"A SaaS Platform for Automated Banking and Data-Driven Insights"

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Abstract: FINNOVA is a contemporary web-based system with the goal to simplify the financial interactions by uniting the management of user accounts, financial information handling, transactions recording, and notifications. Constructed from Next.js, Prisma, and React (Tailwind CSS for UI), the system is developed to give an easy-to-use interface to users to control their financial activities. This document presents FINNOVA's architecture, system elements, data flows, and evaluates its usability and performance. The findings indicate that the platform is scalable, secure under normal usage patterns, and provides far better user experience than conventional financial management tools.

Keywords: Financial management, Web application, Next.js, Prisma, Transaction tracking, User authentication, Dashboard.

I.   INTRODUCTION

To overcome these issues, FINNOVA was designed as a web-enabled financial management system that uses current technologies to consolidate and streamline financial activities. Through the inclusion of fundamental features like user authentication, transaction monitoring, account management, and notification services, FINNOVA offers end-to-end functionality for individuals and small businesses looking for efficiency and transparency in financial activities.

The website is developed on Next.js for the frontend and server-side rendering, Prisma for database operations, and Tailwind CSS for a natural and responsive user interface. The combination guarantees FINNOVA offers a speedy, safe, and responsive experience while being scalable and maintainable. The component-based architecture and modular design ensure it can be easily customized for future developments, like budget features, forecasting, or third-party finance API integration.

In addition to its technical superiority, FINNOVA prioritizes ease of use, accessibility, and safety, so that users with different degrees of technical experience can control their budgets optimally. The system accommodates single users and small organizations alike, making it utility-rich in a variety of settings.
In short, FINNOVA closes the gap between conventional finance management solutions and current web-based solutions by allowing users to automate their finance workflows, eliminate errors, and derive actionable insights. This project is a step towards democratizing financial tools by providing an economical and extendable platform designed for modern needs.

II. EXISTING SYSTEM

Paper [1] introduces GROW MORE, a personal finance application to handle income, expenditure, and budgeting across various time frames. It focuses on reporting and gamification to make users more interactive. Nevertheless, it requires too much manual effort and does not automate the transaction classification.

Paper [2] investigates gamification's role in personal finance management (PFM) apps. Employing the Self-Determination Theory and the Technology Acceptance Model, the authors illustrate how gamification elements enhance user motivation. Contrarily, however, the study observes that financial analysis and transaction processes are still under-explored in gamified systems.

Paper [3] analyzes an e-Personal Finance (e-PF) system for university students with features including financial tests, budget planners, and finance calculators. It proved to be effective in terms of financial literacy but restrictive in scope, not meeting the complete financial transaction handling need of financial matters.

Paper [4] is an account of a web-based Smart Personal Finance Tracker where users can log income and expenses, establish savings goals, and access reports through charts. While useful, the system employs a low-tech stack with minimal backend stability and does not offer security features like authentication and notifications.

Paper [5] suggests an AI-driven personal finance management system that categorizes expenses automatically and provides smart budgeting insights. Promising in real-time analytics, it lacks a modular web platform or solid UI/UX focus, which detriments scalability and usability.

III. METHODOLOGY

3.1. Technology Stack

Current web technologies have been a beneficial resource for building strong, scalable, and user-friendly financial programs. For FINNOVA, a blend of high-end frameworks and libraries has been utilized to provide performance, maintainability, and flexibility. The application takes advantage of Next.js, a robust React framework with server-side rendering and routing support; Prisma, an ORM for efficient and type-safe database interaction; and Tailwind CSS, which provides a responsive and visually stunning interface.

The process flows from user interaction, starting with login or registration. After successful authentication, users are directed through a secure dashboard developed using Next.js. Prisma takes care of smooth interaction with the database below, managing transactions, queries, and data storage. There is consistency of UI elements like forms, tables, and charts provided by Tailwind CSS. The component-based layout enables developers to introduce new features without much burden.

This design allows FINNOVA to strike a balance between speed, accuracy, and scalability. The decoupling of concerns among the front-end, back-end, and database ensures that the system remains optimized and agile, allowing it to accommodate increased user bases and sophisticated features down the road.

3.2 Description of Features

a. Core Features
In order to provide practical financial management requirements, FINNOVA was built with the following core features:

- User Authentication: Role-based secure login and registration system.

- Transaction Management: Users are allowed to add, view, and monitor income and expenses.
- Dashboard Visualization: Presents an uncluttered perspective of the financial situation via dynamic elements.

