TOPIC : WEALTH: YOUR SMART EXPENSE TRACKER AND FINANCIAL ADVISOR

Miss: Pratiksha Mankar , Miss: Shweta Tapase , Miss: Aditi Deshmukh, Miss: Tina Derkar , Mst: Divyansh Tembhare

DEPARTMENT OF INFORMATION TECHNOLOGY

ABSTRACT

The AI Finance Platform, inspired by "wealth," is a full-stack application built using React 19, Next.js 15, Tailwind CSS, Supabase, Prisma ORM, Clerk (for auth), Inngest, Arcjet, and Shadcn UI components. The app automates financial tracking, budgeting, report generation, and AI-powered insights for users, making it a strong addition to any developer resume and well-suited for job applications or portfolio showcases.

I. INTRODUCTION

The integration of artificial intelligence (AI) with modern web development frameworks has revolutionized the way financial data is managed and analyzed. Traditional finance tracking applications rely on manual entry and basic reporting tools, which limit personalization and insight. In response to these limitations, this paper presents the design and implementation of a full-stack AI-integrated finance platform, leveraging React 19, Next.js 15, and a suite of cloud-native technologies to offer dynamic, secure, and intelligent financial management.

The platform addresses several challenges in personal finance management: automated tracking of income and expenses across multiple accounts, intelligent categorization, budget alerts, and AI-driven receipt scanning. By utilizing real-time analytics and machine learning for personalized monthly reports and actionable insights, it aims to empower users to make informed financial decisions while benefiting from a modern, responsive user experience.

II. LITERATURE REVIEW

Research demonstrates that the convergence of artificial intelligence (AI) and finance has accelerated dramatically over the past decade, fundamentally reshaping financial systems through automation, enhanced analytics, and personalized customer experiences. These advances are evident in core banking functions, algorithmic trading, risk assessment, and fraud detection; AI models have improved both the accuracy and speed of financial decision-making while introducing new paradigms for data security and compliance. The proliferation of both machine learning and deep learning techniques has empowered financial institutions and fintech startups to offer sophisticated tools for automated budgeting, tailored advice, and real-time financial monitoring.Though AI has transformed the fintech sector, ongoing literature emphasizes challenges related to explainability, ethical use, and interoperability of financial data. Interdisciplinary approaches and continuous innovation are recommended to address evolving market needs and regulatory landscapes. New studies call for deeper analysis of user-centric design, the efficacy of generative and conversational AI in personal finance, and the integration of real-time analytics with privacy-by-design architectures

II. PURPOSE

The primary purpose of this full-stack AI-powered finance platform project is to automate, secure, and personalize the management of personal finances using advanced web technologies and artificial intelligence. The platform is designed to help users efficiently track their income and expenses, categorize transactions, manage multiple accounts, and receive actionable insights driven by AI.

- Automated Financial Tracking: Streamlines the recording of transactions across multiple accounts through AI-powered receipt scanning and robust categorization, reducing manual effort and errors.
- Personalized Insights: Provides monthly, AI-driven financial summaries and tailored advice to users, enabling smarter budgeting decisions and proactive financial management.
- Budget Management: Empowers users to set spending limits, visualize budget usage, and receive alerts when approaching or exceeding their budget, thereby promoting better financial discipline.
- Secure Data Management: Ensures user authentication, bot protection, and rate limiting using integration with Clerk and Arcjet, safeguarding sensitive financial data and access.
- Scalability and Modern UI: Utilizes scalable technologies (React, Next.js, Tailwind CSS, Shadcn UI) for a responsive and aesthetically pleasing user experience, while maintaining flexibility for future feature additions and business needs.
- Portfolio and Career Value: Showcases expertise in building real-world, production-grade apps using contemporary development tools, making it ideal for enhancing developer resumes and impressing recruiters.

