A MINI PROJECT REPORT

ON

"Organ Donation Management System."

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY ,PUNE
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE

THIRD YEAR OF ENGINEERING
(Computer Engineering)

BY

Miss. Mithe Manasi Gorakh	335
Miss. Nimbalkar Devika Digambar	338
Mr. Patil Vivek Amar	340
Mr. Raut Ajinkya Govardhan	343

UNDER THE GUIDANCE OF
Prof. V. D. MHASKE

DEPARTMENT OF COMPUTER ENGINEERING
SVPM'S COLLEGE OF ENGINEERING
MALEGAON(Bk)

2024-2025

DEPARTMENT OF COMPUTER ENGINEERING
SVPM'S COLLEGE OF ENGINEERING
SEMESTER I 2024-25

C E R T I F I C A T E

This is to certify that the seminar work entitled

Organ Donation Management System

Submitted by

Miss. Mithe Manasi Gorakh	335
Miss. Nimbalkar Devika Digambar	338
Mr. Patil Vivek Amar	340
Mr. Raut Ajinkya Govardhan	343

Is a bonafide work carried out under the supervision of Prof. V. D. MHASKE and it is submitted towards the partial fulfilment of the requirement of savitribai phule pune university,pune for the award of the degree of Third year of Engineering(Computer Engineering).

Prof. V. D. MHASKE
(Guide)

Place:

Date:

Acknowledgement

I want to sincerely thank my guide, **Prof. V. D. MHASKE** , for your constant support and invaluable guidance throughout this journey. Your insights have truly made a difference.

A special thank you to our Head of Department, **Prof. Y. R. KHALATE**, for your leadership and encouragement, which inspired all of us to strive for excellence.

I'm grateful to our Principal, **Dr. S. M. MUKANE**, for creating a nurturing academic environment that helps us grow.

Miss. Mithe Manasi Gorakh	335
Miss. Nimbalkar Devika Digambar	338
Mr. Patil Vivek Amar	340
Mr. Raut Ajinkya Govardhan	343

Absrtact

The Organ Donation Management System (ODMS) is a comprehensive platform designed to optimize the organ donation and transplantation process by automating key functions and enhancing collaboration among stakeholders. This system addresses the critical gap between organ supply and demand by streamlining donor registration, medical evaluation, organ matching, and distribution, ensuring that organs are allocated fairly and efficiently. It employs advanced algorithms that consider multiple criteria, such as blood type, organ type, tissue compatibility, geographical location, and urgency to prioritize recipients, promoting equity and reducing wait times.

ODMS facilitates real-time communication and coordination between donors, recipients, hospitals, transplant centers, and regulatory authorities. With features like real-time tracking of organ availability, transport logistics, and surgical scheduling, the system minimizes delays and maximizes the likelihood of successful transplants. A centralized database securely stores all necessary information, including donor and recipient medical histories, while maintaining compliance with legal standards like HIPAA to protect patient privacy.

In addition to managing live organ donation and posthumous donor registrations, the system supports post-transplant follow-up, allowing healthcare providers to monitor patient outcomes and organ health, contributing to medical research and improvements in transplant protocols. By automating routine tasks and providing data-driven insights, ODMS improves the overall efficiency, transparency, and success rates of organ transplants, ultimately saving more lives through timely and equitable access to donated organs.

Contents

List of Figures

Chapter 1

INTRODUCTION

1.1 Introduction

Organ donation is an extraordinary gift, offering people a second chance at life. For patients suffering from organ failure, receiving a transplant is often the only hope for survival. Yet, despite the generosity of many potential donors, the process of matching donors to patients is complex, time-sensitive, and often hindered by administrative challenges. This leads to long waiting times and missed opportunities, affecting both the donors who want to help and the patients whose lives depend on it. The Organ Donation System, developed as part of this mini-project, is designed to simplify and improve the organ donation process. It serves as an online platform that brings together donors, patients, hospitals, and doctors in a streamlined, user-friendly environment. Through this system, donors can easily register their intent to donate, and hospitals can track these registrations, while patients in need of transplants can receive timely updates on organ availability. Doctors and medical staff can manage the entire organ donation and transplantation process efficiently, ensuring that life-saving matches are made as quickly as possible. The project aims not only to make the logistics of organ donation more efficient but also to humanize the experience. It bridges the gap between those willing to give and those in urgent need, reducing delays and simplifying communication between all parties involved. Ultimately, this Organ Donation System seeks to create a more compassionate and effective process, where technology helps save lives by ensuring that every organ donation opportunity is utilized to its fullest potential, giving hope to those who need it most.

1.2 Problem Statememt

1. **Lack of Awareness:** Many potential donors are unaware of how to register or the process involved in organ donation, leading to under-registration.

2. **Complex Registration Process:** The current system for registering donors is often convoluted and not user-friendly, deterring individuals from signing up.

3. **Fragmented Data Management:** Hospitals struggle with maintaining and accessing a centralized database of donor and patient information, leading to inefficiencies in tracking organ availability.

