

“Healthcare-Management System”
Second year Mini Project Report

Submitted in partial fulfillment of the requirements
of the degree

**BACHELOR OF ENGINEERING IN COMPUTER
ENGINEERING**

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CERTIFICATE

This is to certify that the Mini Project entitled "**Healthcare Management System**" is a bonafide work of **Taniya Vallecha(D7C/65), Simran Godhwani(D7C/23), Nimish Chug (D7B/13), Meet Mattani (D7B/27), Darshan Khapekar(D7B/66)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of "**Bachelor of Engineering**" in "**Computer Engineering**".



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Mini Project Approval

This Mini Project entitled "**Healthcare Management System**" by
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Bachelor of Engineering in Computer Engineering.

Examiners

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Place:

Contents

Abstract	ii
Acknowledgments	iii
List of Abbreviations	iv
List of Figures	v
List of Tables	vi
List of Symbols	vii
1 Introduction	1
1.1 Introduction	
1.2 Motivation	
1.3 Problem Statement & Objectives	
1.4 Organization of the Report	
2 Literature Survey	11
2.1 Survey of Existing System	
2.2 Limitation Existing system or research gap	
2.3 Mini Project Contribution	
3 Proposed System (eg New Approach of Data Summarization)	18
3.1 Introduction	
3.2 Architecture/ Framework	
3.3 Algorithm and Process Design	
3.4 Details of Hardware & Software	
3.4 Experiment and Results	
3.5 Conclusion and Future work.	
References	32

1. Introduction

1.1 Introduction

In an era marked by unprecedented advancements in technology and a growing need for efficient healthcare services, the development of an E-Healthcare Management System represents a crucial step towards improving the quality, accessibility, and overall effectiveness of healthcare delivery. This project aims to leverage the power of information technology to create a comprehensive, user-friendly, and interconnected platform that streamlines various aspects of healthcare management, including patient records, appointments and communication between healthcare providers and patients. Hospital Management System is a software designed to streamline and automate various administrative, clinical, and operational processes within a hospital or healthcare facility. It aims to enhance efficiency and accuracy by providing features like patient registration, appointment scheduling, medical records management and more. The main objective of the system is to minimize the manual work and at the same time increase the speed of work done in hospitals. This system helps healthcare providers to optimize resource utilization and improve communication among different departments, ultimately leading to better healthcare services.

1.2 Motivation

Creating an e-healthcare management project can be motivated by several factors, as it has the potential to address critical healthcare challenges and improve patient outcomes. Here are some key motivations for such a project:

- Enhanced Efficiency: Automation and digital record-keeping can streamline administrative tasks, reducing paperwork and minimizing errors. This can lead to more efficient use of resources, including time and personnel.
- Patient Empowerment: E-healthcare management systems can empower patients to take a more active role in their healthcare. They can access their medical records and schedule appointments
- Cost Savings: By reducing paperwork, eliminating redundant tests, and optimizing resource allocation, e-healthcare management can lead to significant cost savings for healthcare providers and patients alike.
- Better Data Management: E-healthcare projects enable the efficient storage and retrieval of patient data, which can lead to more informed decision-making and improved patient care. Machine learning and data analytics can also be applied to identify trends and insights.

1.3 Problem Statement and Objectives

In the rapidly evolving landscape of healthcare, the need for efficient and comprehensive healthcare management systems has become increasingly evident. The existing healthcare infrastructure is often burdened with inefficiencies, paper-based processes, and fragmented information systems. To address these challenges, there is a growing demand for the design and implementation of an E-Healthcare Management System that can optimize healthcare delivery, enhance patient care, and streamline administrative processes. The goal of this project is to design a robust E-Healthcare Management System that meets the following objectives:

Objectives:

- Improved Patient Care: Enhance the quality of healthcare services by providing healthcare professionals with a digital platform to efficiently manage patient records, monitor patient progress, and enable timely interventions.
- Data Security and Compliance: Ensure robust data security measures, encryption, and compliance with relevant healthcare data protection laws, such as HIPAA, to safeguard patient privacy.
- Improved Patient Experience: Enhance the overall patient experience by reducing administrative burdens, minimizing waiting times, and facilitating telemedicine consultations, ultimately improving patient satisfaction.
- Scalability: Design the system to be scalable, allowing for future growth and the integration of emerging technologies in healthcare.
- Cost Efficiency: Optimize resource utilization and reduce operational costs by automating administrative tasks, streamlining processes, and reducing paperwork

