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Wealth Pool: Group Savings with Monthly Auctions

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Abstract— ***The Wealth Pool is a web-based chit fund system designed to enhance financial inclusion through a secure, automated, and transparent digital platform. Traditional chit funds in India often suffer from fraud, mismanagement, and operational inefficiencies, limiting accessibility and trust. This project leverages a multi-layered approach integrating Java Full Stack (Spring Boot, MySQL) with real-time bidding, automated transactions, and secure fund disbursement to mitigate risks and improve efficiency. The system introduces role-based access, where Admins oversee chit group creation, user verification, auction supervision, and fund distribution, while Participants can join chit groups, make monthly contributions, place bids, and receive funds through a competitive auction process. Key features include real-time payment tracking, penalty enforcement, AI-driven fraud detection, and automated notifications to enhance transparency and user experience. By combining digital automation, real-time analytics, and secure transactions, this system redefines the traditional chit fund model, making it more efficient, secure, and accessible. This paper explores the technical implementation, security measures, and the broader impact of digital chit funds on financial empowerment and economic stability.***

Keywords— Chit Funds, Digital Finance, Group Savings, Online Auctions, Real-Time Bidding, Secure Transactions, Automated Payments, Risk Mitigation, Financial Inclusion, Spring Boot, Java Full Stack, Machine Learning, Digital Automation, Real-Time Analytics, Economic Stability.

I. INTRODUCTION

In today's digital era, wealth management has become an essential aspect of financial planning for individuals, businesses, and corporations. With the increasing complexity of investment portfolios and financial markets, the need for efficient, technology-driven solutions has never been greater.

Traditional wealth management practices often rely on manual record-keeping, fragmented financial data, and time-consuming analysis, making it difficult for users to make informed decisions. As financial literacy remains a challenge for many, there is a pressing need for a comprehensive platform that simplifies financial tracking, enhances decision-making, and offers personalized investment insights.

Wealth Pool is a modern digital wealth management platform designed to address these challenges by integrating cutting-edge financial technologies. It aims to provide users with a seamless experience in tracking investments, optimizing asset allocation, and receiving AI-powered recommendations. By leveraging automation and data analytics, Wealth Pool enables individuals and businesses to gain better control over their finances without requiring in-depth financial expertise. The system consolidates all financial data into a single, intuitive interface, ensuring improved accessibility, transparency, and efficiency in financial planning.

One of the major issues in traditional financial management is the lack of centralized control over investments and financial assets. Users often have accounts spread across multiple banks, investment platforms, and asset management firms, making it difficult to obtain a clear and consolidated view of their financial health. Wealth Pool eliminates this fragmentation by providing a unified dashboard that presents a real-time overview of financial assets, allowing users to make informed decisions based on accurate and up-to-date information. The platform not only tracks expenses and savings but also analyzes spending habits and suggests ways to optimize wealth accumulation. The role of financial technology (FinTech) has been transformative in the wealth management sector. With the advancements in AI, machine learning, and blockchain, financial platforms are now capable of providing real-time analytics, automated transaction tracking, and secure wealth management solutions. Wealth Pool integrates these modern technologies to create a robust system that adapts to individual financial

needs while ensuring data security and compliance with financial regulations. By automating routine financial tasks and generating predictive insights, the platform minimizes the risks associated with manual financial management.

Wealth Pool is designed to serve a broad spectrum of users, from individuals managing personal finances to corporate entities handling complex investment portfolios. For individual users, it offers tools for budgeting, expense tracking, and investment recommendations, helping them grow their wealth efficiently. For businesses and large investors, the system provides risk assessment models, financial forecasting, and market trend analysis to enhance strategic investment planning. The AI-driven features ensure that every financial decision is backed by data-driven insights, reducing uncertainties and improving financial stability.

Security is a crucial factor in digital wealth management, and Wealth Pool prioritizes it by implementing robust security protocols such as encryption, multi-factor authentication, and blockchain technology. Cyber threats and financial fraud remain significant concerns in the online financial ecosystem, and ensuring a secure platform is essential to gaining users' trust. By integrating high-level encryption and regulatory compliance, Wealth Pool ensures that user data remains confidential and protected from unauthorized access.

This research paper aims to explore the design, development, and impact of Wealth Pool as a next-generation financial management platform. It will analyze the methodologies used in its implementation, the technological framework supporting its operations, and the practical applications of its features. Additionally, this study will examine the role of AI and automation in revolutionizing wealth management, comparing Wealth Pool to traditional financial management practices. Through this research, we will demonstrate how an intelligent financial platform can bridge the gap between financial expertise and everyday users, making financial planning more accessible and efficient.

The introduction of AI-driven financial platforms like Wealth Pool marks a significant shift in how financial decisions are made. By reducing dependency on manual calculations and guesswork, users can now make data-backed financial choices that align with their financial goals. This transformation is particularly relevant in today's economy, where financial stability and investment optimization are key factors in wealth accumulation. The ability to predict market trends, assess risks, and receive personalized recommendations gives users a competitive edge in managing their financial portfolios.

The scalability of Wealth Pool ensures that it can adapt to different financial needs, whether for a young professional managing monthly expenses or a large corporation optimizing its investment portfolio.

