

A FIELD PROJECT REPORT ON
Sports Equipment management system

Submitted

In partial fulfilment of the requirements for the award of the degree

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE and ENGINEERING

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CERTIFICATE

This is to certify that the field project entitled "*Sports Equipment management system*" is being submitted by L.N.Rama Krishna (231FA04603), Y.SujithSai (231FA04625), P.Sai Chandh (231FA04672), A.Ganesh (231FA04680), V.Bhagya Lakshmi (231FA04733) in partial fulfilment of the requirements for the degree of Bachelor of Technology (B.Tech.) in Computer Science and Engineering at Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur District, Andhra Pradesh, India.

This is a Bonafide work carried out by the aforementioned students under my guidance and supervision

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DECLARATION

Date: 16-04-2025

We hereby declare that the work presented in the field project titled "SPORTS EQUIPMENT MANAGEMENT SYSTEM" is the result of our own efforts and investigations.

This project is being submitted under the supervision of **Mr. Shaik.Sikindar, Assistant Professor, CSE** in partial fulfilment of the requirements for the Bachelor of Technology (B.Tech.) degree in Computer Science and Engineering at Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur, Andhra Pradesh, India.

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1. INTRODUCTION

The Sports Equipment Management System is a web-based platform designed to streamline the process of managing sports equipment at Vignan's University. The system ensures efficient tracking, issuance, and return of sports equipment by students and faculty. By digitizing inventory management, the system minimizes manual errors, improves accessibility, and enhances overall operational efficiency.

1.1 Problem Definition

Managing sports equipment manually can be a hassle—records get lost, tracking who borrowed what becomes difficult, and returning items on time isn't always smooth. To solve these issues, the Sports Equipment Management System provides a simple and efficient way for students and faculty at Vignan's University to check equipment availability, request items, and track returns. Instead of relying on paperwork or outdated spreadsheets, this web-based system keeps everything organized in one place. With real-time inventory updates, automated reminders, and secure access, it ensures that equipment is properly managed, reducing losses and making the whole process more convenient and transparent for everyone.

1.2 Existing System

The current system for managing sports equipment at Vignan's University relies on manual record-keeping, which comes with several limitations. Equipment issuance and returns are tracked using paper logs or basic spreadsheets, making it difficult to maintain accurate records. There is no centralized database, which leads to misplacement, loss, or duplication of entries. Students and faculty must visit the sports department physically to check equipment availability, leading to inconvenience and delays. Additionally, there is no proper accountability for lost or damaged equipment, as tracking responsibility is challenging. The lack of an automated system also makes inventory management inefficient, with no real-time updates on stock levels, return dates, or maintenance needs. These limitations create operational inefficiencies, making it necessary to develop a digital solution that simplifies equipment tracking, improves accessibility, and ensures proper management.

1.3 Proposed System

The Proposed System aims to replace the existing manual method with a digital, web-based Sports Equipment Management System that streamlines the process of issuing, tracking, and returning sports equipment at Vignan's University. This system provides a centralized database to store real-time information about equipment availability, borrower details, and return deadlines. Students and faculty can easily check equipment status, make requests, and log returns online without the need for physical visits. An automated tracking system ensures accountability by recording user activity and sending reminders for due returns. Additionally, the system enhances inventory management by reducing human errors, preventing misplacement, and allowing faculty to efficiently monitor equipment usage and maintenance needs. With secure authentication, automated notifications, and user-friendly access, the proposed system improves efficiency, transparency, and convenience for both students and administrators.

1.4 Literature Review

Managing sports equipment manually has always been a challenge, especially in educational institutions where multiple students and faculty members borrow and return items daily. Studies have shown that traditional paper-based tracking methods often lead to errors, misplaced items, and accountability issues. Without a proper system, it's easy to lose track of who borrowed what and when it should be returned.

Researchers have explored various digital solutions to solve these problems. Some studies suggest that cloud-based inventory systems help institutions keep better records and provide real-time updates on equipment availability. Others highlight how database-driven tracking can minimize errors and improve efficiency. In professional sports facilities, RFID and barcode scanning have been used to automate inventory management, but these technologies can be expensive for universities.

Many universities have started adopting web-based platforms for sports equipment management. Research has shown that these systems make the process faster, more organized, and accessible for students and faculty. A study even found that institutions using online equipment tracking systems reduced administrative workload by nearly 40%, making it easier to manage inventory with minimal effort.

2. SYSTEM REQUIREMENTS

To ensure smooth operation and optimal performance, the Sports Equipment Management System requires both hardware and software components. Below are the key system requirements.

2.1 Hardware & Software Requirements

For Users (Students & Faculty):

- **Device:** Desktop, Laptop, Tablet, or Smartphone
- **Processor:** Minimum Intel Core i3 / AMD Ryzen 3 or equivalent
- **RAM:** At least 4GB (8GB recommended for better performance)
- **Storage:** Minimum 10GB free space
- **Internet Connection:** Minimum 2 Mbps speed for smooth access
- **Browser Compatibility:** Chrome, Firefox, Edge, Safari (latest versions)

For Server (if applicable):

- **Processor:** Intel Core i5 or higher / AMD Ryzen 5 or higher
- **RAM:** Minimum 8GB (16GB recommended for handling more users)
- **Storage:** SSD with at least 100GB free space for database and logs
- **Network Connection:** High-speed internet with stable uptime
- **Operating System:** Windows Server

2.1.2 Software Requirements

Frontend Technologies:

- HTML, CSS, JavaScript
- Frameworks/Libraries (if applicable): React.js, Bootstrap, Tailwind CSS

Hosting & Deployment:

- **Frontend Hosting:** GitHub Pages,

Additional Software Tools:

- Version Control: Git & GitHub
- Code Editor: VS Code

2.2 Software Requirements Specification (SRS)

The Sports Equipment Management System is designed to make borrowing and managing sports equipment easier and more efficient for students and faculty at Vignan's University.

Instead of relying on messy spreadsheets or paper logs, this system provides a simple, digital solution where users can check equipment availability, request items, and track their borrowed gear—all in one place.