1.4 Organisation of the report

The introduction paved the way for the report, starting with a general overview (1.1 Introduction) of the topic. Motivation (1.2) illuminates the reasons ,the research or project, continued by the Problem Statement & Objectives (1.3) that outlines the problem at hand and the intentional goals. The organization of the report (1.4) will help readers with a blueprint of report.The Literature Survey Scrabble more into current understanding . It elaborates with a Survey of existing System (2.1), presenting an overview of the current state of the subject. Limitations of the existing system or research gaps (2.2) are discussed, identifying areas where improvements or advancements are needed. The section also highlights the Mini Project Contribution (2.3), explaining how the present project aims to fill the identified gaps. The Proposed System introduces our system. Starting with an Introduction (3.1), it provides a detailed overview. Architecture/Framework (3.2) gives perceptions into the structure and

framework of the proposed system, while Algorithm and Process Design (3.3) explain the methodologies used. Details of Hardware & Software (3.4) highlights the technological aspects. Experiments and Results (3.5) present findings, and Conclusion and Future Work (3.6) summarize the outcomes and suggest future research directions. At last the references part is a compilation of all the various sources referred throughout the report.

2.Literature survey

2.1 Survey of Existing System

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often the information is incomplete, or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores.

2.2 Limitation existing system or research gap

Existing healthcare management systems may still rely on paper records or have inefficient digital storage methods. This can lead to the misplacement of patient records, test results, prescriptions or other critical documents. When healthcare providers cannot locate essential information promptly, it can result in delays in diagnosis and treatment, potentially endangering patients' lives. Moreover, patient health information is sensitive, and e-health systems can be vulnerable to data breaches and cyberattacks. Protecting patient data is a significant challenge. Many healthcare systems use different standards and technologies, making it difficult for e-health systems to seamlessly exchange information. This can lead to fragmented care and inefficiencies. Some healthcare providers and patients may be resistant to using e-health systems due to concerns about usability, technical proficiency, or privacy.

2.3 Mini project Contribution

- User-Friendly Interface: Contribute by designing an intuitive user interface for the system. Ensure ease of use for both healthcare providers and patients.
- Accuracy of information and reliability : Hospital management system will help in improving accuracy of information by avoiding issues like repeat entry of data , incomplete data.
- Enhanced Data Accessibility: Enable authorized healthcare professionals to access patient data securely, improving care coordination and

reducing duplicated tests and procedures.

- Improved Patient Experience: Enhance the overall patient experience by reducing administrative burdens, minimizing waiting times, and facilitating telemedicine consultations, ultimately improving patient satisfaction.