The platform's cloud-based infrastructure enables it to handle vast amounts of financial data while maintaining speed and efficiency. Moreover, its user-friendly design ensures that people with varying levels of financial knowledge can navigate and utilize the platform effectively. By integrating machine learning algorithms, Wealth Pool continuously improves its recommendations based on user behavior, market trends, and financial goals.

As digital transformation continues to reshape industries worldwide, the financial sector is no exception. The future of wealth management lies in automation, data-driven insights, and AI-powered financial planning. Wealth Pool is positioned to be a leader in this shift, providing innovative solutions that simplify financial decision-making and empower users to take control of their wealth. This research will delve into the underlying technology, potential market impact, and real-world applications of Wealth Pool, highlighting its significance in modern financial management.

Process of Chit Funds

The process of chit funds begins with the formation of a chit fund group, where individuals agree to contribute a fixed amount periodically. Each member deposits a predetermined amount into the common pool on a monthly basis. The pooled fund is then either auctioned to the highest bidder or allotted via a lottery system. The winning member receives the collected amount, minus a commission or fee for the organizer. This cycle continues until all members have received a payout, ensuring equal benefit for all participants. The structured nature of chit funds ensures that members have access to funds when needed while maintaining a disciplined savings approach.

To best explain its working, here's a simple example: Let's assume there is a chit fund with 20 members each contributing Rs. 5,000 per month for 20 months Thus total monthly collection in this chit fund = Rs. 100,000. Assume that in the 1st month, 3 members need funds and so they participate in the bidding process. Member 1 bids for Rs. 80,000 Member 2 bids for Rs. 75,000 Member 3 bids for Rs. 70,000 Thus, Member 3 becomes eligible to withdraw the money for the month as his bid is lower than the first member's bid. Thus, Foreman's fee = Rs. 5,000 (5% of Rs. 100,000) Member 3 can now withdraw Rs. 70,000 – Rs. 5,000=Rs. 65,000 The remaining Rs. 30,000 (Rs. 100,000- Rs. 70,000) is distributed equally among all the members, i.e.: Rs. 1,500 each. So after the first month, each member contributes only Rs. 3,500 (Rs 5,000- Rs 1,500) The same process is repeated every month for a total of 20 months.

Legal and Illegal Chit Funds

Legal chit funds are governed by the Chit Funds Act, 1982 in India, which mandates registration and regulation of chit fund companies. These legally operated chit funds require government approval and oversight to ensure transparency and fairness. They are managed by licensed institutions that follow structured contracts and proper governance. On the

other hand, illegal chit funds operate outside the legal framework, often unregistered and unauthorized. These fraudulent schemes may collect funds but fail to return payouts, leading to financial scams and losses for participants. The lack of regulatory oversight in illegal chit funds makes them highly risky. To ensure financial safety, individuals should only invest in registered chit funds that adhere to legal and governance standards.

II. LITERATURE REVIEW

This research paper, "Chit Funds as an Innovative Access to Finance for Low-Income Households," examines the role of chit funds as a financial tool that provides both savings and credit options to low-income households. The author highlights how chit funds serve as an essential financial instrument, particularly in rural and semi-urban areas where access to formal banking institutions is limited. The study emphasizes the dual function of chit funds—offering liquidity for immediate financial needs and enforcing disciplined savings behavior over time. The paper also discusses the regulatory challenges and potential risks associated with informal chit fund operations. It outlines cases where chit fund members have faced losses due to fraudulent practices and mismanagement. To address these concerns, the author suggests the need for government intervention, better regulatory frameworks, and the integration of technology to enhance transparency and security. The findings provide insights into how chit funds can complement formal financial services and contribute to broader financial inclusion.

The paper, "Chit Funds: Boon to Small Enterprises," explores how chit funds act as a vital financial resource for small and medium enterprises (SMEs), offering them an alternative source of working capital. The author argues that many small businesses struggle to obtain loans from formal financial institutions due to stringent eligibility criteria and lack of collateral. Chit funds fill this gap by providing a flexible and community-driven financial solution. The study delves into various chit fund models, such as open chit funds and closed chit funds, and evaluates their effectiveness in supporting business growth. It highlights the advantages of chit funds, including lower interest rates compared to informal money lenders, ease of access, and community trust. However, the paper also points out risks, such as delayed payments, defaulting members, and fraudulent operators. The author proposes solutions such as legal recognition, enhanced digital documentation, and partnerships between chit funds and financial regulators to improve their credibility and sustainability.

The review paper, "Exploring the Landscape of Financial Inclusion through the Lens of Financial Technologies: A Review," provides a comprehensive analysis of financial inclusion, with a specific focus on the role of financial technologies (FinTech) in bridging the financial gap for underserved populations. The study examines how digital solutions, including mobile banking, e-wallets, blockchain, and AI-driven financial services, have transformed access to financial resources.

The paper highlights how digital chit funds can enhance financial inclusion by reducing operational inefficiencies, increasing transparency, and improving security. It draws comparisons between traditional financial models and emerging FinTech-driven solutions, demonstrating how technology can minimize risks such as fund mismanagement and fraud. Additionally, the study explores global case studies where FinTech interventions have led to successful financial inclusion outcomes, providing a framework that could be adapted to the chit fund industry.

