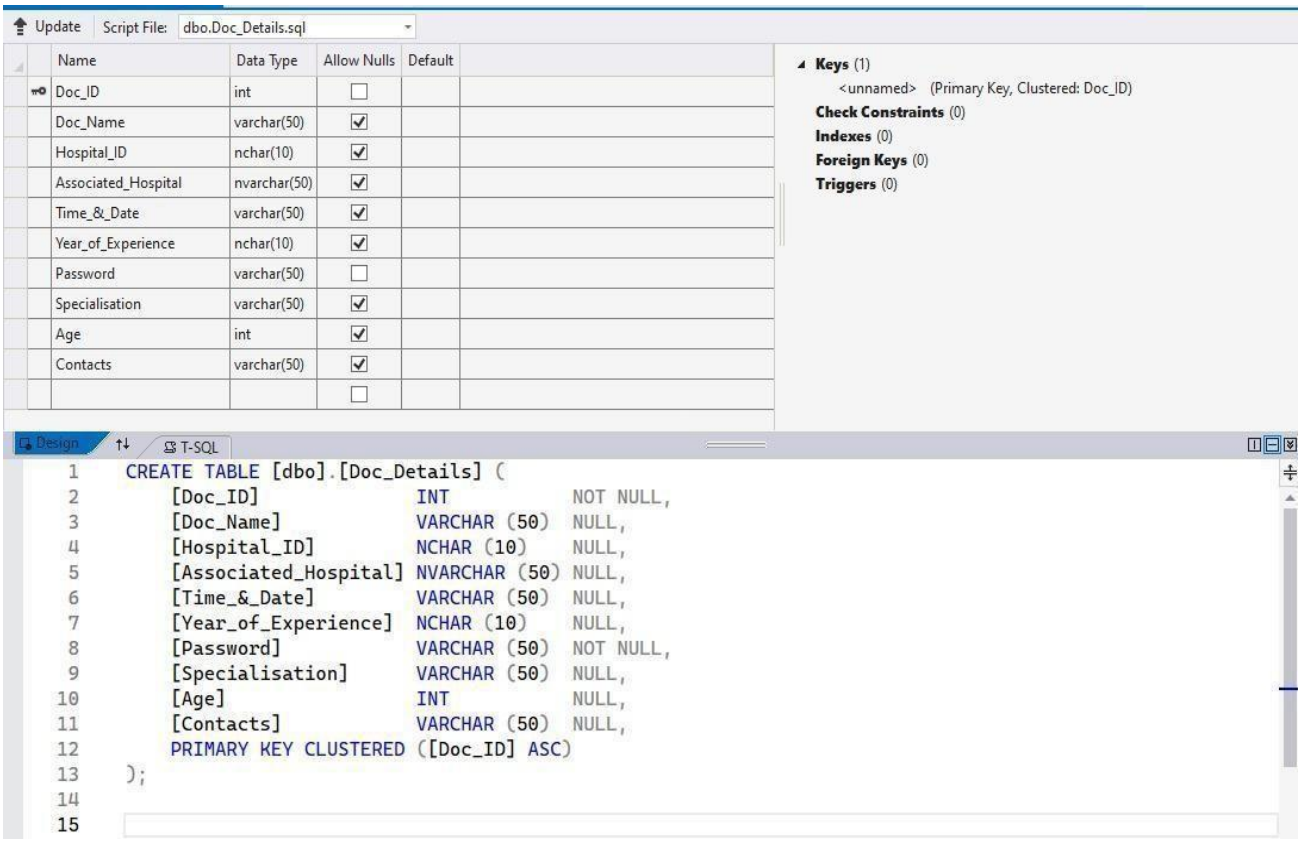


Figure 5: Doctor Details

