VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA", BELAGAVI - 570018, KARNATAKA

Project Report on

"Digital Technologies for Strengthening Stree Shakti Sanghas"

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

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted by

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Centre for Post Graduate Studies, Sathagalli, Mysuru – 570029.

2024 – 2025

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CERTIFICATE

This is to certify that the Project work entitled **"Digital Technologies for Strengthening Stree Shakti Sanghas",** is a bonafide work carried out by **Akash U K, Mahadeva Prasad M, Hemanth Kumar S, Sagar D S,** bearing USN**, 4VZ22CS001, 4VZ22CS014, 4VZ23CS013, 4VZ22CS023** at **Department of Computer Science and Engineering**, **Visvesvaraya Technological University**, **Centre for Post Graduate Studies, Mysuru** in partial fulfilment for the award of **Bachelor of Technology in Computer Science and Engineering**, Visvesvaraya Technological University, Belagavi during the academic year **2024 - 2025**. It is certified that all the corrections/suggestions indicated during Internal Assessment have been incorporated in the report. The Mini Project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Technology degree.

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DECLARATION

We **Akash U K, Mahadeva Prasad M, Hemanth Kumar S, Sagar D S** bearing **USN 4VZ22CS001, 4VZ22CS014, 4VZ23CS013, 4VZ22CS023** hereby declare that this project work entitled **"Digital Technologies for Strengthening Stree Shakti Sanghas",** are the bonafide work carried out by us under the guidance and supervision of **Dr. G F Ali Ahammed** Program Coordinator, Department of Computer Science and Engineering, VTU, CPGS, Mysore. This project work is submitted to **Visvesvaraya Technological University, Belagavi** in partial fulfilment of the requirements for the award to degree of **Bachelor of Technology in Computer Science and Engineering during the academic year 2024 - 2025**.

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ABSTRACT

The Shree Shakthi Mahila Sangha project aims to develop a digital solution for efficiently managing and tracking the activities and membership of the organization without relying on traditional written documentation. This project involves creating a database system to store member details, track recent activities, and maintain a history of events and interactions within the Sangha. The system allows for seamless addition of new members and the maintenance of an up-to-date member list. A key feature of the project is the integration of a helpdesk system that enables members to submit queries or requests, which are then managed and addressed in an organized manner. The project facilitates real-time tracking of requests, allowing the Sangha to improve its responsiveness and support for members. By digitizing these processes, the project aims to streamline administrative tasks, enhance communication, and provide better access to resources for members of the Shree Shakthi Mahila Sangha, contributing to the overall efficiency and effectiveness of the organization.

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INTRODUCTION

1.1 Aim of the project

The aim of the Shree Shakthi Mahila Sangha mini project is to develop a digital system that simplifies the management of member information and activities. The project aims to create a centralized database where member details can be easily added, updated, and tracked. It also focuses on storing the history of events and activities organized by the Sangha for quick access. Additionally, the project includes a helpdesk feature that allows members to submit queries or requests, ensuring timely responses and better support. Overall, the goal is to improve the efficiency of the organization by reducing reliance on paper-based records and providing a more organized, responsive system for managing member-related tasks

1.2 Motivation

The motivation for doing the Stree Shakthi Mahila Sangha mini project stems from the need to modernize and streamline the management of the organization's operations. Traditionally, managing member details, event history, and support services may involve manual records and paperwork, which can be time-consuming, prone to errors, and difficult to maintain. By digitizing these processes, the project aims to make these tasks more efficient, accessible, and organized. Additionally, the motivation comes from the desire to improve communication and support within the Sangha. With a helpdesk system, members will have a direct platform to raise queries and requests, ensuring they receive timely assistance. The project also seeks to empower the organization to manage its activities more effectively, allowing it to focus more on its core mission of women's empowerment and community service. In summary, the motivation is to create a modern, efficient, and user-friendly system that supports the growth and success of the Stree Shakthi Mahila Sangha.

1.3 The Problem Statement

The key challenges faced by the Stree Shakthi Mahila Sangha in the context of the mini project are:

1. Manual Data Management: Managing member details, event histories, and other important records manually leads to inefficiency, errors, and difficulties in retrieving information quickly.

2. Lack of Real-Time Access: The absence of a centralized database makes it challenging to track and access up-to-date information about members and past activities in real-time.
3. Inefficient Member Support: Without a dedicated helpdesk system, addressing member queries or requests is slow, leading to delays in providing the necessary assistance or resolving issues.
4. Increased Administrative Workload: Reliance on paperwork for managing activities and membership increases the administrative burden, consuming time and resources that could be better utilized for the core activities of the Sangha.
5. Limited Communication and Coordination: Without a digital platform, communication between the members and management is fragmented, which may hinder collaboration and responsiveness.
6. Data Security and Storage: Storing sensitive member information and event records in physical or unorganized digital formats poses risks of data loss, security breaches, or mismanagement.
7. Manual Management: The organization currently uses traditional manual methods to manage member details, event histories, and support services, which are time-consuming and prone to errors.

1.4 Summary

The Stree Shakthi Mahila Sangh is a women's empowerment organization aimed at uplifting and supporting women, especially in rural or underserved communities. It focuses on fostering financial independence, skill development, and social inclusion for women. The core objectives include empowering women, building a support network, promoting gender equality, and providing essential services like education, healthcare, and financial aid. The organization also works to raise awareness about women's rights and issues that affect their lives. In the context of the mini project, the digital solution to manage member information, event histories, and communication will be built using HTML, CSS, JavaScript, and JSON for front-end development and data handling. The project will use XAMPP as the platform for setting up a local server and managing the database, ensuring efficient storage and retrieval of member details and activities, and Node.js and their modules for integration of backend with frontend. This system will streamline the organization's administrative tasks, improve communication, and enhance overall operational efficiency.