3. Proposed System

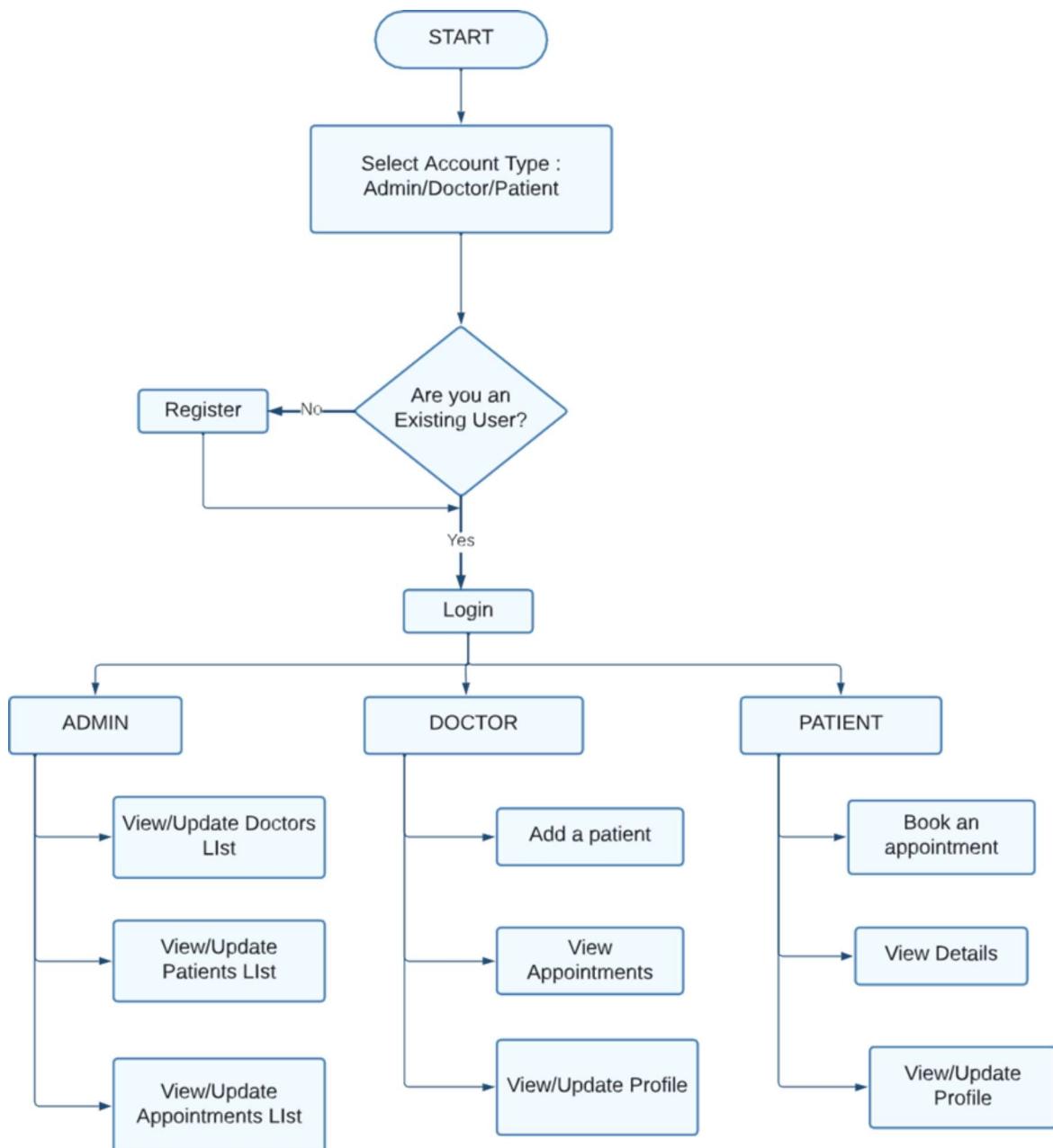
3.1 Introduction

The E-Healthcare Management System is a comprehensive digital solution designed to streamline healthcare processes, enhance patient care, and improve the efficiency of healthcare providers. This proposed system combines modern technology with healthcare practices to provide a seamless and patient-centric approach to healthcare management.

Key Features:

- Comprehensive Patient Record Management: Create a centralized repository for patient records, ensuring the availability of accurate and up-to-date medical information to healthcare providers.
- Efficient Appointment Scheduling: Develop an appointment scheduling system that reduces patient wait times, optimizes healthcare provider schedules, and allows online appointment booking.
- Electronic Health Records (EHR): Digital storage of patient records, including medical history, lab reports, and prescriptions. Accessible to authorized healthcare providers, ensuring data consistency and patient safety.
- User-Friendly Interface: Contribute by designing an intuitive user interface for the system. Ensure ease of use for both healthcare providers and patients.
- Statistics: Statistics to track patient and doctor data. These statistics help decision-making, resource allocation, and service improvement. By using data insights, healthcare providers can enhance patient care and system efficiency.
- Uploading Medical Certificates/Reports-Patients can conveniently access medical certificates and reports.

