Blood Donation Bank Management System

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***Abstract*— Blood Donation is a critical part of healthcare services and requires efficient management. The conventional methods of managing blood donations are time-consuming and prone to errors. This research paper presents the development of a Blood Donation Management System using Java Swing and JDBC with a login page, sign-up page, and forgot password page. The system also includes a database with five tables for user, donor, blood bank, receiver, and staff transaction management. Additionally, HTML was used to improve the system's front-end, providing a user-friendly interface.**

***Keywords*— Blood Donation Management System, Java Swing, JDBC, Login Page, Sign-up Page, Forgot Password Page, Database, HTML.**

I. Introduction (*Heading 1*)

Blood Donation Management is the process of managing the collection, storage, and distribution of blood and its components. It is a critical aspect of healthcare services as it is used to treat a wide range of medical conditions. The traditional methods of blood donation management are time-consuming and prone to errors. Therefore, the need for an automated and user-friendly system is essential.

The proposed system is a Blood Donation Management System developed using Java Swing and JDBC. Java Swing is a popular user interface toolkit that provides a wide range of components for creating graphical user interfaces. JDBC is a standard interface for connecting Java applications to relational databases.

The system has a login page, sign-up page, and forgot password page, ensuring secure access to the system. The login page allows registered users to access the system by entering their credentials. The sign-up page allows new users to register themselves by providing their details. The forgot password page allows users to reset their password if they forget it.

The proposed system aims to improve the efficiency and accuracy of blood donation management by providing an automated and user-friendly interface. It enables blood banks to manage their donations more effectively by keeping track of donor information, blood groups, and inventory management.

II. Literature Survey

Several Blood Donation Management Systems have been developed using various technologies. In [1], a Blood Bank Management System was developed using PHP and MySQL. The system allowed blood banks to manage their donations, donors, and inventory. In [2], a Blood Donation Management System was developed using ASP.NET and C#. The system provided a user-friendly interface for managing blood donations.

In [3], a Blood Bank Management System was developed using Java and MySQL. The system provided features such as donor registration, blood donation, inventory management, and donor search. However, none of the systems mentioned above had a login page, sign-up page, or forgot password page, making them less secure.Abbreviations and Acronyms

III. Proposed System

The proposed system is a Blood Donation Management System developed using Java Swing and JDBC. It has a login page, sign-up page, and forgot password page, ensuring secure access to the system. The system aims to improve the efficiency and accuracy of blood donation management by providing an automated and user-friendly interface.*Authors and Affiliations*

The system has the following modules:

A. Login Module:

The login module allows registered users to access the system by entering their credentials. The module validates the user's credentials and provides access to the system if they are correct. If the user enters incorrect credentials, the module displays an error message.

B. Sign-up Module:

The sign-up module allows new users to register themselves by providing their details. The module validates the user's details and adds them to the system if they are correct. If the user enters incorrect details, the module displays an error message.

C. Forgot Password Module:

The forgot password module allows users to reset their password if they forget it. The module validates the user's email address and sends a reset password link to their registered email address. If the email address is incorrect, the module displays an error message.

D. Donor Module

The donor module allows blood banks to manage their donor information. The module provides features such as donor registration, donor search and donor details management. The module allows blood banks to keep track of donor information, including personal details, blood type, and donation history.

E. Blood Bank Module:

The blood bank module allows blood banks to manage their inventory. The module provides features such as blood group management, stock management, and blood issuance management. It enables blood banks to keep track of blood inventory and ensure the availability of the required blood group for patients in need.

F. Receiver Module:

The receiver module allows blood banks to manage their receiver information. The module provides features such as receiver registration, receiver search, and receiver details management. It enables blood banks to keep track of receiver information and ensure timely delivery of blood to the patients in need.

G. Staff Transaction Module

The staff transaction module allows blood banks to manage their staff information and transaction details. The module provides features such as staff registration, staff search, and transaction details management. It enables blood banks to keep track of staff information and their transaction details.

H. Database Design:

The proposed system uses a relational database to store user information, donor information, blood bank information, receiver information, and staff transaction details. The database design consists of five tables:

The system has the following tables:

User Table: This table stores user information, including username, password, email, and user type.

Donor Table: This table stores donor information, including donor ID, donor name, age, gender, blood group, and donation history.

Blood Bank Table: This table stores blood bank information, including blood bank ID, blood bank name, address, and contact information.

Receiver Table: This table stores receiver information, including receiver ID, receiver name, age, gender, blood group, and contact information.
Staff Transaction Table: This table stores staff information, including staff ID, staff name, staff type, and transaction details.

Front-End Improvement:
The front-end of the proposed system was improved using HTML. HTML is a standard markup language used for creating web pages. The use of HTML provided a user-friendly interface for the system. The system's front-end was designed to be responsive and compatible with different devices and screen sizes.

IV. Conclusion

In conclusion, the proposed Blood Donation Management System using Java Swing and JDBC with a login page, sign-up page, and forgot password page provides a secure and user-friendly interface for managing blood donations. The system enables blood banks to manage their donor information, blood inventory, receiver information, and staff transaction details more efficiently and accurately. The system's front-end was improved using HTML, providing a user-friendly interface for the system. The proposed system is expected to reduce errors and increase the efficiency of blood donation management. Future work can focus on implementing more advanced features such as blood donation reminders, blood donation eligibility check, and blood donation camp management.

References

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