CHAPTER 2

LITERATURE SURVEY

2.1 Existing system

The existing features and processes of the organization were primarily manual and fragmented, leading to inefficiencies. Member information was traditionally managed through paper records or spreadsheets, making it difficult to track and update member details in real time. New member registrations were done manually, either via paper forms or informal digital records, leading to inconsistency and delays in data retrieval. There was no centralized database, which meant that administrators had to rely on scattered and hard-to-access data, complicating member management tasks such as tracking membership status or renewals.

Limitations of Existing System

- Manual Data Management: Member information is stored manually in paper or spreadsheets, leading to inefficiency and errors. No centralized database for easy access.
- Ineffective Helpdesk System: Queries are managed informally, with no formal ticketing system to track or prioritize issues, causing delays and missed resolutions.
- Fragmented and Unsecure Data Storage: Data is scattered across different formats, making it hard to manage and prone to loss or unauthorized access. No backup system in place.
- Limited Communication and Notifications: Lack of automated notifications and reminders, relying on manual communication methods that are time-consuming and hard to track.
- Scalability Issues: As the organization grows, the system becomes inefficient and difficult to manage, lacking the ability to scale effectively with increased data and queries.

2.2 Proposed system

The proposed system for the Shree Shakthi Mahila Sangha aims to modernize and streamline the management of members and helpdesk queries through automation and centralized data management. A centralized member management system will allow for easy registration, tracking, and updating of member details in a secure database, making the process more efficient and reducing errors. The system will automate tasks such as membership status updates, renewals, and notifications, ensuring timely communication with members. Additionally, a formal helpdesk system with a ticketing platform will be implemented to manage member queries. Each query will be logged, categorized, and tracked for resolution, with automated notifications keeping members informed of progress. The system will also include role-based access control to ensure secure handling of sensitive data, along with regular backups to prevent data loss.

Advantages of the proposed system

1. Implementation Costs: Developing and deploying the new system may require significant investment in software, infrastructure, and training for staff.
2. Technical Issues: The transition from the manual system to an automated one could face technical challenges, such as data migration errors or integration issues with existing tools.
3. Training and Adoption: Staff and members may need time and training to adapt to the new system, which could cause temporary inefficiencies during the learning phase.
4.System Downtime: While the system will be designed for reliability, any unforeseen technical failures or server issues could lead to downtime, affecting operations.
5. Data Security Risks: Despite enhanced security features, the centralized system still carries the risk of cyber threats or unauthorized access, which requires continuous monitoring and updates to maintain data integrity.

CHAPTER 3

SYSTEM REQUIREMENT SPECIFICATION

To support the proposed Stree Shakti Mahila Sangha database system effectively, the following hardware requirements are essential. These requirements ensure that the system operates efficiently, securely, and reliably, meeting the performance needs.

3.1 Hardware Specification

Processor: Intel/AMD

RAM: 512MB or more

Keyboard: RS/32 or USB/normal

Mouse: compatible mouse

3.2 Software Specification

Back-end: MySQLs

Font-end: Html, CSS, JavaScript, Embedded js and Node.js

Server: XAMPP

Code editor: VS code

3.3 Functionality Requirements

1. **Data Management**:

   - Allow members to create, update, retrieve, and delete (CRUD) records related to Sangha activities such as member details, events, and financial transactions.
   - Enable efficient storage and retrieval of data using MySQL as the backend database.

2. **User Interface**:

   - Provide a web-based user interface designed with HTML, CSS, and JavaScript for easy interaction with the system.
   - Support user-friendly navigation for accessing different modules like member data, activity reports, or financial analysis.

3. **Data Security**:

- Ensure secure data transactions through encrypted connections.
- Password is encrypted in order to store it in databse.
- Implement user authentication mechanisms to protect access to sensitive Sangha data.

4. **Compatibility**:

- Ensure the system works with standard input devices like RS/32 or USB keyboards and compatible mice.

5. **Server Functionality**:

- Use the XAMPP server to manage the web server and database connection seamlessly.
- Support concurrent user access without performance degradation.

6. **Code Editing and Maintenance**:

- Allow ease of development and code maintenance using VS Code as the primary code editor

3.4 Non-Functionality Requirements

1. **Performance**:

- The system should operate efficiently with a minimum of 512GB RAM, ensuring responsiveness even on basic hardware configurations.
- Handle simultaneous access by multiple Sangha members without significant lag, especially during peak usage for events or meetings.

2. **Reliability**:

- Ensure the system is reliable with minimal downtime during regular Sangha operations or maintenance tasks.
- Maintain consistent data integrity, ensuring the safety of member records, event details, and financial information, even during unexpected server crashes or restarts.

3. **Usability**:

   - The interface should be intuitive and user-friendly, enabling Sangha members to navigate the system with minimal training or technical expertise.
   - Provide a responsive design compatible with various screen sizes, including desktops, tablets, and mobile devices, to ensure accessibility for all members.

4. **Scalability**:

   - Design the system to support future growth, including larger datasets for membership records, events, or financial transactions.
   - Facilitate easy scaling of the database and server configuration as the Sangha's activities and member base expand.

5. **Security**:

   - Protect sensitive Sangha data from vulnerabilities such as SQL injection and unauthorized access.
   - Regularly update the server and codebase to address potential security risks and ensure data privacy for members and activities.