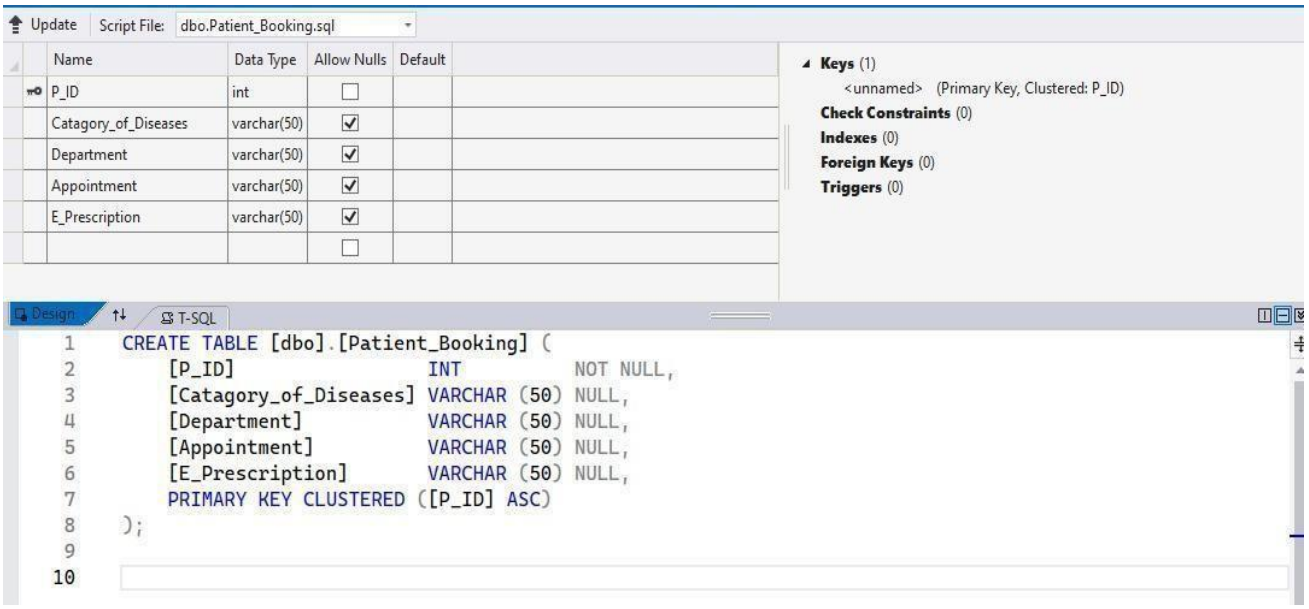


Figure 6: Patient Booking