4. **Long Waiting Times:** Patients in need of transplants face long waits, often without clear communication about their status or potential matches, which

can lead to anxiety and uncertainty.

5. **Poor Communication:** There is often a lack of effective communication between donors, patients, and healthcare providers, creating gaps in information and coordination.

6. **Time Sensitivity:** Organ transplants are highly time-sensitive, and delays in matching donors with recipients can result in lost lives.

7. **Transparency Issues:** Both donors and recipients may feel disconnected from the process, leading to mistrust and concerns about how their organs will be allocated and used.

1.3 Goals

1. **Simplify Donor Registration:** Create an easy-to-use interface that allows individuals to register as organ donors quickly and efficiently.

2. **Centralized Data Management:** Develop a centralized database for hospitals to manage and access donor and patient information in real-time.

3. **Automate Matching Process:** Implement an automated system for matching donors with suitable recipients, ensuring faster and more accurate matches based on medical criteria.

4. **Real-time Notifications for Patients:** Provide patients with real-time updates on their transplant status and potential matches, improving transparency and reducing anxiety.

5. **Streamlined Communication:** Enhance communication between donors, patients, hospitals, and medical staff to ensure everyone is informed and coordinated throughout the process.

6. **Increase Organ Donation Awareness:** Promote awareness about the importance of organ donation and simplify the registration process to encourage more individuals to become donors.

7. **Enhance Ethical Standards:** Establish transparent practices for organ allocation, ensuring fairness and trust in the system for both donors and recipients.

8. **Support Medical Staff Efficiency:** Provide tools for healthcare providers to manage organ availability and patient needs efficiently, reducing administrative burdens.

9. **Track Organ Availability:** Develop a system to monitor the availability of donated organs in real-time, helping to facilitate timely transplants.

10. **Improve Overall User Experience:** Design the system with a focus on user experience, making it accessible and intuitive for all stakeholders involved in the organ donation process.

1.4 Objectives

1. **User-Friendly Interface:** To create a straightforward and intuitive web interface that allows donors, patients, and healthcare providers to navigate the system with ease.
2. **Efficient Registration Process:** To reduce the time and complexity associated with registering as an organ donor, ensuring a seamless experience for users.
3. **Comprehensive Database:** To establish a centralized database that securely stores donor and patient information, making it easily accessible for hospitals and healthcare providers.
4. **Automated Matching Algorithm:** To develop an algorithm that automatically matches donors with recipients based on medical criteria, urgency, and compatibility.
5. **Real-Time Updates:** To implement a notification system that provides patients and healthcare providers with real-time updates on organ availability and transplant status.
6. **Enhanced Communication Channels:** To create a communication platform within the system that facilitates direct interaction between donors, recipients, and medical staff.
7. **Awareness Campaigns:** To include features that educate users about the significance of organ donation and promote registration through awareness campaigns integrated into the system.
8. **Tracking and Reporting:** To provide hospitals with tools to track organ donation metrics, including the number of registered donors, successful matches, and overall transplant outcomes.
9. **Ethical Oversight:** To ensure that all processes within the system adhere to ethical standards, maintaining transparency and fairness in organ allocation.
10. **Continuous Improvement:** To gather user feedback and perform regular updates to the system, enhancing its functionality and user experience over time.

1.5 Proposed Modules and Their Interactions

1.5.1 Patient Management Module

- **Functionality:**
  - Register patients and maintain their profiles.
  - Update medical history and transplant status.
- **Interactions:** Interfaces with the Organ Matching and Notification modules to update transplant status.

1.5.2 Organ Registration Module

- **Functionality:**
  - Allow donors to register their intent to donate.
  - Collect necessary donor information (medical history, contact details).
- **Interactions:** Communicates with the Donor Management Module and the Notification System for updates.

1.5.3 Donor Management Module

- **Functionality:**
  - Maintain a comprehensive database of registered donors.
  - Enable hospitals and healthcare providers to manage donor profiles.
- **Interactions:** Interfaces with the Organ Matching Module to identify available organs.

1.5.4 Hospital Management Module

- **Functionality:**
  - Allow hospitals to access donor and patient profiles.
  - Manage organ availability and transplant schedules.
- **Interactions:** Works closely with the Notification Module for real-time updates and alerts.

1.5.5 Organ Matching Module

- **Functionality:**
  - Implement an automated algorithm for matching donors with recipients.
  - Prioritize matches based on urgency and medical compatibility.
- **Interactions:** Integrates with the Patient Management and Donor Management modules to ensure accurate matching.

1.5.6 Notification and Alerts Module

- **Functionality:**
  - Provide real-time notifications to patients about potential matches and transplant updates.
  - Notify hospitals regarding new registrations and available organs.
- **Interactions:** Interacts with all other modules to deliver timely alerts based on system events.

1.5.7 Reports and Analytics Module

- **Functionality:**
  - Generate reports on donor registrations, successful matches, and transplant outcomes.
  - Provide insights into system performance and user engagement metrics.
- **Interactions:** Works with the Donor Management and Hospital Management modules to collect data for analysis.

