BLOOD BANK AND DONAR MANAGEMENT SYSTEM

Mayur S. Ukey*1, Bhupendra G. Patle*2, Nayanita R. Diwathe*3, Khushi R. Kalambe*4, Payal D. Nimbarte*5, Pournima K. Patle*6, Pranjali V. Bhaisare*7

*1,2,3,4,5,6,7AICTE, Computer Engineering, MPCOE, Bhandara, Maharashtra State, India.

ABSTRACT

Donating blood is essential for saving lives, particularly during medical procedures and crises. Finding appropriate blood donors at the correct moment might be difficult, though. By creating an online blood donation platform with Python (Django framework) and MySQL, the suggested solution seeks to close this gap. The technology makes it simple for donors to register and lets users look for blood donors by area and blood type. Users can get major city emergency contact numbers in the event that a donor is not available. The three components that make up the system—Admin, Donor, and User—each have unique features for effectively administering blood donation services. This initiative improves the blood donation process by making it more structured, dependable, and accessible.

Keywords: Blood Donation, Donor Management, Life-Saving Platform, Healthcare, Emergency Search.

I.　INTRODUCTION

System development has always been a difficult process, and costs and complexity increase with the size of the system. Structured coverage of the entire development process, the use of standard methodologies, modular task definitions, the separation of logical and physical components, and well-structured documentation are all necessary for the applied model to guarantee successful system development.

Growing healthcare demands have led to a major growth in the requirement for an organized and effective blood donation system. Conventional blood donation techniques entail laborious and ineffective manual coordination and searching. An online blood donation system is suggested as a solution to these problems in order to make it simple for donors to register, search for donors, and communicate with recipients. When a registered donor's blood type is required, the system allows them to be called directly, guaranteeing prompt emergency response times.

This project offers an organized, scalable, and user-friendly platform by using MySQL as the backend database and Python (Django framework). The three modules that make up the system—Admin, Donor, and User—all work together to make managing blood donations more efficient.

II.　EXISTING SYSTEM

System development requests, feasibility studies, and data collecting are handled manually in the current system, which causes delays and inefficiencies.

Process of Preliminary Investigation:

Project Clarification: The preliminary examination of project requests to guarantee their viability and clarity.

Study of Feasibility:

Technical viability: Assesses the infrastructure and technology that are now available.

Operational Feasibility: Evaluates user benefits and system efficiency.

Analyzes costs and benefits to determine economic feasibility.

Techniques for Gathering Data:

Surveys: Semi-structured, unstructured, and structured questionnaires for all levels of management.

Interviews: Performed both formally and informally to obtain thorough perspectives.

Observation: Examining the workplace to find inefficiencies.

Restrictions:

Handling data by hand might result in mistakes and inefficiency.

Absence of Automation: No centralized database to facilitate the retrieval of information.

Limited User Interaction: There is little integration of real-time feedback.

Inaccurate Data Collection: Unstructured approaches lead to inaccurate data.

In summary: To increase productivity and accuracy, the current system has to be improved through automation and simplified data handling.

III.   PROPOSED SYSTEM

The suggested system is a platform for online blood donations created to make it easier for donors and receivers to communicate. There are three primary modules in it:

Module of Administration

- dashboard to monitor system operations, such as blood demand, donor registrations, and inquiries.
- Management of blood groups (Add, Update, Delete).
- Management of donor lists, including the option to conceal or remove donor information.
- responding to user inquiries sent via the contact page.
- handling blood requests and producing reports according to time frames.
- Options for recovery, password changes, and profile maintenance.

Module for Users

- homepage with vital blood donation information.
- For information and to get in touch with the administrator, see the About Us and Contact Us sections.
- Users can locate and get in touch with registered donors using the donor list.
- Use the search feature to locate donors by blood type and city.

Module for Donors

- dashboard that functions as the homepage for the donor.
- View the blood requests that recipients have made.
- administration of profiles with the option to change all information except the email address and username.
- The ability to modify the password if necessary.
- Use the logout feature to safely leave the system.

