SAVEETHA SCHOOL OF ENGINEERING

SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES

CHENNAI-602105

Blood Bank Management System

A CAPSTONE PROJECT REPORT

Submitted in the partial fulfillment for the completion of the course

CSA4311 INTERNET PROGRAMMING FOR DHTML

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted by

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Under the Supervision of

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DECLARATION

We, **K. Umesh Chandra, A. Shanmukha Vinay** students of **Bachelor of Engineering in the Department** of Computer Science and Engineering, Saveetha Institute of Medical and Technical Sciences, Saveetha School of Engineering, Chennai, hereby declare that the work presented in this Capstone Project Work entitled **Blood Bank Management System** is the outcome of our own bonafide work and is correct to the best of our knowledge and this work has been undertaken taking care of Engineering Ethics.

(Umesh Chandra.K 192210308)

(Shanmukha Vinay.A 192210313)

Date:

Place:

CERTIFICATE

This is to certify that the project entitled **"Blood Bank Management System"** submitted by **K. Umesh Chandra, A. Shanmukha Vinay** has been carried out under my supervision. The project has been submitted as per the requirements in the current semester of B.E. Computer Science and Engineering.

Supervisor
Dr. Senthilvadivu

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Abstract

The Blood Bank Management System is an advanced digital solution designed to streamline the management and accessibility of blood donor and blood bank records. This system centralizes information collected from various regions, enabling quick and efficient access to critical data. It empowers organizations to monitor and evaluate the effectiveness of blood donation activities by providing measurable performance metrics.

Key features include secure donor and hospital registration, real-time updates on blood group availability, and a robust search functionality for locating donors and blood banks. The system ensures the confidentiality of medical reports while facilitating strategic planning and decision-making processes, thereby enhancing medical service delivery. By generating comprehensive reports, the system addresses key management challenges related to donor records, ultimately contributing to efficient resource allocation and improved healthcare outcomes.

This user-friendly system caters to both donors/users and hospitals with features like login, registration, posting donor and blood bank information, and status updates, ensuring a seamless and integrated experience for all stakeholders.

INTRODUCTION

The **Blood Bank Management System** is a web-based platform that simplifies managing blood donor and blood bank information.Hospitals can manage inventory, update statuses, and generate reports. This user-friendly system ensures efficient resource management, timely updates, and improved healthcare decision-making.

Key Features:

1. **User/Donor Account Management:**

   Donors can register, log in, and manage their profiles through a personal dashboard. They can also search for blood banks or donors by blood group, location, and availability, with features like authentication and password recovery.

2. **Blood Donation Information Posting:**

   Donors can post their donation details, such as blood group, location, and contact information. This feature ensures that their availability is visible to users in need.

3. **Hospital Account Management:**

   Hospitals can register, log in, and access a dedicated admin panel for managing blood bank operations. They can update blood group statuses, view donor and blood bank details, and manage their account information.

4. **Real-Time Blood Group Updates:**

   Hospitals can post and update blood group availability in real-time, ensuring that critical information is always up-to-date.

5. **Report Generation:**

   - The system allows admins to generate reports on donor registrations, blood donations, and inventory statuses. Overall, the Blood Bank Management System bridges the gap between blood donors and recipients, ensuring efficient resource management and improved healthcare delivery.

Project Description

The Blood Bank Management System is a web-based platform developed to streamline the management of blood donation and blood bank information. It serves as a bridge between blood donors and hospitals, enabling efficient handling of critical resources. The system facilitates donor registration, blood group availability updates, and quick searches for donors and blood banks, ensuring prompt responses to medical emergencies.

Key Highlights

- **Donor Features:**
  - Registration, login, and profile management.
  - Posting and updating donor information.
  - Search functionality for blood banks and other donors by blood group and location.
- **Hospital Features:**
  - Manage blood group inventory and update availability.
  - View donor and blood bank details.
  - Generate reports for efficient decision-making.

The system is designed for mobile responsiveness, secure data handling, and easy accessibility, ensuring seamless service for both donors and hospitals. It enhances medical service delivery by providing timely and accurate information.