1.5.8 Security and Compliance Module

- **Functionality:**
  - Ensure data security and compliance with regulations (e.g., HIPAA).
  - Implement user authentication and authorization mechanisms.
- **Interactions:** Monitors all modules to maintain security standards and data protection.

1.5.9 Feedback and Continuous Improvement Module

- **Functionality:**
  - Gather user feedback regarding their experiences with the platform.
  - Analyze feedback to inform updates and enhancements.
- **Interactions:** Interfaces with all user-facing modules to collect insights for improvement.

Chapter 2

Literature Review

2.1 Introduction

Organ donation remains a critical healthcare service, playing a vital role in saving lives and improving the quality of life for patients with end-stage organ failure. As the gap between organ demand and supply widens, the need for efficient and effective Organ Donation Management Systems (ODMS) has become increasingly evident. This literature review aims to synthesize existing research on ODMS, highlighting their significance, technological advancements, challenges faced, and ethical implications in organ donation.

2.2 Existing Methodology

The existing methodologies for Organ Donation Management Systems (ODMS) generally encompass several key components aimed at enhancing the efficiency and effectiveness of the organ donation process. The following outlines the predominant methodologies employed in current ODMS frameworks:

2.2.1 Centralized Database Management

Many ODMS utilize a centralized database that consolidates information on donors, recipients, and healthcare providers. This approach allows for real-time data access and sharing, ensuring that all stakeholders have up-to-date information. Such systems often incorporate robust data security measures to protect sensitive information and comply with legal regulations.

2.2.2 Automated Matching Algorithms

Automated matching algorithms are crucial in existing ODMS. These algorithms analyze medical data and criteria such as blood type, organ size, and urgency to match donors with suitable recipients. By utilizing statistical models and machine learning techniques, these systems can improve the accuracy of matches and reduce waiting times for patients in need of transplants.

2.2.3 Real-Time Notifications and Alerts

Real-time notification systems are implemented to keep donors, recipients, and healthcare providers informed about the status of organ donations and transplants.

These systems facilitate timely communication through various channels, including SMS, email, and mobile applications, enhancing transparency and reducing anxiety among patients and their families.

2.2.4 Awareness and Educational Programs

Current methodologies often integrate awareness and educational campaigns aimed at informing the public about the importance of organ donation. These programs leverage social media, community outreach, and informational resources to dispel myths and encourage individuals to register as donors.

2.2.5 Data Analysis and Reporting Tools

Existing ODMS frequently include data analysis and reporting tools that allow healthcare organizations to monitor key metrics related to organ donation and transplantation. These tools help in assessing system performance, identifying trends, and informing policy decisions to improve overall efficiency.

2.2.6 Ethical Oversight Mechanisms

To address ethical concerns in organ allocation, many systems incorporate oversight mechanisms that ensure transparency and fairness. This includes establishing guidelines for allocation based on medical need and urgency, while also considering cultural and social factors that may influence donor and recipient decisions.

2.2.7 Integration with Healthcare Systems

Existing methodologies emphasize the importance of integrating ODMS with other healthcare management systems. This interconnectedness enables seamless data sharing and coordination between different healthcare providers, thereby enhancing the overall effectiveness of organ donation initiatives.

2.2.8 Feedback Mechanisms for Continuous Improvement

Finally, many ODMS include feedback mechanisms to gather insights from users, including donors, recipients, and medical staff. This feedback is critical for identifying areas for improvement and ensuring that the system remains user-centered and effective in meeting its goals.

2.3 Proposed Methodology

The proposed system serves as a centralized portal for managing various types of essential donations to those in need. The methodology follows a structured approach to achieve the goals of streamlining the donation process while ensuring transparency and effective coordination among all stakeholders.

2.3.1 Centralized Donation Management

The system consolidates contributions from individuals and organizations, allowing for efficient management of donations. This centralization simplifies the donation

process by providing a single platform where all contributions can be monitored and managed.

2.3.2 Transparency and Trust Building

Transparency is a core component of the system. By sharing relevant information with volunteers, the system fosters trust among donors, recipients, and volunteers. This information sharing includes updates on donation statuses, allocation processes, and recipient needs, ensuring that all parties are informed and engaged in the process.

2.3.3 Seamless Integration with Other Tools

The system is designed to integrate seamlessly with other tools and platforms. This integration allows for the exchange of information and better coordination across different initiatives, enhancing the effectiveness of the donation management process. By facilitating the interaction of various software tools, the system ensures a cohesive approach to handling multiple donation assignments.

2.3.4 Automation of Processes

By automating processes that would typically require human intervention, the system enhances efficiency. Automation minimizes manual effort and reduces the likelihood of errors, allowing for faster processing of donations and more accurate tracking of resources. This approach not only delivers results more efficiently but also lowers costs associated with manual labor, thereby optimizing resource allocation.

2.3.5 Enhanced Resource Allocation

The integration of automated processes and centralized management allows for improved resource allocation. The system can identify areas where resources are needed most and distribute them accordingly, ensuring that donations are utilized effectively to meet the needs of recipients.

