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Smart Chit Fund Management System

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Abstract— Chit fund services are widely used as a financial arrangement because members require flexible savings options and access to funds. Traditional chit fund management can involve manual recordkeeping, which may lead to difficulties in tracking payments, managing auctions, and maintaining financial records. The Smart Chit Fund Management System is proposed as a digital platform that simplifies chit fund operations and provides centralized management of members and chit groups. Member records provide information about contributions and payment status, while the platform supports installment tracking, auction management, and payout records. Database technologies and web-based interfaces are used to support member management, transaction tracking, and report generation. Administrators can manage chit groups, monitor payments, and maintain financial records through the same platform. The proposed system therefore combines member management, payments, auctions, and payouts within a single organized financial management system.

Keywords— Smart Chit Fund Management System, Financial Management, Chit Groups, Auction Management, Payment Tracking, Database Management, Web Application.

I. INTRODUCTION

Over the years, the financial sector has increasingly adopted digital technologies to improve financial management and accessibility. Chit funds provide a savings and borrowing mechanism in which members contribute a fixed amount at regular intervals and receive the collected amount according to the rules of the group. However, traditional chit fund operations often depend on manual recordkeeping, which can create difficulties in managing members, tracking installment payments, and maintaining accurate financial records. The Smart Chit Fund Management System addresses these limitations through a technology-based platform that centralizes chit fund activities. The system enables administrators to create chit groups, manage member information, monitor payments, and maintain auction and payout records. Members can access relevant information about their contributions, payment history, and chit group activities through a common platform. The proposed system combines member management, installment tracking, auction management, payment records, and financial reporting to provide an organized and efficient approach to chit fund management.

II. LITERATURE SURVEY

Digital financial management systems have increasingly adopted web technologies and database management to simplify financial transactions and recordkeeping. Traditional chit fund management practices may involve manual documentation, which

can create difficulties in maintaining accurate member records, tracking installment payments, and managing auction activities. Existing financial management systems provide facilities for transaction tracking and reporting, but they may not fully address the specific requirements of chit fund operations. Database management systems support structured storage and retrieval of member details, payment histories, and financial records. Web-based applications provide a centralized environment for administrators and members to access relevant information. Digital payment technologies can further simplify transaction processing and improve payment traceability. The Smart Chit Fund Management System applies these concepts to a centralized platform that integrates member management, chit group creation, installment tracking, auction records, payout management, and financial reporting within a single application.

III. SYSTEM ARCHITECTURE

The Smart Chit Fund Management System follows a multi-tier architecture that separates the responsibilities of users, application services, and data management. This arrangement is intended to make the system modular, reliable, and easier to maintain as the number of members and chit groups increases. The architecture consists of three connected layers: the presentation layer, the application layer, and the data layer.

Presentation Layer (Frontend): This layer provides the interface through which administrators and members interact with the application. It allows administrators to create chit groups, manage member details, monitor installment payments, and maintain auction records. Members can view chit group information, payment histories, installment schedules, and payout details through the same interface. A simple and responsive design improves accessibility and makes routine operations easier to perform.

Application Layer (Backend): The backend contains the business logic that coordinates requests from administrators and members. It handles authentication, member registration, chit group management, installment tracking, auction processing, payout management, and report generation. Validation and access control mechanisms help ensure that users perform only authorized operations. The application layer also coordinates communication between the frontend and the database to maintain consistent financial records.

Data Layer (Database): This layer provides persistent storage for information generated by the application. It maintains user accounts, chit group details, membership records, installment schedules, payment histories, auction details, and payout information. Appropriate database relationships and constraints help maintain data integrity and reduce inconsistencies. The database also supports efficient retrieval of financial records for monitoring, transaction tracking, and report generation.

IV. METHODS & IMPLEMENTATION

A modular implementation strategy is used to develop the Smart Chit Fund Management System, allowing individual functions to be developed and maintained independently. The development process involves requirement analysis, system design, implementation, testing, and refinement. This approach helps organize development activities and ensures that different modules work together to support chit fund operations.

Admin & Member Modules: The administrator module allows authorized users to create chit groups, manage member information, monitor installment collections, and maintain auction and payout records. The member module provides facilities for accessing chit group details, viewing installment schedules, checking payment histories, and monitoring relevant financial information. These modules provide a common platform for managing interactions between administrators and members.