2.2.1 Functional Requirements

Here's what the system can do:

- **Login & Authentication:** Students, faculty, and admins can log in securely.
- **Equipment Tracking:** Users can see which items are available and request to borrow them.
- **Request & Approval System:** Students can request items, and faculty/admins can approve or deny them.
- **Return Management:** Users can return borrowed items, and the system updates inventory in real time.
- **Reminders & Notifications:** Automated alerts for due dates, overdue returns, and approvals.
- **Personalized Dashboard:** Users can view their borrowed items, request history, and return status.
- **Reports & Logs:** Admins can track equipment usage and generate reports to improve management.

2.2.2 Non-Functional Requirements

Beyond just functionality, the system needs to be:

- **Fast & Reliable:** Handles multiple users without lag.
- **Secure:** Protects user data with encryption and role-based access.
- **Easy to Use:** Designed to be simple and intuitive for students and faculty.
- **Mobile-Friendly:** Works smoothly on desktops, tablets, and smartphones.
- **Scalable:** Can expand to handle more equipment and users as needed.

2.2.3 System Design (If needed)

- **User Flow:** A clear path showing how users interact with the system.
- **Database Structure:** Tables for users, equipment, requests, and transactions.
- **Role-Based Access:** Different permissions for students, faculty, and admins.

2.2.4 Assumptions & Constraints

- Users need an internet connection to access the system.
- The system is designed for Vignan's University and may not support external users.
- Admins have full control over inventory and user management.
- Currently, it's a web-based system (a mobile app could be a future upgrade!).

3. SYSTEM DESIGN

The Sports Equipment Management System is built to make borrowing and tracking sports gear easy and hassle-free. It ensures smooth operations, security, and a great user experience for students, faculty, and admins.

3.1 Modules of System

The Sports Equipment Management System is divided into several key modules, each designed to handle a specific function. These modules work together to provide a smooth and efficient experience for students, faculty, and administrators.

1. User Management Module

- Handles login, registration, and authentication for students, faculty, and admins.
- Implements role-based access, ensuring each user has the correct permissions.

2. Equipment Inventory Module

- Maintains a list of all available sports equipment.
- Allows admins to add, update, and remove items.
- Displays real-time availability status to users.

3. Equipment Request & Approval Module

- Students can browse and request sports equipment.
- Faculty/Admins review and either approve or reject requests.
- Ensures fair usage by tracking requests.

4. Issuing & Return Management Module

- Logs the issuance of equipment to students after approval.
- Tracks return dates and sends reminders for due or overdue returns.
- Updates inventory in real time when an item is returned.

5. Notification & Reminder Module

- Sends alerts via email or in-app notifications for:
 - Request approvals/rejections
 - Equipment due dates
 - Overdue return warnings

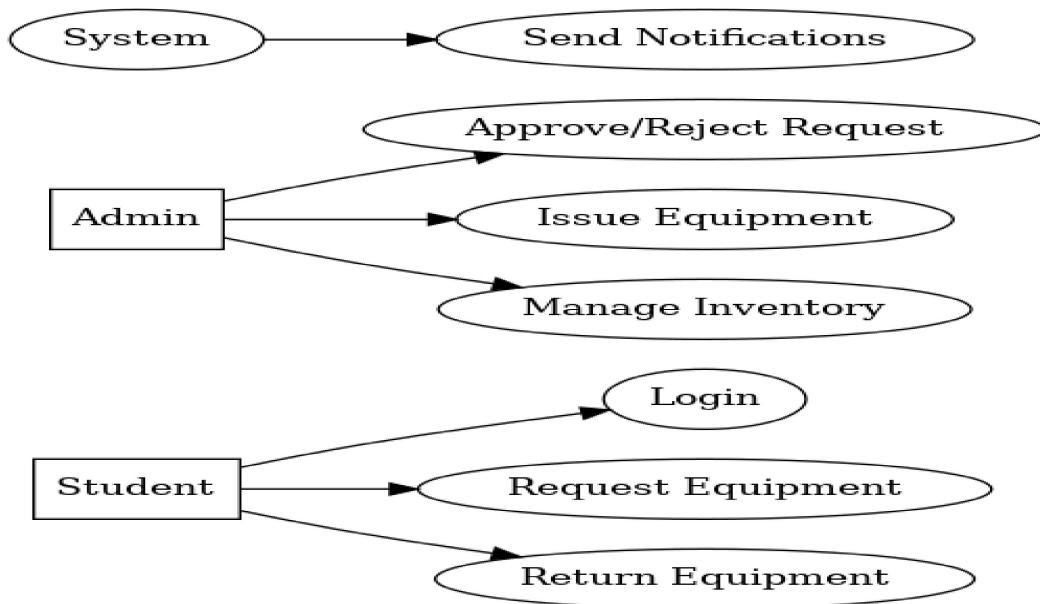
6. Reports & Analytics Module

- Generates reports on equipment usage, pending requests, and overdue items.
- Helps admins optimize inventory and track trends in sports gear demand.

7. Security & Access Control Module

- Ensures secure logins and encrypted data storage.
- Implements role-based permissions (Student, Faculty, Admin).
- Tracks all user actions for accountability.

3.2 UML Diagrams



4. IMPLEMENTATION

The Sports Equipment Management System is implemented as a web-based application using a combination of frontend, backend, and database technologies. The implementation process involves coding, testing, and deployment to ensure a seamless and user-friendly experience.

4.1 Sample Code

MAIN PAGE:

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>SPORTS EQUIPMENT PAGE </title>

    <style>

        body {

            font-family: Arial, sans-serif;

            background: url('https://vignan.ac.in/etpec22/clg.jpg') no-repeat center center fixed;

            background-size: cover;

            margin: 0;

            padding: 0;

            display: flex;

            flex-direction: column;

            align-items: center;

        }

        .navbar {

            width: 100%;

            background-color: #0277bd;

            overflow: hidden;

            padding: 10px 0;

            text-align: center;

        }

    </style>

</head>

<body>

    <div class="navbar">

        <h1>Sports Equipment Management System</h1>

        <ul>

            <li>Home</li>

            <li>Equipment List</li>

            <li>Add Equipment</li>

            <li>User Management</li>

            <li>Logout</li>

        </ul>

    </div>

    <div>

        <h2>Equipment List</h2>

        <p>This page displays a list of equipment items managed by the system.</p>

        <table border="1">

            <thead>

                <tr>
                    <th>Equipment ID</th>
                    <th>Equipment Name</th>
                    <th>Category</th>
                    <th>Status</th>
                    <th>Actions</th>
                </tr>
            </thead>