3.2 Architecture/Framework



3.3 Details of Hardware & Software

Hardware Requirements:-

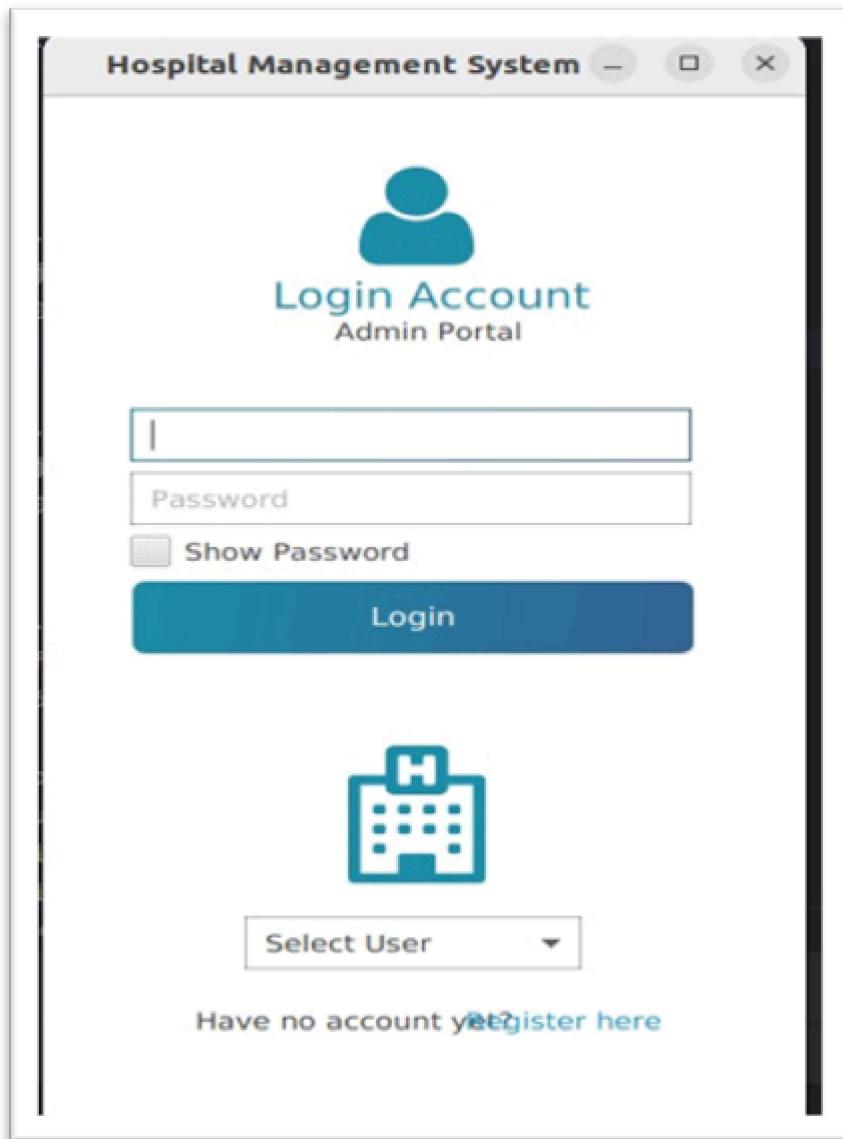
- The HDD required for the application is minimum 2gb
- The application works on minimum Intel core i3
- requires 4gb RAM

Software Requirements :-

- The application is designed using intelliJ idea.
- The technology used in java .
- The database has been designed on MYSQL
- XAMPP to run PHPMYADMIN database.

3.4 Experiments and Results

1. Login Portal: The user first has to select the account type: Admin/Doctor/Patient. Then the user logins into the system using username and password. If the user is new,then he has to first register and then login.



2. Admin Portal: The admin portal consists of options to view and update patients list, doctors list and appointments list. The portal also contains statistics to track patient's data and doctor's data.

The screenshot shows the Admin Portal dashboard. On the left is a sidebar with navigation links: Dashboard, Doctors, Patients, Appointments, Profile, and Profile Setting. The main area has a header "Dashboard Form" with the date "02/10/2024 12:29:32 AM", the user "Welcome, Test", and a status indicator "Active". Below the header are three cards: "Active Doctor" (0), "Total Patients" (7), and "Active Patients" (8). The central part of the dashboard displays "Doctor Information" with a table:

Doctor ID	Name	Specialized	Status
DID-1	test	Allergist	Confirm
DID-3	aryan	Dermatologist	Confirm

On the right side, there are two charts: "Patient's Data" (line chart) and "Doctor's Data" (bar chart).