The paper, "Chit Funds System of India," provides an in-depth analysis of the chit fund system in India, exploring its historical significance, operational mechanisms, benefits, and associated risks. The author describes the fundamental working of chit funds, where members contribute fixed amounts periodically, and the pooled fund is allocated to one participant each cycle, either through bidding or a lottery system. The study identifies key challenges faced by traditional chit funds, including the lack of digital record-keeping, reliance on manual processes, susceptibility to fraud, and difficulties in regulatory enforcement. It also examines the impact of government regulations such as the Chit Funds Act, 1982, highlighting the need for stricter oversight to protect investors.Furthermore, the paper explores recent advancements in digital chit fund management, discussing how online platforms are leveraging FinTech solutions to address inefficiencies. The study concludes by recommending the adoption of digital payment methods, blockchain technology for fund security, and AI-driven fraud detection systems to modernize and regulate chit funds effectively.

The report, "The Global Findex Database 2017: Measuring Financial Inclusion and the FinTech Revolution," presents global data on financial inclusion and highlights the transformative impact of FinTech solutions on financial accessibility. The study examines trends in account ownership, savings behavior, and digital payment adoption across different regions, with a particular focus on low- and middle-income countries. One of the key findings of the report is the rapid adoption of mobile financial services, which have significantly increased financial participation among unbanked populations.

The study emphasizes the role of digital financial tools in enabling secure and efficient transactions, reducing dependency on cash-based systems. In the context of chit funds, the report's insights are highly relevant, as they demonstrate how mobile-based financial solutions can enhance accessibility and transparency. The study suggests that digital chit fund platforms can bridge the financial gap for individuals who lack traditional banking services by offering a structured savings mechanism and accessible credit options.

The report from ChitMonks, "ChitMonks - Enabling and Empowering Digital Chit Funds," showcases how blockchain

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and smart contracts can enhance chit fund management. The study explains how ChitMonks leverages decentralized ledger technology (DLT) to ensure transparency, security, and efficiency in chit fund transactions.

Key features discussed in the report include:

- Blockchain-based transaction recording: Every contribution, bid, and payout is securely recorded on a tamper-proof ledger, reducing the risk of fraud.
- Automated auction processes: Smart contracts execute payouts based on pre-defined rules, eliminating manual intervention and reducing operational inefficiencies.
- Regulatory compliance: Digital platforms ensure adherence to government regulations by integrating and digital verification mechanisms.
- AI-Powered Risk Assessment: The system uses AI models to assess the financial behavior of participants and predict the risk of late payments.

The study provides case studies of digital chit fund implementations that have successfully reduced default rates, improved user trust, and expanded financial accessibility. It concludes that digitization is the key to modernizing chit funds and making them a scalable financial solution for diverse user groups.

III. METHODOLOGY

The development of "Wealth Pool: Group Savings with Monthly Auctions" follows a structured approach to design, implement, and validate a digital chit fund system. This section details the system's architecture, key algorithms, implementation specifics, and testing strategies, emphasizing scalability, security, and user-centric design. The methodology integrates modern web technologies with foundational principles of financial group savings, providing a robust framework for future AI/ML enhancements.

System Design

The Wealth Pool system is architecturally divided into three layers: presentation, application, and data, ensuring modularity and scalability. Presentation Layer: Built using HTML5, CSS3, and JavaScript, with Bootstrap for responsive design. The frontend ensures cross-device compatibility (desktop, tablet, mobile) and employs asynchronous JavaScript (AJAX) for real-time updates, such as auction status and transaction notifications. User interfaces include dashboards for both users (e.g., group listings, payment history) and admins (e.g., group management, auction oversight), designed with usability principles like intuitive navigation and consistent layouts.

Application Layer: Powered by Java Spring Boot, a lightweight framework for creating RESTful APIs. Spring Boot's embedded Tomcat server simplifies deployment. Key components include:

User Management: Handles registration, authentication, and role-based access control (RBAC) using Spring Security with JWT for session management. Chit Group Management: Manages group creation, membership, and contribution tracking via REST endpoints. Auction Engine: Executes monthly auctions, processes bids, and calculates surplus distribution. Dependency injection and Spring Data JPA reduce boilerplate code and enhance maintainability.

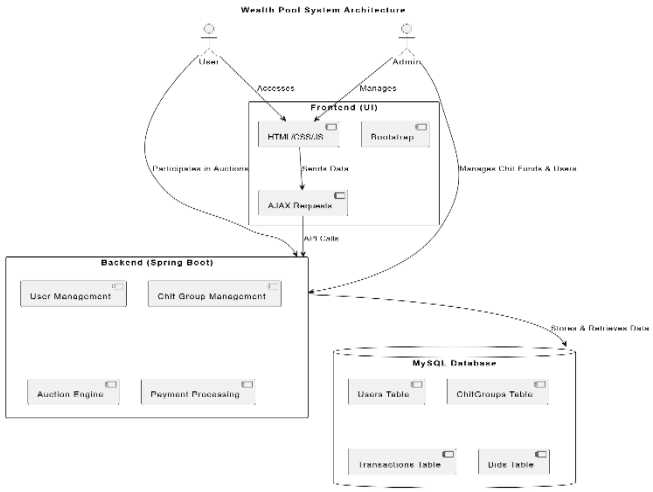

Fig1: System Architecture

Data Layer: Utilizes MySQL for its performance and open-source nature. The schema includes tables such as Users, Chit Groups, Transactions, and Bids, with indexing on frequently queried fields for fast retrieval.

Security Design: HTTPS with SSL/TLS encryption secures data transmission. Passwords are hashed bcrypt.