            <tbody>

                <tr>
                    <td>1</td>
                    <td>Football</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>2</td>
                    <td>Basketball</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>3</td>
                    <td>Tennis Racket</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>4</td>
                    <td>Volleyball</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>5</td>
                    <td>Soccer Ball</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>6</td>
                    <td>Hockey Stick</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>7</td>
                    <td>Badminton Racket</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>8</td>
                    <td>Gymnastics Mat</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>9</td>
                    <td>Football Goal Post</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>10</td>
                    <td>Basketball Hoop</td>
                    <td>Sports</td>
                    <td>Available</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
            </tbody>
        </table>
    </div>

    <div>
        <h2>Add Equipment</h2>
        <form>
            <label>Equipment Name:</label>
            <input type="text" name="name" required="required" />
            <label>Category:</label>
            <input type="text" name="category" required="required" />
            <label>Status:</label>
            <input type="text" name="status" required="required" />
            <input type="submit" value="Add Equipment" />
        </form>
    </div>

    <div>
        <h2>User Management</h2>
        <table border="1">
            <thead>
                <tr>
                    <th>User ID</th>
                    <th>Name</th>
                    <th>Role</th>
                    <th>Actions</th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>1</td>
                    <td>John Doe</td>
                    <td>Administrator</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>2</td>
                    <td>Jane Smith</td>
                    <td>User</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>3</td>
                    <td>Mike Johnson</td>
                    <td>User</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>4</td>
                    <td>Sarah Lee</td>
                    <td>User</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
                <tr>
                    <td>5</td>
                    <td>David Wilson</td>
                    <td>User</td>
                    <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
                </tr>
            </tbody>
        </table>
    </div>

    <div>
        <h2>Logout</h2>
        <form>
            <input type="submit" value="Logout" />
        </form>
    </div>

</body>
```

```

.navbar a {
    color: white;
    padding: 14px 20px;
    text-decoration: none;
    font-size: 18px;
}

.navbar a:hover {
    background-color: #01579b;
}

.container {
    margin-top: 50px;
    text-align: center;
}

h1 {
    color: #fafafa;
}

</style>

</head>

<body>

<div class="navbar">
    <a href="index.html">Dash board</a>
    <a href="Home.html">Home</a>
    <a href="STUDENT FORM.html">Student Page</a>
    <a href="EQUIPMENT.HTML">Equipment Page</a>
    <a href="Fac.html">Faculty Page</a>
    <a href="return page.html">Return Equipment Page</a>
</div>

<div class="container">

```

```
<h1 align="center">VIGNAN'S UNIVERSITY SPORTS EQUIPMENT  
MANAGEMENT SYSTEM</h1>
```

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

Home page:

```
!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Sports Equipment Management</title>  
    <style>  
        * {  
            margin: 0;  
            padding: 0;  
            box-sizing: border-box;  
            font-family: "Arial", sans-serif;  
        }  
  
        body {  
            background-color: #e3f2fd;  
            text-align: center;  
            color: #333;  
        }  
  
.navbar {  
    background-color: #2196f3;  
    overflow: hidden;  
    display: flex;
```

```
justify-content: center;  
padding: 15px 0;  
box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);  
}  
  
.navbar a {  
color: white;  
text-decoration: none;  
padding: 14px 20px;  
font-size: 18px;  
transition: 0.3s;  
}  
  
.navbar a:hover {  
background-color: #1e88e5;  
border-radius: 5px;  
}  
  
.hero {  
background: linear-gradient(to right, #64b5f6, #1e88e5);  
height: 300px;  
display: flex;  
align-items: center;  
justify-content: center;  
color: white;  
font-size: 30px;  
font-weight: bold;  
text-shadow: 2px 2px 5px black;  
border-bottom-left-radius: 50% 20%;  
border-bottom-right-radius: 50% 20%;
```

```
}
```

```
.container {  
    padding: 40px;  
    display: flex;  
    justify-content: space-around;  
    flex-wrap: wrap;  
}
```

```
.box {  
    background-color: white;  
    padding: 20px;  
    border-radius: 10px;  
    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);  
    width: 300px;  
    margin: 20px;  
    transition: 0.3s;  
}
```

```
.box:hover {  
    transform: scale(1.05);  
    box-shadow: 0 6px 12px rgba(0, 0, 0, 0.3);  
}
```

```
.box h3 {  
    color: #1565c0;  
    margin-bottom: 10px;  
}
```

```
.box p {
```

```
        color: #555;  
    }  
  
.footer {  
    background-color: #1565c0;  
    color: white;  
    padding: 15px;  
    position: relative;  
    margin-top: 30px;  
}  
</style>  
</head>  
<body>  
  
<div class="navbar">  
    <a href="index.html">Dash board</a>  
    <a href="Home.html">Home</a>  
    <a href="STUDENT FORM.html">Student Page</a>  
    <a href="EQUIPMENT.HTML">Equipment Page</a>  
    <a href="Fac.html">Faculty Page</a>  
    <a href="return page.html">Return Equipment Page</a>  
</div>  
  
<div class="hero">  
    Welcome to the Sports Equipment Management System  
</div>  
  
<div class="container">  
    <div class="box">  
        <h3>Manage Equipment</h3>
```

```
<p>View available sports equipment and manage inventory with ease.</p>
</div>
```

```
<div class="box">
  <h3>Student Requests</h3>
  <p>Students can request equipment and track their borrowings.</p>
</div>
```

```
<div class="box">
  <h3>Faculty Approval</h3>
  <p>Faculty members can approve or deny student requests.</p>
</div>
</div>
```

```
<div class="footer">
  &copy; 2025 Sports Equipment Management | Designed for Efficiency
</div>
```

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

Student Page: <!DOCTYPE html>

```
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Student Page</title>
    <style>
      body {
        font-family: Arial, sans-serif;
        background-color: #e3f2fd;
```

```
margin: 0;  
padding: 0;  
display: flex;  
flex-direction: column;  
align-items: center;  
}  
  
.navbar {  
width: 100%;  
background-color: #0277bd;  
overflow: hidden;  
padding: 10px 0;  
text-align: center;  
}  
  
.navbar a {  
color: white;  
padding: 14px 20px;  
text-decoration: none;  
font-size: 18px;  
}  
  