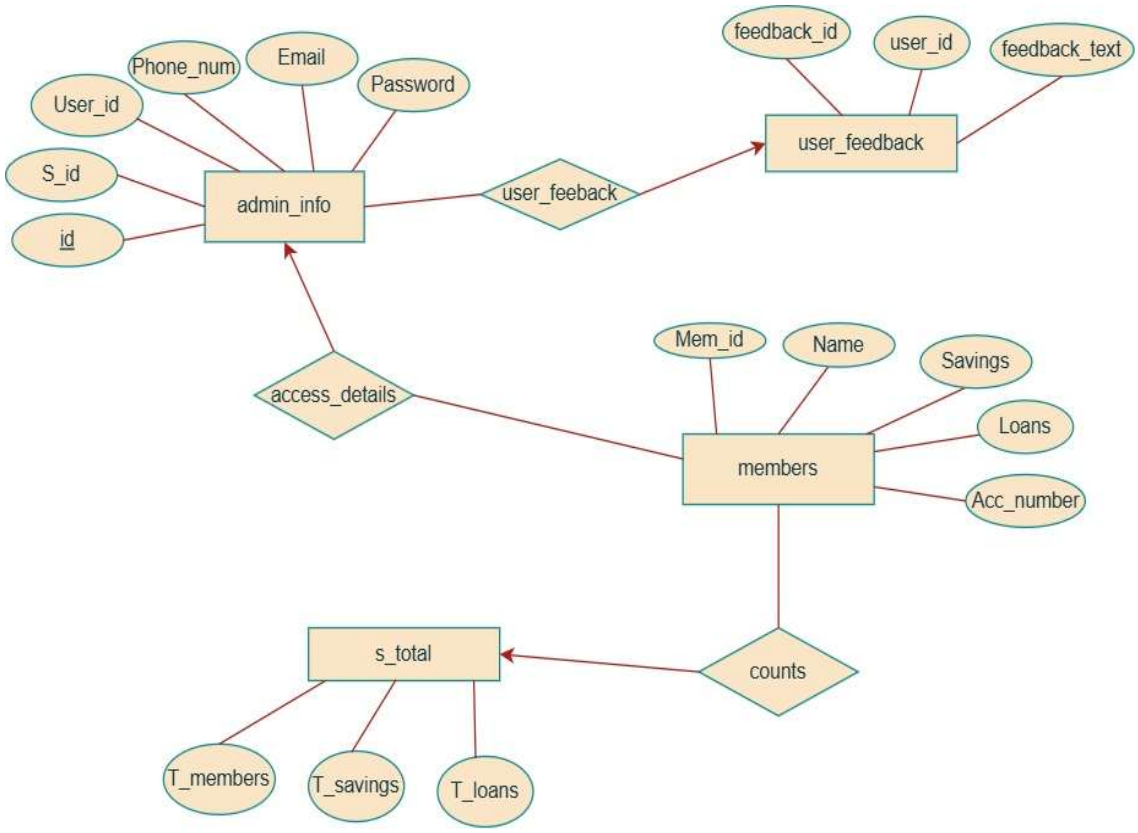
6. **Maintainability**:

   - Ensure the codebase is modular and well-documented to simplify debugging and the addition of new features.
   - Enable seamless integration of new modules or functionalities to support evolving Sangha requirements without affecting existing operations

CHAPTER 4

SYSTEM ARCHITECTURE

4.1 ER Diagram



CHAPTER 5

SYSTEM DESIGN

5.1 Database Table Structure

id	S_id	user_id	Phone_num	Email	Password
1	1	1245	6365583019	admin@gmail.com	admin@123

Mem_id	Name	Savings	Loans	Acc_number
1	Bhagya	300	0	51420100538

T_members	T_savings	T_loans
1	300	0

feedback_id	user_id	feedback_text	createdat
1	1	'Nice website'	2024-12-26 02:00:05

CHAPTER 6

IMPLEMENTATION

6.1 Packages

1.Express

- Description: Express is a web application framework for Node.js that simplifies the process of building web applications and APIs. It provides robust routing and middleware options.
- Usage:
    1. Define application routes (e.g., GET, POST, etc.).
    2. Handle HTTP requests and responses.
    3. Serve static files like images, CSS, and JavaScript.

2. EJS (Embedded JavaScript)

- Description: EJS is a template engine for rendering HTML pages dynamically. It allows you to embed JavaScript logic into HTML templates for dynamic content generation.
- Usage:
    1. Render dynamic HTML pages with data passed from the server.
    2. Use loops and conditions directly in the template for customization.

2. EJS (Embedded JavaScript)

- Description: bcrypt is a Node.js package that provides robust hashing functionality for securely storing and managing passwords. It uses the bcrypt hashing algorithm, which includes salting to protect against dictionary attacks and rainbow table attacks.
- Usage:

    1. Generate secure hashed passwords for storage in your database.
    2. Compare a user's input with the stored hash to validate credentials.
    3. Automatically generates and incorporates a unique salt for each password to enhance security.

4.MySQL

- Description: MySQL is a Node.js package that allows interaction with a MySQL database. It provides methods for querying, managing, and retrieving data from the database.
- Usage:
    1. Connect to the database and execute queries.
    2. Perform CRUD operations on tables.

6.Body-Parser

- Description: Body-Parser is middleware that parses incoming request bodies in a middleware before your handlers. It parses JSON, URL-encoded, and other data formats.
- Usage:
    1. Parse JSON and form data from HTTP POST requests.
    2. Extract data from the req.body object in Express.

