Hospital Finder App

A PROJECT REPORT

Submitted by,

T.Prasad	**20201CEI0095**
G.Harika	**20201CEI0122**
Kalle Busi Gari Venkata Kumar	**20201CEI0085**
Katam Naga Phanindra Reddy	**20201CEI0105**

Under the guidance of,

Ms.Shilpa C N

in partial fulfillment for the award of the

degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER ENGINEERING
[ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING]

At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

BENGALURU

JANUARY 2024

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project report **"HOSPITAL FINDER APP"** being submitted by T Prasad, G Harika , Kalle Busi Gari Venkata Kumar, Katam Naga Phanindra Reddy bearing rollnumber(s) 2020201CEI0095,20201CEI0122, 20201CEI0085, 2020CEI0105 in partial fulfilment of requirement for the award of degree of Bachelor of Technology in Computer Engineering [Artificial Intelligence and Machine Learning]is a bonafide work carried out under my supervision

Ms.Shilpa C N   **Dr.Gopal K Shyam**
Assistant Professor Grade-1   Professor & HoD
School of CSE   School of CSE
Presidency University   Presidency University

Dr. C. KALAIARASAN   **Dr. SHAKKEERA L**   **Dr. Md. SAMEERUDDIN KHAN**
Associate Dean   Associate Dean   Dean
School of CSE&IS   School of CSE&IS   School of CSE&IS
PresidencyUniversity   Presidency University   Presidency University

PRESIDENCY UNIVERSITY
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **Hospital Finder App** in partial fulfilment for the award of Degree of **Bachelor of Technology** in **Computer Engineering[Artificial Intelligence and Machine Learning],** is a record of our own investigations carried under the guidance of **Ms.Shilpa C N Assistant Professor Grade-1, School of Computer Science and Engineering , Presidency University, Bengaluru.** We have not submitted the matter presented in this report anywhere for the Award of any other Degree.

Names	Roll.Nos	Signature
T.Prasad	20201CEI0095	
G.Harika	20201CEI0122	
Kalle Busi Gari Venkata Kumar	20201CEI0085	
Katam Naga Phanindra Reddy	20201CEI0105	

ABSTRACT

This abstract presents a comprehensive overview of a multi-tiered healthcare management system, catering to the administrative, hospital, doctor, and user segments. The system is designed to streamline healthcare operations and enhance accessibility for all stakeholders. For administrators, the system offers functionalities like secure login, enabling them to manage hospital information, including adding new hospitals and viewing existing ones. Additionally, they can maintain a database of blood donors. Hospitals can log in to the system, add doctors to their roster, and view patient appointments, promoting efficient healthcare delivery. Doctors can access the system to view their appointment schedules and update appointment statuses in real time, ensuring effective patient management. Users, on the other hand, can register and log in, enabling them to find nearby hospitals and view available blood donors within their vicinity, promoting timely healthcare access. This healthcare management system aims to bridge the gap between healthcare providers and patients, enhancing the overall healthcare experience and accessibility for all involved parties. In addition to its core features, the multitiered healthcare management system leverages the power of mobile technology through a dedicated Android application. This mobile application extends the reach of the system, allowing administrators, hospitals, doctors, and users to access critical information and perform essential tasks on the go. The mobile platform enhances flexibility and responsiveness in healthcare management by enabling stakeholders to stay connected, make informed decisions, and respond promptly to evolving situations.

Moreover, the system prioritizes security and data privacy, ensuring that sensitive healthcare information remains confidential and protected across both the web and mobile platforms.

KEYWORDS: Mobile application, Android.

ACKNOWLEDGEMENT

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

CHAPTER-1
INTRODUCTION

1.1 About App
1.1.1 How it is helpful :

Patient satisfaction has been proven to be one of the most valid indicators of the quality of care. Analysis of patient satisfaction data is in demand by many health-care providers. Most health-care providers, from doctor's offices to clinics and hospitals, collect patient satisfaction surveys to evaluate their various services and patient experience. For improving patient satisfaction, issues of health care provided at the hospital level and the factors that originate those issues from patients' point of view should be discovered. Therefore, survey data should be either manually analysed by examining each possible pattern in the data set using conventional methods or an unsupervised methodology is needed to do the analysis with least amount of human interaction. Such methodology should get the satisfaction survey data, find patterns that are repeated among patients' demographics and their satisfaction level in different fields, validate the patterns and compile them into a set of recommendations to help hospitals improve satisfaction within various patient communities. This methodology is a hybrid unsupervised clustering-labelling method, which finds associations between various levels of patients' satisfaction and demographics. The associations are validated by using standard statistical models and turned into useful recommendations for hospitals in order to improve patients' experience, save cost, and build long-term patient loyalty. The methodology can be generalized to any complex multi-level survey analysis.

1.2 Problem Statement

Healthcare management is a complex and critical area, often plagued by inefficiencies, inadequate accessibility, and disjointed information. Patients struggle to find suitable hospitals and blood donors, while hospitals and doctors encounter challenges in managing appointments and resources. This project addresses the existing problems in healthcare management by providing a comprehensive solution.

The project offers an integrated appointment management system, streamlining the scheduling process for both patients and healthcare providers.Patients can easily book and

School of Computer Science Engineering & Information Science, Presidency University

1

manage appointments online, reducing wait times and improving the overall patient experience.Healthcare providers benefit from optimized scheduling, reducing noshows and maximizing the efficient use of resources.The project includes a geospatial hospital and blood bank locator, empowering patients to easily find nearby healthcare facilities and blood donation centers. Users can access real-time information on hospital services, specialties, and available blood types, promoting timely and informed healthcare decisions. A dedicated platform for blood donors is integrated to address blood shortage challenges.Donors can register, receive alerts about urgent blood needs, and contribute to building a robust and responsive blood donor network.

1.3 Existing method

The information about the hospitals to the user based on public comments. This is achieved through natural language processing approach using sentiment analysis involving three factors namely, polarity, subjectivity and intensity. Polarity is used to determine the category (positive, negative, neutral) of emotion in a given word. Subjectivity refers to the personal feelings, views or beliefs.

CHAPTER-2

LITERATURE SURVEY

The literature surrounding mobile health (mHealth) applications emphasizes the pivotal role they play in transforming healthcare management. Numerous studies delve into the user-centric design principles that contribute to the success of healthcare apps, exploring factors such as user engagement, satisfaction, and overall usability. Security and authentication methods within healthcare applications have been a substantial focus, with research investigating the impact of secure login methods, such as email verification and password authentication, on data integrity and user trust.

Furthermore, the integration of geolocation services in healthcare apps has been a subject of interest, as it significantly enhances accessibility and user experience by providing location-based services. Studies on the efficiency and effectiveness of appointment scheduling features within healthcare applications highlight their impact on patient outcomes and healthcare provider workflows. The integration of electronic health records (EHR) into mobile apps has also been explored, emphasizing how these applications facilitate seamless doctor-patient interactions and improve the overall healthcare experience.

Med-Recommender System for Predictive Analysis of Hospitals and Doctors:

S. Swarnalatha; I. Kesavarthini; S. Poornima; N. Sripriya

Existing Method:

A recommender system is proposed and developed to help users to find the best hospital for a particular treatment. Finding a best hospital that can cure one's ailment is of paramount importance. A good hospital is one in which there are always enough staff on duty with the right skills, knowledge and experience.

Advantages :

Personalized Recommendations: Recommender systems use user data and preferences to provide personalized hospital recommendations. This can help users find the best hospital that suits their specific medical needs and preferences.Efficient Recommender systems save users time and effort by narrowing down their choices and providing them with a limited set of hospital options.

Disadvantages :

To provide personalized recommendations, these systems require access to users' health data and preferences. This can raise privacy concerns, especially if the data is mishandled or compromised.Recommender systems can suffer from bias if the data used to train them contains biases. This can result in recommendations that favor certain hospitals over others, potentially leading to inequality in healthcare access.

Medication recommendation system based on clinical:

Ayrine John; Muhammed Ilyas H.; Veena Vasudevan

Existing Method:

Designing medication recommendation system is a need for the fast-growing world. In this fast-growing world, the need for the application which recommend a medication led to a doctor friendly and hospital free atmosphere for all users all over the world.