.navbar a:hover {  
background-color: #01579b;  
}  
  
.container {  
background: white;  
padding: 20px;  
border-radius: 10px;  
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);  
width: 50%;  
margin-top: 30px;  
}
```

```
label {  
    font-weight: bold;  
    display: block;  
    margin-top: 10px;  
}  
  
input {  
    width: 100%;  
    padding: 8px;  
    margin-top: 5px;  
    border: 1px solid #ccc;  
    border-radius: 5px;  
}  
  
.next-btn {  
    background-color: #0277bd;  
    color: white;  
    padding: 10px 15px;  
    border: none;  
    border-radius: 5px;  
    cursor: pointer;  
    display: none;  
    margin-top: 15px;  
}  
.next-btn:hover {  
    background-color: #01579b;  
}  
</style>  
</head>  
<body>  
<div class="navbar">  
    <a href="index.html">Dash board</a>
```

```

<a href="Home.html">Home</a>
<a href="STUDENT FORM.html">Student Page</a>
<a href="EQUIPMENT.HTML">Equipment Page</a>
<a href="Fac.html">Faculty Page</a>
<a href="return page.html">Return Equipment Page</a>
</div>

<div class="container">
    <h2>Student Registration</h2>
    <label for="regNo">Registration Number:</label>
    <input type="text" id="regNo" placeholder="Enter your registration number"
    oninput="fetchStudentDetails()">

    <div id="studentDetails" style="display: none;">
        <label>Name:</label>
        <input type="text" id="name" readonly>
        <label>Branch:</label>
        <input type="text" id="branch" readonly>
        <label>Year:</label>
        <input type="text" id="year" readonly>
        <label>Section:</label>
        <input type="text" id="section" readonly>
    </div>

    <button class="next-btn" id="nextBtn" onclick="goToNextPage()">Next</button>
</div>

<script>
    function fetchStudentDetails() {
        let regNo = document.getElementById("regNo").value;

```

```

let detailsDiv = document.getElementById("studentDetails");

let nextBtn = document.getElementById("nextBtn");

if (regNo.length >= 10) { // Simulating a condition to fetch data
    document.getElementById("name").value = "Pathuri Sai Chandh";
    document.getElementById("branch").value = "Computer Science";
    document.getElementById("year").value = "2nd";
    document.getElementById("section").value = "2k";

    detailsDiv.style.display = "block";
    nextBtn.style.display = "block";
    localStorage.setItem("studentID", "231FA04672");
    localStorage.setItem("studentName", "Pathuri Sai Chandh");
} else {
    detailsDiv.style.display = "none";
    nextBtn.style.display = "none";
}

}

function goToNextPage() {
    window.location.href = "EQUIPMENT.HTML";
}

</script>
</body>
</html>

Student Page:
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">

```

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Student Page</title>
<style>
body {
    font-family: Arial, sans-serif;
    background-color: #e3f2fd;
    margin: 0;
    padding: 0;
    display: flex;
    flex-direction: column;
    align-items: center;
}
.navbar {
    width: 100%;
    background-color: #0277bd;
    overflow: hidden;
    padding: 10px 0;
    text-align: center;
}
.navbar a {
    color: white;
    padding: 14px 20px;
    text-decoration: none;
    font-size: 18px;
}
.navbar a:hover {
    background-color: #01579b;
}
.container {
    background: white;
```

```
padding: 20px;  
border-radius: 10px;  
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);  
width: 50%;  
margin-top: 30px;  
}  
  
label {  
font-weight: bold;  
display: block;  
margin-top: 10px;  
}  
  
input {  
width: 100%;  
padding: 8px;  
margin-top: 5px;  
border: 1px solid #ccc;  
border-radius: 5px;  
}  
  
.next-btn {  
background-color: #0277bd;  
color: white;  
padding: 10px 15px;  
border: none;  
border-radius: 5px;  
cursor: pointer;  
display: none;  
margin-top: 15px;  
}  
  
.next-btn:hover {  
background-color: #01579b;
```

```

        }

    </style>

</head>

<body>

<div class="navbar">

    <a href="index.html">Dash board</a>

    <a href="Home.html">Home</a>

    <a href="STUDENT FORM.html">Student Page</a>

    <a href="EQUIPMENT.HTML">Equipment Page</a>

    <a href="Fac.html">Faculty Page</a>

    <a href="return page.html">Return Equipment Page</a>

</div>

<div class="container">

    <h2>Student Registration</h2>

    <label for="regNo">Registration Number:</label>

    <input type="text" id="regNo" placeholder="Enter your registration number"
oninput="fetchStudentDetails()">

<div id="studentDetails" style="display: none;">

    <label>Name:</label>

    <input type="text" id="name" readonly>

    <label>Branch:</label>

    <input type="text" id="branch" readonly>

    <label>Year:</label>

    <input type="text" id="year" readonly>

    <label>Section:</label>

    <input type="text" id="section" readonly>

</div>

```

```

<button class="next-btn" id="nextBtn" onclick="goToNextPage()">Next</button>
</div>

<script>
function fetchStudentDetails() {
    let regNo = document.getElementById("regNo").value;
    let detailsDiv = document.getElementById("studentDetails");
    let nextBtn = document.getElementById("nextBtn");

    if (regNo.length >= 10) { // Simulating a condition to fetch data
        document.getElementById("name").value = "Pathuri Sai Chandh";
        document.getElementById("branch").value = "Computer Science";
        document.getElementById("year").value = "2nd";
        document.getElementById("section").value = "2k";

        detailsDiv.style.display = "block";
        nextBtn.style.display = "block";
        localStorage.setItem("studentID", "231FA04672");
        localStorage.setItem("studentName", "Pathuri Sai Chandh");
    } else {
        detailsDiv.style.display = "none";
        nextBtn.style.display = "none";
    }
}

function goToNextPage() {
    window.location.href = "EQUIPMENT.HTML";
}
</script>
</body>

```

```
</html>
```

Equipment Page:

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Equipment Page</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            background-color: #e3f2fd;

            margin: 0;

            padding: 0;

            display: flex;

            flex-direction: column;

            align-items: center;

        }

        .navbar {

            width: 100%;

            background-color: #0277bd;

            padding: 10px 0;

            text-align: center;

        }

        .navbar a {

            color: white;

            padding: 14px 20px;

            text-decoration: none;

            font-size: 18px;