Problem Description

Develop a Blood Bank Management System as a web-based software solution to address the challenges of managing blood donor and blood bank information efficiently. The software should provide:

1. **For Donors:**
    - Easy registration and profile management.
    - Ability to post and update donation details.
    - Search functionality for nearby blood banks or other donors.
2. **For Hospitals:**
    - Tools to manage blood inventory and update blood group availability.
    - Access to donor information for quick responses to requests.
    - Report generation to track registrations, donations, and inventory.
3. **General Requirements:**
    - Secure user authentication and data handling.
    - Mobile responsiveness for accessibility across devices.
    - User-friendly interface for both donors and hospital admins.

This software will streamline the process of matching donors with recipients, ensuring timely access to critical resources and improving healthcare delivery.

Tool Description

The **User Interface (UI)** of the Blood Bank Management System is designed for simplicity and efficiency, ensuring smooth navigation for both donors and hospital administrators.

1. **Dashboard:**
    - **Donor Dashboard:** Displays donor details, posted donation information, and feedback options. It provides easy access to update profiles, view donation history, and search for blood banks or other donors.
    - **Hospital Dashboard:** Offers an overview of blood group inventory, donor records, and report generation tools. Admins can manage blood bank details, update blood availability, and access donor feedback.
2. **Blood Information Management:**
    - **Drag-and-Drop Tools:** Hospitals can easily add or update blood group details, donor records, and blood bank information using intuitive drag-and-drop functionality.
    - **Category Management:** Enables admins to categorize blood groups, manage availability, and highlight urgent requirements for rare groups.
3. **Navigation:**
    - Clear menus guide users through profile management, blood group updates, and search functionalities.
    - Intuitive layout ensures that users can find the desired information quickly and efficiently.
4. **Search Functionality:**
    - Advanced search tools allow users to find donors or blood banks based on blood group, location, and availability criteria.Real-time filtering enhances the search experience for urgent requests.

Operations

System Setup and Maintenance:

- **Blood Bank Information Configuration:**
  Admins can set up and manage blood group inventory, donor records, and blood bank details through the admin panel.
- **User Registration Management:**
  Admins configure registration processes for donors and hospitals, manage user accounts, and oversee information posting and updates.

Pre-Launch Testing:

- **System Testing:**
  The technical team conducts extensive testing, including performance and security tests, to ensure seamless operation under high user demand.
- **Data Security Testing:**
  Rigorous testing is performed to ensure secure handling of sensitive donor and medical data.

Ongoing Operations:

- **Real-Time Monitoring:**
  A dedicated team monitors system performance, ensures accurate inventory updates, and resolves any operational issues promptly.
- **Technical Support:**
  A support team is available to assist users with account access, data updates, and search queries.

Post-Operation Management:

- **Report Generation:**
  Admins generate reports on blood inventory, donor registrations, and hospital interactions to assess performance and plan improvements.
- **Feedback Management:**
  User feedback is reviewed to enhance system functionality and user experience.

Approach / Module Description / Functionalities

The **Blood Bank Management System** is designed with modular functionality, where each operation is implemented as an individual function. These functions are then integrated to form a cohesive software platform.

1. **User Management Module:**
    - **Registration and Login:** Donors and hospitals can create accounts, log in, and manage their profiles.
    - **Authentication:** Secure login and password recovery for all users.
2. **Blood Information Management Module:**
    - **Donor Information:** Donors can post and update their blood donation details.
    - **Inventory Management:** Hospitals can manage and update blood group availability and other critical information.
3. **Search and Filtering Module:**
    - **Search Functionality:** Users can search for blood banks or donors based on criteria like blood group, location, and availability.
4. **Report Generation Module:**
    - **Report Generation:** Admins can generate detailed reports on blood inventory, donor records, and hospital interactions to evaluate and optimize system performance.
5. **Feedback and Notifications Module:**
    - **User Feedback:** Donors and hospitals can provide feedback about their experience.
    - **Notifications:** Users receive updates about blood group availability and other important information.

Each module is designed to work independently but is seamlessly integrated into the overall system, ensuring efficient operation and ease of maintenance.