Advantages :

A medication recommendation system can provide users with convenient and immediate access to information about potential medications for their health concerns, reducing the need for physical visits to doctors or hospitals.Users can quickly obtain suggestions for over-the-counter medications or general remedies for common ailments, helping them make faster decisions about their health.

Disadvantages :

Medication recommendation systems may not take into account individual medical histories, allergies, or specific health conditions, potentially leading to inappropriate or unsafe recommendations.Relying solely on automated recommendations can result in misdiagnosis of more serious health conditions or delay in seeking professional medical help when necessary.

An Internet Medical Service Recommendation :

Lei Wang; Qiang Zhang; Qing Qian; Jishuai Wang; Wenbo Cheng; Jindan Feng

Existing Method:

The recommendation system could mine the user's behavior operation data and provide different personalized recommendation services for different users. The problems of inaccurate and incomplete description of patients' needs in internet medical service have brought great challenges to the recommendation of internet medical service.

Advantages:

By mining user behavior and operation data, the system can provide personalized recommendations that cater to individual users' preferences and needs, enhancing the overall user experience.The system can offer healthcare information and services that are specifically relevant to a user's medical history, conditions, and preferences, ensuring that users receive more accurate and targeted information.

Disadvantages:

Collecting and analyzing user behavior and health data may raise privacy concerns, especially if data is mishandled, or users are unaware of how their information is used.Data analysis and algorithms used in the system may misinterpret user behavior or medical .

A Hospital Recommendation System Based on Patient :

Mohammad Reza Khoie,Tannaz Sattari Tabrizi,Elham Sahebkar Khorasani

Existing Method:

Patient satisfaction has been proven to be one of the most valid indicators of the quality of care. Analysis of patient satisfaction data is in demand by many health-care providers. Most health-care providers, from doctor's offices to clinics and hospitals, collect patient satisfaction surveys to evaluate their various services and patient experience.

Advantages:

Patient satisfaction data provide valuable insights into the quality of care and services provided by healthcare facilities. By analyzing this data, providers can identify areas that need improvement and take steps to enhance the patient experiencThe analysis of patient satisfaction data allows healthcare providers to better understand patients' needs and preferences. This, in turn, enables the delivery of more patient-centered care and services.

Disadvantages:

Patient satisfaction data can be subjective and influenced by individual perceptions, expectations, and cultural factors. Analyzing subjective data can be challenging and may not always provide a complete picture of the quality of care.Not all patients may respond to satisfaction surveys, and those who do may have particularly positive or negative experiences, potentially leading to response bias.

A Hybrid Recommender System for Patient-Doctor Matchmaking in Primary Care

Qiwei Han, Manas Gaur

Existing Method:

We partner with a leading European healthcare provider and design a mechanism to match patients with family doctors in primary care. We define the matchmaking process for several distinct use cases given different levels of available information about patients. Then, we adopt a hybrid recom-mender system to present each patient a list of family doctor recommendations. We partner with a leading European healthcare provider and design a mechanism to match patients with family doctors in primary care. We define the matchmaking process for several distinct use cases given different levels of available information about patients. Then, we adopt a hybrid recommender system to present each patient a list of family doctor recommendations.

Advantages :

A hybrid recommender system can take into account a wide range of patient information and preferences to provide personalized recommendations, ensuring that patients are matched with family doctors who best suit their specific healthcare needs and preferences.Matching patients with the right family doctor can enhance the patient experience, leading to higher satisfaction and better continuity of care.

Disadvantages :

Handling patient data for recommendation purposes raises concerns about data privacy and security, and healthcare providers must ensure that sensitive patient information is properly protected.The quality and accuracy of patient data and the potential for bias in the recommendations are crucial issues that need to be carefully addressed to avoid errors or unfair disparities in doctor recommendations.Developing and implementing a hybrid recommender system can be costly in terms of technology infrastructure, data integration, and staff training.

LITERATURE SURVEY TABLE

Year	Author	Title	Description
21-23 February 2019.	S. Swarnalatha; I. Kesavarthini; S. Poornima; N. Sripriya	Med-Recommender System for Predictive Analysis of Hospitals and Doctors	A recommender system is proposed and developed to help users to find the best hospital for a particular treatment. Finding a best hospital that can cure one's ailment is of paramount importance. A good hospital is one in which there are always enough staff on duty with the right skills, knowledge and experience.
12-13 August 2016	Ayrine John; Muhammed Ilyas H.; Veena Vasudevan	Medication recommendation system based on clinical	Designing medication recommendation system is a need for the fast-growing world. In this fast-growing world, the need for the application which recommend a medication led to a doctor friendly and hospital free atmosphere for all users all over the world.
24-26 August 2020	Lei Wang; Qiang Zhang; Qing Qian; Jishuai Wang; Wenbo Cheng; Jindan Feng	An Internet Medical Service Recommendation Method based on Collaborative Filtering	The recommendation system could mine the user's behavior operation data and provide different personalized recommendation services for different users. The problems of inaccurate and incomplete description of patients' needs in internet medical service have brought great challenges to the recommendation of internet medical service

Table 2.1

CHAPTER-3

RESEARCH GAPS OF EXISTING METHODS

3.1.User Interaction

Users can share their experiences by providing reviews and ratings for hospitals they have visited. This feature helps other users make informed decisions about choosing a hospital based on real-world feedback.

3.1.1Registration and Login

Users can register on the app, providing essential details for   a personalized experience. Secure login methods, such as email verification or password authentication, ensure data integrity.

3.1.2Hospital Search

Users can search for nearby hospitals based on location, specialty, or other relevant criteria. The app utilizes

Hospitals can use the app to communicate important health campaigns, alerts, and announcements to the community. This feature helps in disseminating critical health information, promoting preventive care, and creating awareness about public health initiatives.

3.1.3Appointment Booking

Users can view available appointment slots for doctors at their chosen hospital. Booking functionality allows users to schedule appointments conveniently.

The app sends automated appointment reminders and notifications to both users and healthcare providers, reducing the likelihood of missed appointments and improving overall scheduling efficiency.

3.1.4Blood Donor Database

Users can access information on nearby blood donors, fostering timely access to critical healthcare resources.

Donors may register through the app, providing their availability and blood type.

3.2Doctor Interaction

Doctors can create and manage their profiles on the app, including their specialties, qualifications, and availability.

3.2.1Appointment Management

Doctors can view their appointment schedules.

3.2.2 Virtual Consultation

Doctors have the option to offer virtual consultation services through the app. Patients can schedule virtual appointments, enabling remote medical consultations for non-critical health issues.

3.3. Hospital Interaction

System Integration:
Hospitals integrate their information into the system, including details.

3.3.1 Emergency Room Wait Times

Hospitals can provide real-time information on emergency room wait times. Users can check the app for estimated wait times, enabling them to make informed decisions during urgent situations.

CHAPTER-4
PROPOSED MOTHODOLOGY

The proposed healthcare management system envisions a comprehensive, integrated platform that revolutionizes the healthcare landscape. It offers secure access for administrators to manage hospitals and blood donors, while hospitals can efficiently handle doctor appointments. Doctors can seamlessly manage appointments and update statuses, ensuring real-time information. Users will benefit from a user-friendly interface that allows registration, easy login, and access to information on nearby hospitals and available blood donors within a 150-mile radius. This system will bridge the existing gaps in healthcare management, providing an efficient, transparent, and accessible solution for all parties involved, ultimately enhancing the overall quality of healthcare services.

4.1 Admin

Administrators, through a secure login, gain the power to manage healthcare facilities efficiently. They can effortlessly add new hospitals to the system, view and update hospital information, and maintain a database of blood donors, ensuring a comprehensive healthcare network. Upon completing their tasks, administrators can securely log out.

4.2 Hospital

Hospitals access the system through their unique login credentials. They can seamlessly add doctors to their staff, monitor and view patient appointments, and log out after ensuring effective hospital management.

4.3 Doctor

Doctors log in to view their appointment schedules and provide real-time status updates, simplifying patient management. After performing their duties, doctors securely log out.