        }

    </style>

</head>

<body>

    <div class="navbar">

        <a href="#">Home</a>

        <a href="#">Equipment</a>

        <a href="#">About Us</a>

        <a href="#">Contact Us</a>

    </div>

    <h1>Equipment Page</h1>

    <p>This page displays the equipment management system. You can view, add, update, and delete equipment details here.</p>

    <table border="1">

        <thead>

            <tr>
                <th>Equipment ID</th>
                <th>Equipment Name</th>
                <th>Category</th>
                <th>Status</th>
                <th>Actions</th>
            </tr>
        </thead>

        <tbody>

            <tr>
                <td>1</td>
                <td>Football</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>2</td>
                <td>Basketball</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>3</td>
                <td>Soccer Ball</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>4</td>
                <td>Tennis Racket</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>5</td>
                <td>Volleyball</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>6</td>
                <td>Gymnastics Mat</td>
                <td>Sports Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>7</td>
                <td>Dumbbell Set</td>
                <td>Fitness Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>8</td>
                <td>Barbell Set</td>
                <td>Fitness Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>9</td>
                <td>Kettlebell Set</td>
                <td>Fitness Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
            <tr>
                <td>10</td>
                <td>Ab Wheel</td>
                <td>Fitness Equipment</td>
                <td>Available</td>
                <td><a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a></td>
            </tr>
        </tbody>
    </table>

    <button>Add New Equipment</button>

</body>

</html>
```

```
.navbar a:hover {  
    background-color: #01579b;  
}  
  
.container {  
    background: white;  
    padding: 20px;  
    border-radius: 10px;  
    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);  
    width: 70%;  
    margin-top: 30px;  
    text-align: center;  
}  
  
table {  
    width: 100%;  
    border-collapse: collapse;  
    margin-top: 20px;  
}  
  
th, td {  
    border: 1px solid #ddd;  
    padding: 10px;  
    text-align: center;  
}  
  
th {  
    background-color: #0277bd;  
    color: white;  
}  
  
.request-btn {  
    background-color: #0277bd;  
    color: white;  
    padding: 5px 10px;  
}
```

```
border: none;  
border-radius: 5px;  
cursor: pointer;  
}  
.request-btn:hover {  
background-color: #01579b;  
}  
.selected-items {  
margin-top: 20px;  
}  
.next-btn {  
background-color: #0277bd;  
color: white;  
padding: 10px 15px;  
border: none;  
border-radius: 5px;  
cursor: pointer;  
display: none;  
margin-top: 15px;  
}  
.next-btn:hover {  
background-color: #01579b;  
}  
</style>  
</head>  
<body>  
<div class="navbar">  
<a href="index.html">Dash board</a>  
<a href="Home.html">Home</a>  
<a href="STUDENT FORM.html">Student Page</a>
```

```

<a href="EQUIPMENT.HTML">Equipment Page</a>
<a href="Fac.html">Faculty Page</a>
<a href="return page.html">Return Equipment Page</a>
</div>

<div class="container">
    <h2>Equipment List</h2>
    <table>
        <tr>
            <th>Equipment</th>
            <th>Available Count</th>
            <th>Image</th>
            <th>Request</th>
        </tr>
        <tbody id="equipmentTable"></tbody>
    </table>

    <div class="selected-items">
        <h3>Selected Equipment</h3>
        <ul id="selectedList"></ul>
        <button class="next-btn" id="nextBtn" onclick="goToFacultyPage()">Next</button>
    </div>
</div>

<script>
let equipmentData = [
    { name: "Football", count: 10, img: "imageadress" },
    { name: "Basketball", count: 10, img: "imageadress" },
    { name: "Badminton Racket", count: 10, img: "imageadress" },
    { name: "Cricket Bat", count: 10, img: "imageadress" },
]

```

```

        { name: "Volleyball", count: 10, img: imageaddress },
        { name: "Table Tennis Bat", count: 10, img: "imageaddress" },
        { name: "Skipping Rope", count: 10, img: "image address" }

    ];

function loadEquipment() {
    let tableBody = document.getElementById("equipmentTable");
    tableBody.innerHTML = "";

    equipmentData.forEach((item, index) => {
        let row = `<tr>
            <td>${item.name}</td>
            <td id="count${index}">${item.count}</td>
            <td></td>
            <td><button class="request-btn" onclick="requestEquipment('${item.name}', ${index})">Request</button></td>
        </tr>`;
        tableBody.innerHTML += row;
    });
}

function requestEquipment(name, index) {
    let countElement = document.getElementById("count" + index);
    let availableCount = parseInt(countElement.innerText);
    let selectedList = document.getElementById("selectedList");

    if (availableCount > 0) {
        countElement.innerText = availableCount - 1;
    }
}

```

```

let selectedEquipment = JSON.parse(localStorage.getItem("requestedEquipment")) || []
[];

if (!selectedEquipment.includes(name)) {
    selectedEquipment.push(name);
    localStorage.setItem("requestedEquipment", JSON.stringify(selectedEquipment));

    let listItem = document.createElement("li");
    listItem.textContent = name;
    selectedList.appendChild(listItem);
}

document.getElementById("nextBtn").style.display = "block";
}

}

function goToFacultyPage() {
    window.location.href = "Fac.html";
}

window.onload = function () {
    loadEquipment();

    let storedEquipment = JSON.parse(localStorage.getItem("requestedEquipment")) || [];
    let selectedList = document.getElementById("selectedList");

    if (storedEquipment.length > 0) {
        document.getElementById("nextBtn").style.display = "block";

        storedEquipment.forEach(item => {
            let listItem = document.createElement("li");

```

```

        listItem.textContent = item;
        selectedList.appendChild(listItem);
    });
}

};

</script>

</body>
</html>

Faculty Page:

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Faculty Page</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background-color: #e3f2fd;
            margin: 0;
            padding: 0;
            display: flex;
            flex-direction: column;
            align-items: center;
        }
        .navbar {
            width: 100%;
            background-color: #0277bd;
            padding: 10px 0;
            text-align: center;
        }
    </style>

```

```
}

.navbar a {

    color: white;

    padding: 14px 20px;

    text-decoration: none;

    font-size: 18px;

}

.navbar a:hover {

    background-color: #01579b;

}

.container {

    background: white;

    padding: 20px;

    border-radius: 10px;