Implementation

DASHBOARD

```
<!DOCTYPE html>
<html lang="en" dir="ltr">

<head>
   <meta charset="utf-8">
   <title>Blood bank management</title>
   <!-- favicon -->
   <link href="favicons/favicon.ico" rel="icon" type="image/x-icon" />
   <!-- bootstrap -->
   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC" crossorigin="anonymous">
   <link rel="stylesheet" href="css/dashboard.css">
   <!-- font awesome script -->
   <script src="https://use.fontawesome.com/releases/v5.15.4/js/all.js" data-auto-a11y="true"></script>
</head>

<body>
   <div class="container-fluid">

      <nav class="navbar navbar-expand-lg navbar-dark">

         <a class="navbar-brand" href="">Blood bank management</a>

         <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarTogglerDemo02">
            <span class="navbar-toggler-icon"></span>
         </button>
```

```
        <div class="collapse navbar-collapse nav_elements" id="navbarTogglerDemo02">

            <ul class="navbar-nav mx-auto">

                <li class="nav-item">
                    <a class="nav-link" href="add_recipient_details.php">Add Recipient details</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="donor_details.php">Add donor details</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="request_blood.php">Request Blood</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#aboutus">About</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="#">Contact</a>
                </li>

            </ul>
        </div>
    </nav>
</div>

<!-- top part -->
<div class="top">
    <h1 class="heading"><em><strong>XYZ hospital</strong> </em> </h1>
    <img class="blood0" src="images/blood0.jpg" alt="background image">
</div>

<!-- middle -->
<div class="middle">
```

```
<h2>
<center>Things you should know before donating blood</center>
</h2>
<br>
<ol>
<li>You need to be 17 or older to donate whole blood.</li>
<li>You have to weigh at least 50 Kg and be in good health to donate</li>
<li>You need to provide information about medical conditions and any medications you're taking.
<br> These may affect your eligibility to donate blood.
</li>
<li>You must wait at least 8 weeks between whole blood donations and 16 weeks between double red cell donations.</li>
<li>Platelet donations can be made every 7 days, up to 24 times per year.</li>
</ol>
</div>
<hr size="3" noshade>
<div class="middle">
<h2>
<center>Donation procedure</center>
</h2>
<br>
<p>You must register to donate blood. This includes providing identification, your medical history, and undergoing a quick physical examination. You'll also be given some information about blood donation to read.
<br>
Once you're ready, your blood donation procedure will begin. Whole blood donation is the most common type of donation. This is because it offers the most flexibility. It can be transfused as whole blood or separated into red cells, platelets,
and plasma for different recipients.
</p>
<ol>
```

You’ll be seated in a reclining chair. You can donate blood either sitting or lying down.

A small area of your arm will be cleaned. A sterile needle will then be inserted.

You’ll remain seated or lying down while a pint of your blood is drawn. This takes 8 to 10 minutes.

When a pint of blood has been collected, a staff member will remove the needle and bandage your arm.

```
    </ol>
  </div>
  <hr size="3" noshade>
  <!-- bottom -->
  <div class="bottom" id=aboutus>
    <h2>About us</h2>
    <p>
    <h4>This is DBMS Mini Project</h4>
    <br>
    <h5>Made by MITWPU students :</h5>

    <br>
    PE 04 Aniket Ghorpade
    <br>
    PE 09 Manoranjan Harsh
    <br>
    PE 13 Atharva Jadhav
    <br>
    PE 17 Atharva Gurav
    <br>
    PE 36 Aamir Hullur
    </p>

  </div>
</body>
</html>
```