2.3.6 Continuous Improvement

Feedback mechanisms will be established to gather insights from users, volunteers, and donors. This continuous improvement approach ensures that the system evolves based on user experiences and changing needs, further enhancing its effectiveness and reliability.

This methodology aims to create a robust donation management system that maximizes efficiency, transparency, and trust, ultimately improving the outcomes for all stakeholders involved in the donation process.

Chapter 3

Software Requirement Specifications

3.1 Technology Stack

- **Frontend:** JAVA AWT.
- **Backend:** Java.
- **Database:** MySQL.
- **IDE:** Eclipse.

3.2 Development Phases

1. **Phase 1: Requirement Analysis and Planning**
    - Define detailed requirements based on user stories and stakeholder interviews.
    - Create wireframes and prototypes for the user interface.
2. **Phase 2: Module Development**
    - Develop each module iteratively, focusing on core functionalities.
    - Implement APIs for module interactions.
3. **Phase 3: Testing and Validation**
    - Conduct unit testing, integration testing, and user acceptance testing.
    - Validate system performance and user experience.
4. **Phase 4: Deployment and Training**
    - Deploy the system on a cloud platform.
    - Provide training sessions for users and medical staff.
5. **Phase 5: Feedback and Continuous Improvement**
    - Gather user feedback post-launch.
    - Implement updates and enhancements based on feedback.

Chapter 4

Assumptions

4.1 Assumptions

In developing and implementing the Organ Donation Management System (ODMS), several key assumptions have been made to guide the design, functionality, and operational effectiveness of the system. These assumptions include:

4.1.1 User Engagement

It is assumed that users, including donors, recipients, and healthcare providers, will engage actively with the system. This engagement is critical for the success of the ODMS, as it relies on users to provide accurate and up-to-date information.

4.1.2 Data Accuracy and Reliability

The system assumes that the data entered by users and healthcare organizations will be accurate and reliable. It is essential for the effectiveness of the automated matching algorithms and the overall integrity of the database.

4.1.3 Regulatory Compliance

The ODMS is designed with the assumption that it will comply with all relevant regulations and ethical standards governing organ donation. This includes adherence to privacy laws (e.g., HIPAA) and ethical guidelines for organ allocation.

4.1.4 Technological Infrastructure

It is assumed that the necessary technological infrastructure, including internet access and device compatibility, will be available to all users. This includes hospitals, donors, and patients who need to access the system.

4.1.5 Willingness to Donate

The system operates under the assumption that there is a significant portion of the population willing to register as organ donors. Effective awareness campaigns will be critical in encouraging this willingness.

4.1.6 Training and Support

It is assumed that healthcare providers and administrative staff will receive adequate training and support to effectively utilize the ODMS. This training is essential for ensuring the system's proper implementation and ongoing use.

4.1.7 Interoperability

The ODMS is designed with the assumption that it can seamlessly integrate with existing healthcare management systems. This interoperability is vital for efficient data sharing and communication between different healthcare entities.

4.1.8 Scalability

It is assumed that the system will be scalable to accommodate future growth in user numbers, data volume, and the potential expansion of functionalities. This scalability is important for adapting to changing needs in the healthcare landscape.

4.1.9 Feedback Utilization

The system assumes that user feedback will be collected and utilized for continuous improvement. Active participation from users in providing feedback is critical to enhancing system functionality and user experience.

4.1.10 Ethical Considerations

Finally, it is assumed that the implementation of the ODMS will be guided by ethical considerations in organ allocation, ensuring fairness, transparency, and respect for all individuals involved in the donation process.

Chapter 5

E-R Diagram

5.1 Entity-Relationship (ER)

An **Entity-Relationship (ER) diagram** is a graphical tool used in database design to represent the data entities within a system and their interrelationships. It serves as a blueprint for creating a structured database by illustrating the following key components:

5.1.1 Entities

These are the primary objects or concepts in the system that hold data. Entities can represent anything relevant to the business context, such as people (e.g., customers, employees), places (e.g., stores, locations), events (e.g., transactions, appointments), or concepts (e.g., products, services).

5.1.2 Attributes

These are the properties or characteristics of an entity that describe its features. For instance, a `Customer` entity might have attributes like `CustomerID`, `Name`, `Email`, and `Phone Number`.

5.1.3 Relationships

These define how entities are connected to one another. Relationships can be categorized into:

- **One-to-One (1:1)**: A single entity in one set is related to a single entity in another set. For example, each employee has one unique badge number.
- **One-to-Many (1:N)**: A single entity in one set can relate to multiple entities in another set. For instance, a single customer can place multiple orders.
- **Many-to-Many (M:N)**: Multiple entities in one set can relate to multiple entities in another set. For example, students can enroll in multiple courses, and each course can have multiple students.