6.2 Functions

1.use

Purpose: Attaches middleware to the Express app. Middleware functions are executed sequentially to process requests and responses.

2.set

Purpose: Used to set application settings or configurations in an Express app.

3.get

Purpose: Defines a route to handle HTTP GET requests.

4.post

Purpose: Defines a route to handle HTTP POST requests, often used for form submissions or API calls.

5.listen

Purpose: Starts the server and listens for incoming connections on a specified port.

6.require

Purpose: Imports external modules or files into your Node.js application.

6.3 Pseudocode for Backend Implementation

1. Use method

```
app.use(bodyParser.urlencoded({ extended: true }));
app.use(bodyParser.json());
```

2. Set method

```
// Set EJS as the view engine
app.set('view engine', 'ejs');
app.set('views', path.join(__dirname, 'views'));
```

3. Get method

```
app.get('/members', (req, res) =>{});
```

4. Post method

```
app.post('/register', (req, res) => {
  const { Sanghaid, Name, phoneNumber, email, Password, ConfirmPassword } = req.body;

  // Check if password and confirm password match
  if (Password !== ConfirmPassword) {
    return res.status(400).send(`
      <script>
        alert('Passwords do not match');
        window.location.href = '/ssms/signup';
      </script>`);
  }

  // Insert data into the database
  const query = `INSERT INTO admin_info (S_id, User_id, Phone_num, Email, Password) VALUES (?, ?, ?, ?, ?)`;
  db.query(query, [Sanghaid, Name, phoneNumber, email, Password]);
```

5. Listen method

```
// Start the server
app.listen(3000, () => {
  console.log('Server is running on port 3000');
  console.log('Click on link to open website: localhost:3000/ssms');
});
```

6. CreateConnection method

```
const db = mysql.createConnection({
host: 'localhost',
user: 'root', // replace with your MySQL username
password: '', // replace with your MySQL password
database: 'ssms' // replace with your database name
});
```

CHAPTER 7

TESTING

7.1 Test Cases for Functional Requirements

Test Case ID	Description	Input	Expected Result	Status
TC001	Verify login with valid credentials	Email: admin@gmail.com Password: admin@123	User is successfully logged in	Pass
TC002	Verify login with invalid credentials	Email: test@gmail.com Password: admin@123	Alter message: "Invalid user details"	Pass

7.2 Data Integrity

Test Case ID	Description	Input	Expected Result	Status
TC003	Verify data is encrypted during transmission	Monitor network traffic	Data packets should be encrypted	Pass
TC004	Ensure database integrity after a vote is cast	Add-money	Money is addded correctly in the database	Passl
TC005	Test for SQL injection vulnerability	Enter malicious input: ';DROP TABLE votes;--	Input is sanitized, system handles safely	Pass

7.3 Scalability

Test Case ID	Description	Input	Expected Result	Status
TC006	Test system performance under high traffic	Simulate 1000 concurrent users	System remains responsive, no crashes	Pass
TC007	Verify database can handle multiple updates concurrently	Login and update from multiple users simultaneously	Website loaded and worked correctly	Pass

7.4 User Experience

Test Case ID	Description	Input	Expected Result	Status
TC008	Verify responsiveness of the UI	Open on different devices (desktop, tablet, mobile)	UI adjusts appropriately to screen size	Pass
TC009	Ensure error messages are user-friendly	Enter invalid input in any form	User-friendly error message displayed	Pass
TC010	Test navigation between pages	Click on various links/buttons	Pages load without errors	Pass

7.5 Hardware Requirements

Test Case ID	Description	Input	Expected Result	Status
TC012	Test system functionality on minimum hardware	System with 512MB RAM	System operates without performance degradation	Pass/Fail

7.6 Software Requirements

Test Case ID	Description	Input	Expected Result	Status
TC013	Verify compatibility with the specified server	Deploy on XAMPP server	Application works correctly	Pass
TC014	Verify database connection	Start XAMPP, query MySQL DB	Database connects successfully	Pass

7.7 Test Cases for updating Savings and Loans of members

Test Case ID	Description	Input	Expected Result	Status
TC015	Adding money for savings of the members	Adding money using input tag	The money should be added to particular member.	Pass
TC016	Add or remove money from loans of the members	Adding / removing money using input tag	The money should be added / removed from particular member.	Pass

These test cases ensure the system is robust, user-friendly, secure, and meets both functional and non-functional requirements.