Chit Group Management: Chit group management involves configuring the total chit value, installment amount, duration, and maximum number of members. The system maintains group details and membership records in a structured manner. Validation mechanisms help ensure that the entered information satisfies the configured requirements before the group is created.

Payment & Installment Management: The payment management module maintains installment schedules, payment records, and outstanding amounts. The system records relevant transaction details and updates payment statuses to help administrators monitor collections. Members can view their payment histories and installment information, improving accessibility and transparency in financial recordkeeping.

Auction & Payout Management: The auction module maintains auction dates, bid information, winning members, and auction outcomes according to the configured chit group rules. The payout module records the amount payable to eligible members, applicable deductions, payout dates, and transaction status. These modules help organize auction activities and maintain records of fund distribution.

System Monitoring & Quality Assurance: The system includes facilities for monitoring financial records, generating reports, and reviewing chit group activities. Input validation and role-based access control help protect information and prevent unauthor-

ized operations. Testing is performed to verify individual modules, interactions between components, and the overall behavior of the application before deployment These modules help organize auction activities and maintain records of fund distribution.

V. TECHNICAL STACK

The Smart Chit Fund Management System uses a modular technology stack to support efficient financial record management and future expansion. The system architecture separates the presentation, application, and database layers, making development and maintenance easier. The selected technologies support user authentication, chit group management, installment tracking, auction records, payout management, and financial reporting.

The presentation layer can be developed using HTML, CSS, and JavaScript to provide a user-friendly interface for administrators and members. These technologies help create responsive web pages for member registration, chit group details, payment histories, and administrative dashboards. A simple interface improves accessibility and allows users to perform routine operations efficiently.

The application layer can be implemented using Python Flask or another suitable backend framework to handle the business logic and communication between the frontend and database. The backend manages authentication, member registration, chit group creation, installment records, auction information, payout details, and report generation. Input validation and role-based access control help maintain the security and consistency of financial information.

The database layer can use MySQL or SQLite to store user accounts, chit group details, membership records, installment schedules, payment histories, auction information, and payout records. Appropriate database relationships and constraints help maintain data integrity and support efficient retrieval of financial information. Visual Studio Code can be used for development, while Git and GitHub can support version control and project management. Together, these technologies provide the foundation for developing an organized and maintainable chit fund management application.

VI. RESULTS & DISCUSSION

The Smart Chit Fund Management System provides a centralized platform for managing chit fund activities, including member management, chit group creation, installment tracking, auction records, and payout management. The system organizes essential financial information within a common application, reducing dependence on manual recordkeeping and simplifying the management of chit fund operations. The modular architecture supports interaction between administrators, members, and the database, providing an organized workflow for managing financial records.

The administrator module provides facilities for creating chit groups, managing member information, monitoring installment collections, and maintaining auction and payout records. These functions help administrators organize chit fund activities and access relevant financial information efficiently. The member module allows users to view chit group details, installment schedules, payment histories, and payout information, improving accessibility and transparency.

Home Page/User Dashboard



Figure 1: Login Page/User Dashboard

The login page provides a secure entry point for administrators and registered members to access the Smart Chit Fund Management System. Users can enter their registered email address or mobile number and password to authenticate their identity. The system validates the entered credentials and grants access according to the assigned user role. New members can register by providing the required personal details, while password recovery facilities help users regain access to their accounts. The login interface provides a simple and responsive design to improve accessibility and protect user information.

The user dashboard provides a centralized interface for members to manage their chit fund activities. It displays active chit groups, installment payment details, upcoming due dates, payment history, auction schedules, and payout information. Members can view available chit schemes, join eligi

Member Dashboard

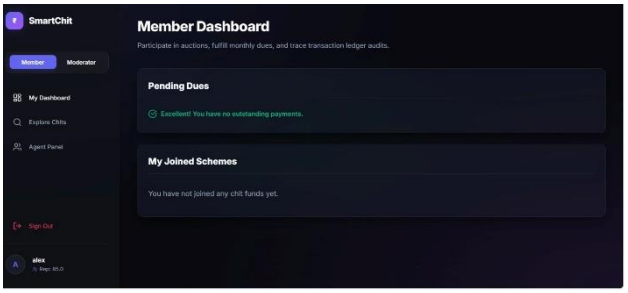


Figure 2: Member Dashboard and joined groups

The Member Dashboard provides a centralized interface for members to manage their chit fund activities. It displays pending dues, joined chit schemes, and other relevant information related to member participation. The dashboard allows members to explore

available chit funds, monitor their installment payments, and access their account details. The pending dues section helps members identify outstanding payments, while the joined schemes section displays the chit funds in which they have enrolled. The interface also provides navigation options for the dashboard, chit exploration, and agent panel. A sign-out option ensures that members can securely exit the system. The dashboard improves accessibility, simplifies financial tracking, and provides a user-friendly platform for managing chit fund activities.