The goal of this system is to streamline the blood donation procedure, increasing both donors' and recipients' accessibility and effectiveness. The project increases the overall effectiveness of blood donation services by utilizing technology, guaranteeing that life-saving blood gets to individuals in need on schedule.
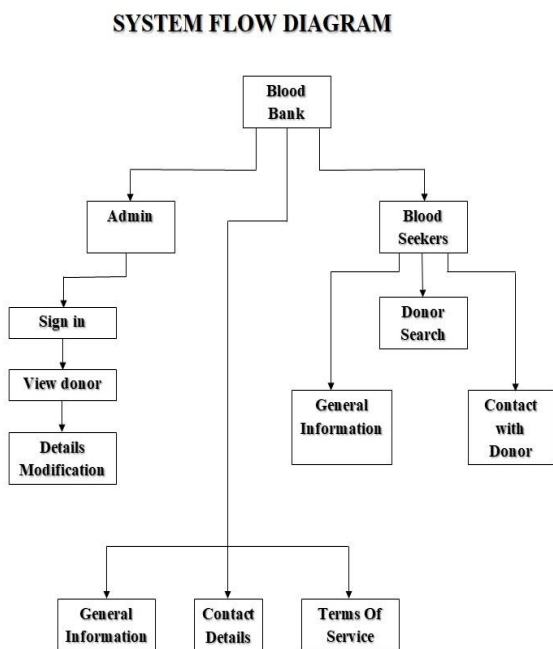
IV.   RESULTS AND DISCUSSION
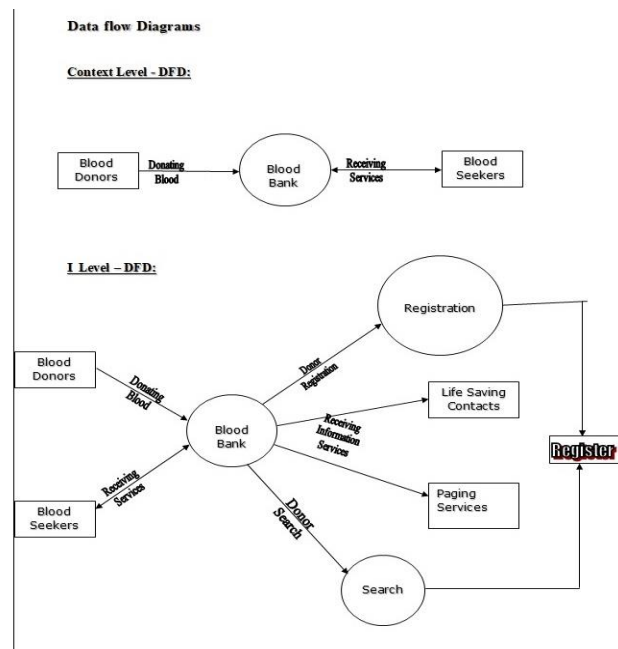

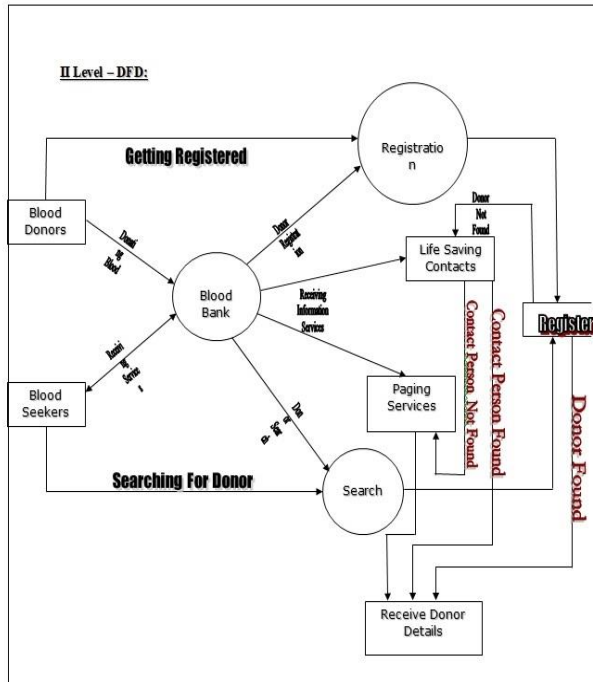**Figure 1:** System Flow Diagram.   **Figure 2:** Data Flow Diagram.