4.4 User

Users, registering and logging in, enjoy easy access to nearby hospitals and   available Specify that the system incorporates automated appointment reminders and notifications for both doctors and users. This feature can help reduce missed appointments, enhance communication, and improve overall scheduling efficiency.Highlight the inclusion of a feedback and rating system for users to provide reviews about their healthcare experiences. This not only serves as a valuable tool for quality improvement but also helps users make informed decisions about choosing healthcare providers.

If applicable, mention that the system includes a feature to assist users in locating nearby emergency services. This can be crucial in emergency situations, providing users with quick access to critical healthcare facilities.

Emphasize if the system supports telemedicine services, allowing doctors to conduct virtual consultations. This can be particularly beneficial for users who may not be able to visit a hospital physically. Specify whether the system is accessible through multiple platforms, such as web browsers, mobile applications, and tablets. This ensures flexibility and convenience for users and healthcare providers who may prefer different devices.

Discuss the use of data analytics tools for administrators to analyze healthcare trends, manage resource allocation efficiently, and make informed decisions for the overall improvement of healthcare services.Mention that the system includes training modules and ongoing support services for administrators, hospital staff, doctors, and users to ensure effective utilization and a smooth user experience.

If applicable, describe how the system integrates with health insurance systems, allowing for seamless verification of insurance details and simplifying the billing process for both healthcare providers and users.Highlight if the system supports language localization, enabling users to navigate the platform in their preferred language. This enhances accessibility for a diverse user base.

CHAPTER-5

OBJECTIVES

5.1 User Interaction

5.1.1 Registration and Login

Users can register on the app, providing essential details for a personalized experience. Secure login methods, such as email verification or password authentication, ensure data integrity.

5.1.2 Hospital Search

Users can search for nearby hospitals based on location, specialty, or other relevant criteria. - The app utilizes

5.1.3 Appointment Booking

Users can view available appointment slots for doctors at their chosen hospital. Booking functionality allows users to schedule appointments conveniently.

5.1.4 Blood Donor Database

Users can access information on nearby blood donors, fostering timely access to critical healthcare resources.
Donors may register through the app, providing their availability and blood type.

5.2 Doctor Interaction

Doctors can create and manage their profiles on the app, including their specialties, qualifications, and availability.

5.2.1 Appointment Management:

Doctors can view their appointment schedules.

5.3 Hospital Interaction

System Integration:
Hospitals integrate their information into the system, including details.

CHAPTER-6

SYSTEM DESIGN & IMPLEMENTATION

6.1 Expirement Details

6.1.1SOFTWARE FRONT END REQUIREMENTS

6.1.1.1H/W CONFIGURATION:

- Processor   -   I3/Intel Processor

- RAM   -   8 GB

- Hard Disk   -   1TB

6.1.1.2S/W CONFIGURATION:

- Operating System   - Windows 10

- JDK   - java

- Plugin   - Kotlin

- SDK   - Android

- IDE   - Android studio

- Database`   - Server, My SQL , PHP

6.2 Block Diagram:
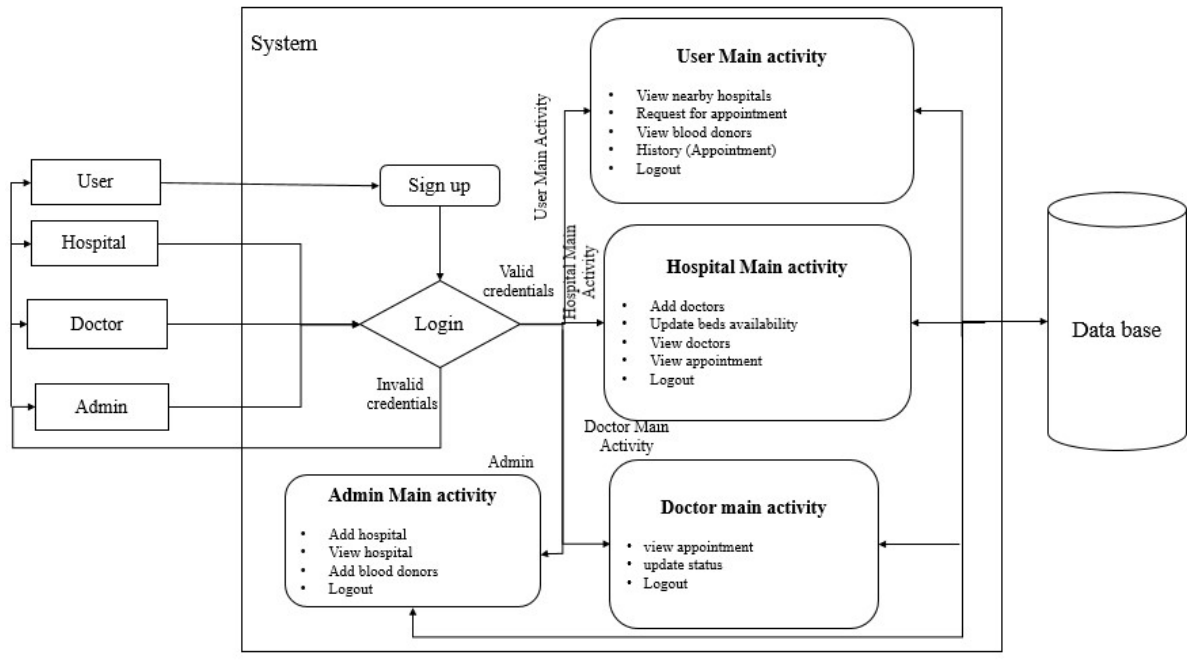
Figure 6.0

6.3 Usecase Diagrm:
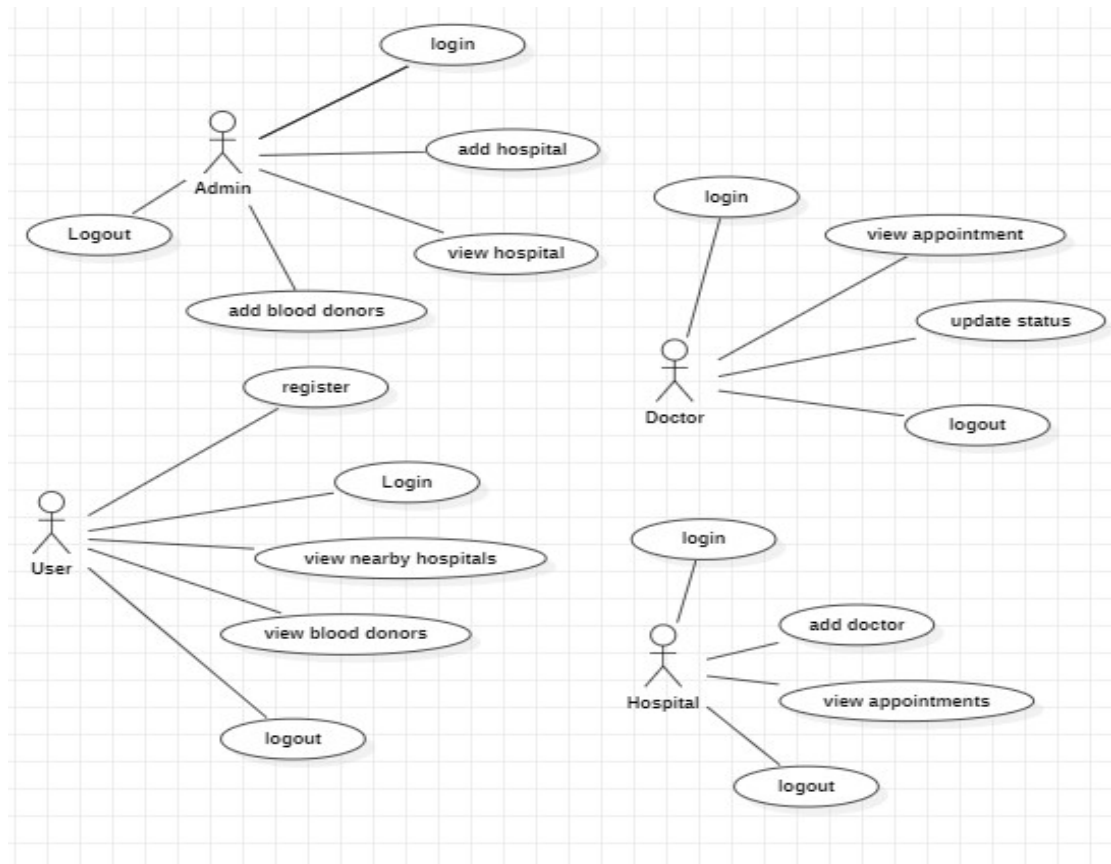
Figure 6.1

6.4Class Diagram
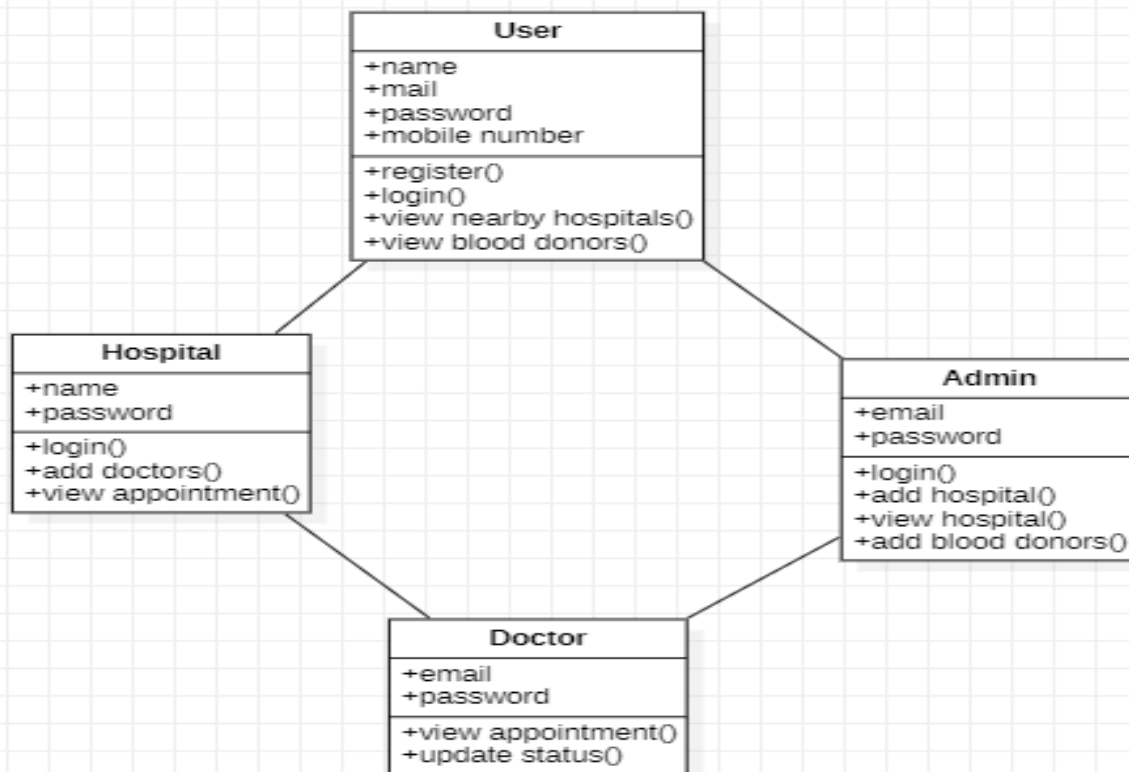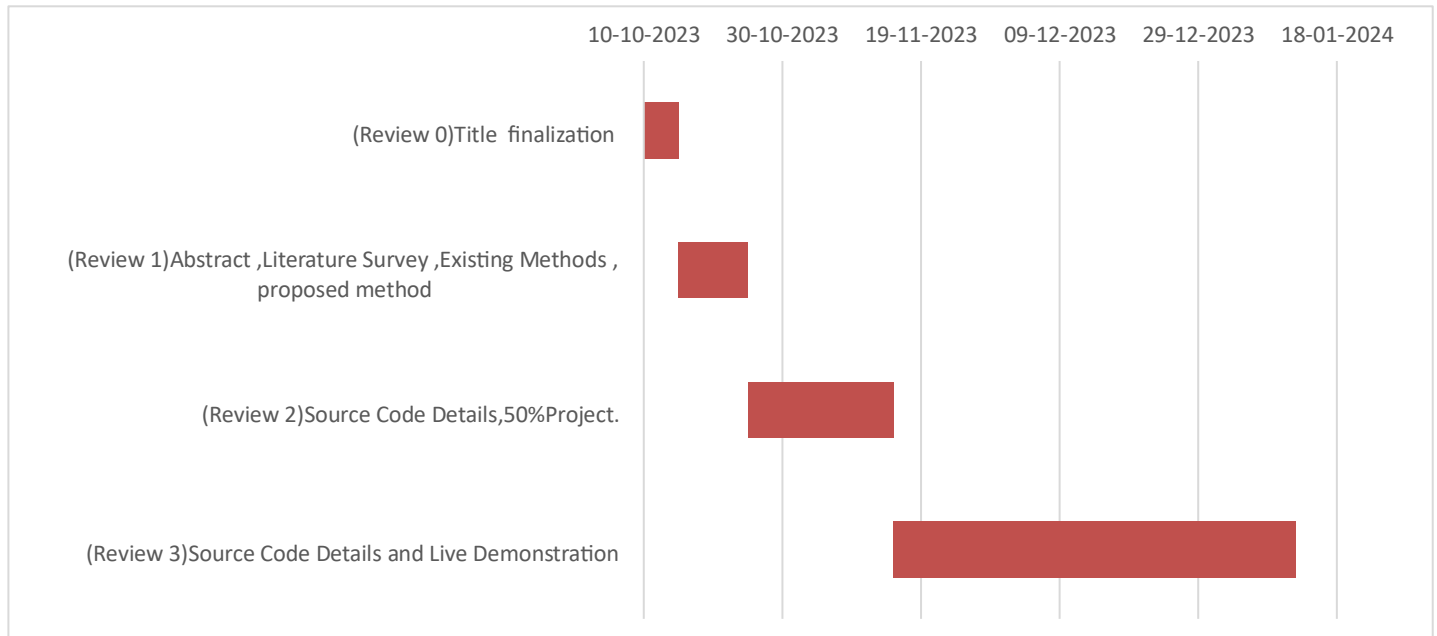