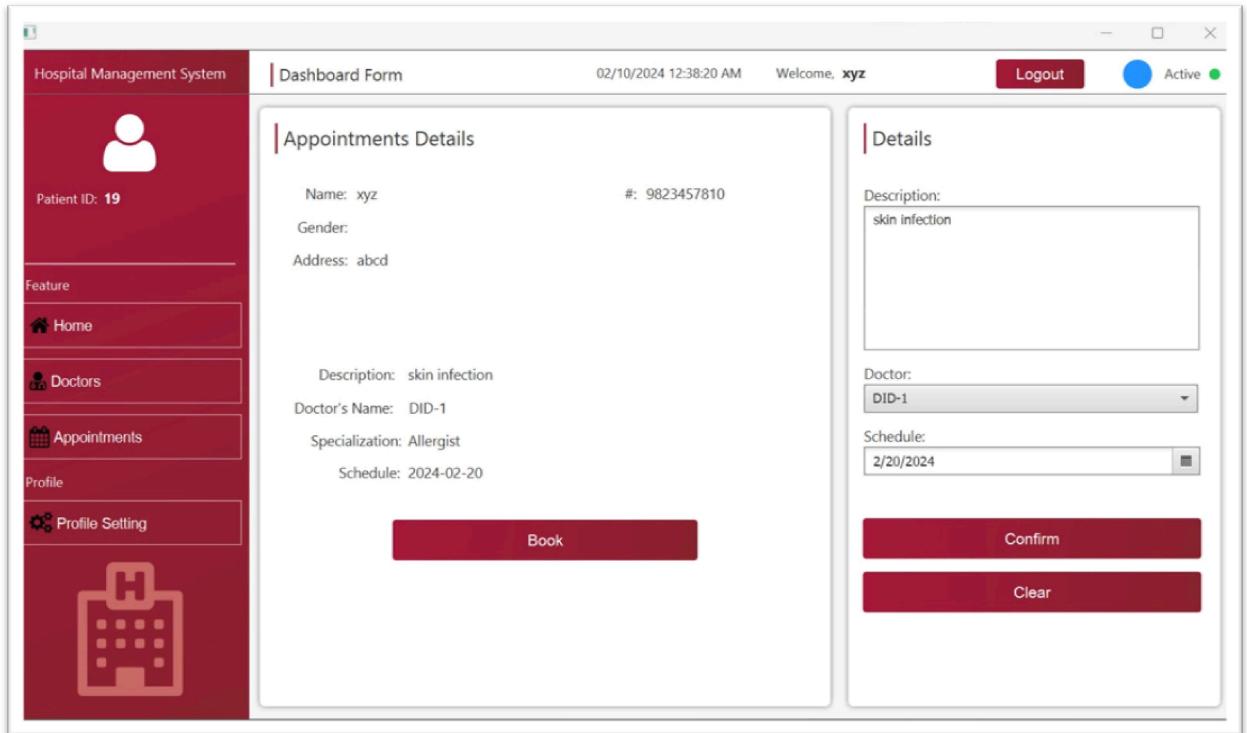
3. Doctor Portal: The doctor portal consists of options to add a new patient and all his details. The doctor can view the scheduled appointments. Also, the doctor can view/update his profile. The portal also contains statistics to track number of patients and number of appointments.

The screenshot shows the Doctor Portal dashboard. The sidebar is identical to the Admin Portal. The main area has a header "Dashboard Form" with the date "02/10/2024 12:33:57 AM", the user "Welcome, Test", and a status indicator "Active". Below the header are three cards: "Inactive Patients" (0), "Total Patients" (0), and "Active Patients" (0). The central part of the dashboard displays "Appointment" information with a table:

Appointment ID	Name	Description	App Date	Status
1	test	cold	2023-10-28	Active
2	test	gdrtertee	2023-10-24	Active
3	treee	asdadasd	2023-10-27	Active
4	test	fever	2023-10-26	Active
5	test	head surg...	2023-11-08	Active
6	test	headache	2023-10-26	Active
7	test	headache	2024-02-12	Active
8	xyz	gift	2024-02-13	Active

On the right side, there are two charts: "Number of Patients" (line chart) and "Number of Appointments" (bar chart).