CHAPTER 8

RESULT

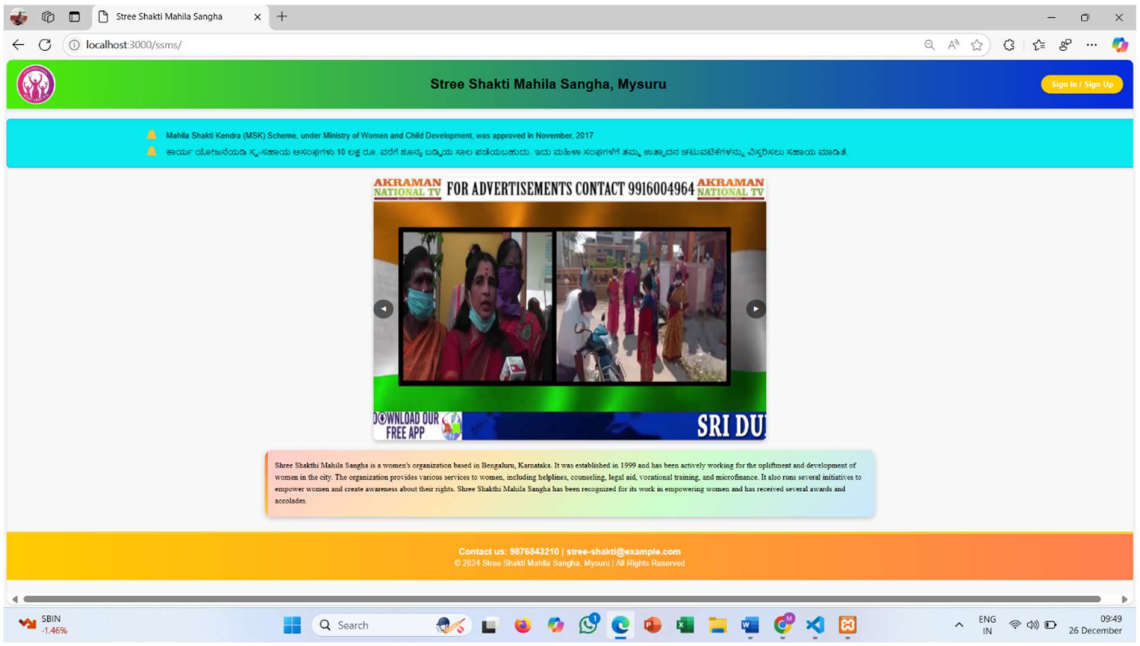


Figure 8.1

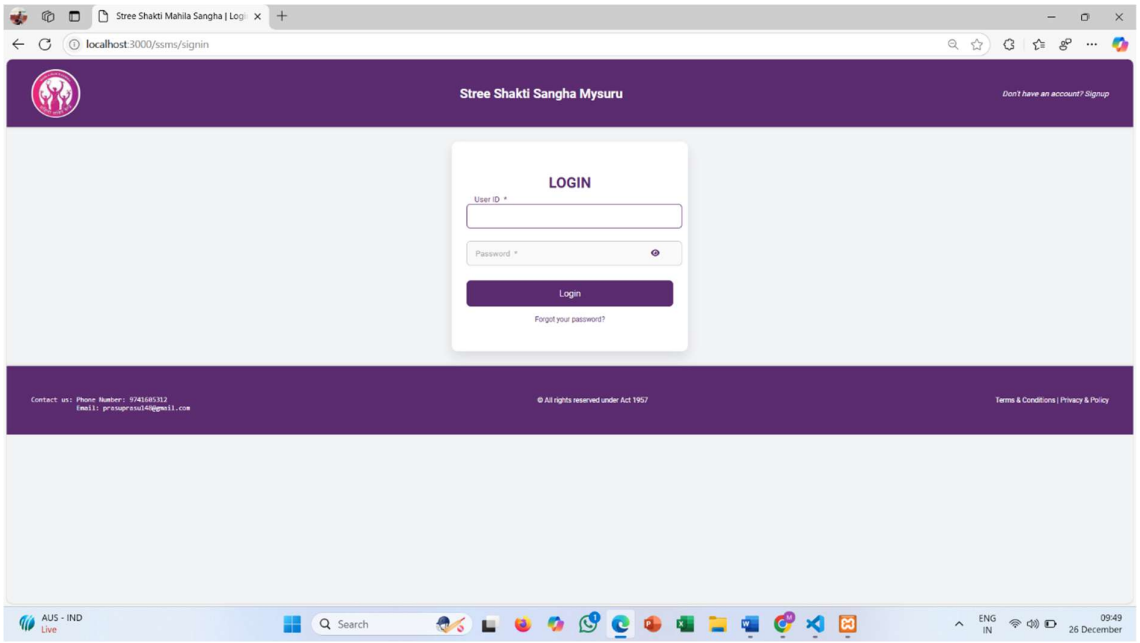


Figure 8.2

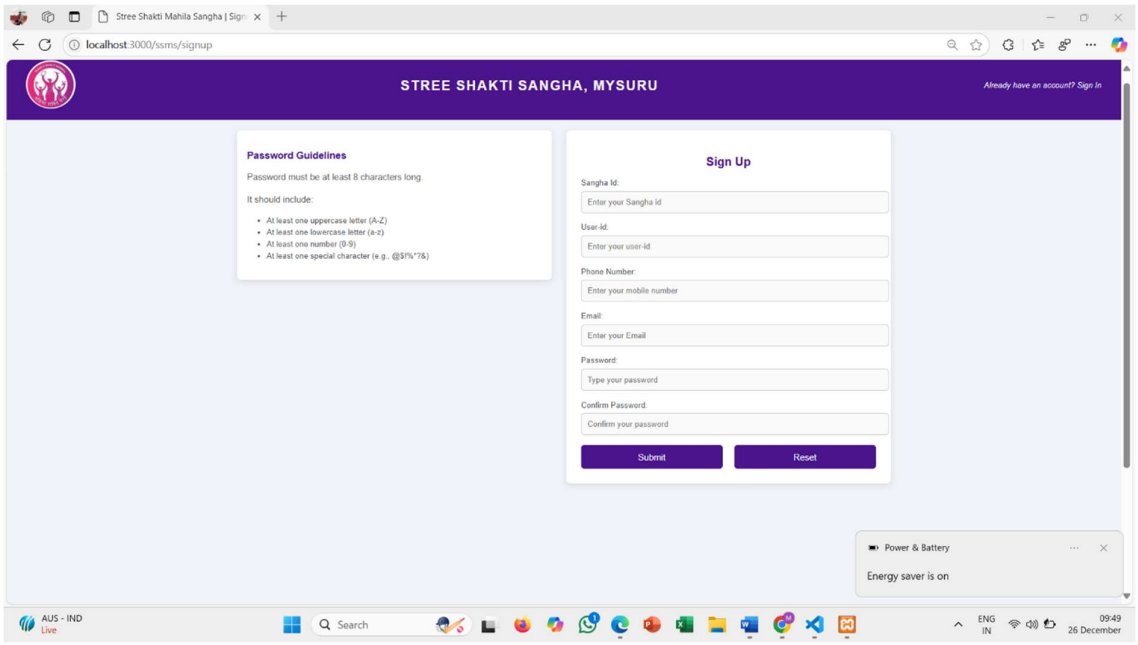