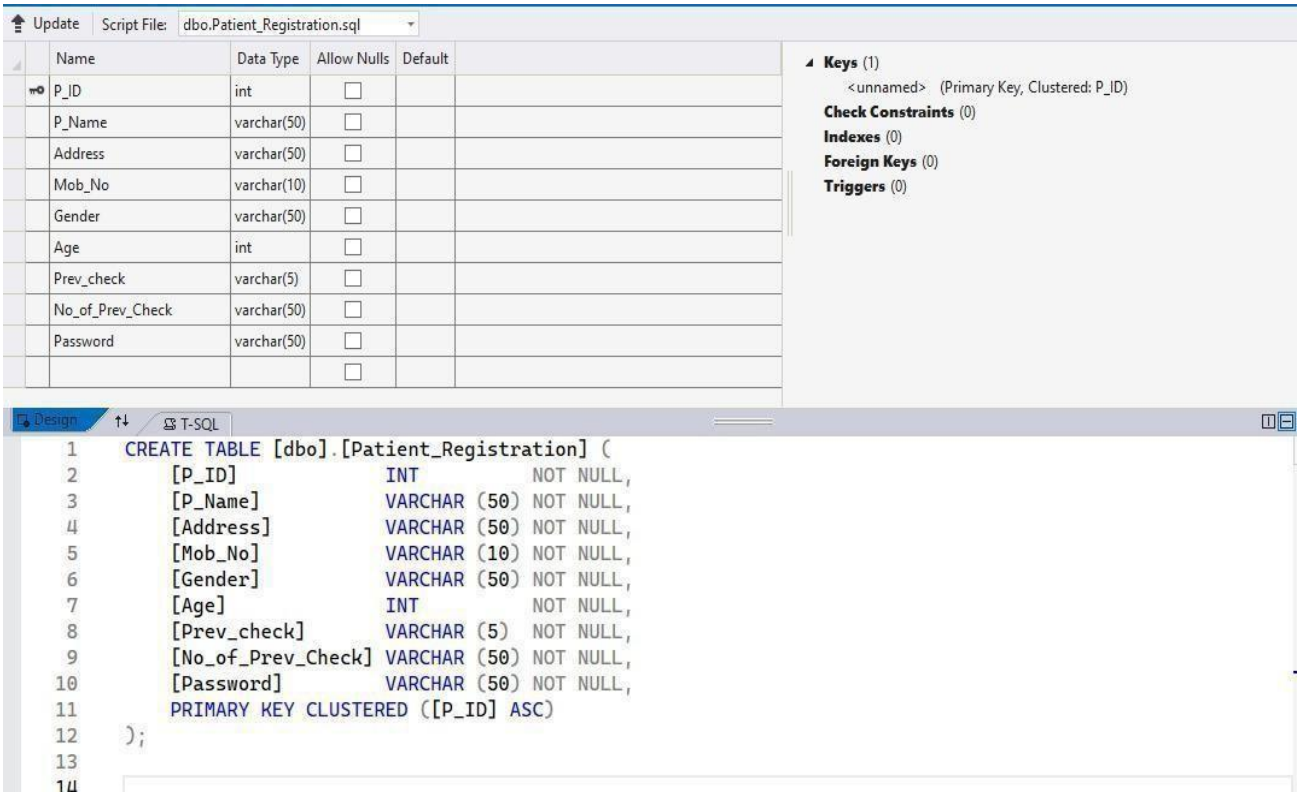
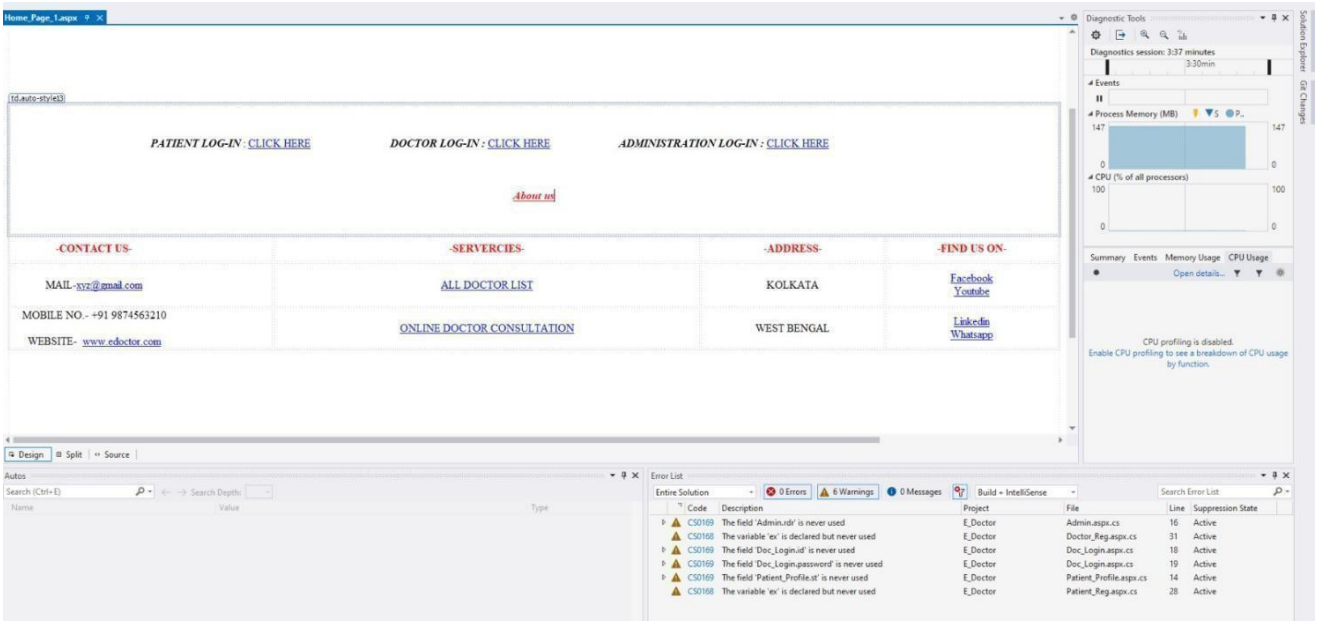