Create And Manage Chit Group

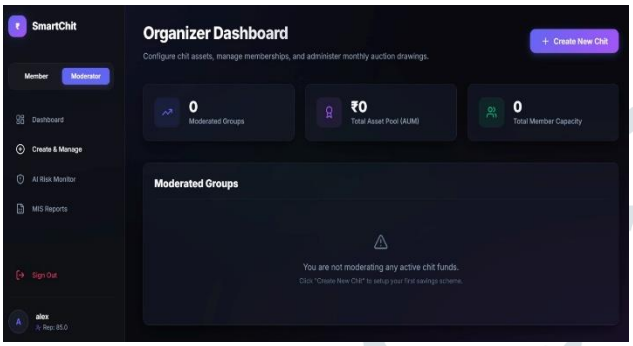


Figure 3: Organizer Panel Dashboard

The Organizer Dashboard provides a centralized interface for managing chit fund schemes and monitoring their overall activities. It displays key information, including the number of moderated groups, total asset pool, and total member capacity. Organizers can create new chit schemes, configure chit details, manage memberships, and administer monthly auction activities. The dashboard also includes an AI Risk Monitor to identify potential financial risks and an MIS Reports section to generate management information reports.

Introduce new member and referral roster

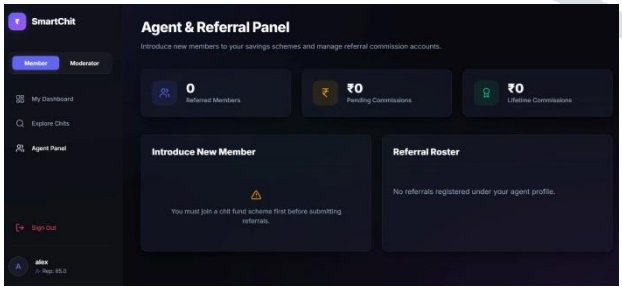


Figure 4: Agent and referral panel

The Agent and Referral Panel enables members to introduce new participants to available chit fund schemes and manage their referral activities. It displays key information, including the total number of referred members, pending commissions, and lifetime commissions earned. The introduce new member section supports the referral process, allowing eligible members to recommend the chit fund scheme to new participants. The referral roster maintains information about members registered through an agent's referral profile. The system also verifies scheme membership before allowing referrals to be submitted. This module helps expand the member network, improves referral tracking, and provides transparency in commission management. The panel simplifies referral activities and supports the efficient administration of member acquisition within the Smart Chit Fund Management System.

VII. CONCLUSION

The Smart Chit Fund Management System provides a digital platform for managing chit fund activities, including member registration, chit group creation, installment payments, auctions, and payout distribution. The application combines member management, financial transaction tracking, organizer administration, and referral management within a single system. Members can explore chit schemes, monitor pending dues, and track their participation, while organizers can create schemes, manage memberships, and administer monthly auction activities.

The system follows a modular architecture that separates the user interface, application logic, and data storage. This structure supports maintainability, scalability, and efficient communication between system components. Authentication, role-based access control, transaction records, and notification facilities help improve security, transparency, and reliability in managing financial activities. The dashboard provides members and organizers with convenient access to important information, reducing dependence on manual record-keeping and simplifying routine operations.

By integrating the major chit fund management functions into one application, the proposed system provides an organized and accessible approach to digital chit fund administration. It helps improve financial record management, supports timely installment tracking, and enables better monitoring of chit group activities. Further development could introduce advanced fraud detection, improved AI-based risk prediction, automated payment reminders, secure payment gateway integration, and mobile application support. These enhancements could strengthen financial monitoring, improve user experience, and extend the capabilities of the Smart Chit Fund Management System.

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