Figure 6.2

6.5 UML diagrams Collaboratio
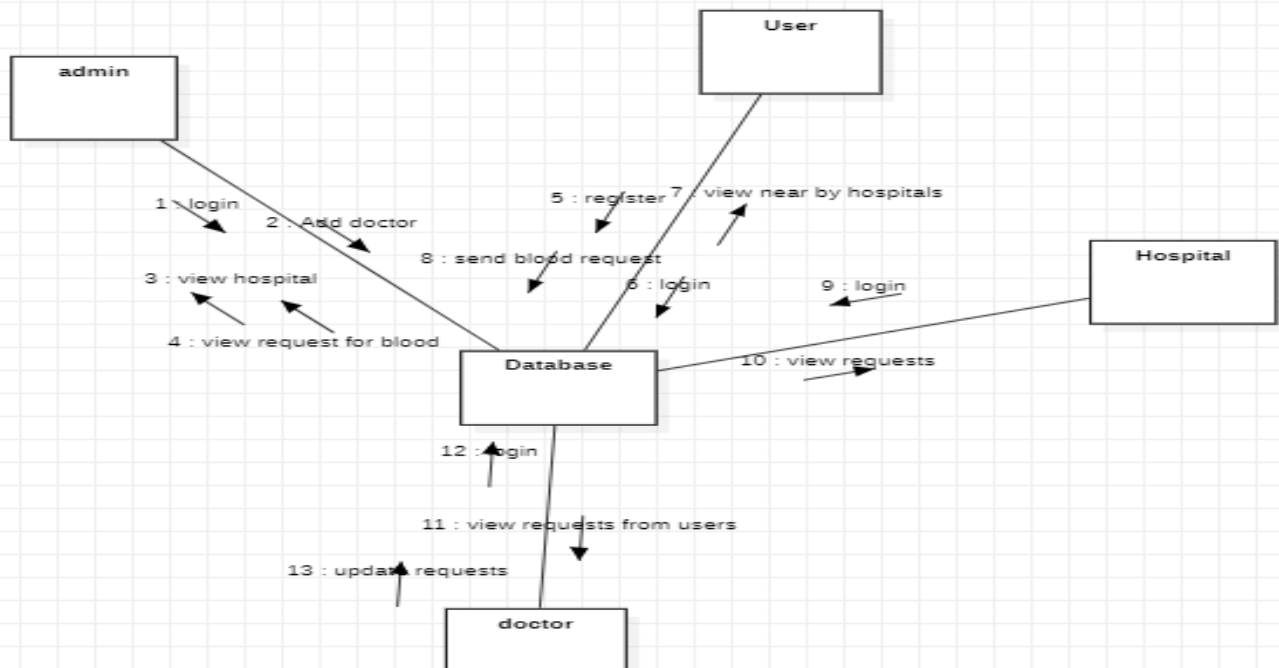
Figure 6.3
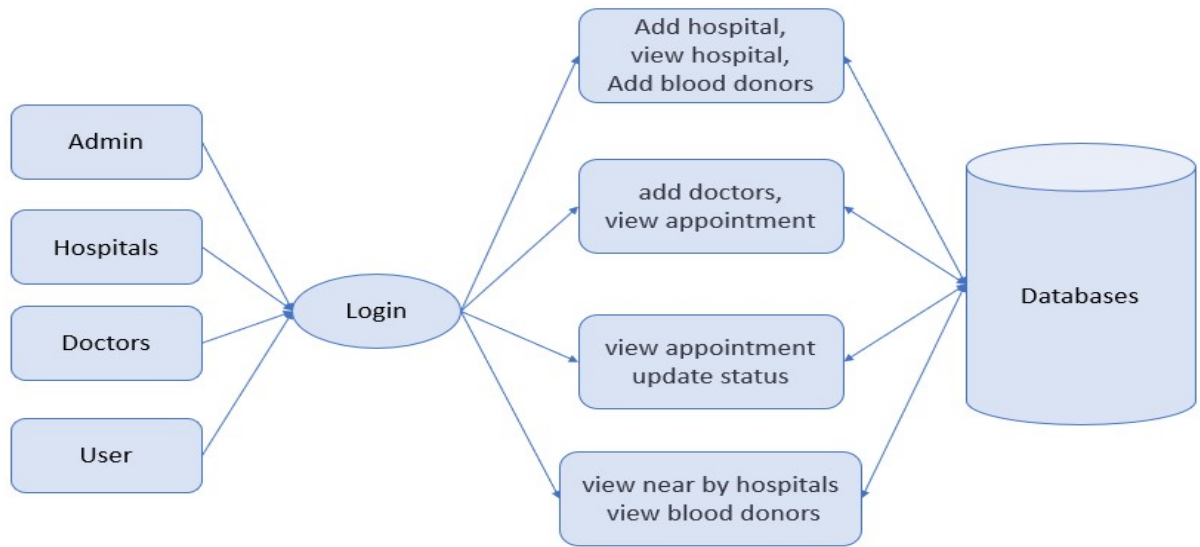
Figure 6.4

CHAPTER-7
TIMELINE FOR EXECUTION OF PROJECT (GANTT CHART)

7.1 Gantt Chart

CHAPTER-8

OUTCOMES

Expected outcomes for this project include a user-friendly healthcare management system that streamlines administrative tasks, enhances appointment management, and improves accessibility for patients. This system will reduce operational inefficiencies, minimize delays, and promote transparent healthcare services, ultimately leading to an improved and efficient healthcare experience for all stakeholders.

8.1 Ease of Hospital Location

Users can effortlessly find hospitals, clinics, and medical facilities**.**

8.2 Informed Decision-Making

Users can make informed decisions about their healthcare.

8.3 Streamlined Appointment Booking

Users can efficiently book appointments with healthcare   providers through the app.

8.4 Blood Donor Database

Users can access information on nearby blood donors, fostering timely access to critical healthcare resources.
Donors may register through the app, providing their availability and blood type.

8.5 Appointment Booking

Users can view available appointment slots for doctors at their chosen hospital.
Booking functionality allows users to schedule appointments conveniently.

CHAPTER-9

RESULTS AND DISCUSSIONS

9.1 Result

The Hospital Finder app successfully implements a comprehensive set of features catering to users, doctors, and hospitals. The user interaction functionalities, including registration and login, hospital search, appointment booking, and the blood donor database, collectively contribute to a user-friendly and accessible healthcare experience. Users can easily register, find nearby hospitals based on specific criteria, book appointments conveniently, and access critical information about blood donors, fostering timely healthcare access.

The doctor interaction features empower healthcare providers to manage their profiles effectively, showcasing their expertise and availability. The appointment management system ensures that doctors have real-time access to their schedules, facilitating efficient time utilization and prompt patient care.
User Reviews and Ratings:Highlight the inclusion of a user review and rating system within the app. This feature allows users to share their experiences, providing valuable feedback for both hospitals and potential app users. Positive reviews can boost confidence in the healthcare services offered.

9.1.1 Emergency Services Locator

Mention a specialized feature that helps users locate nearby emergency services, such as emergency rooms and urgent care centers. This enhances the app's utility in critical situations, ensuring prompt access to emergency healthcare.

9.1.2 Health Records Integration

Discuss the integration of electronic health records (EHRs) within the app, allowing users to securely store and access their medical history. This feature not only enhances user convenience but also facilitates better-informed healthcare decisions.

9.1.3 Telemedicine Integration

If applicable, emphasize any integration with telemedicine services, enabling virtual consultations between doctors and patients. This feature can broaden the scope of healthcare accessibility, particularly in situations where physical visits are challenging.

9.1.4 Appointment Reminders and Notifications

Highlight the app's capability to send appointment reminders and notifications to users and doctors. This helps in reducing no-shows, improving appointment adherence, and enhancing overall healthcare efficiency.

9.1.5Health Education Resources

Include information about any health education resources or articles integrated into the app. Providing users with access to reliable health information can contribute to better health literacy and proactive healthcare management.

9.2Discussion:

The success of the Hospital Finder app lies in its ability to bridge the gap between healthcare providers and patients through a well-designed and user-centric interface. The user interaction features prioritize accessibility, allowing users to navigate the app seamlessly, find relevant healthcare information, and schedule appointments with ease. The emphasis on secure login methods ensures data integrity, instilling confidence in users regarding the confidentiality of their personal information.

CHAPTER-10

CONCLUSION

In conclusion, the development of the integrated healthcare management system represents a significant leap forward in addressing the existing challenges within the healthcare sector. This project aims to revolutionize administrative, hospital, doctor, and user interactions, ushering in an era of enhanced efficiency, accessibility, and transparency. By streamlining processes and providing real-time information, the proposed system will greatly improve the overall healthcare experience. It is not merely a technological innovation but a humanitarian endeavour, contributing to better patient care and more effective healthcare administration. With this system, we move towards a future where healthcare services are seamless, user-friendly, and readily accessible to all, promoting the well-being of society.

10.1 Cost-Efficiency

Highlight how the integrated healthcare management system can lead to cost savings for both healthcare providers and patients. Streamlining administrative processes and reducing paperwork can contribute to overall cost-efficiency in the healthcare system.

10.2 Data Security

Emphasize the importance of data security and privacy in the proposed system. Discuss how robust security measures will be implemented to protect sensitive patient information, ensuring compliance with relevant regulations and building trust among users.

10.3. Interoperability

Touch upon the interoperability aspect of the system, showcasing how it will integrate seamlessly with existing healthcare infrastructure and systems. This interoperability can facilitate better communication and coordination among different healthcare entities.