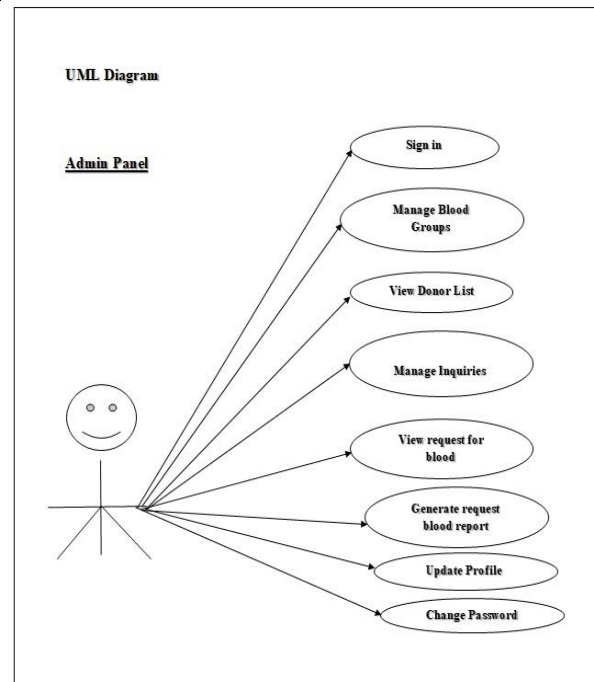**Figure 3:** Data Flow Diagram Level-II.

Figure 4: Admin Panel.
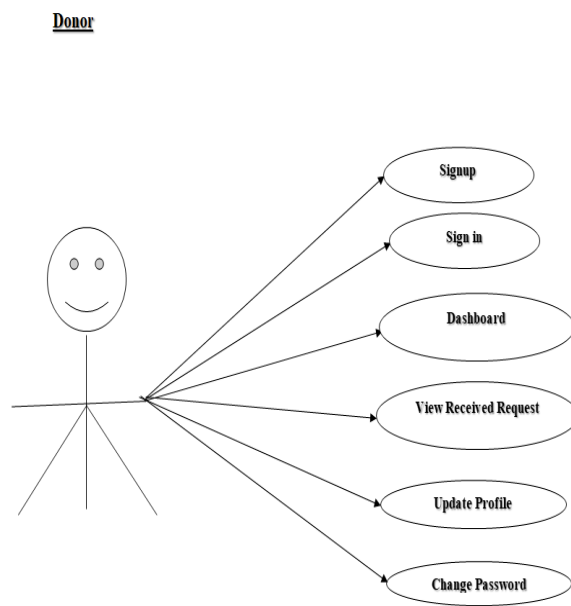
Figure 5: Donor Panel.
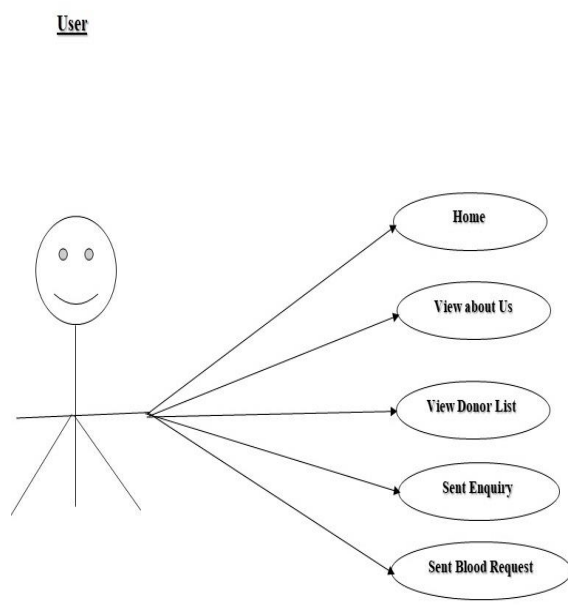