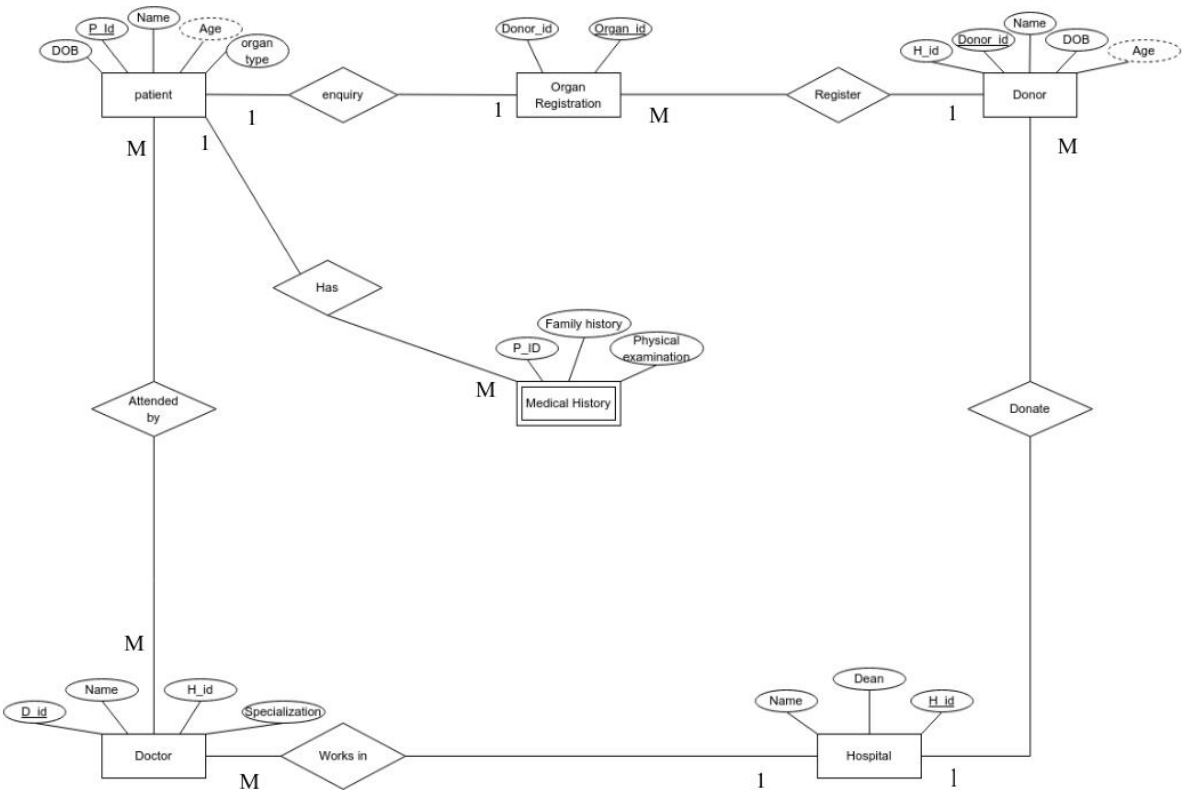

Figure 5.1: E-R Diagram

Chapter 6

Normalization

Normalization is the process of organizing a database to reduce redundancy and improve data integrity. Below is the normalization of the provided schema into different normal forms.

6.1 First Normal Form (1NF)

A table is in 1NF if:

- All attributes contain only atomic (indivisible) values.
- Each attribute contains values of a single type.
- Each column must have a unique name.
- The order in which data is stored does not matter.

Current Schema:

- **Patient**: (P_ID [PK], Name, organ type, DOB, age)
- **Organ Registration**: (Organ_ID [PK], Donor_ID[FK])
- **Donor**: (D_ID[PK], H_ID [FK], Name, age, DOB)
- **Hospital**: (H_ID [PK], Name, Dean)
- **Doctor**: (D_ID[PK], Name, H_ID [FK], specialization)

Analysis: The current schema appears to be in 1NF as each attribute holds atomic values.

6.2 Second Normal Form (2NF)

A table is in 2NF if:

- It is in 1NF.
- All non-key attributes are fully functionally dependent on the primary key.

Analysis:

- **Patient**: P_ID is the primary key. Attributes (Name, organ type, DOB, age) are all dependent on P_ID.
- **Organ Registration**: Organ_ID is the primary key, and Donor_ID is a foreign key that refers to Donor. There are no other non-key attributes.
- **Donor**: D_ID is the primary key. Attributes (H_ID, Name, age, DOB) are dependent on D_ID.
- **Hospital**: H_ID is the primary key. Attributes (Name, Dean) are dependent on H_ID.
- **Doctor**: D_ID is the primary key. Attributes (Name, H_ID, specialization) are dependent on D_ID.

Results: No changes are needed as all tables meet the 2NF requirements.

6.3 Third Normal Form (3NF)

A table is in 3NF if:

- It is in 2NF.
- No transitive dependency exists; that is, no non-key attribute depends on another non-key attribute.