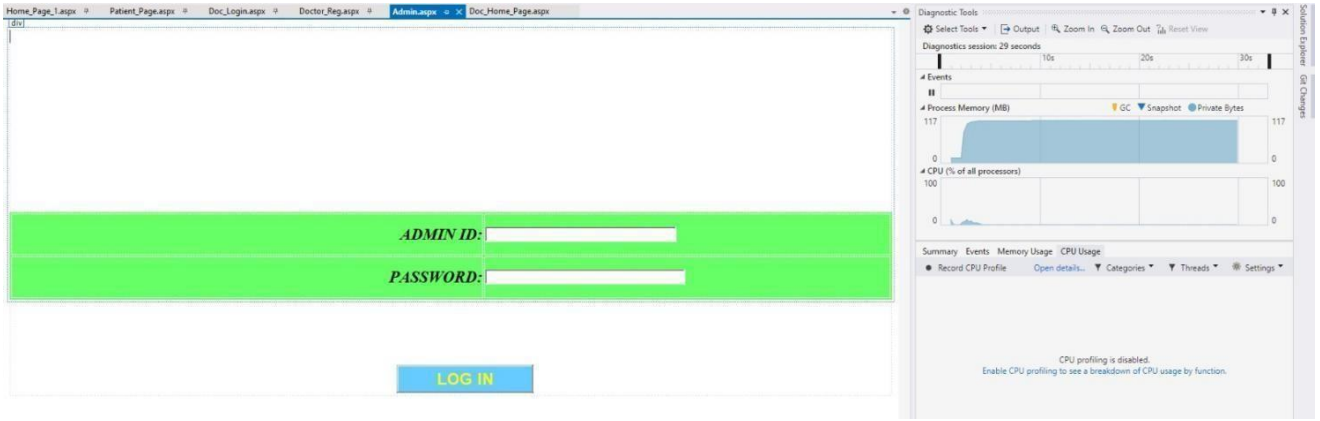
Figure 7: Patient Registration

OUTPUTS:

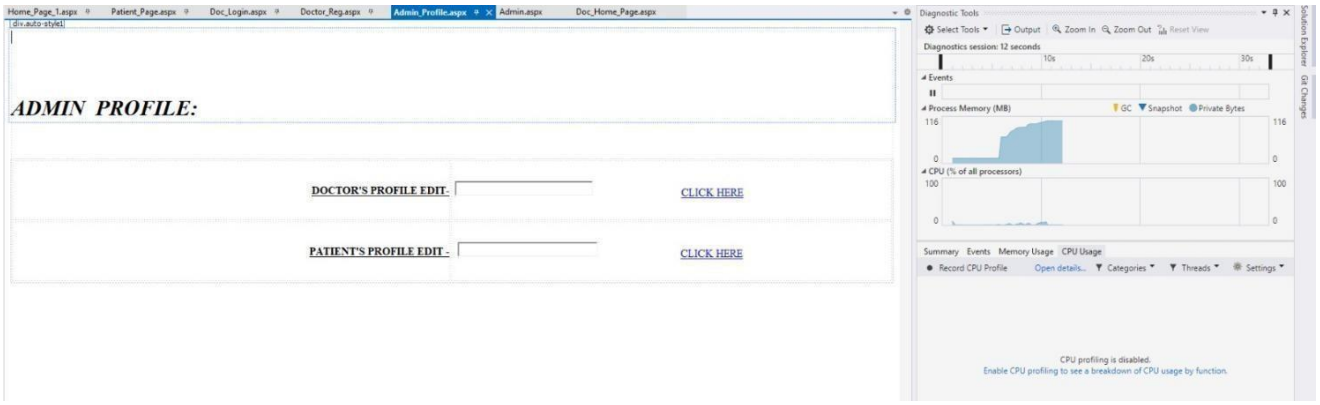
- ***WEBSITE:***



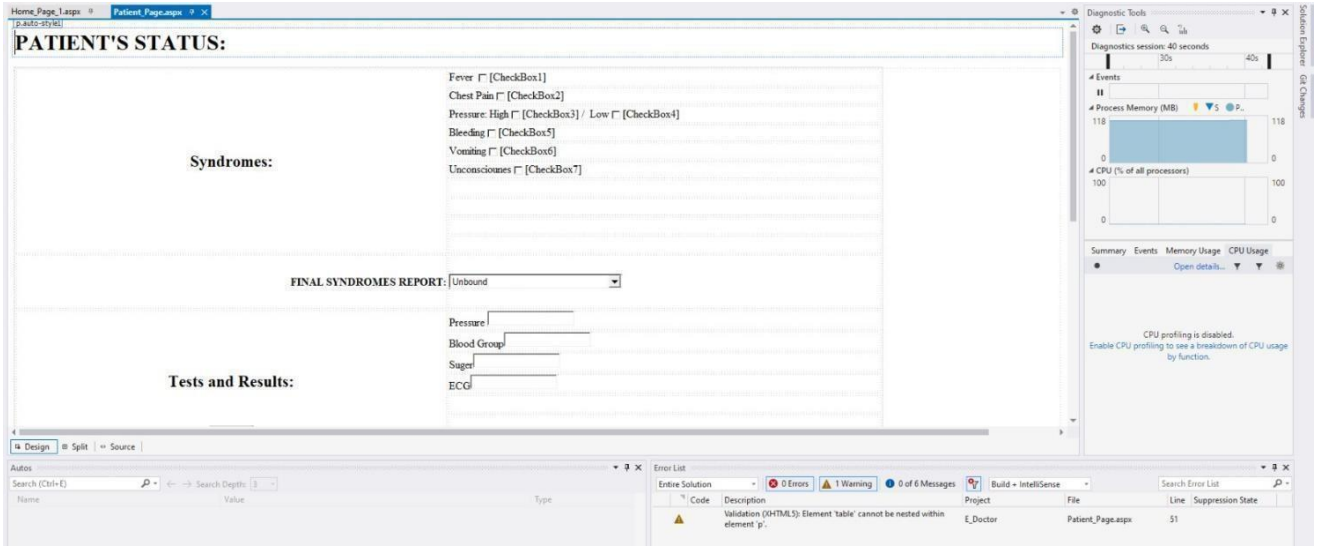
Output Image 1: HOME PAGE LAYOUT



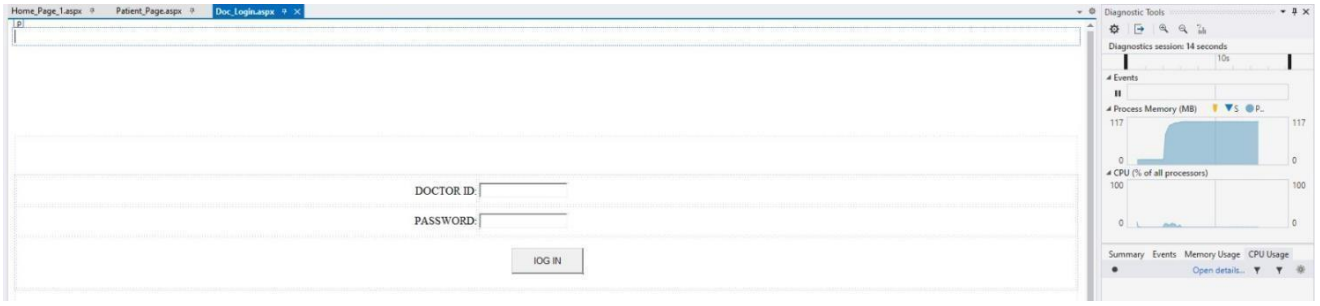
Output Image 2: Admin login page



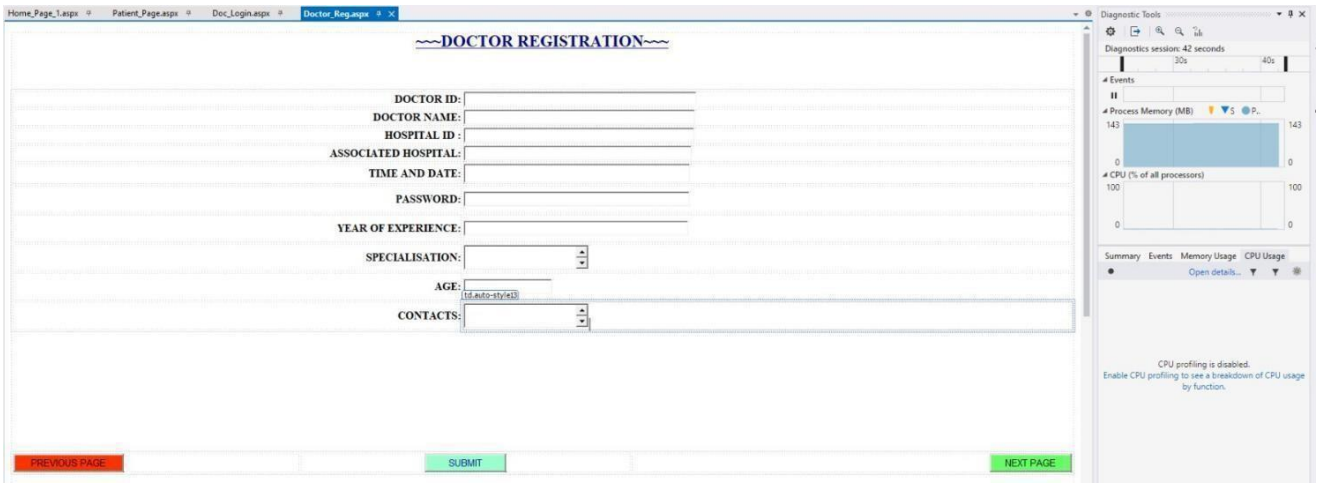
Output Image 3: Admin profile page



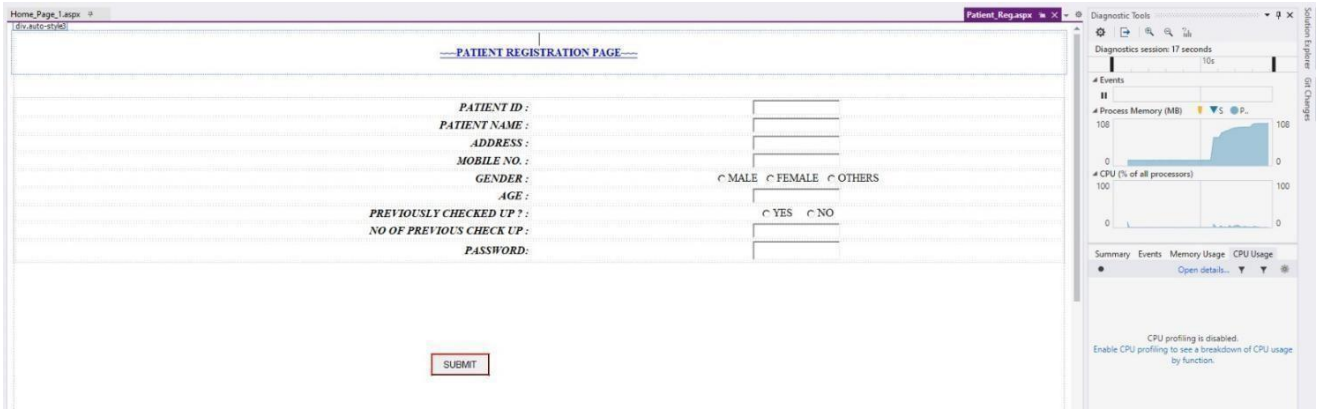
Output Image 4: Patient Status Checking Page



Output Image 5: Doctor Login Page



Output Image 6: Doctor Registration Page



Output Image 7: Patient Registration Page

DATA ENTRY VALUES:

P_ID	P_Name	Address	Mob_No	Gender	Age	Prev_check	No_of_Prev_C...	Password
100	sds	xyz	1236547890		55		5	sds2001
111	sds	xyz	1236547890	FEMALE	55	YES	5	sds2001
NULL	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*