Figure 8.3

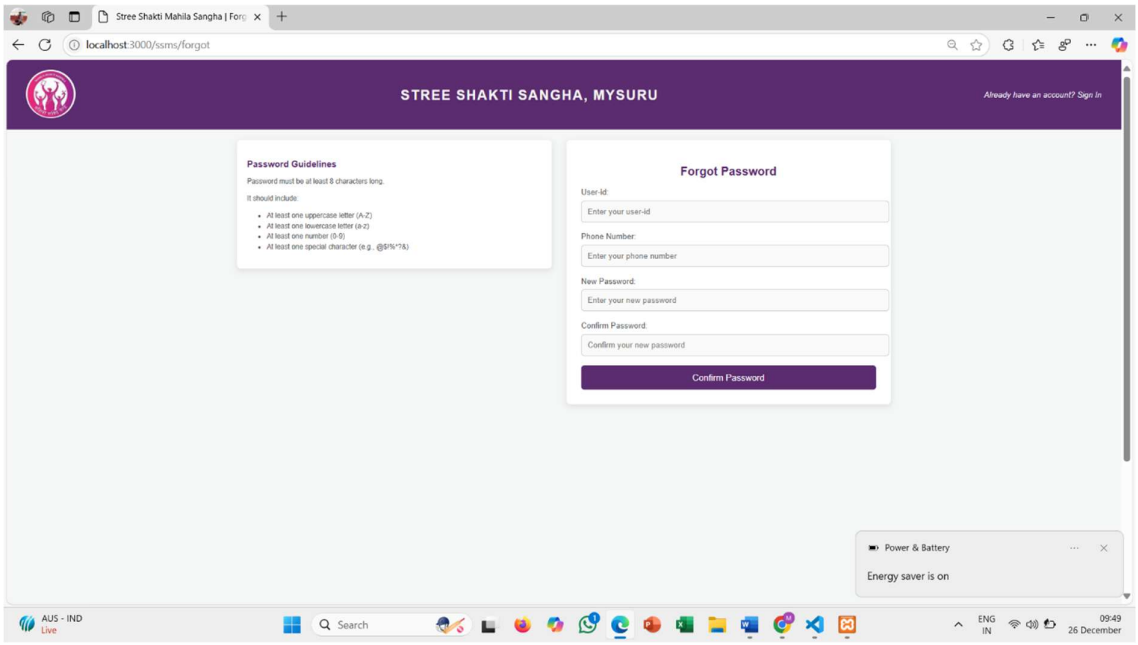


Figure 8.4

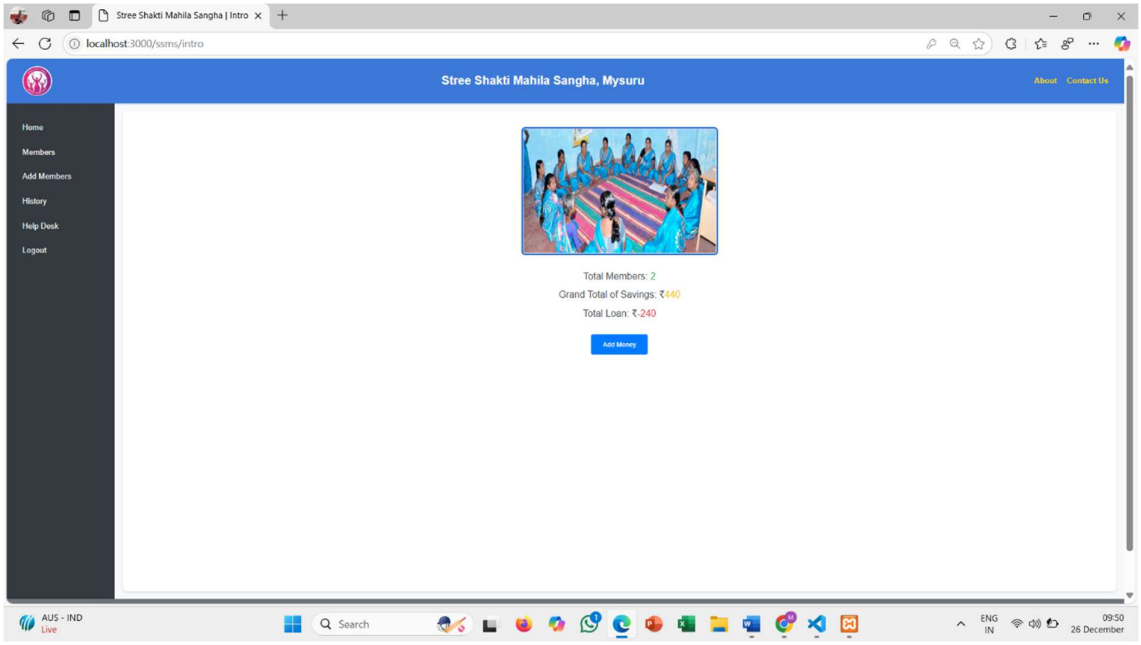
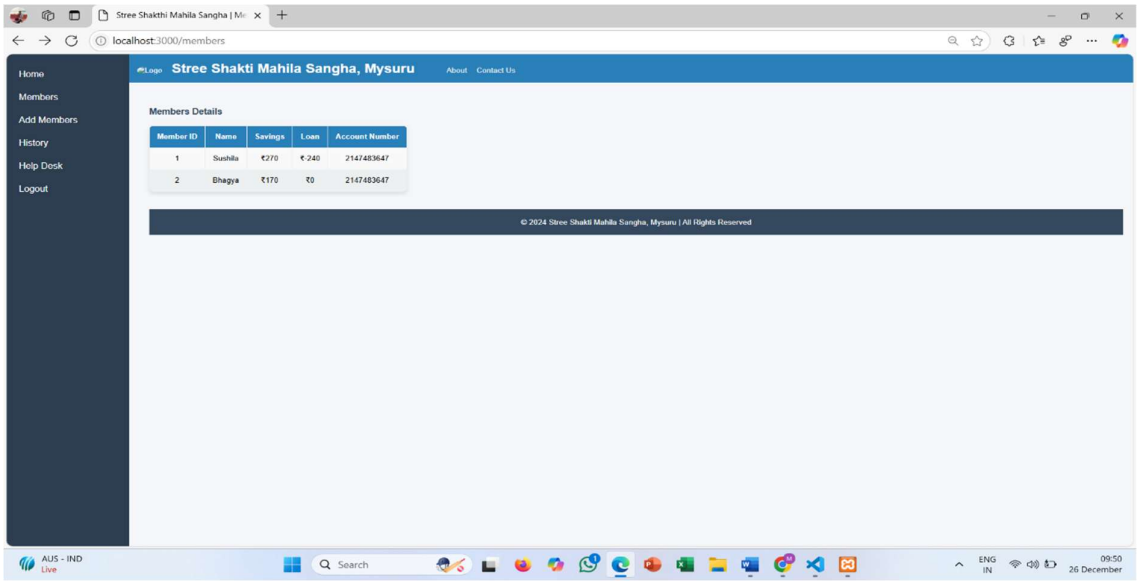