Analysis:

- **Patient**: No transitive dependencies are present.
- **Organ Registration**: There are no non-key attributes that depend on another non-key attribute.
- **Donor**: D_ID is the primary key, but there is a potential issue with *age* and *DOB*. The age can be derived from the DOB, which can lead to redundancy.
  - **Normalization**: Remove age from the Donor table, since it can be derived from DOB.
  - **Revised Donor**: (D_ID [PK], H_ID [FK], Name, DOB)
- **Hospital**: There are no transitive dependencies.
- **Doctor**: There are no transitive dependencies.

6.4 Revised Schema After Normalization

- **Patient**: (P_ID [PK], Name, organ type, DOB)
- **Organ Registration**: (Organ_ID [PK], Donor_ID [FK])
- **Donor**: (D_ID [PK], H_ID [FK], Name, DOB)
- **Hospital**: (H_ID [PK], Name, Dean)
- **Doctor**: (D_ID [PK], Name, H_ID [FK], specialization)

Chapter 7

Tables and Collections:

7.1 The Main Page:

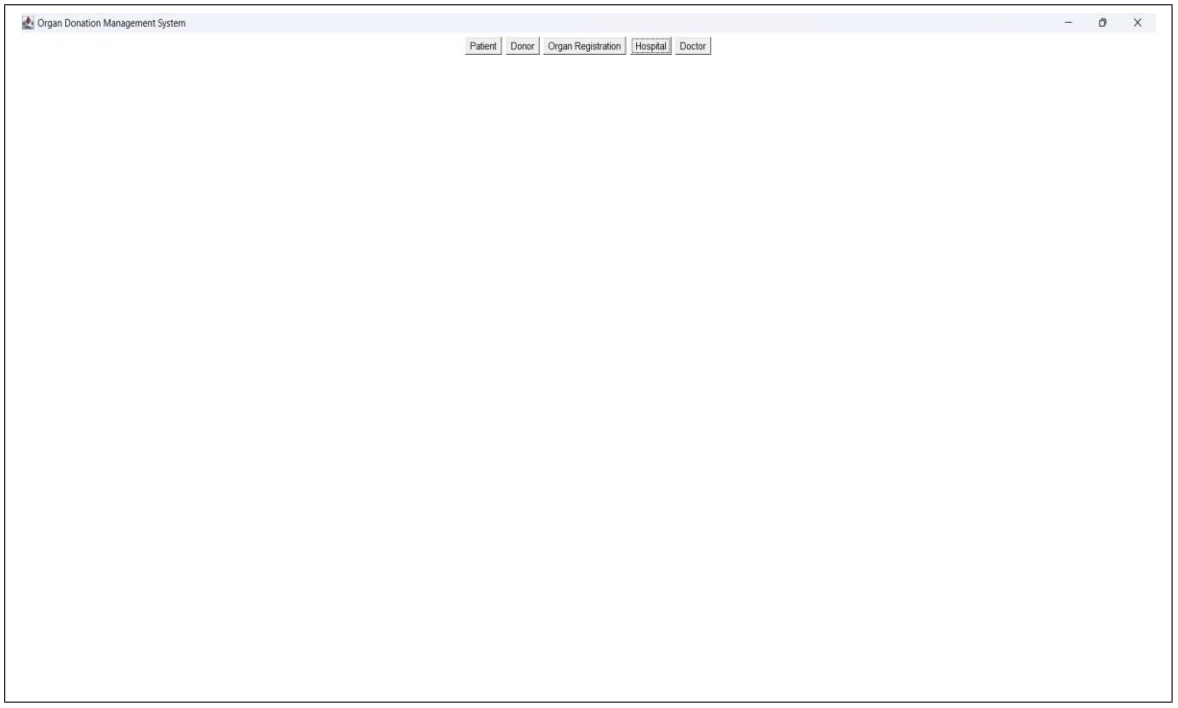

Figure 7.1: Main Page

7.2 Patient Details:

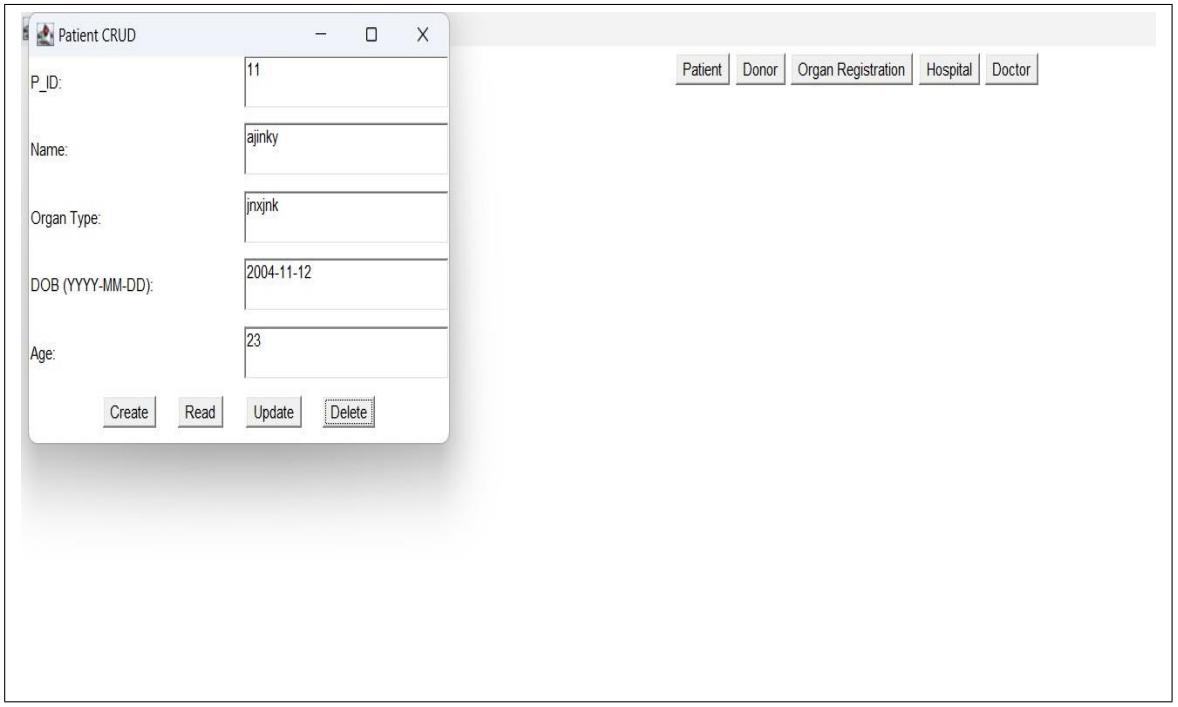