- Notifications/Emails: Pre-programmed notifications and updates issued to users about transactions or account activity.
- Profile Management: Enables account information, preferences, and settings to be modified by users.

These features were chosen with purpose based on their importance in daily financial transactions. Every feature was developed to minimize manual effort and enhance clarity, security, and accessibility.

b. Data Handling
FINNOVA processes financial information using structured storage and retrieval processes. All transactions are processed through Prisma to guarantee type safety and reliability. Transactions are time-stamped and classified, which allows meaningful reports such as month-to-month summaries, expenditure breakdowns, and trend analysis to be generated.
The platform emphasizes security and privacy, where sensitive financial information is stored securely and accessed via authenticated sessions. Enhancements in the future will include the integration of encryption at rest, predictive analytics, and external API connections for real-time data sync with banks or third-party services.

3.3 Working Procedure of FINNOVA
The functionality of FINNOVA, as shown in Fig. 1 (Database Workflow), has been created to accept user data like transactions, account information, or budgets and convert them into actionable financial results through a disciplined database-based process.

The process starts when a user creates an account via the Users table. Every user is identified by a unique identifier and connected with their credentials, profile information, and associated accounts. After authentication, the user can create and maintain financial accounts in the Accounts table. The accounts contain major details like account type, balance, and if the account is the user's default.
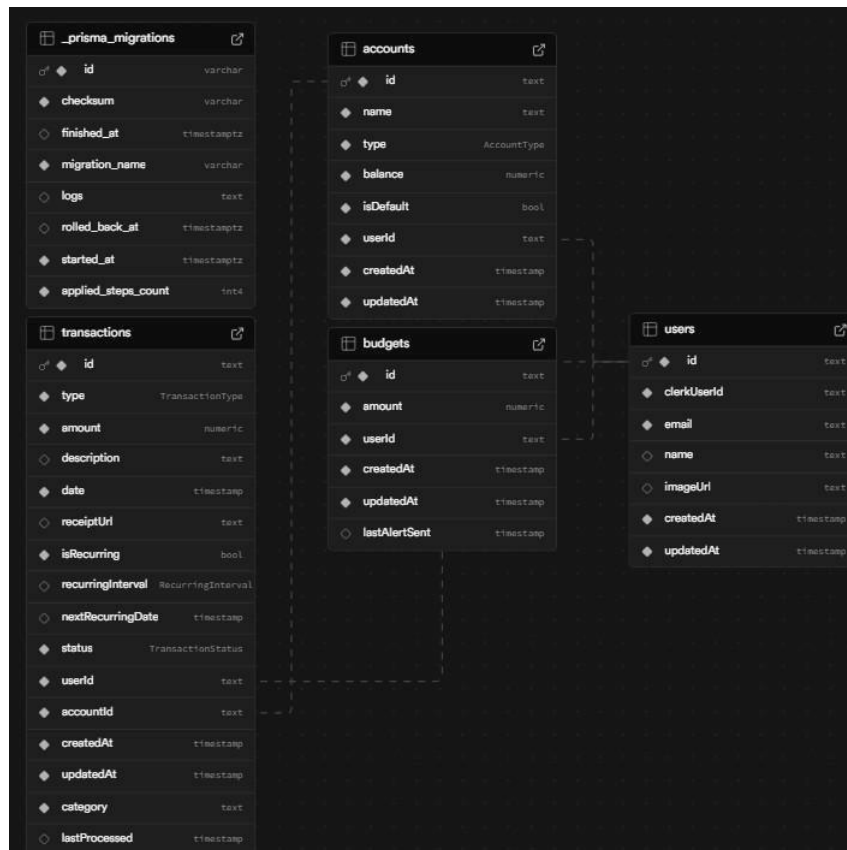

Fig 3.1 Work flow for Database Workflow

When a transaction is made, the information is stored in the Transactions table. A transaction has attributes like type (income or expense), amount, description, date, receipt URL, and recurring or not. The schema accommodates recurring intervals and next recurring dates so that repeated transactions like monthly subscriptions or salary deposits are automated. Transaction status (like pending, cleared) and categorization provide clarity and ease of retrieval for reporting.

The Budgets table also supports better financial management since it enables users to allocate funds towards certain goals or expense categories. Every budget is associated with a user and stores the amount, creation and update timestamps, and last alert sent. This makes FINNOVA send alerts whenever spending is about to reach or exceed certain limits, which helps with proactive money management.