    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);

    width: 50%;

    margin-top: 30px;

}

table {

    width: 100%;

    border-collapse: collapse;

    margin-top: 20px;

}

th, td {

    border: 1px solid #ddd;

    padding: 10px;

    text-align: center;

}

th {

    background-color: #0277bd;
```

```

        color: white;
    }

    .btn {
        padding: 5px 10px;
        border: none;
        border-radius: 5px;
        cursor: pointer;
        color: white;
    }

    .approve {
        background-color: #4CAF50;
    }

    .deny {
        background-color: #D32F2F;
    }

    .btn:hover {
        opacity: 0.8;
    }

</style>

</head>

<body>

<div class="navbar">

    <a href="index.html">Dash board</a>
    <a href="Home.html">Home</a>
    <a href="STUDENT FORM.html">Student Page</a>
    <a href="EQUIPMENT.HTML">Equipment Page</a>
    <a href="Fac.html">Faculty Page</a>
    <a href="return page.html">Return Equipment Page</a>

</div>

```

```

<div class="container">

    <h2>Faculty Verification</h2>
    <label for="facultyId">Faculty ID:</label>
    <input type="text" id="facultyId" placeholder="Enter Faculty ID">
    <label for="password">Password:</label>
    <input type="password" id="password" placeholder="Enter Password">
    <button class="btn approve" onclick="verifyFaculty()">Login</button>
</div>

<div class="container" id="allotmentSection" style="display: none;">

    <h2>Allot Equipment</h2>
    <table>
        <tr>
            <th>Student ID</th>
            <th>Student Name</th>
            <th>Equipment Taken</th>
            <th>Date & Time</th>
            <th>Action</th>
        </tr>
        <tbody id="equipmentList"></tbody>
    </table>
</div>

<div class="container" id="allottedSection">

    <h2>Allotted Equipment</h2>
    <table>
        <tr>
            <th>Student ID</th>
            <th>Student Name</th>
            <th>Equipment Taken</th>
        </tr>

```

```

<th>Date & Time</th>
<th>Faculty Name</th>
</tr>
<tbody id="allottedList"></tbody>
</table>
</div>

<script>
let facultyDatabase = {
    "FAC001": "password123",
    "FAC002": "admin456"
};

function verifyFaculty() {
    let facultyId = document.getElementById("facultyId").value;
    let password = document.getElementById("password").value;

    if (facultyDatabase[facultyId] && facultyDatabase[facultyId] === password) {
        document.getElementById("allotmentSection").style.display = "block";
        loadEquipmentRequests();
    } else {
        alert("Invalid Faculty Credentials");
    }
}

function loadEquipmentRequests() {
    let storedRequests = JSON.parse(localStorage.getItem("requestedEquipment")) || [];
    let studentId = localStorage.getItem("studentId") || "Unknown";
    let studentName = localStorage.getItem("studentName") || "Unknown";
    let tableBody = document.getElementById("equipmentList");
}

```

```



```

```

<td>${equipment}</td>
<td>${dateTime}</td>
<td>${facultyName}</td>
</tr>';
allottedList.innerHTML += row;

updateEquipmentCount(equipment);
removeRequest(equipment);

alert(`Equipment '${equipment}' has been allotted.`);
}

function denyEquipment(equipment) {
removeRequest(equipment);
alert(`Equipment '${equipment}' request denied.`);
}

function updateEquipmentCount(equipment) {
let equipmentCounts = JSON.parse(localStorage.getItem("equipmentCounts")) || {};
if (equipmentCounts[equipment]) {
equipmentCounts[equipment] -= 1;
}
localStorage.setItem("equipmentCounts", JSON.stringify(equipmentCounts));
}

function removeRequest(equipment) {
let storedRequests = JSON.parse(localStorage.getItem("requestedEquipment")) || [];
let updatedRequests = storedRequests.filter(item => item !== equipment);
localStorage.setItem("requestedEquipment", JSON.stringify(updatedRequests));
loadEquipmentRequests();
}

```

```

}

window.onload = function () {
    let studentId = localStorage.getItem("studentId");
    let studentName = localStorage.getItem("studentName");
    if (!studentId || !studentName) {
        localStorage.setItem("studentId", "*****");
        localStorage.setItem("studentName", "*****");
    }
};

</script>
<div class="footer">
    &copy; All Rights reserved by Vignan university
</div>
</body>
</html>

```

Equipment Return Page:

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Return Equipment Page</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background-color: #e3f2fd;
            margin: 0;
            padding: 0;
            display: flex;

```

```
flex-direction: column;  
align-items: center;  
}  
.navbar {  
width: 100%;  
background-color: #0277bd;  
overflow: hidden;  
padding: 10px 0;  
text-align: center;  
}  
.navbar a {  
color: white;  
padding: 14px 20px;  
text-decoration: none;  
font-size: 18px;  
}  
.navbar a:hover {  
background-color: #01579b;  
}  
.container {  
background: white;  
padding: 20px;  
border-radius: 10px;  
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);  
width: 70%;  
margin-top: 30px;  
text-align: center;  
}  
table {  
width: 100%;
```

```
border-collapse: collapse;  
margin-top: 20px;  
}  
  
th, td {  
    border: 1px solid #ddd;  
    padding: 10px;  
    text-align: center;  
}  
  
th {  
    background-color: #0277bd;  
    color: white;  
}  
  
.return-btn {  
    background-color: #0277bd;  
    color: white;  
    padding: 5px 10px;  
    border: none;  
    border-radius: 5px;  
    cursor: pointer;  
}  
  
.return-btn:hover {  
    background-color: #01579b;  
}  
  
</style>  
</head>  
<body>  
    <div class="navbar">  
        <a href="index.html">Dash board</a>  
        <a href="Home.html">Home</a>  
        <a href="STUDENT FORM.html">Student Page</a>
```

```

<a href="EQUIPMENT.HTML">Equipment Page</a>
<a href="Fac.html">Faculty Page</a>
<a href="return page.html">Return Equipment Page</a>
</div>

<div class="container">
<h2>Return Equipment</h2>

<h3>Enter Registration Number</h3>
<input type="text" id="regInput" placeholder="Enter Registration No">
<button onclick="verifyStudent()">Verify</button>

<div id="studentDetails" style="display: none;">
<h3>Student Details</h3>
<table>
<tr><th>Registration Number</th><td id="regNo"></td></tr>
<tr><th>Name</th><td id="studentName"></td></tr>
<tr><th>Branch</th><td id="branch"></td></tr>
<tr><th>Year</th><td id="year"></td></tr>
<tr><th>Section</th><td id="section"></td></tr>
<tr><th>Issued Equipment</th><td id="issuedItems"></td></tr>
</table>
</div>

<div id="facultyAuth" style="display: none;">
<h3>Faculty Authentication</h3>
<input type="text" id="facultyIdInput" placeholder="Enter Faculty ID">
<input type="password" id="facultyPassInput" placeholder="Enter Password">
<button onclick="verifyFaculty()">Verify Faculty</button>
</div>