Figure 7.2: Patient Detailed

7.3 Donor Details:

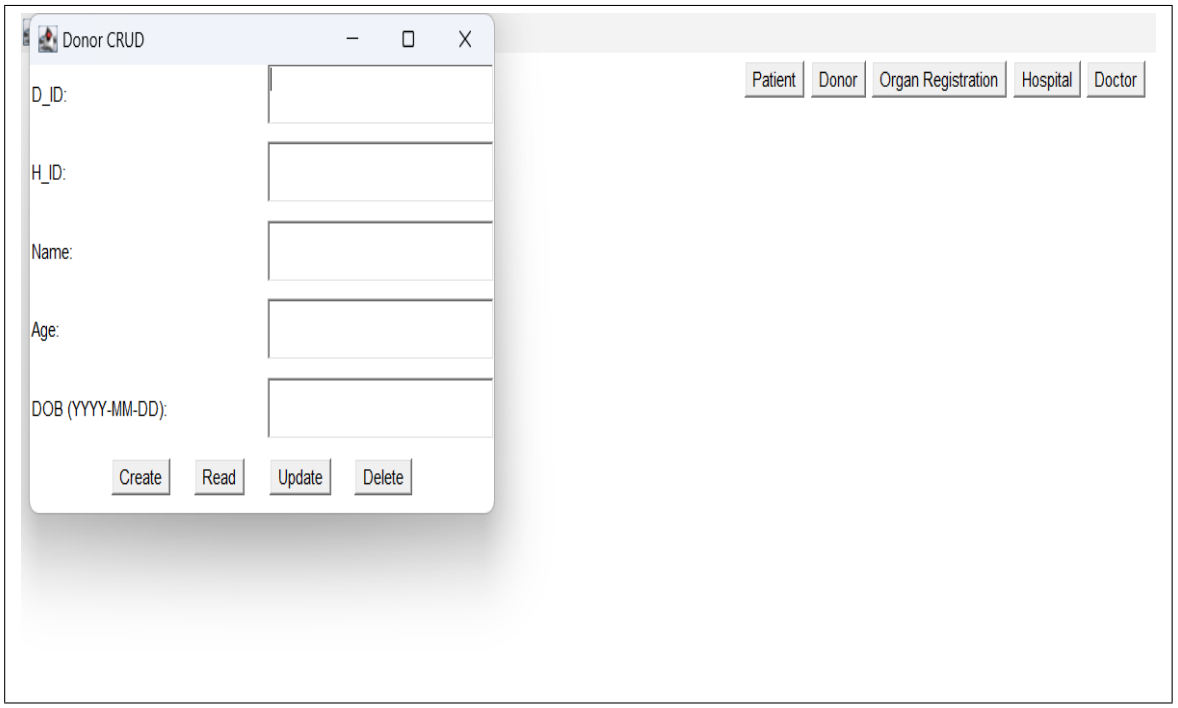

Figure 7.3: Donor Details

7.4 Sample Code:

```java
package ajinkya;
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

// Main Application Class
public class MainApp extends Frame implements ActionListener {
    private Button btnPatient, btnDonor, btnOrganRegistration, btnHospital, btnDoctor;

    public MainApp() {
        // Create buttons
        btnPatient = new Button("Patient");
        btnDonor = new Button("Donor");
        btnOrganRegistration = new Button("Organ Registration");
        btnHospital = new Button("Hospital");
        btnDoctor = new Button("Doctor");

        // Set layout
        setLayout(new FlowLayout());

        // Add buttons to frame
        add(btnPatient);
        add(btnDonor);
        add(btnOrganRegistration);
        add(btnHospital);
        add(btnDoctor);

        // Add action listeners
        btnPatient.addActionListener(this);
        btnDonor.addActionListener(this);
```