Max Rows: 1000

Doc_ID	Doc_Name	Hospital_ID	Associated_Ho...	Time_&_Date	Year_of_Experi...	Password	Specialisation	Age	Contacts
100	asd	234	xyz	31-01-2024 17:3...	6	44456	*NULL*	*NULL*	*NULL*
101	sds2001	589	xyz	11:30 am , 12/2...	5	1236547	*NULL*	*NULL*	*NULL*
102	sds2002	580	xyz	31-01-2024 17:2...	5	123654780	*NULL*	*NULL*	*NULL*
118	asd	147	xyz	28-02-2024 21:5...	55		egdgrrtedhgfg...	45	ertggerge84677...
119	asd	147	xyz	28-02-2024 21:5...	55		egdgrrtedhgfg...	45	ertggerge84677...
147	mmm	580	xyz	06-03-2024 21:5...	6	147852	rrrttyyyyyttrr	34	2345678902
148	ffff	334	4tr	06-03-2024 22:0...	10	145874	rruuut	56	567809532
150	name	200	xyz	06-03-2024 21:3...	6	777788	spe	45	contact
NULL	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*

dbo.Catagory_...iseases [Data]

Max Rows: 1000

Diseases	Catagory	Medicine	Dose
Fever	Crosin-650	Paracitamal	3-4 times per day
Fever	Paracit-650	Paracitamal	3-4 times per day
Simple cough	Ascoryn	ASP	3 times after fo...
Simple Cough	Reconil	ASP	3 times per day
NULL	*NULL*	*NULL*	*NULL*

Output Image 8: DATA ENTRY TABLE

Future Scope:

The services mentioned below are in our future scope. Essentially, it is a forward-looking statement, that provides a vision for the project's evolution and continued relevance. Future scopes -

a) Prescription service
b) Payment and receipt service
c) Diagnostic and Advisory Service
d) Medicine order service
e) Market Expansion
f) Feature Enhancements

CONCLUSION:

In conclusion, the E-Doctor[(1)(2)(3)] website brings a range of benefits to both patients and healthcare providers. It revolutionizes the healthcare experience by offering accessible, efficient, and secure medical consultations, while expanding the reach of healthcare services to areas that were previously underserved. This innovative platform truly transforms the way healthcare is delivered and received. An E-Doctor[(1)(2)(3)] website, or telemedicine platform, can offer many benefits to both patients and healthcare providers. In conclusion, such a website provides convenient, accessible healthcare by enabling patients to connect with medical professionals remotely for consultations, diagnoses, and treatment plans. This service can save time and resources for both parties, as it eliminates the need for travel and waiting room visits. Additionally, it can be particularly beneficial for patients in remote areas or those with mobility issues. However, ensuring the privacy and security of patient data is crucial, and the platform must comply with relevant healthcare regulations and standards. Overall, e-doctor websites represent a promising evolution in healthcare delivery that can enhance patient care and improve access to medical services.

APPENDIX:

1. What technology stack is recommended for building an e-doctor website?
2. What programming languages and frameworks were used in the development of the E-Doctor system?
3. What database management system was utilized for storing patient data?
4. Are there any specific hardware or software requirements for running the E-Doctor application?
5. What data is collected from users of the E-Doctor application, and how is it used?
6. Are there any mechanisms for users to control their data privacy settings or opt-out of certain data collection practices?
7. How does the E-Doctor system comply with relevant privacy regulations, such as GDPR or HIPAA?
8. What types of testing were performed during the development lifecycle of the E-Doctor system?
9. Can you provide examples of test cases and their results from unit, integration, and acceptance testing?
10. How is regression testing handled to ensure that new updates or features do not introduce unexpected issues?
11. What metrics were used to evaluate the performance of the E-Doctor system, and what were the results?
12. How does the system handle concurrent user sessions and large volumes of data?
13. Have any performance optimizations been implemented based on the evaluation findings?
14. Can you provide a list of references or citations to relevant research papers, standards, or industry best practices that informed the development of the E-Doctor system?
15. How were external resources utilized to ensure the reliability and accuracy of medical information presented within the application?
16. How should the video consultation functionality be implemented?
17. What measures should be taken to handle high traffic?
18. How can user data be safely stored?
19. How can the website support different languages and localization?
20. How can patient appointment scheduling be managed efficiently?
21. How can you handle video consultations for various network speeds?
22. How can patients verify their identity for medical services?

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