```

```

<div id="facultyDetails" style="display: none;">
    <h3>Faculty Details (Authorized By)</h3>
    <table>
        <tr><th>Faculty ID</th><td id="facultyId"></td></tr>
        <tr><th>Faculty Name</th><td id="facultyName"></td></tr>
    </table>
</div>

<div id="issuedEquipmentSection" style="display: none;">
    <h3>Issued Equipment</h3>
    <table id="issuedEquipmentTable">
        <tr>
            <th>Equipment</th>
            <th>Return</th>
        </tr>
    </table>
</div>

<h3>Returned Equipment History</h3>
<table id="returnedEquipmentTable">
    <tr>
        <th>Equipment</th>
        <th>Student Name</th>
        <th>Registration No</th>
        <th>Faculty Name</th>
        <th>Return Date & Time</th>
    </tr>
</table>
</div>

```

```

<script>

let students = {

    "231FA04672": { name: "Pathuri Sai Chandh ", branch: "Computer Science", year:
    "2nd", section: "2k" }

};

let faculty = {

    "001": { name: "Dr.Sk.Sikindar", password: "p123" }

};

function verifyStudent() {

    let regNo = document.getElementById("regInput").value;

    let issuedEquipment = JSON.parse(localStorage.getItem("issuedEquipment_" +
    regNo)) || [];



    if(students[regNo]) {

        document.getElementById("regNo").innerText = regNo;
        document.getElementById("studentName").innerText = students[regNo].name;
        document.getElementById("branch").innerText = students[regNo].branch;
        document.getElementById("year").innerText = students[regNo].year;
        document.getElementById("section").innerText = students[regNo].section;
        document.getElementById("issuedItems").innerText = issuedEquipment.length ?
        issuedEquipment.join(", ") : "None";
        document.getElementById("studentDetails").style.display = "block";
        document.getElementById("facultyAuth").style.display = "block";
    } else {
        alert("Student not found!");
    }
}

```

```

function verifyFaculty() {

    let facultyId = document.getElementById("facultyIdInput").value;
    let password = document.getElementById("facultyPassInput").value;

    if (faculty[facultyId] && faculty[facultyId].password === password) {
        document.getElementById("facultyId").innerText = facultyId;
        document.getElementById("facultyName").innerText = faculty[facultyId].name;
        document.getElementById("facultyDetails").style.display = "block";
        loadIssuedEquipment();
    } else {
        alert("Invalid Faculty ID or Password!");
    }
}

function loadIssuedEquipment() {

    let regNo = document.getElementById("regNo").innerText;
    let table = document.getElementById("issuedEquipmentTable");
    let issuedEquipment = JSON.parse(localStorage.getItem("issuedEquipment_" + regNo)) || [];

    table.innerHTML = `<tr>
        <th>Equipment</th>
        <th>Return</th>
    </tr>`;

    issuedEquipment.forEach((item, index) => {
        let row = table.insertRow(-1);
        row.insertCell(0).innerText = item;
        let btnCell = row.insertCell(1);
        let button = document.createElement("button");

```

```

        button.innerText = "Return";
        button.classList.add("return-btn");
        button.onclick = () => returnEquipment(index, item, row, regNo);
        btnCell.appendChild(button);
    });

    document.getElementById("issuedEquipmentSection").style.display = "block";
}

function returnEquipment(index, equipmentName, row, regNo) {
    row.remove();

    let returnedTable = document.getElementById("returnedEquipmentTable");
    let newRow = returnedTable.insertRow(-1);
    newRow.insertCell(0).innerText = equipmentName;
    newRow.insertCell(1).innerText =
        document.getElementById("studentName").innerText;
    newRow.insertCell(2).innerText = regNo;
    newRow.insertCell(3).innerText =
        document.getElementById("facultyName").innerText;
    newRow.insertCell(4).innerText = new Date().toLocaleString();
}

</script>
<div class="footer">
    &copy; All Rights reserved by Vignan university
</div>
</body>
</html>

```

4.2 Test cases:

➤ User Registration and Login

- **Test Case 1.1:** Verify that a new user (student/faculty) can register successfully with valid details.
- **Test Case 1.2:** Verify that the system prevents registration with duplicate email addresses.
- **Test Case 1.3:** Verify that a user can log in with valid credentials.
- **Test Case 1.4:** Verify that the system displays an error message for invalid login attempts.
- **Test Case 1.5:** Verify that the system allows password recovery through email.