10.4. Predictive Analytics

Discuss how the system can leverage data analytics to provide insights and predictions, enabling healthcare professionals to anticipate trends, allocate resources efficiently, and proactively address potential issues before they escalate.

10.5. Patient Empowerment

Highlight how the system empowers patients by giving them easy access to their medical records, appointment schedules, and relevant health information. This emphasis on patient engagement can lead to more informed healthcare decisions and improved health outcomes.

10.6. Continued Innovation

Mention that the integrated healthcare management system is designed to evolve with technological advancements. Continuous updates and integration of emerging technologies (e.g., artificial intelligence, telemedicine) will ensure that the system remains at the forefront of healthcare innovation.

10.7. User Training and Support

Acknowledge the importance of user training programs and ongoing support to ensure that healthcare professionals and administrative staff can maximize the benefits of the system. This can contribute to a smoother transition and faster adoption.

REFERENCES

[1] Ayrine John; Muhammed Ilyas H.; Veena Vasudevan,"Medication recommendation system based on clinical ",2016.

[2] B. Starfield, L. Shi, and J. Macinko, "Contribution of primary care tohealth systems and health," The Milbank Quarterly, vol. 83, no. 3, pp.457–502, 2005 .

[3] Cathal Doyle, Laura Lennox and Derek Bell, "A systematic review of evidence on the links between patient experience and clinical safety and effectiveness", 2013.

[4] Lei Wang; Qiang Zhang; Qing Qian; Jishuai Wang; Wenbo Cheng; Jindan Feng, "An Internet Medical Service Recommendation",2020 .

[5] Mohammad Reza Khoie,Tannaz Sattari Tabrizi,Elham Sahebkar Khorasani,"A Hospital Recommendation System Based on Patient ",2017 .

[6] Qiwei Han,Manas Gaur,"A Hybrid Recommender System for Patient-Doctor Matchmaking in Primary Care",2018 .

[7] S. Swarnalatha; I. Kesavarthini; S. Poornima; N. Sripriya, "MedRecommender System for Predictive Analysis of Hospitals and Doctors",2019 .

[8] Sigfried Gold, Noemie Elhadad and James J Cimino, "Extracting Structured Medication Event Information from Discharge Summaries", 2008.

[9] L. Yang, C.-K. Hsieh, H. Yang, J. P. Pollak, N. Dell, S. Belongie, et al., "Yum-Me: A personalized nutrient-based meal recommender system", 2017.

[10] K.W. Tan, H.C. Lau and F.C.Y. Lee, "Improved patient lengthof-stay in   emergency   department   through dynamic   queue management", 2013.

APPENDIX-A

PSUEDOCODE

 # Define User Class CLASS
User: ATTRIBUTES:
    username   password
  email

 # Define Hospital Class CLASS Hospital:
ATTRIBUTES:
    name
location
specialties
doctors
  appointments

 # Define Doctor Class CLASS
Doctor: ATTRIBUTES:
    name
specialty
availability
  appointments

 # Define Appointment Class CLASS
Appointment:
  ATTRIBUTES:
    doctor
patient   time
  status

 # Define Database Class CLASS
Database: ATTRIBUTES:
  users
hospitals
doctors
  appointments

  METHOD addUser(user):
    # Implement logic to add a user to the database

  METHOD addHospital(hospital):
    # Implement logic to add a hospital to the database

  METHOD addDoctor(doctor):
    # Implement logic to add a doctor to the database

```
    METHOD addAppointment(appointment):
       # Implement logic to add an appointment to the database

    METHOD getHospitalsByLocation(location):
       # Implement logic to retrieve hospitals based on location
RETURN hospitals

    METHOD getDoctorsByHospital(hospital):
       # Implement logic to retrieve doctors associated with a hospital
       RETURN doctors
```

User Registration
```
FUNCTION registerUser(username, password, email):     user = CREATE User
with (username, password, email)     database.addUser(user)
    RETURN "Registration successful. Please log in."
```

Hospital Search
```
FUNCTION searchHospitals(location):
    hospitals = database.getHospitalsByLocation(location)
    RETURN hospitals
```

Appointment Booking
```
FUNCTION bookAppointment(user, doctor, time):
    IF user IS NOT NULL AND doctor IS NOT NULL:
       appointment = CREATE Appointment with (doctor, user, time,
"Pending")        database.addAppointment(appointment)
RETURN "Appointment booked successfully."     ELSE:
       RETURN "Invalid user or doctor. Please try again."
```

Additional functions for doctor availability, user authentication, etc., would be implemented as needed.

Sample Usage
```
user1 = registerUser("JohnDoe", "password123",
"john@example.com")
hospitalsInCity = searchHospitals("City A")
bookAppointment(user1, doctorObject, "2023-01-01 10:00 AM")
```

Explanation:

- Classes (`User`, `Hospital`, `Doctor`, `Appointment`, `Database`) are defined to represent entities in the system.

- Each class has attributes that define the properties of the respective entity.

- The `Database` class has methods to add users, hospitals, doctors, and appointments to the database, as well as retrieve hospitals and doctors based on certain criteria.

- Functions like `registerUser`, `searchHospitals`, and `bookAppointment` use these classes and methods to perform actions in the system.

- `bookAppointment` checks if both the user and doctor are valid before creating and adding an appointment to the database.

Class Definitions

  - `User`, `Hospital`, `Doctor`, and `Appointment` classes define the structure and attributes of user, hospital, doctor, and appointment objects, respectively.

Database Class:

  - Manages a simple database with methods for adding users, hospitals, doctors, and appointments, as well as retrieving hospitals by location and doctors by hospital.

Functions:

  - `registerUser(username, password, email)`: Creates a new user object, adds it to the database, and returns a registration success message.

  - `searchHospitals(location)`: Retrieves hospitals based on the specified location.

  - `bookAppointment(user, doctor, time)`: Books an appointment if both user and doctor are valid, returning a success or error message.

Sample Usage:

  - Demonstrates how to register a user, search for hospitals, and book an appointment using the defined functions.