Auction Algorithm Design

The auction mechanism is the core innovation, designed to fairly distribute funds while incentivizing participation:

Input Collection: Monthly contributions from n subscribers (e.g., n = 50, C = ₹1000) create a pool $P = n \times C$ = ₹50,000. Users submit bids B_i, representing the amount they are willing to accept.

Winner Determination: The winner is the user with the lowest bid $B_{min}=\min(B_1,B_2,...,B_n)$. Ties are resolved via random selection.

Surplus Distribution: Surplus $S = P - B_{min}$ (e.g., S = ₹5,000) is calculated. After deducting an organizer fee F (e.g., 5%, F = ₹2,500), the remaining S_{net} = ₹2,500 is distributed as a dividend $D=S_{net}/(n-1) \approx$ ₹50 per non-winner.

Execution: Implemented as a Spring Boot service (AuctionService), triggered monthly via @Scheduled.

System Setup and Configuration

Frontend Setup: Use HTML, CSS, and JavaScript for designing the user interface, and optionally integrate frameworks like Bootstrap for responsive layouts. Structure the frontend with folders for HTML files, CSS stylesheets,

and JavaScript functionalities. Set up API integrations for data communication with the backend, ensuring responsiveness and interactivity.

Backend Setup: Configure a Spring Boot application for backend logic and REST API development, using dependencies for web and database interactions. Set up MySQL as the database for managing user data, chit groups, auctions, and transactions, with proper table designs. Use Git for version control to track and manage changes across the project.

Implementation of Core Modules

Chit Group Creation: The system allows admins to create chit groups with details such as group name, number of members, and monthly installments. User interfaces will include forms for entering group details, which are validated on submission. Backend logic ensures group data is saved to the database and accessible for future use.

Auction Workflow: Auctions are conducted monthly, with users bidding on the lowest amount they are willing to accept. The frontend displays auction details like date, base amount, and participants. The backend processes bids to determine the winner, updates auction statuses, and ensures proper handling of surplus distributions.

Payment and Transaction Management: Users can make payments via a dedicated interface with QR codes and view their transaction history. The backend manages payment processing, records transactions in the database, and ensures data integrity for monthly contributions and auction payouts.

IV. WORKFLOW

The Wealth Pool System operates as a digital chit fund platform where users participate in a structured savings and auction-based payout system. The workflow ensures transparency, security, and automation, enhancing the traditional chit fund model.

The user workflow diagram illustrates the step-by-step interaction of a user with the Wealth Pool - Group Savings with Monthly Auctions system. It outlines key processes including registration, authentication, chit group selection, payments, auctions, and profile management. Each step ensures a smooth, secure, and transparent experience for users participating in digital chit funds.

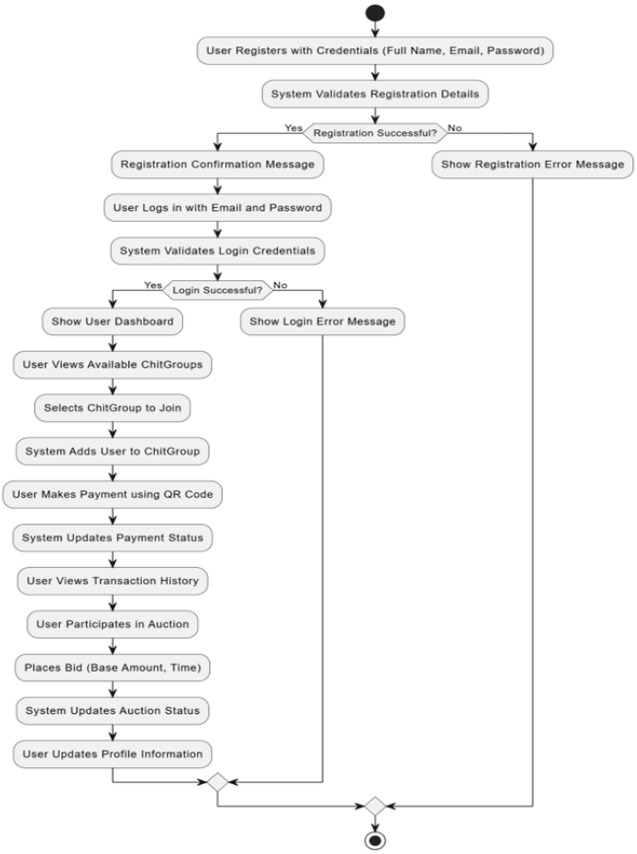

Fig2: User Workflow

The workflow begins with a user registering on the platform by providing their full name, email, and password. This is the initial step where the user creates an account to participate in the Wealth Pool system. The system collects this information and validates whether the entered details meet the necessary requirements. If the details are valid, the registration process proceeds. If the details are invalid (e.g., incorrect email format, weak password), an error message is displayed, and the user must correct their inputs. Once the user submits the registration form, the system checks whether the provided credentials meet security and regulatory standards. If the validation is successful, the system sends a registration confirmation message, allowing the user to proceed. However, if the registration fails due to issues like duplicate email IDs, missing fields, or incorrect formats, the user is shown a registration error message, prompting them to re-enter the correct information.