5. RESULTS

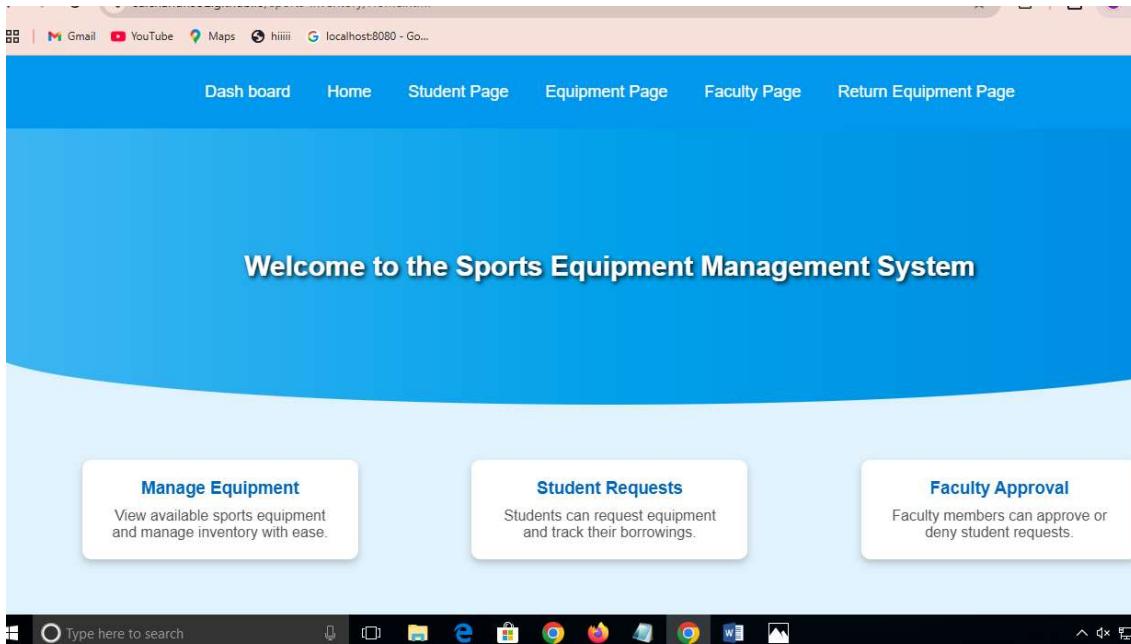
Managing sports equipment manually can be challenging—records get misplaced, tracking borrowed items is difficult, and ensuring timely returns is often unreliable. To address these issues, the Sports Equipment Management System offers a web-based solution that streamlines the process for students and faculty at Vignan's University.

5.1. Output Screens:

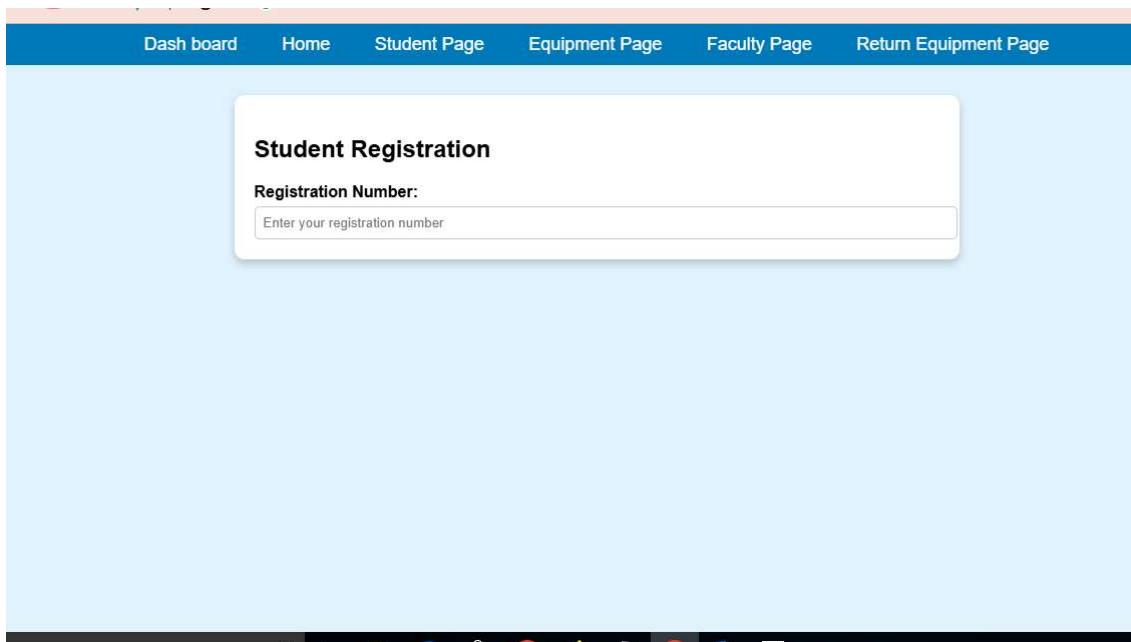
Main page:



Home page:



Student Page:



Equipment page:

Equipment List			
Equipment	Available Count	Image	Request
Football	10		<button>Request</button>
Basketball	10		<button>Request</button>
Badminton Racket	10		<button>Request</button>
Cricket Bat	10		<button>Request</button>
Volleyball	10		<button>Request</button>
Table Tennis Bat	10		<button>Request</button>
Skipping Rope	10		<button>Request</button>

Faculty page:

Dashboard Home Student Page Equipment Page Faculty Page Return Equipment Page

Faculty Verification

Faculty ID: Password: Login

Allotted Equipment

Student ID	Student Name	Equipment Taken	Date & Time	Faculty Name
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Return Equipment Page:

The screenshot shows a web-based application interface for returning equipment. At the top, there is a navigation bar with links: Dash board, Home, Student Page, Equipment Page, Faculty Page, and Return Equipment Page. The main content area has a title "Return Equipment". Below it, there is a section labeled "Enter Registration Number" with an input field and a "Verify" button. Another section labeled "Returned Equipment History" is present. A horizontal table header row is shown below, with columns labeled "Equipment", "Student Name", "Registration No", "Faculty Name", and "Return Date & Time". At the bottom of the page, a copyright notice reads "© All Rights reserved by Vignan university".

6. CONCLUSION

The Sports Equipment Management System at Vignan's University transforms the traditional, manual process into a streamlined, digital solution. By providing real-time inventory updates, automated tracking, and secure access, it ensures that equipment is properly managed, losses are reduced, and borrowing is more convenient for students and faculty. With this system, delays, misplaced records, and late returns are minimized, making the entire process more transparent, efficient, and user-friendly. This not only improves resource management but also enhances the overall sports experience at the university.

7. REFERENCES

Academic & Research-Based References

1. Wang, Shuai (2022). *Influence of Management Efficiency of Sports Equipment in Colleges and Universities Based on the Intelligent Optimization Method*. This study highlights how intelligent systems improve management efficiency and reduce administrative workload in universities by providing real-time updates and streamlined processes.

Available at: <https://www.researchgate.net/publication/359236263>

2. Yang, Mingxia & Jiang, Liang (2015). *Research on Design and Implementation of Sports Equipment Management System*. This paper discusses the development of a sports equipment management system using .NET and SQL Server technologies, aimed at reducing delays, minimizing data loss, and improving user accessibility.

Available at: <https://www.researchgate.net/publication/300616842>

GIT HUB REPOSITORY

<https://saichandh932.github.io/sports-inventory/>