APPENDIX-B
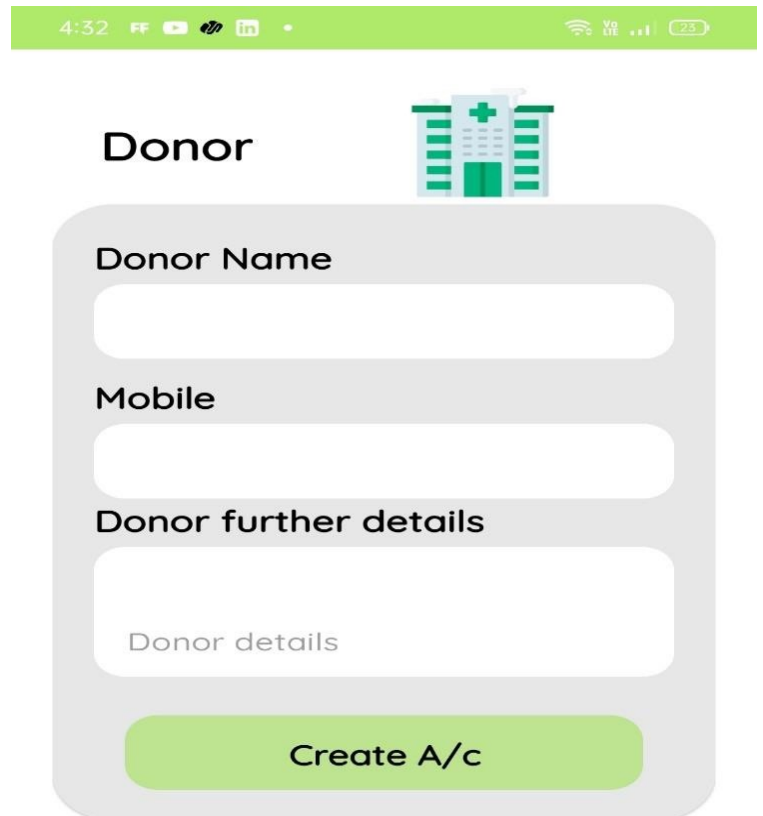
SCREENSHOTS

It is the login page of User ,Docter and Hospital. If any
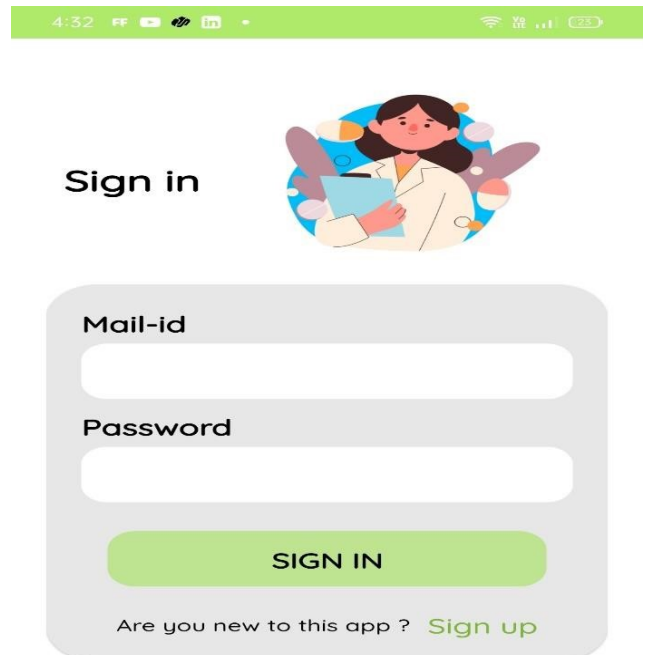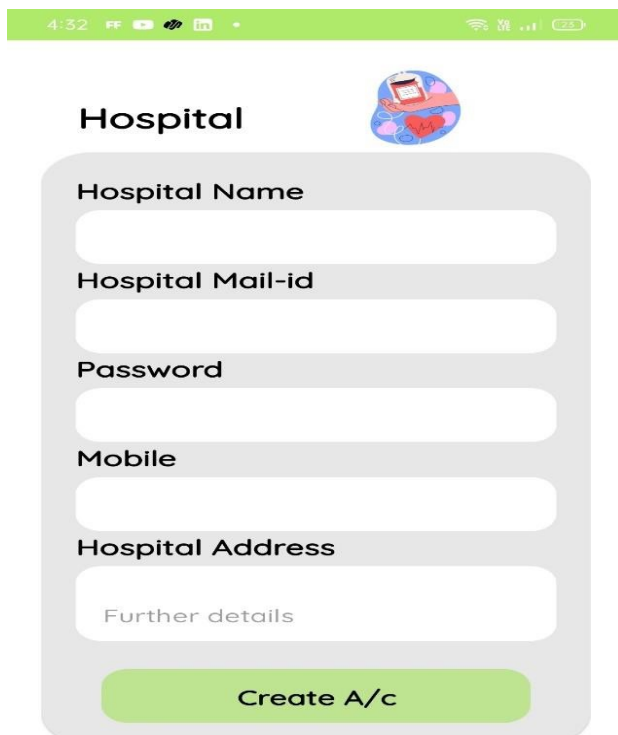
It is the front Page of the Admin.In this page we are going add the hospital and Donors.

In this Page the Donor can give his/her details.

In this Page you can add Hospital details.

It is the front end of the User .He/She can search Hospital ,search Blood Donor ,Appoinments.

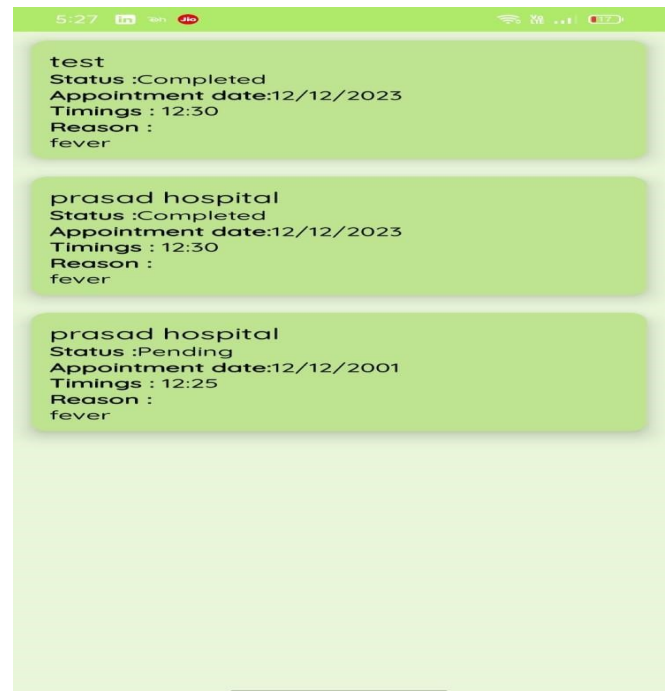It is the back end of the Hospital search. here we can find search Hospital Details.
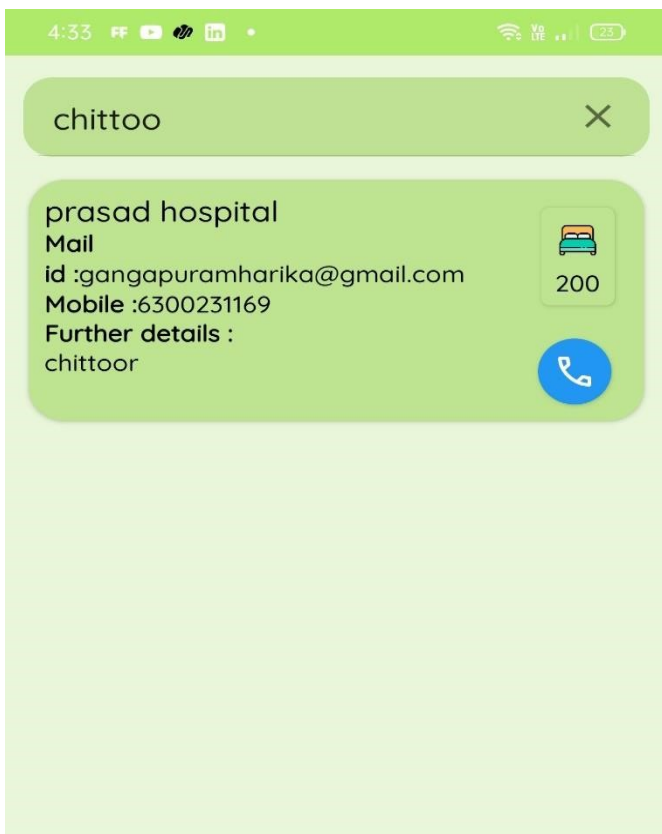
It is the Taking Appointment with the Doctor.

In this we can find details of the blood donors and there details.

It is the User taking Appointment details.

test
Status :Completed
Appointment date:12/12/2023
Timings : 12:30
Reason :
fever

prasad hospital
Status :Completed
Appointment date:12/12/2023
Timings : 12:30
Reason :
fever

prasad hospital
Status :Pending
Appointment date:12/12/2001
Timings : 12:25
Reason :
fever

Hi prasad hospital😊 !!
Mobile number :6300231169
Mail-id :gangapuramharika@g
com
Further details :