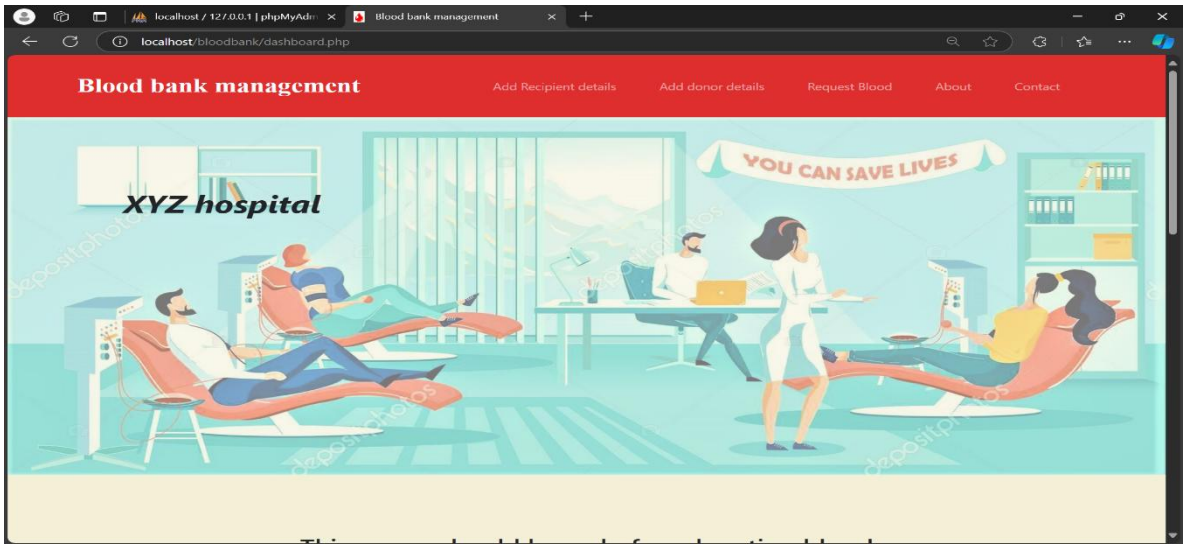
LOGIN PAGE

```
<?php
require('config.php');
session_start();
// When form submitted, check and create user session.
if (isset($_POST['email'])) {
    $email = stripslashes($_REQUEST['email']);    // removes backslashes
    $email = mysqli_real_escape_string($con, $email);
    $password = stripslashes($_REQUEST['password']);
    $password = mysqli_real_escape_string($con, $password);
    // Check user is exist in the database
    $query    = "SELECT * FROM users WHERE email='$email'
                 AND password='" . md5($password) . "'";
    $result = mysqli_query($con, $query);
    $rows = mysqli_num_rows($result);
    if ($rows >= 1) {
        $_SESSION['email'] = $email;
        // Redirect to user dashboard page
        header("Location: dashboard.php");
    } else {
        echo "<div class='form'>
                <h3>Incorrect email/password.</h3><br/>
                <p class='link'>Click here to <a href='login.php'>Login</a> again.</p>
                </div>";
    }
}
?>
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8" />
    <title>blood bank management</title>
```

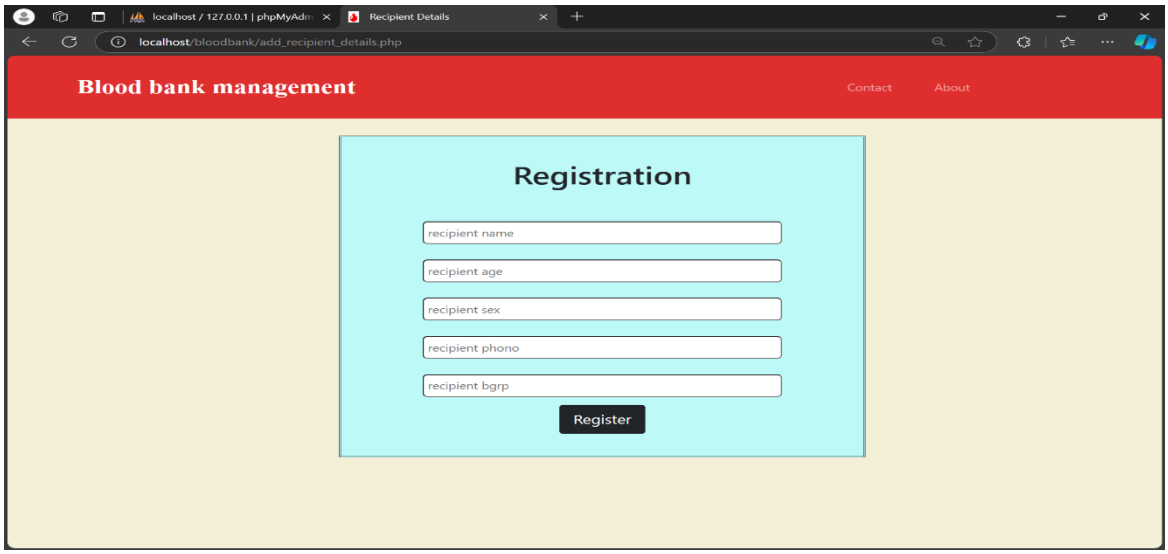
```
    <!-- favicon -->
    <link href="favicons/favicon.ico" rel="icon" type="image/x-icon" />
    <!-- bootstrap -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC" crossorigin="anonymous">
    <link rel="stylesheet" href="css/login.css">
    <!-- font awesome script -->