Prisma migrations, which are handled via the _prisma_migrations table, guarantee that schema updates and database changes are executed reliably and version-controlled. This ensures system stability and flexibility in support of future feature

The interaction among these pieces creates an effective workflow:

- User Authentication → User register/login through the Users table.
- Account Creation → Accounts are created and attributed to users in the Accounts table.
- Transaction Management → Transactions are recorded, grouped, and linked with accounts and users in the Transactions table.
- Budget Allocation → Budgets stored in the Budgets table are defined by users to monitor financial targets.
- Notification & Alerts → The system monitors thresholds and sends alerts as required, using the timestamps and budget rules.

- Data Analysis & Insights → Data from accounts, transactions, and budgets aggregated is computed and graphed on the user dashboard.

By adopting this workflow, FINNOVA tracks financial data accurately, stores it in an organized manner, and interprets it with value. The synthesis of user accounts, transactions, and budgeting in a common model not only offers raw data storage but also actionable knowledge for improved decision-making.

IV.   RESULT AND ANALYSIS

As FINNOVA is still being developed, its value exists mainly in its power to assist users in accurate financial monitoring and useful, visually directed intelligence regarding their income, spending, and budgets. The system was constructed to execute major financial functions—user authentication, account maintenance, transaction logging, and budget tracking—via a streamlined database-driven process.

When a user makes entries of transactions, the system not only reflects the corresponding account balance but also offers categorized visual overviews. They are both analytical and informative in output. For each user account, the system provides:

Total Income and Expenses: Clearly distinguished to emphasize financial well-being.
Net Balance: A simple calculation of earnings against expenses.
Budget Utilization: Indicates how much of the budget so far utilized, with warnings on overspending.

Category Breakdown of Expenses: Offers information on expenditure habits (e.g., utilities, food, education, miscellaneous).

This renders FINNOVA more than just a basic transaction recorder—it becomes a source of information, connecting raw numeric information with instantaneously visualized monetary analysis. By being able to reveal financial movement clearly, it makes users able to make better-informed decisions, plan their savings, and budget effectively.

For unclassified transactions, FINNOVA automatically places them in default categories or marks them as "Untitled Transaction." This promotes **transparency** and enables users to review and customize them later, thereby enriching the precision of subsequent money tracking.
We anticipate that **FINNOVA** will outperform traditional financial tracking methods, such as spreadsheets and manual bookkeeping, in terms of **efficiency, usability, and accessibility**. Conventional approaches are limited by their heavy reliance on manual calculations and static reporting, which can obscure spending trends and budget utilization.
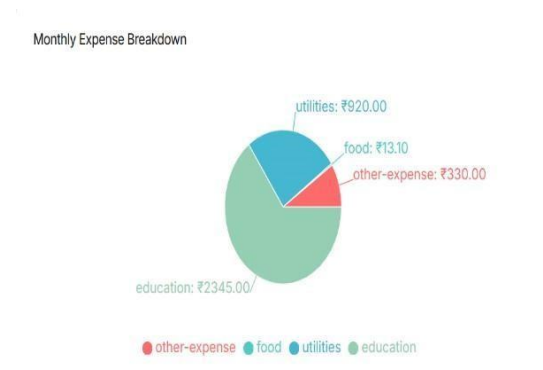

Fig.4.1 Recent Transaction

Fig.4.2 Expense Breakdown Pie Chart

Fig.4.3 Transaction Categories

Fig.4.4 Transaction Overview Graph

By incorporating a **knowledge-based financial reporting system**, FINNOVA advances significantly beyond conventional financial tracking applications. Instead of merely recording and displaying transactions, the platform delivers **comprehensive insights**, including spending behavior, budget utilization, category breakdowns, and net financial health.

As a result, users not only gain access to raw financial data but also receive **contextual knowledge** that bridges daily transactions with strategic financial planning. This allows individuals to understand where money is spent, identify areas for potential savings, and plan effectively for future goals.

Furthermore, FINNOVA integrates a **user-driven feedback mechanism**, enabling refinement of uncategorized transactions, corrections, and category customizations. Through this adaptive cycle, the system continuously evolves to provide more accurate, reliable, and personalized financial insights.

CONCLUSION

Plant identification through Artificial Intelligence is especially coded to offer crisp, clear, and easily understandable details of the medicinal values of Neem, Aloe Vera, Hibiscus, and Curry Leaves. Through advanced image detection, it shall provide details of each plant's botanical classification, therapeutic use, and regions where it is known to inhabit.

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