IV. IMPLEMENTATION

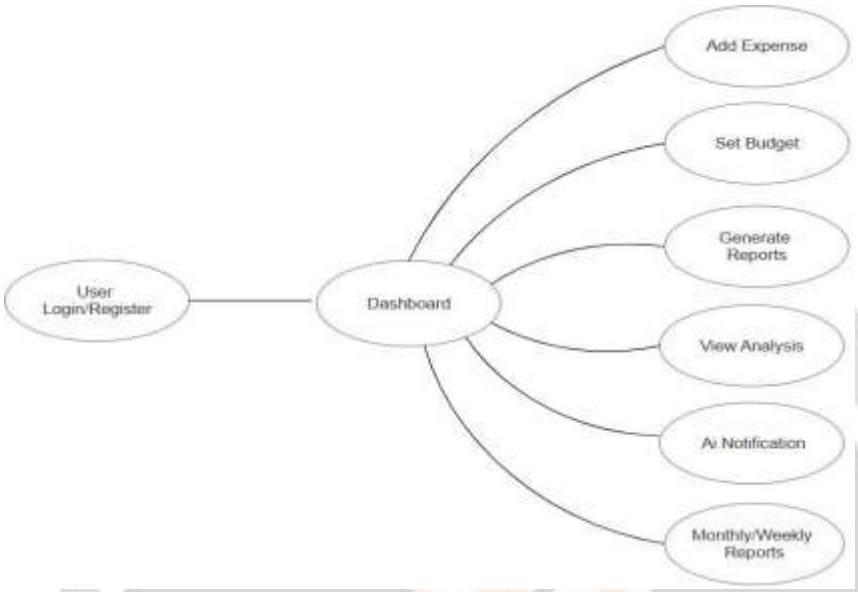
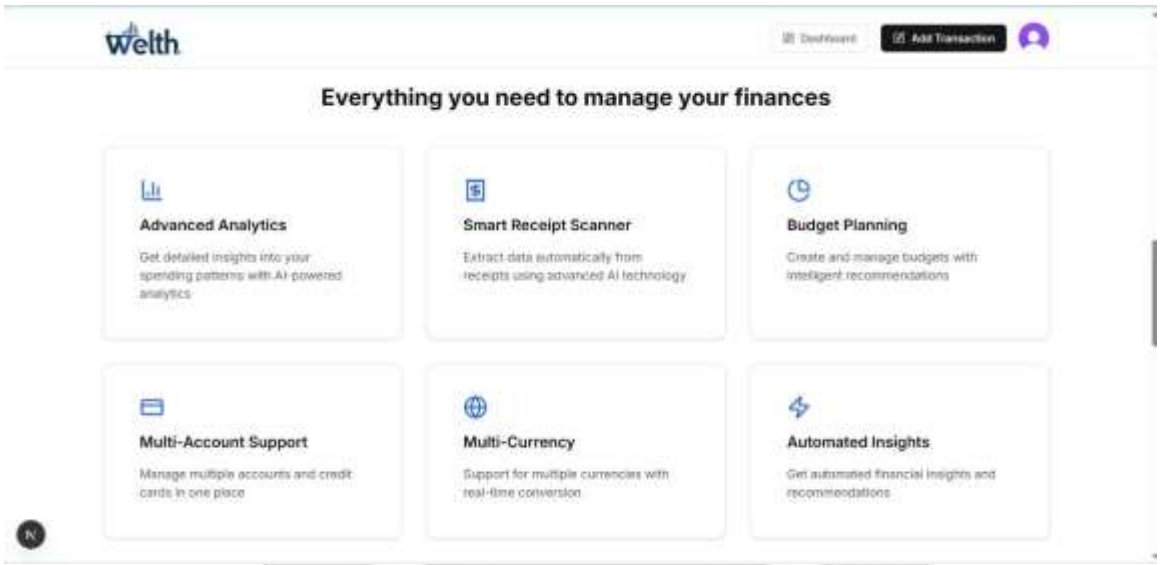


fig:-Flow diagram of daily expense tracker


Welth
Dashboard
Add Transaction
Everything you need to manage your finances
Advanced Analytics
Get detailed insights into your spending patterns with AI-powered analytics
Smart Receipt Scanner
Extract data automatically from receipts using advanced AI technology
Budget Planning
Create and manage budgets with intelligent recommendations
Multi-Account Support
Manage multiple accounts and credit cards in one place
Multi-Currency
Support for multiple currencies with real-time conversion
Automated Insights
Get automated financial insights and recommendations

Welth
Features
Testimonials
Login
Create your account
Continue with Google
First name
Last name
Username
Email address
Password
Continue
Sign in