    <script src="https://use.fontawesome.com/releases/v5.15.4/js/all.js" data-auto-a11y="true"></script>
</head>
<body>
    <div class="container-fluid">
        <nav class="navbar navbar-expand-lg navbar-dark">
            <a class="navbar-brand" href="">Blood bank management</a>
            <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarTogglerDemo02">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse nav_elements" id="navbarTogglerDemo02">
                <ul class="navbar-nav mx-auto">
                    <li class="nav-item">
                        <a class="nav-link" href="#">Contact</a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link" href="#aboutus">About</a>
                    </li>
                </ul>
            </div>
        </nav>
    </div>
    <div class=" row login">
        <div class="col col-lg-6">
```

```
        <form class="form" method="post" name="login">
            <h1 class="login-title">Login</h1>
            <input type="text" class="login-input" name="email" placeholder="email" autofocus="true" />
            <input type="password" class="login-input" name="password" placeholder="Password" />
            <input type="submit" value="Login" name="submit" class="btn btn-dark btn-lg login-button" />
            <p class="link"><a href="register.php">New Registration</a></p>
        </form>
      </div>
      <div class="col col-lg-6">
        <img class="blood3 rounded float-start" src="images/blood3.jpg" alt="">
      </div>
   </div>
</body>
</html>
```