After successful registration, the user must log in using their email and password. The system verifies the entered credentials against stored records. If login is successful, the system redirects the user to their dashboard, where they can access various features. If login fails (e.g., incorrect password or non-existent account), the user is shown a login error message and must retry. This step ensures that only authorized users can access the platform, preventing unauthorized access. Upon successful login, the user is directed to their dashboard, where they can view available chit groups. The system presents different savings groups

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with details such as: Monthly contribution amount, Total tenure (e.g., 12 months, 24 months, etc.), Auction rules and payout methods. The user selects a chit group that aligns with their financial goals and confirms their participation. Once the user selects a chit group, the system adds them as a participant in that group. To secure their position, they must make an initial payment via a QR code payment method. The system processes the payment and updates the payment status. If the transaction is successful, the user is officially part of the chit group. If the payment fails, the system prompts the user to retry the payment. This step ensures that every participant is financially committed before entering the chit fund cycle.

Once payments are made, the user can view their transaction history, ensuring transparency in contributions and payouts. The next step is the monthly auction process, where participants bid for the pooled amount. Users place a bid by entering a base amount and time (discount they are willing to accept). The system updates the auction status and determines the lowest bidder. The winner receives the payout after deducting the agreed discount. This ensures a fair and automated auction process, eliminating manual errors. After each auction, the system updates all relevant statuses, including auction results, payments, and participant standing. Users can continue participating in subsequent auctions until the chit cycle completes. Additionally, users can update their profile information, such as contact details, payment preferences. The process repeats every month until all participants have won at least once. At the end of the chit cycle: Users can withdraw from the system or join a new chit group. The system provides financial reports and insights into past participation. By automating this process, the Wealth Pool system ensures a secure, transparent, and scalable chit fund experience, allowing users to save, bid, and benefit efficiently.

The admin workflow in the Wealth Pool: Group Savings with Monthly Auctions system is a structured process designed to ensure the efficient management of users, chit groups, auctions, and financial transactions. This workflow begins with the admin logging in using their registered email and password. The system verifies the login credentials against stored data to authenticate the admin. If the credentials are valid, access is granted to the admin dashboard; otherwise, an error message is displayed, restricting unauthorized access. This authentication step is crucial for securing sensitive financial and user data from potential breaches.

Once logged in, the admin dashboard provides a centralized view of all users and chit groups. This section acts as the control hub, allowing the admin to monitor active participants, manage ongoing chit groups, and oversee financial activities. From this dashboard, the admin can navigate to different functionalities, such as creating or modifying chit groups, setting up auctions, approving new users, and reviewing payment statuses. Having a well-structured dashboard enhances the admin's ability to make quick and informed decisions to maintain smooth operations.

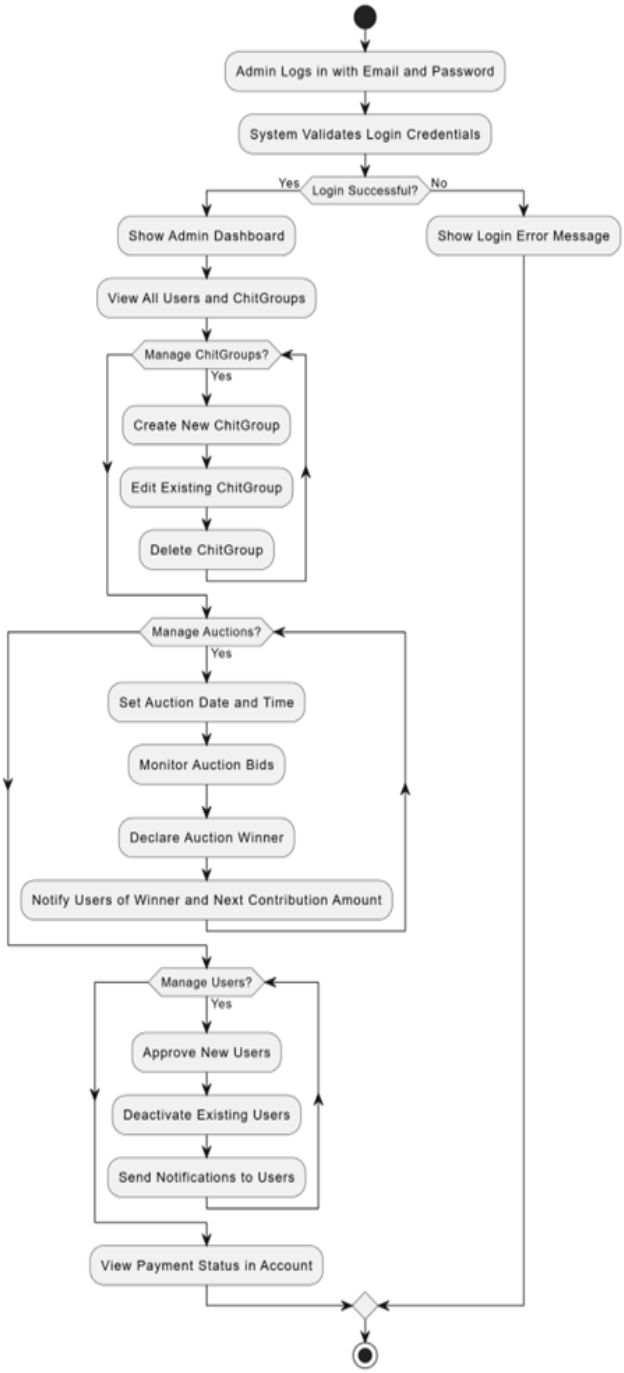

Fig3: Admin Workflow

A major responsibility of the admin is managing chit groups. Chit groups form the foundation of the Wealth Pool system, enabling users to save and bid for funds. The admin has the ability to create new chit groups, which involves defining parameters such as the chit group name, monthly contribution amount, total tenure, and number of participants. If required, the admin can edit existing chit groups, making modifications to rules, participant details, or contribution amounts. Additionally, the admin can delete chit groups that are inactive or no longer serving their intended purpose. This

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ensures that only valid and functioning chit groups remain in the system.