Welth
Dashboard
Add Transaction
Dashboard
Monthly Budget (Default Account)
Recent Transactions
Pratiksha Mank
Investments
Mobile Recharge
Other Income
Shopping
Education
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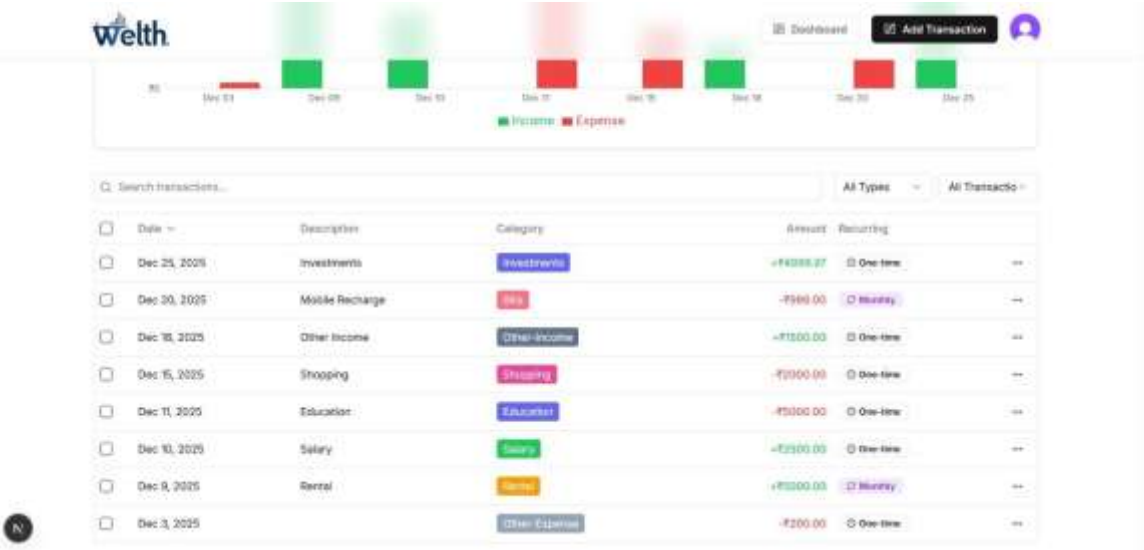
education: ₹5000.00
bills
shopping
education

Welth
Dashboard
Add Transaction
Add Transaction
Scan Receipt with AI
Type
Expense
Amount
Account
PM MAIN (₹193.75)
Category
Select category
Date
December 31st, 2025
Description
Enter description

Welth
Dashboard
Add Transaction
Pratiksha Mankar
Savings Account
₹15800.97
Transaction Overview
Last Month
Total Income
₹13999.97
Total Expenses
₹6199.00
Net
₹5800.97
Income
Expense


Welth
Dashboard
Add Transaction
Income
Expense
Search transactions...
All Types
Date
Description
Category
Amount
Recurring
Dec 25, 2025
Investments
Dec 20, 2025
Mobile Recharge
Dec 18, 2025
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Education
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Salary
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Rental
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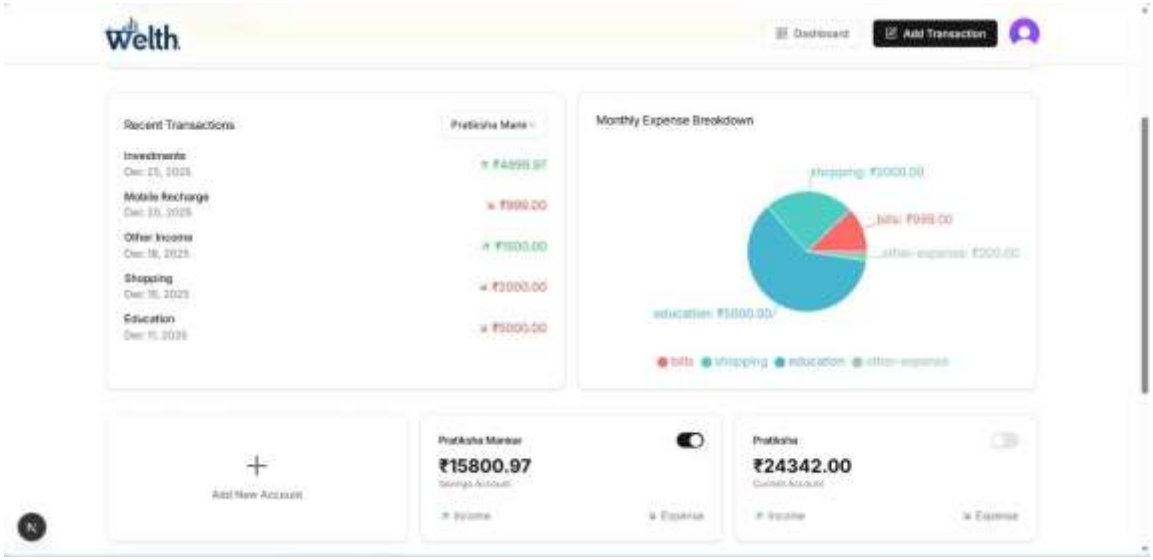

The methodology of the AI Finance Platform (Wealth) is as follows:

- This system comprises a full-stack web application built with Next.js 15 (App Router), React 19, Tailwind CSS, and Shadcn UI components, enabling users to maintain a comprehensive digital financial dashboard across multiple accounts.
- The platform provides secure user authentication via Clerk integration, supporting Google OAuth and protected routes (e.g., /dashboard, /account/[id], /transaction/create), with middleware enforcing redirects for unauthenticated access.
- Users access a responsive landing page with scroll animations, feature highlights (AI receipt scanning, budget alerts, analytics), testimonials, and a call-to-action leading to sign-in/sign-up pages hosted at custom routes (/sign-in, /sign-up).
- Post-authentication, the dashboard displays recent transactions, category-wise expense pie charts, account selector (with default account setting), and monthly budget progress bar; users create/manage accounts via drawers using React Hook Form and Zod validation.
- For instance, subcategories emerge dynamically from transaction data (e.g., travel, salary, bills), with AI-powered receipt scanning via Gemini AI auto-filling forms (amount, category, description) for new transactions.
- The application is platform-independent, fully responsive for mobile/desktop, with backend powered by Supabase PostgreSQL database via Prisma ORM models (User, Account, Transaction with fields like amount, category, type: income/expense, recurring interval).
- Transactions support filtering/sorting (by date, type, recurring status), bulk deletion, editing, and visualization via interactive charts (bar charts for income/expenses over time periods: 7 days, 1/3/6 months; pie charts for category spending).
- Real-time automation uses Inngest for cron jobs: budget alert emails (triggered when usage > threshold, e.g., 93%), recurring transaction creation (daily/weekly/monthly/yearly), and monthly AI insights reports (total income/expenses, net difference, personalized tips via Gemini AI).
- Security features include Arcjet for rate limiting on APIs (e.g., transaction creation), bot protection/shielding, and Clerk's user management (profile updates, MFA-ready).
- The above-mentioned figure illustrates the user flow from landing → auth → dashboard → account-specific views, with seamless CRUD operations and visualizations updating dynamically.

- Deployment occurs via Vercel, ensuring scalability with serverless functions for API routes (e.g., createAccount, fetchTransactions, updateBudget).
  Custom hooks manage API fetches (e.g., useAccounts, useTransactions), while seeding provides demo data for transactions across accounts.

- This implementation delivers automated, AI-enhanced financial management superior to manual entry systems.

V. SECURITY

- Strong Authentication: Multi-factor authentication (MFA) is enforced, especially for admin and user accounts, ensuring that only authorized users can access the platform.
- Role-Based Access Control (RBAC): User permissions are restricted based on their roles, preventing unauthorized actions or data exposure.
- Zero-Trust Architecture: No device or user is trusted by default; all requests are authenticated, and access is strictly limited to only what is essential ● End-to-End Encryption: All sensitive data, such as financial records and user credentials, is
encrypted both at rest and in transit, using robust standards like AES-256.
- Secure Key Management: Encryption keys are stored securely and rotated periodically to prevent unauthorized access

VI. CONCLUSION

In conclusion, the full-stack AI-powered finance platform stands as a forward-thinking solution for modern personal financial management, integrating robust security throughout every layer of its architecture. The project not only streamlines budgeting, transaction tracking, and the delivery of personalized financial insights using advanced

AI models, but it also places user data privacy and system integrity at the forefront. By implementing industry-leading protections—such as encryption for both data in transit and at rest, multi-factor authentication, rate limiting, and continuous monitoring—the platform ensures that users' sensitive information remains secure and compliant with prevailing regulations. Furthermore, the use of AI-driven threat detection and real-time anomaly monitoring provides resilience against emerging cyber risks, while secure coding practices and regular audits reinforce its reliability.

VII. FUTURE SCOPE

The future scope of a full-stack AI-powered finance platform is highly promising, with several significant directions for enhancement and industry impact. As AI and machine learning continue to advance, the integration of autonomous financial agents—capable of making independent decisions, providing real-time recommendations, and automating complex financial tasks—will become increasingly prevalent. Innovations such as agentic AI are expected to empower platforms to deliver deeply personalized financial guidance, optimize user budgets, and detect fraudulent activity with ever-increasing accuracy.

Moreover, the growing use of generative AI will transform routine banking and finance operations, enabling hyper-personalized services, automated report generation, and proactive financial insights for each user. The trend toward embedded finance will see financial functionalities seamlessly integrated into a variety of non-financial platforms, vastly expanding the reach and usability of such solutions. This will open opportunities for partnerships with e-commerce, HR, and supply chain platforms, creating a holistic ecosystem for users.

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