Beds

Appointments

Add doctor

Logout

It is the front end of the Hospital.
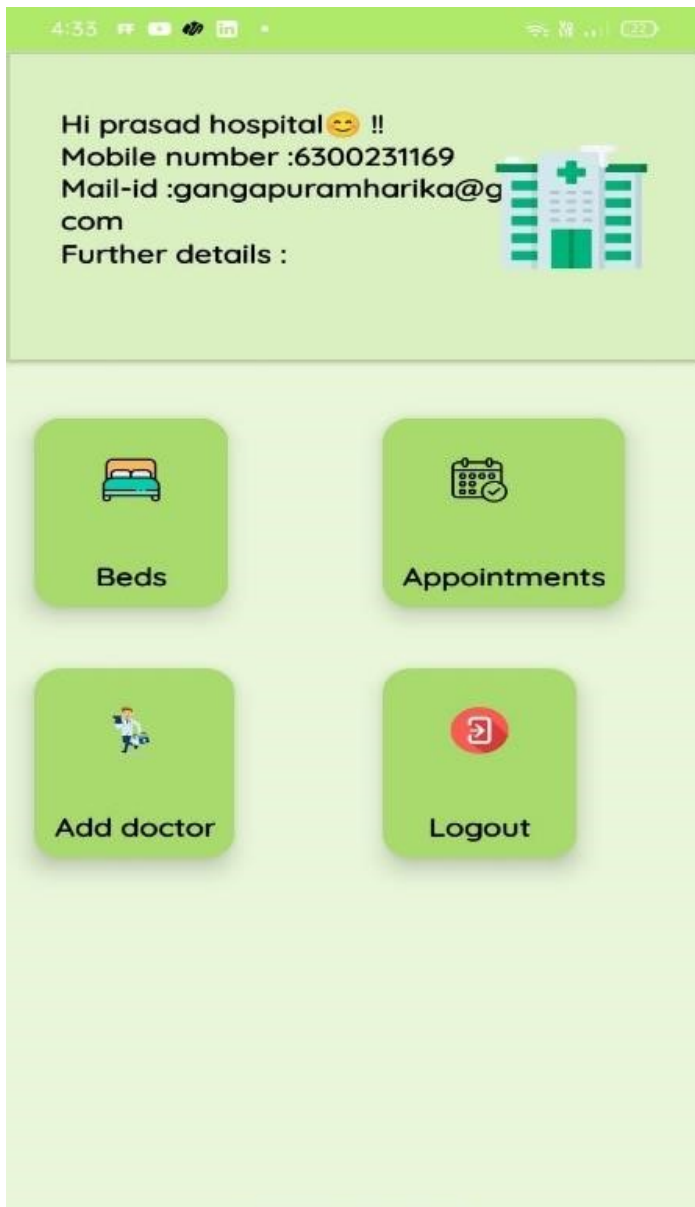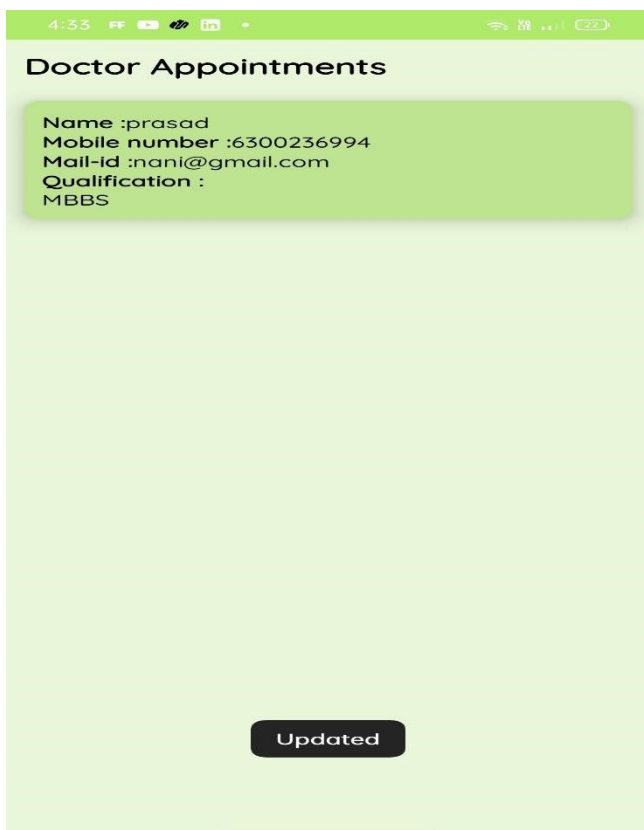
In this page Giving details of the Doctors
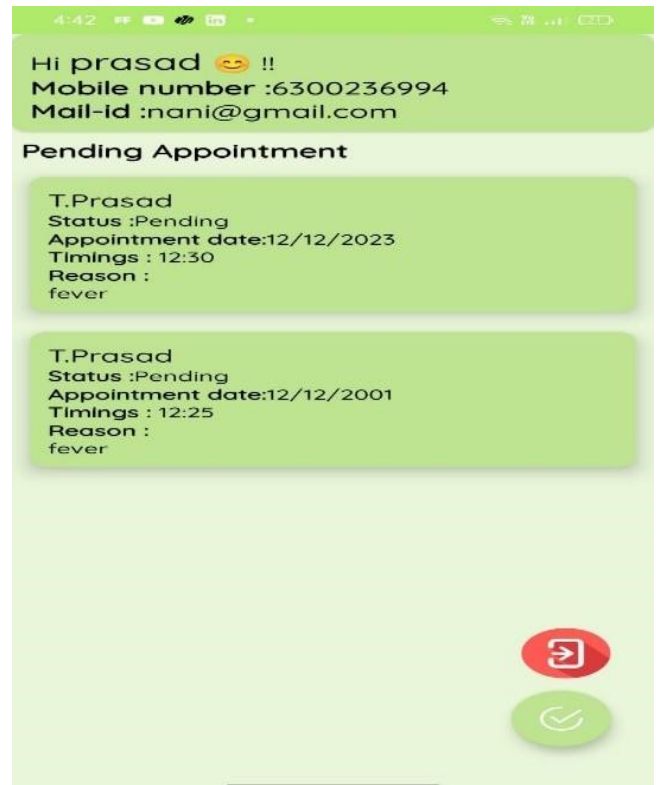

The Doctor can Reject the Appointment or Accept.

How many Beds are there in Hospital.
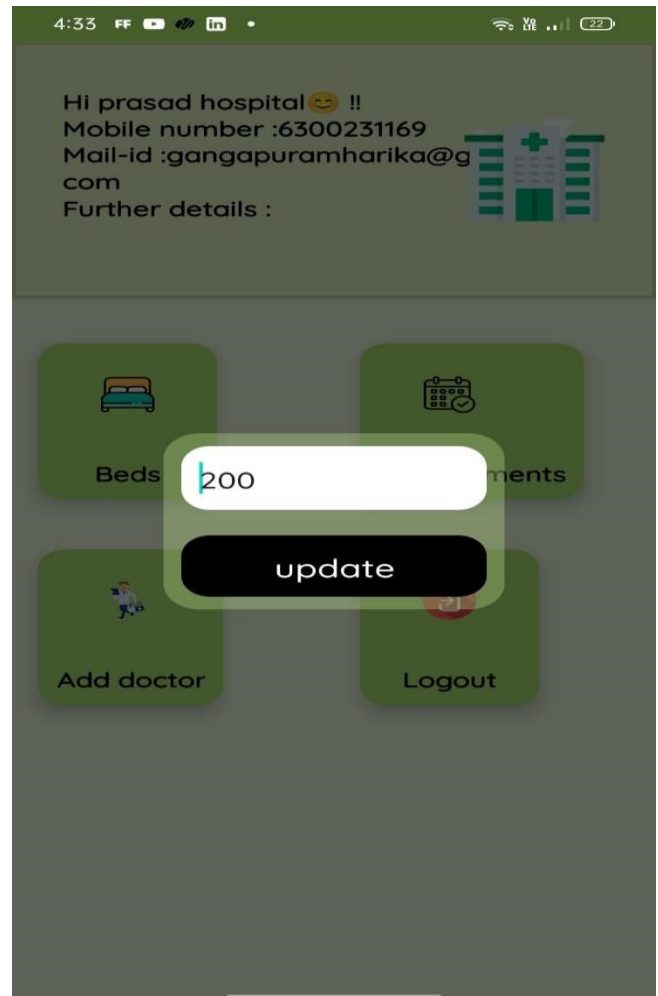
It is the details of the Doctor.

Pending Appointments.

User can see the Doctor Has Accepted the Appointment or Not.

APPENDIX-C
ENCLOSURES

1. **Conference Paper Presented Certificates of all students.**

2. **Similarity Index / Plagiarism Check report clearly showing the Percentage (%). No need of page-wise explanation.**

The Project work carried out here is mapped to SDG-3

The project we carried out here contributes to Good Health and Well-Being and how we can improve finding the Hospital and taking the appointment with doctors and getting the blood donors.