Another key function is auction management, which plays a vital role in determining the monthly winner who receives the pooled funds. The admin is responsible for setting auction dates and times, ensuring that all participants are aware of when bidding will take place. Once the auction is live, users place bids indicating the discount they are willing to offer on the total amount. The admin monitors the auction bids in real time to ensure transparency and fairness. After the auction concludes, the admin declares the auction winner—usually the participant who offers the highest discount. Following this, a notification is sent to all participants informing them of the winner and the next contribution amount.

Beyond auctions, user management is another crucial aspect of the admin's role. The admin approves new users after verifying their details, including their eKYC (electronic Know Your Customer) process, which may involve Aadhaar card verification. This verification ensures that only genuine users participate in chit groups. The admin also has the authority to deactivate users if they fail to comply with rules, miss payments, or attempt fraudulent activities. Additionally, the admin can send notifications to users, reminding them about upcoming auctions, payment deadlines, and important updates regarding their chit groups.

One of the most critical functions is payment management and tracking. The admin needs to ensure that all users make their contributions on time. Through the dashboard, the admin can view the payment status of each participant, track pending payments, and generate reports on financial transactions. If a user delays or misses a payment, the admin can take appropriate action, such as imposing penalties or sending reminders. This tracking mechanism is crucial for maintaining the financial stability of the chit fund system and ensuring that winners receive their funds promptly. The admin workflow is designed to be a continuous cycle, where each month's auction leads into the next.

Once an auction is completed and the winner is declared, the system prepares for the next round, requiring the admin to repeat the process of auction scheduling, bid monitoring, and winner declaration. This cycle continues until the chit group reaches its completion. The structured repetition ensures that the platform functions smoothly without disruptions.

Additionally, security measures and compliance are integrated into the admin workflow to prevent fraud, unauthorized access, or financial mismanagement. The authentication process ensures that only registered admins can access sensitive data, while real-time tracking of payments and auctions enhances transparency. Automated notifications and audit logs provide a detailed record of all actions taken, further strengthening the system's security and reliability.

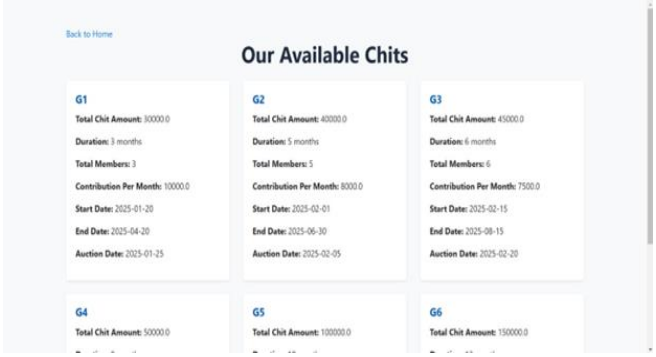
In conclusion, the admin workflow in the Wealth Pool system is essential for managing the entire chit fund process effectively. By handling user approvals, chit group management, auction oversight, payment tracking, and notifications, the admin plays a pivotal role in maintaining transparency and trust within the system. The structured and automated nature of this workflow minimizes errors, enhances efficiency, and ensures that participants experience a seamless and reliable savings process. Through continuous monitoring and real-time updates, the admin ensures that all users can engage in group savings with confidence and security.

V. RESULT AND DISCUSSION

The implementation of the Wealth Pool: Group Savings with Monthly Auctions system has yielded significant improvements in the management of chit funds, ensuring transparency, efficiency, and user engagement. The results of the system's admin workflow showcase how the structured processes contribute to a seamless experience for both admins and participants. This section evaluates the impact of key functionalities, discusses observed benefits, and highlights challenges faced during implementation.

Fig4: Home Page

The Wealth Pool homepage serves as an entry point for users interested in group savings through monthly auctions. The navigation bar provides access to key sections like Available Chits, Rules & Guidelines, Login, and Signup. The hero section welcomes users with a bold "Welcome to Wealth Pool" title and a background featuring financial elements, emphasizing savings and investment. Below, the "What are Chit Funds?" section explains the chit fund concept, where members pool money at regular intervals, and one participant receives the total amount each cycle. The homepage



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effectively introduces the platform, educates users, and encourages participation through a clean and engaging design.

This page displays available chit groups in the Wealth Pool platform, providing essential details for users to choose a suitable savings plan. Each chit group (G1, G2, G3, etc.) has a total chit amount, duration, total members, and monthly contribution. It also includes key dates such as start date, end date, and auction date.

Fig5: Available Chits

Fig7: Registration Page

This structured view helps users compare different chit plans before joining.

This is the registration page for the Wealth Pool platform, where users create an account by entering their name, email, password, date of birth, address, and Aadhaar number for identity verification. The design is clean, with structured input fields for easy registration. The background features financial graphs, reinforcing the platform's focus on savings and investments.