Figure 8.5



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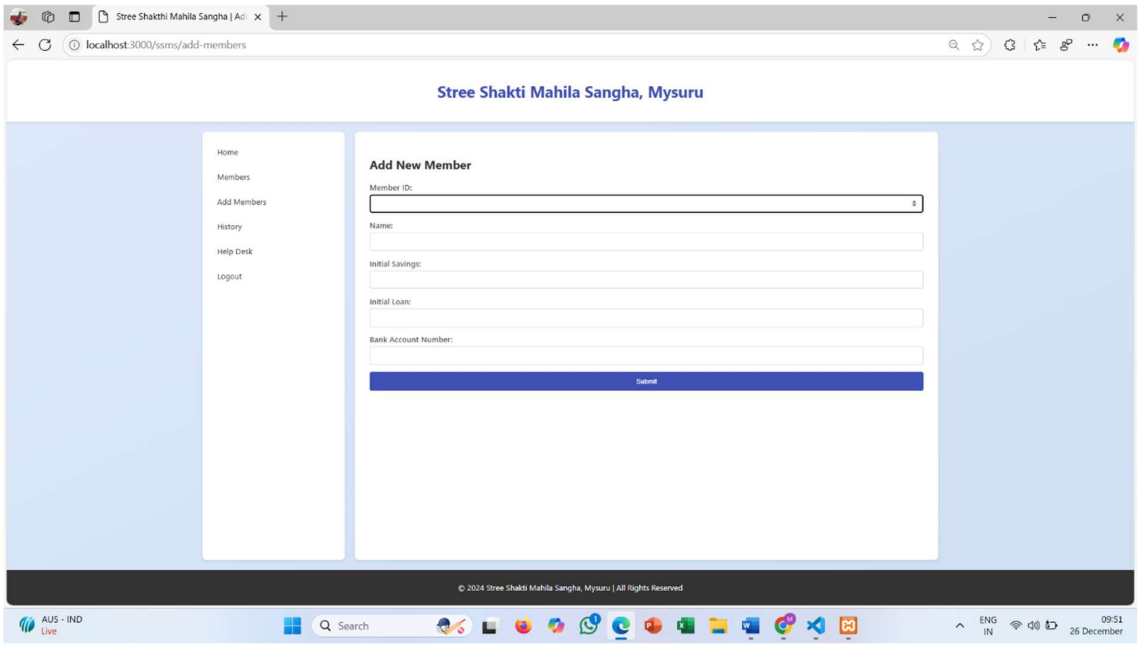

