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Research Paper

Built AI Finance Platform with the help of "FinAlze-The Future of Smart Finance"

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ABSTRACT

Fin Alze is an AI Finance Platform.' After all, the full-stack React project is packed with things to make your life that much better. Its primary goal is to cast aside the ruts of actual enterprise finance and brass knuckles technology, its frontiers bordered by your own thinking. The end result: an altogether fresh concept of personal and business accounting that integrates advanced artificial intelligence methods with an elegant user interface. The core result is not just an ordinary accounting system but a partially automated, progressively smarter platform that provides information on finance itself generates reports and gives intelligent answers to financial questions. It makes financial data more accessible and operational.

1.Introduction

Today's world is moving at a swift pace, that handling finances can sometimes feel like being lost in forestand without compass. To put it simply, when you need information in real-time rather than just simple coarse- grain statistics, traditional money management tools just don't cut it. It is here that FinAlze comes to the rescue — a full-stack React project and one whose tech stack combination is modern enough to make most high-end developers envious. We set out to design something really smart, something that went beyond number crunching. We looked forward and created a platform that could read the pulse of your finances, offering you positive rather than merely passive guidance or advice. The goal was simple: to turn raw financial data streams into actionable, meaningful information that could be combined with other sources of human intelligence and lead to a more prosperous future.

1.1 Problem statement

FinAlze addresses the key issue of lacking intelligent automation and forward-looking insights in traditional financial management solutions. Users often struggle to transform large volumes of financial data into something meaningful and useful, relying either on their own manual analysis or a variety of fragmented tools. This gap in synchronization leads to missed opportunities, inefficient financial decisions, and even unclear thinking when it comes to personal or corporate wealth management.

2. Methodology

FinAlze was developed as a fully integrated full-stack application, using a variety of contemporary technologies to guarantee robust capabilities and optimal ease of use.

2.1 Front-End Development:

Dashboards can be dynamic and routing efficient because the user interface, now provided by **ABS**, uses the **Next.js React framework**. Besides, its strongly attached API ability lets developers access wide-open spaces. It supports **Tailwind CSS**, which is perfect for those who prefer utility-first libraries offering fast and consistent UI development. Additionally, **Shadcn UI** is used for sleek, easily accessible components—you'll find all sorts of buttons, cards, and tables conveniently placed right at your fingertips. If you need to manage forms in a more streamlined fashion, adopt **React Hook Form** along with **Zod** for schema-based validation. Obtain comprehensive front-end libraries like **React Spinners** and **React Email**,

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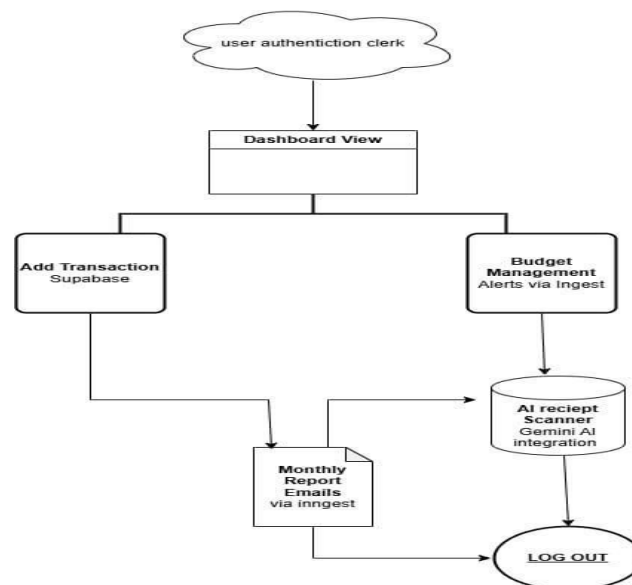
which can instantly give you the user interface you want and are highly reusable across different projects. **Resend** is used to send transactional emails of good quality, boosting developers' productivity sky-high.