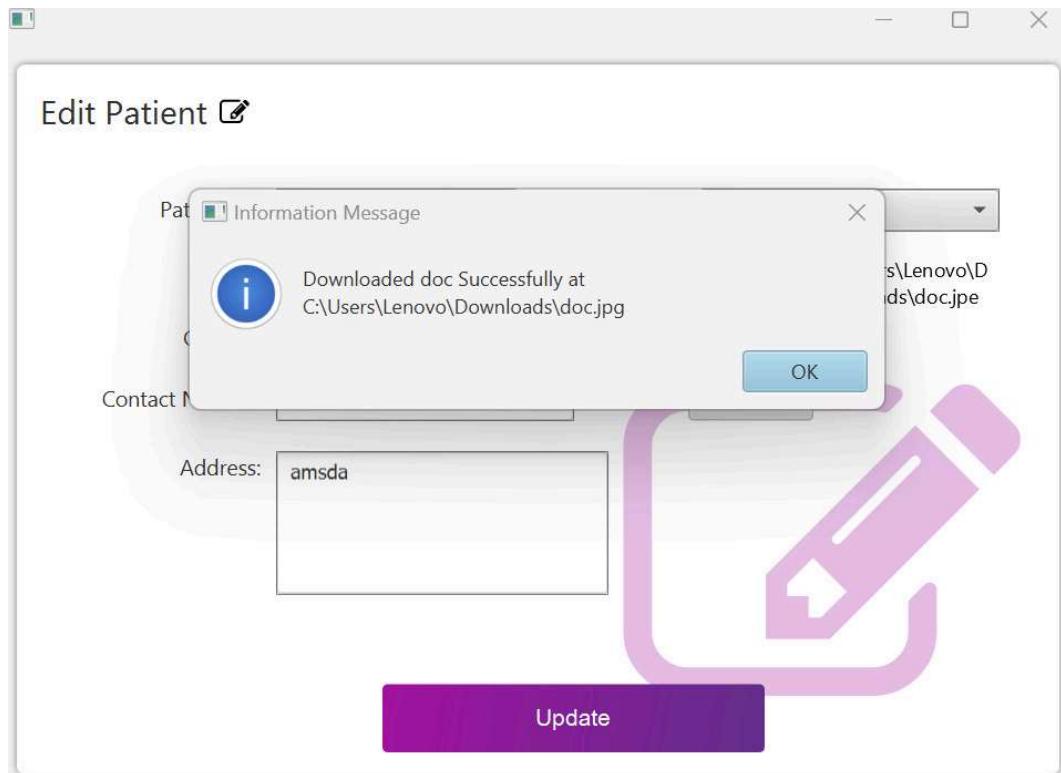
4. Patient Portal: The patient portal consists of options to view all the details regarding the appointments, diagnosis and treatment. The patient can also book an appointment. Moreover, he can also view/update his profile.



5. File Module:

The portals consist of options to upload and download medical reports and medical certificates.

The screenshot shows the 'Edit Patient' file module. It features a form with fields for Patient ID (2), Status (Confirm), Name (meet), Gender (Male), Contact Number (9879858), and Address (amsda). To the right of the address field is a large pink icon of a pen writing on a document, with a 'Download' button next to it. At the bottom is a purple 'Update' button.



3.5 Conclusion And Future Work

The E-Health care management system project demonstrates the significant benefits that digital solutions can bring to the healthcare industry. The proposed application aims to create a friendly working environment for any health centers and to overcome the drawbacks in existing system. Through the implementation of this system a streamlined communication between patients and health care providers improved patient encouragement and empowerment.. Patients can now schedule appointments, access their medical records, and engage in meaningful interactions with their healthcare providers. This has fostered a sense of ownership and improved overall patient satisfaction. In future, to enhance data security in the existing healthcare system we propose a system where we implement encryption for all healthcare data, ensuring that data is encrypted from the moment it's captured or entered into the system until it reaches its intended recipient. This prevents unauthorized access at any point in the data's journey. Also the use of QR codes can improve efficiency, security, and accessibility in various aspects of healthcare.

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