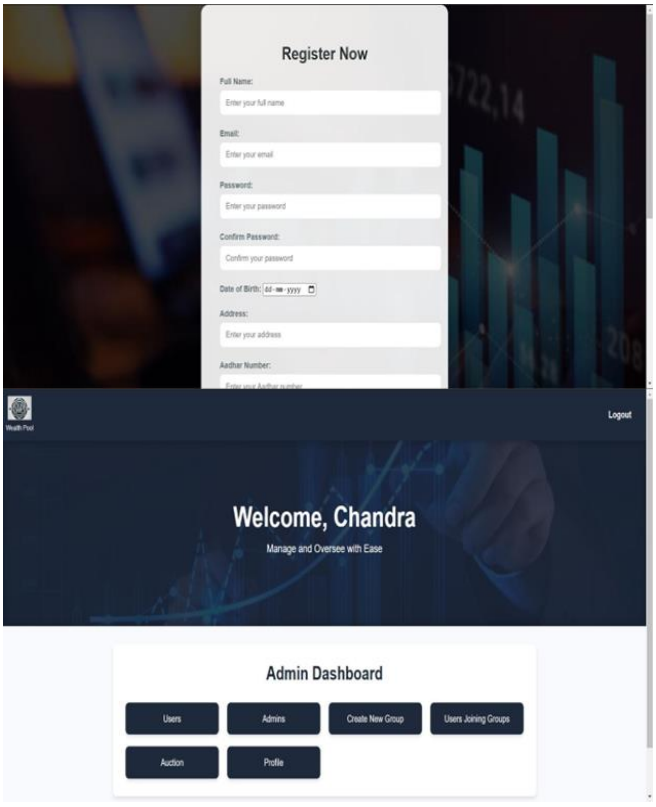
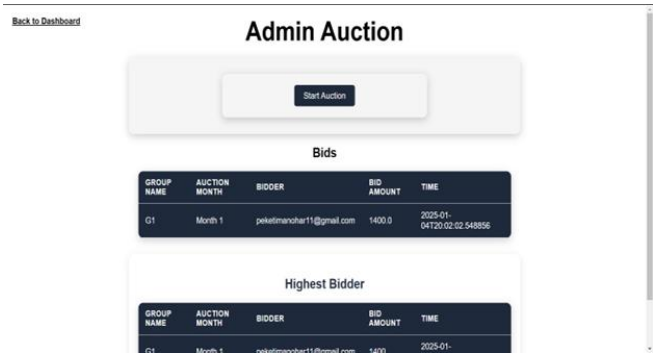


Fig8: Admin Dashboard

This is the Admin Dashboard of the Wealth Pool web application, which facilitates the management of group savings and monthly auctions (chit funds). The interface is designed for seamless navigation, enabling admins to oversee users, groups, and transactions effortlessly.

Features and Functionalities:

Dashboard Controls:



- Users & Admins: Allows the admin to view, manage, and update user and admin details.
- Create New Group: Enables the admin to set up new chit fund groups with defined parameters.
- Users Joining Groups: Tracks user participation and registration in different chit groups.
- Auction Management: Monitors ongoing and upcoming chit fund auctions, ensuring smooth execution.

Profile Section: Provides an option to update admin profile information and settings. This dashboard serves as the central control panel for admins, simplifying the process of managing chit groups, tracking users, handling auctions, and maintaining system efficiency.

This is the "Create New Group" page in the Wealth Pool web application, allowing an admin to create a new chit fund group. The form is structured to collect essential details required to set up a group for monthly savings and auctions.

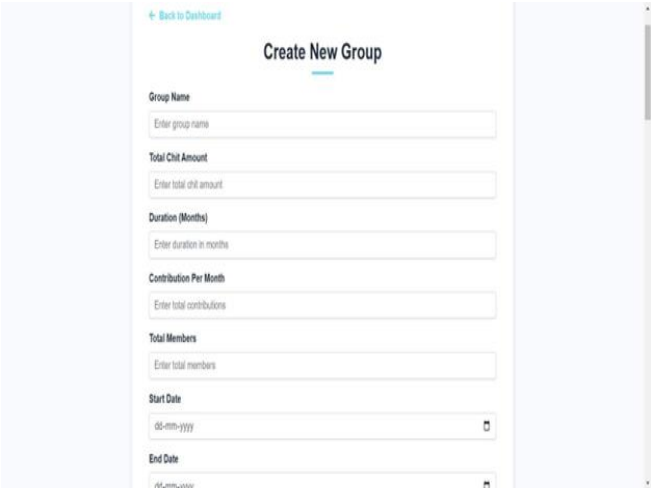


Fig9: Create New Group

Key Components:

- Group Name – A text field where the admin enters the name of the new chit fund group.

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- Total Chit Amount – A field to specify the total amount that will be collected over the chit cycle.
- Duration (Months) – Specifies how many months the chit group will be active.
- Contribution Per Month – The amount each participant has to contribute every month.
- Total Members – The total number of participants allowed in the group.
- Start Date – A date picker to select when the chit group will begin.
- End Date – A date picker to select when the chit group will conclude.

This form ensures that all required parameters are collected before creating a new chit group, enabling smooth management of group-based savings and auctions.