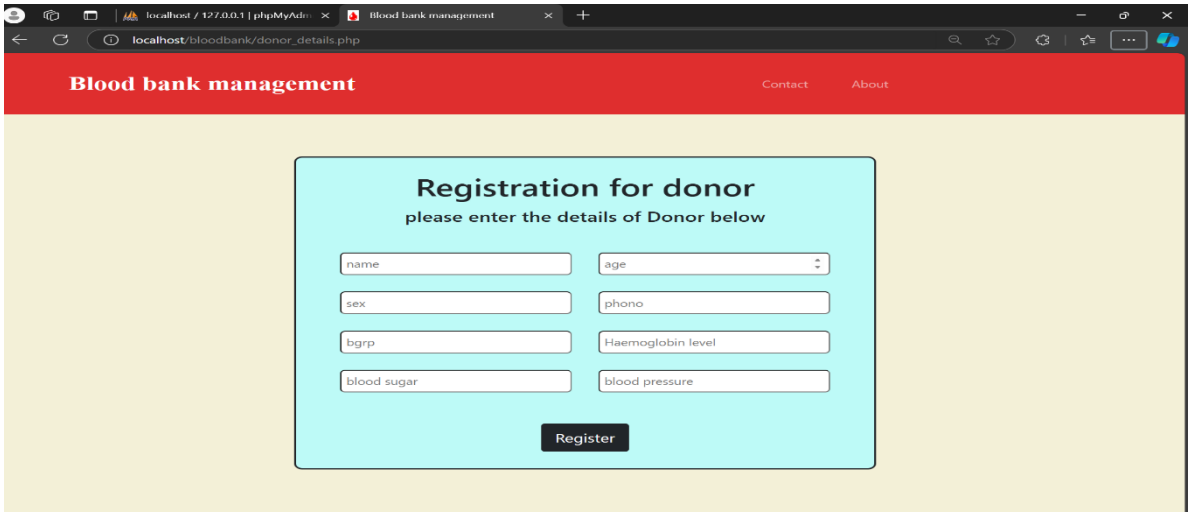
RESULTS

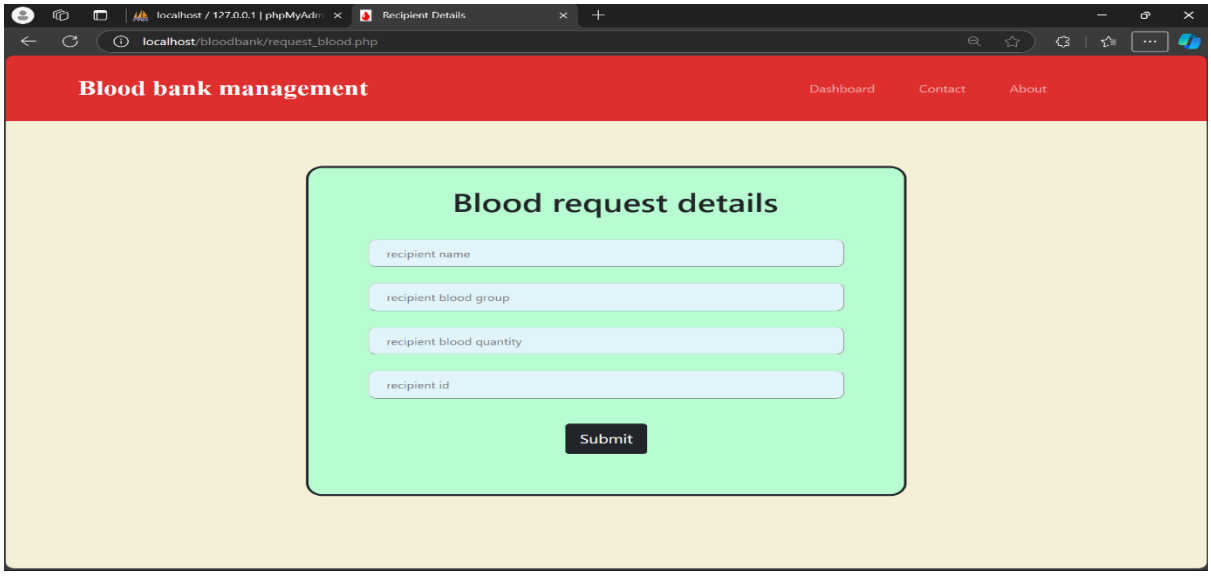


HOME PAGE

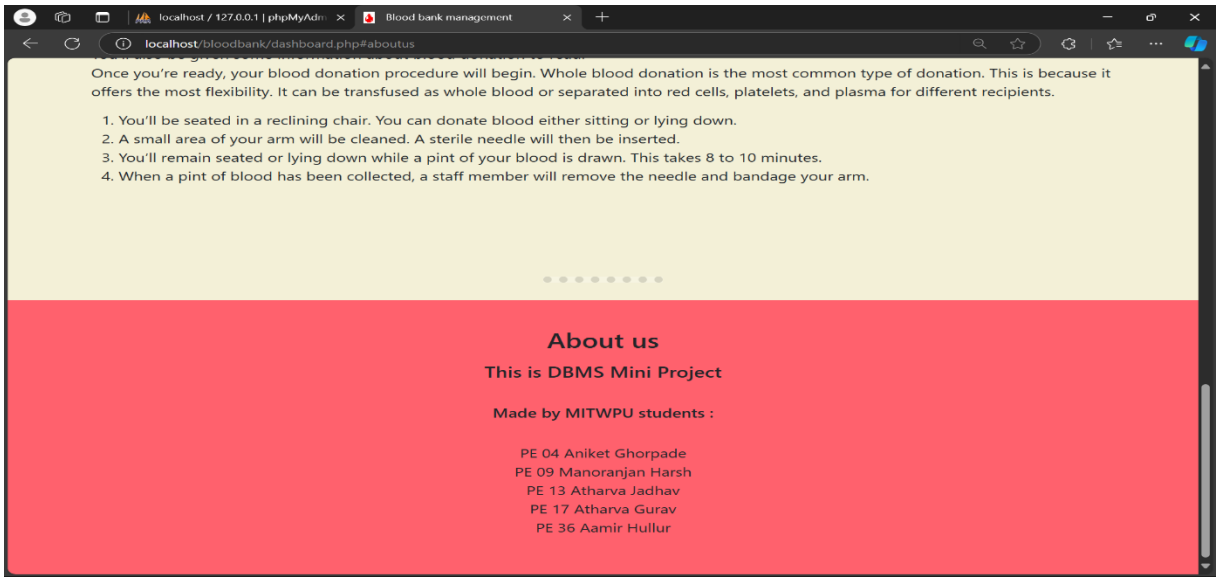


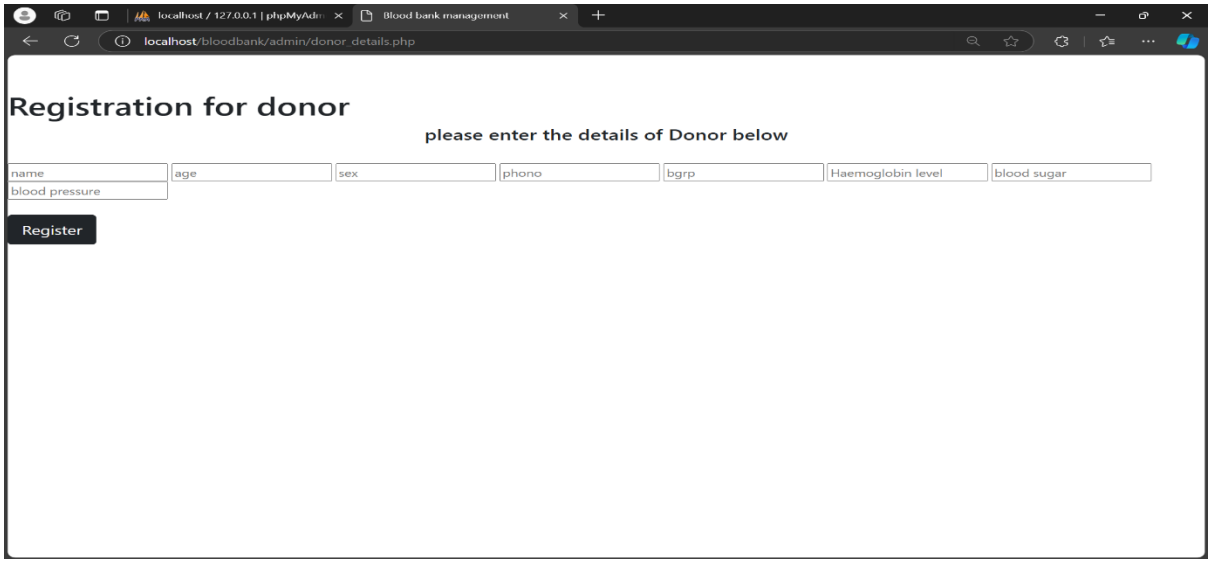
REGISTRATION FORMS

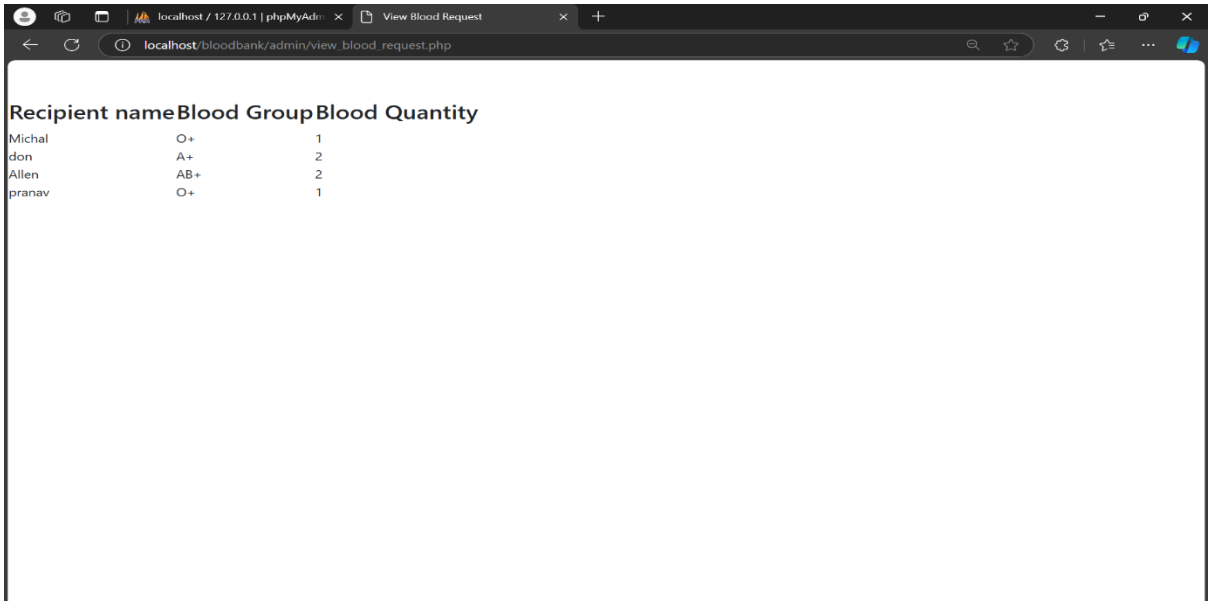




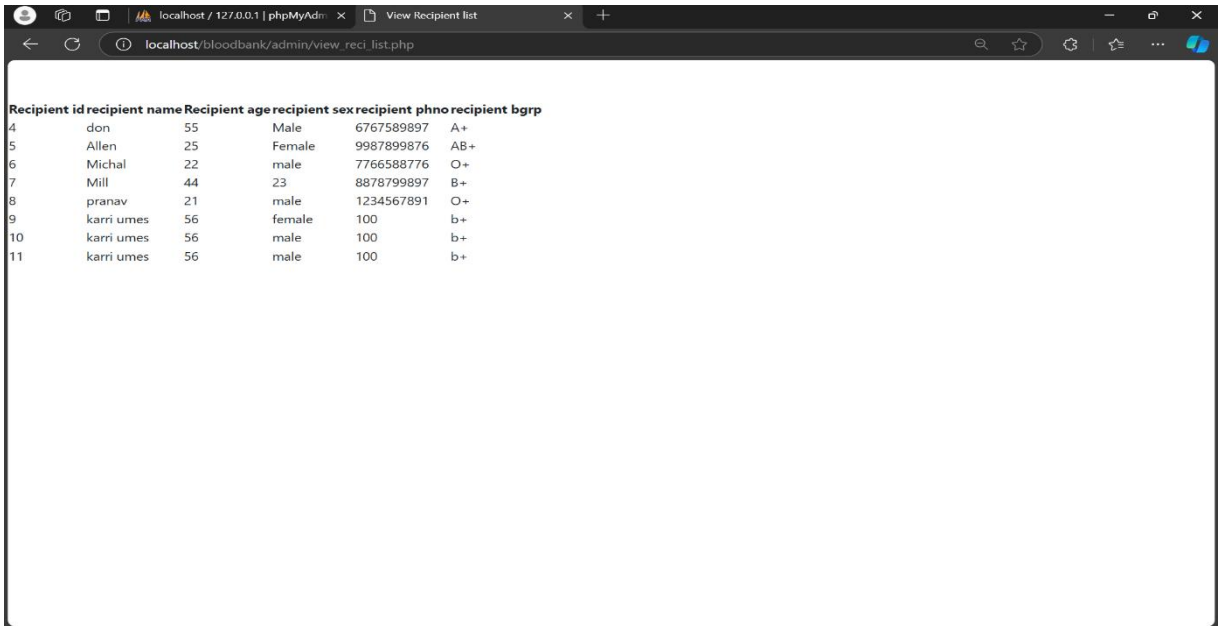
BLOOD REQUEST DETAILS







Recipient name	Blood Group	Blood Quantity
Michal	O+	1
don	A+	2
Allen	AB+	2
pranav	O+	1



Recipient id	recipient name	Recipient age	recipient sex	recipient phno	recipient bgrp
4	don	55	Male	6767589897	A+
5	Allen	25	Female	9987899876	AB+
6	Michal	22	male	7766588776	O+
7	Mill	44	23	8878799897	B+
8	pranav	21	male	1234567891	O+
9	karri umes	56	female	100	b+
10	karri umes	56	male	100	b+
11	karri umes	56	male	100	b+

Conclusion

The Blood Bank Management System provides an efficient and user-friendly platform that simplifies the management of blood donations and blood bank operations. By integrating functionalities like donor registration, blood group inventory management, real-time updates, and advanced search features, the system ensures a seamless connection between donors and hospitals. It enhances operational efficiency, optimizes resource management, and improves medical service delivery. The system's modular design allows for easy maintenance and future upgrades, ensuring its adaptability to evolving needs in the healthcare sector. The implementation of secure authentication, reporting tools, and real-time monitoring further strengthens the platform's reliability and performance, ultimately contributing to better healthcare outcomes.

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