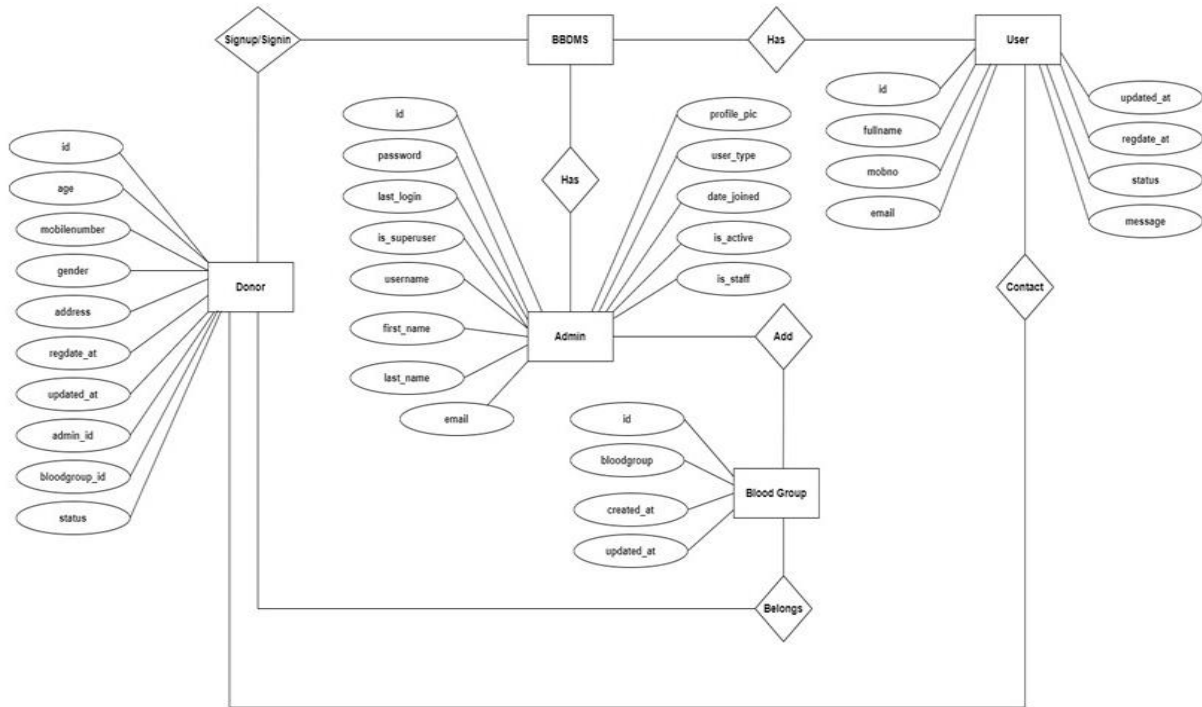**Figure 6:** User Panel.