Fig10: Admin Auction Page

This page is part of the Admin Dashboard in the Wealth Pool application, specifically designed for handling monthly auctions in chit fund groups. The auction determines which participant will receive the pooled funds for the month based on the bidding process.

This is the Participant Dashboard of the Wealth Pool: Group Savings with Monthly Auctions web application, designed to provide users with seamless access to chit fund participation, auctions, and transaction management. The page features followed by key navigation options such as viewing available chit groups, tracking subscribed chits, checking transaction history, participating in auctions, and managing profile settings. This interface ensures an intuitive and user-friendly experience, allowing participants to efficiently manage their financial goals through the Wealth Pool platform.

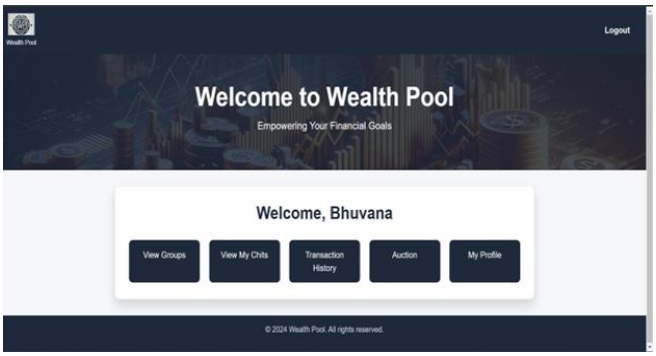

Fig11: User Dashboard

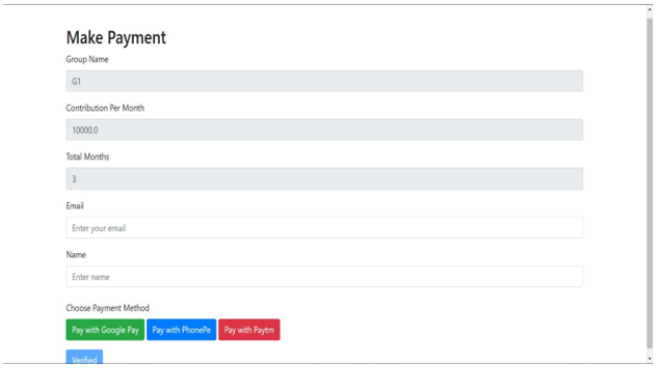

Fig12: Make Payment

This image illustrates the "Make Payment" interface, enabling users to pay contributions for a selected chit group via different payment methods.

VI. FUTURE SCOPE

The Wealth Pool project has significant potential for future enhancements, particularly in improving accessibility, security, and data-driven decision-making. One key area of development is the creation of a dedicated mobile application. A mobile app would provide users with seamless access to their chit fund accounts, real-time notifications for auctions and payments, and an intuitive interface for managing transactions.

Additionally, features such as biometric authentication, offline functionality, and multilingual support would enhance user engagement and ensure a smooth financial experience. Developing the application using cross-platform frameworks like Flutter or React Native would allow for greater accessibility across different devices. Another crucial aspect of future development is the integration of advanced analytics to provide insights into group performance and user behavior. By leveraging artificial intelligence and machine learning, the system can analyze bidding patterns, predict auction trends, and assess financial risks. Personalized recommendations based on user activity can improve decision-making, while fraud detection mechanisms can ensure transaction integrity. Data visualization tools such as Power BI and Tableau can be used to present real-time insights, enabling administrators to monitor financial flows and user engagement more effectively.

Furthermore, implementing blockchain technology can significantly enhance the security and transparency of financial transactions within the platform. Blockchain ensures that every transaction is recorded in an immutable ledger, reducing the risk of fraud and manipulation. Smart contracts can automate bidding and fund distribution, eliminating the need for manual intervention and increasing efficiency.

Additionally, decentralized record-keeping provides users with greater trust in the system, as all transactions remain verifiable and auditable. Blockchain platforms such as

Ethereum (with Solidity-based smart contracts) or Hyperledger Fabric can be explored for this purpose.

By integrating these advancements, the Wealth Pool system can evolve into a highly secure, transparent, and intelligent financial platform. Future research can focus on optimizing blockchain scalability, improving AI-driven predictive analytics, and exploring mobile payment innovations. These developments will contribute to modernizing chit fund systems, fostering financial security, and empowering communities through innovative digital solutions.

VII. CONCLUSION

In conclusion, the Wealth Pool project represents a modernized approach to traditional chit fund systems, leveraging technology to enhance financial security, transparency, and user convenience. By implementing a web-based platform, users can efficiently participate in group savings and auctions, ensuring a structured and reliable financial process. The system not only simplifies chit fund management but also fosters trust through digital transactions and automated processes.

Future enhancements, such as a dedicated mobile application, advanced analytics, and blockchain integration, will further strengthen the platform by improving accessibility, security, and predictive insights. These innovations will enable users to make informed financial decisions, mitigate risks, and enhance their overall experience. Additionally, the adoption of emerging technologies will ensure that the platform remains scalable and adaptable to evolving financial needs.

Ultimately, this project serves as a stepping stone toward the digitization of community-based financial models, promoting financial inclusion and empowerment.

By continuing research and development in areas such as AI-driven insights, decentralized finance, and user-centric design, Wealth Pool has the potential to revolutionize the chit fund industry, making it more efficient, secure, and accessible for all stakeholders.

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