Figure 8.7

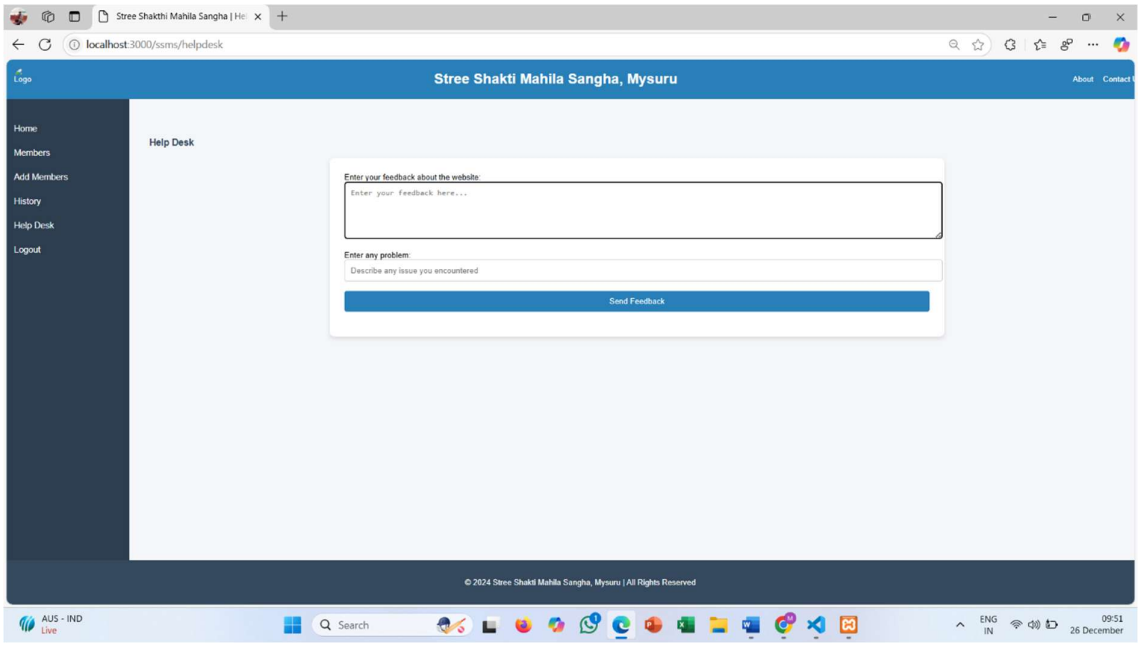

Figure 8.8

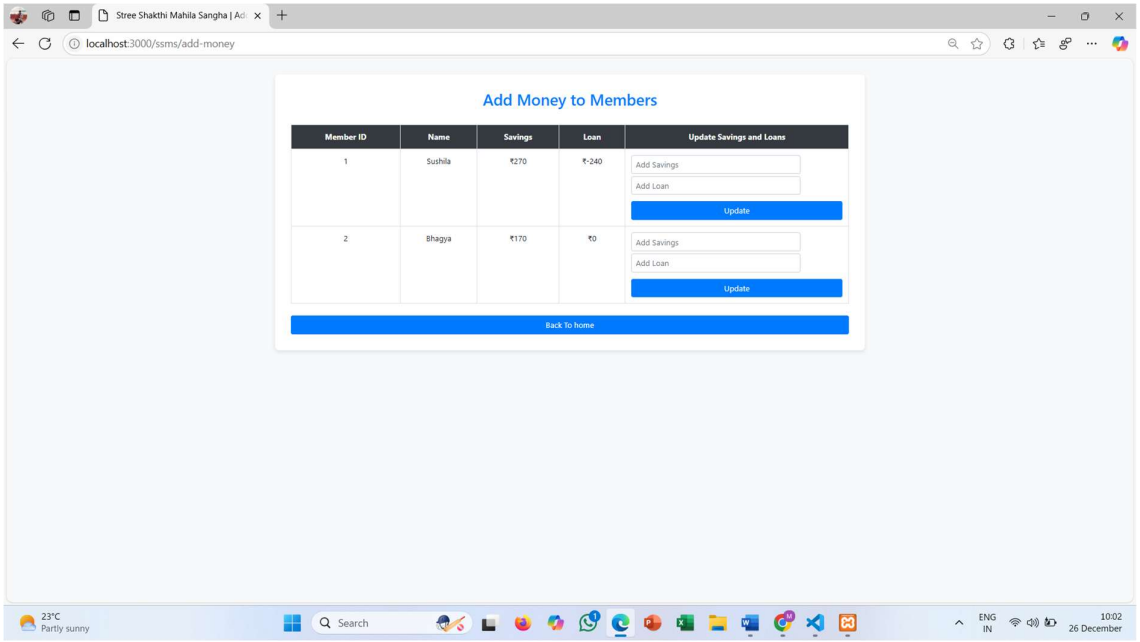
Stree Shakthi Mahila Sangha | Ad
localhost:3000/ssms/add-money
Add Money to Members
Member ID
Name
Savings
Loan
Update Savings and Loans
1
Sushila
₹270
₹-240
Add Savings
Add Loan
Update
2
Bhagya
₹170
₹0
Add Savings
Add Loan
Update
Back To home
23°C
Partly sunny
Search
ENG
IN
10:02
26 December

Figure 8.9

CONCLUSION

The Shree Shakthi Mahila Sangha project is an important step towards empowering women by transitioning the organization from traditional manual processes to a modern digital platform. With features such as a centralized database for managing members, tracking activities, and a responsive helpdesk system, the project simplifies administrative tasks and improves communication. These advancements ensure greater efficiency, accessibility, and inclusivity, enabling the Sangha to provide better support to its members and their initiatives.

This digital transformation has the potential to ensure long-term sustainability and growth for the Sangha. Future additions like mobile application support, multilingual features, and data analytics can further enhance its impact and expand its reach. This project demonstrates how technology can be effectively utilized to empower communities and improve organizational efficiency, setting an example for similar initiatives.

REFERENCES

- freeCodeCamp - Offers tutorials and project-based learning for HTML, CSS, JavaScript.
- MDN Web Docs - Comprehensive documentation on web development technologies.
- https://www.youtube.com/watch?v=TlB_eWDSMt4 – Helped learn and implement node.js.
- www.googlescholar.com – used to know information about stree shakthi sangha.
- www.chatgpt.com – helped to identify and debug errors.
- www.github.com - to create repository and save documentation of the file.