Figure 7.4: Donor Details

7.5 Database Sample:

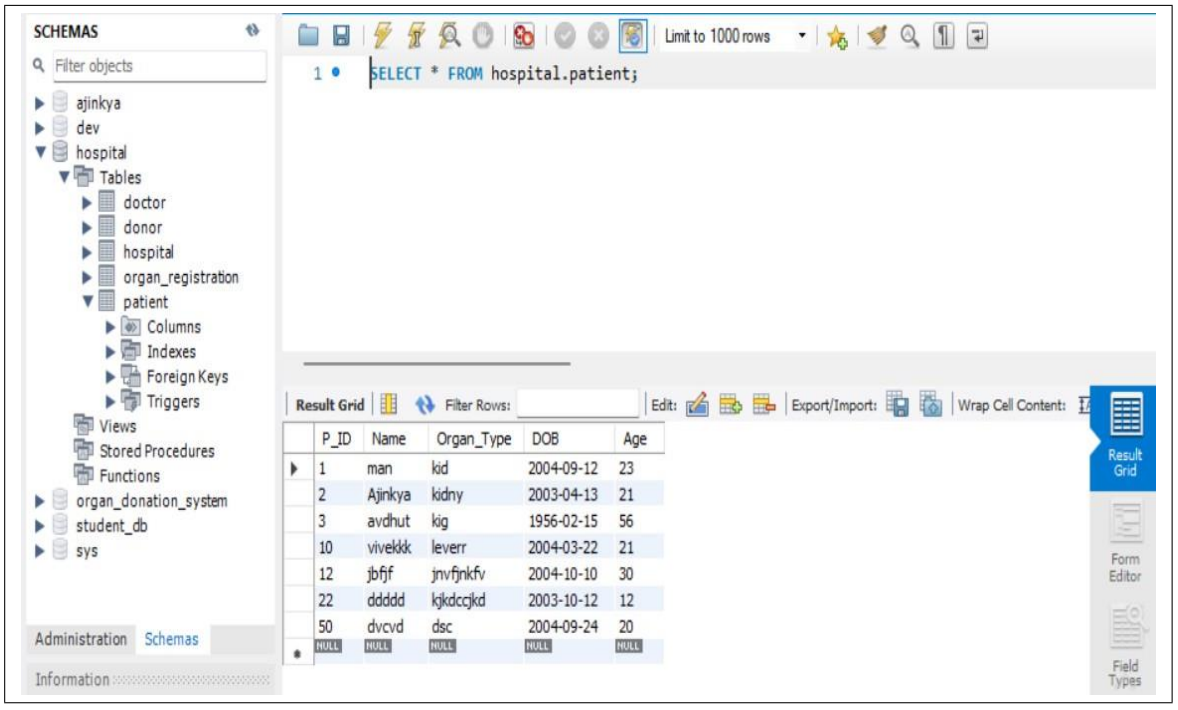

Figure 7.5: Database View

Chapter 8

CONCLUSION

The Organ Donation Management System is a crucial solution designed to streamline and enhance the organ donation process. By integrating various stakeholders—patients, donors, hospitals, and doctors—into a unified platform, this system promotes transparency, efficiency, and accessibility. It facilitates the registration, matching, and management of organ donations, reducing human intervention and errors, and ensuring timely decision-making. Moreover, by incorporating modern technologies and allowing interoperability with other systems, the Organ Donation Management System can significantly reduce operational costs and optimize resource allocation. Ultimately, this system helps save lives by ensuring that organs are allocated effectively and fairly, while maintaining transparency and integrity throughout the process.

Bibliography

[1] Alderson, D. and others. Logistical Challenges in Organ Procurement, 2020.

[2] Chambers, R. and others. The Role of Telemedicine in Organ Donation During the COVID-19 Pandemic, 2021.

[3] Delmonico, F. L. and others. The Role of a Centralized Organ Donation System, 2017.

[4] Gordon, E. J. and others. Public Awareness and Attitudes Toward Organ Donation, 2018.

[5] Hernández, E. and others. Data Analysis in Organ Donation Management Systems, 2022.

[6] Lee, Y. and others. Mobile Applications for Organ Donation: A Review, 2021.

[7] Murray, T. H. and others. Ethical Dilemmas in Organ Allocation, 2020.

[8] Squires, S. and others. Improving Efficiency in Organ Donation Management, 2020.

[9] Sullivan, E. and others. Impact of Organ Transplantation on Quality of Life, 2019.

[10] Williams, I. and others. Engaging the Public in Organ Donation, 2019.

[11] Zhou, Y. and others. Applications of Artificial Intelligence in Organ Donation, 2019.