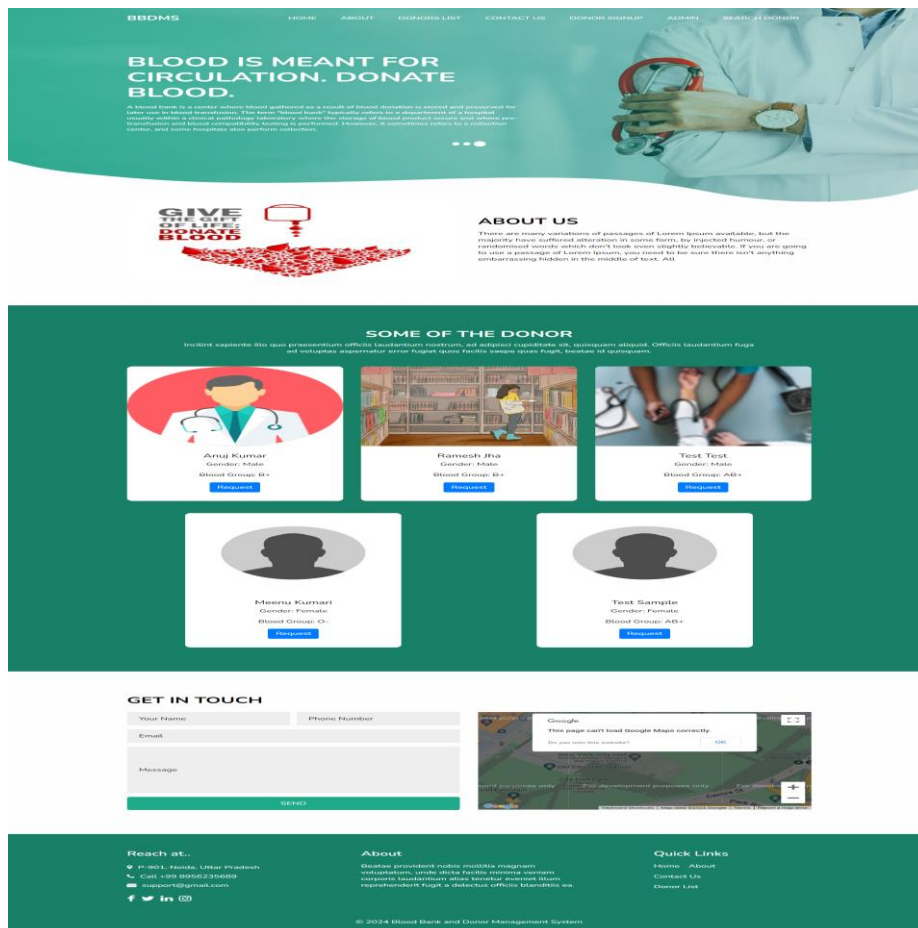**ER Diagram**

Figure 7: ER Diagram.

Figure 8: Home Page.

V. CONCLUSION

Through the use of database management and software engineering principles, this project has given me invaluable practical experience in software development. It improved my knowledge of security protocols, HTML, JavaScript, Python, Django, and MySQL. By adding more sophisticated security features and growing the donor database, the system can be made even better. I want to express my gratitude to my parents, friends, and guide for their encouragement and support in helping me finish this project.

VI. REFERENCES

[1] Sinha S, Seth T, Colah RB, Bittles AH. Haemoglobinopathies in India: estimates of blood requirements and treatment costs for the decade 2017–2026. Journal of community genetics. 2020 Jan;11(1):39-45.

[2] Kulshreshtha V, Maheshwari DS. The blood donation centre Management Information System in India. international Journal of Engineering Research & Android applications (IJERA) SSN.:2248-9622.

[3] Priya P, Saranya V, Shabana S, Subramani K. The optimization of blood donor information and management system by Technopedia. International Journal of Innovative Research in Science, Engineering and Technology. 2014 Feb;3(1).

[4] Kulshreshtha V, Maheshwari S. Benefits of management information system in blood bank. International Journal of Engineering and Science. 2012 Dec;1(12):5-7.

[5] "Android Blood Bank" by Prof. Snigdha1, Varsha Anabhavane2, Pratiksha lokhande3, Siddhi Kasar4, Pranita More5 Lecturer, Information Technology, Atharva College of Engineering, Mumbai, India 1 Student, Information Technology, Atharva College of Engineering, Mumbai, India 2,3,4,5

[6] "A Study on Blood Bank Management System" by A. Clemen Teena, K. Sankar and S. Kannan, Department of MCA, Bharath University, Selaiyur, Chennai-73, Tamil Nadu, India