2.2 Back-End Development:

At the heart of **FinAlze**'s intelligence lies **Gemini AI**, Google's powerful generative AI model. It is used for analyzing financial data, generating insights and reports, summarizing trends, and answering any questions related to finance. **Prisma ORM** handles database management, providing type-safe and effective interaction with the database for CRUD operations. **Clerk** provides secure user authentication and management (including signup expiration, login, and session handling). **Postgres** also offers a back-end alternative, **Supabase**, which includes a PostgreSQL database, authentication, and storage facilities. **Arcjet** can be integrated into your service for rate-limiting protection and to deny certain sensitive routes where proper authorization does not come from the right server IP address.

2.3 System Flow Chart:

Starting with user interaction on the **Next.js** front end, **Clerk** handles authorization, securing the dashboards and AI features (authorization). Through **Prisma**, the user's data and financial records are managed and stored. What kind of database to use can be chosen by the user. **Gemini AI** processes financial data, called by user request or through **Inngest**-



orchestrated scheduled tasks. The front end connects to these back-end services via an **API route** in **Next.js**. **Resend** is used to generate emails, such as new user introductions and interim reports. **Arcjet** is the layer of security that plays a crucial role in keeping API endpoints from being overwhelmed with malicious traffic. To manage API endpoints, send image data to the Python recognition service, and store attendance logs, the backend is built with Node.js and Express. The frontend React application uses MUI components to display attendance records in real time, send snapshots on a regular basis, and access the webcam



Fig 1: AI Finanace Plateform Using FinAlze

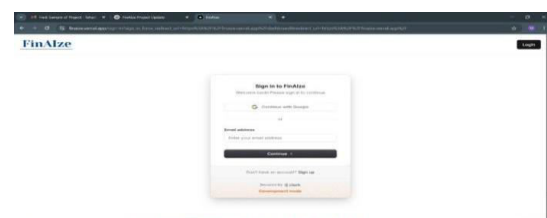


Fig 2: Login Page

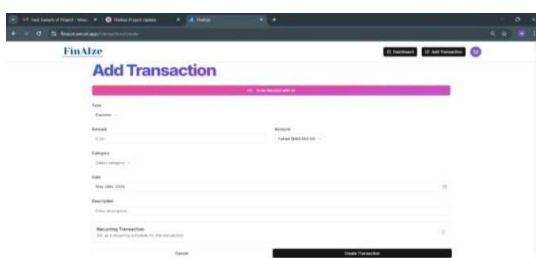


Fig 3: Transaction Page

Add Transaction

Scan Receipt with AI

Fig 4: Receipt Scanning

3. Result

We've successfully built FinAlze, an intelligent financial management platform that's alive and dynamic. Highlights: gemini ai integrated easily with, by doing this both finance observation ideas and detailed reports were automatically generated turning the complex numbers into understandable advice. With Tailwind CSS and Shadcn UI, we created responsive user interfaces that are more appealing to look at too. Clerk gave us secure user authentication and management, so that both data privacy and access to customized financial finance dashboards were guaranteed. Also, the project created a powerful type-safe data management layer using Prisma that enabled solid handling of both financial transactions and user profiles.

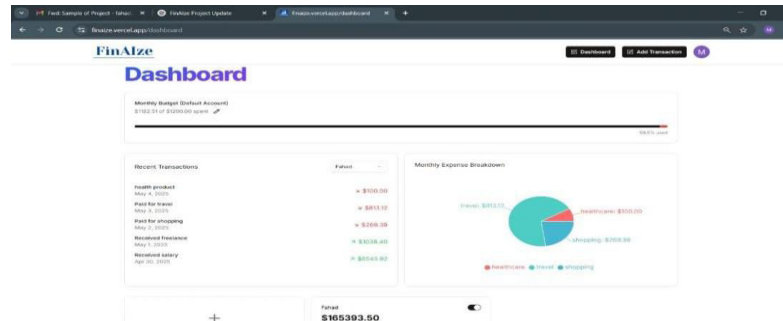


Figure-5 Monthly Report

4. Conclusion

FinAlze combines the latest web technologies and artificial intelligence, which makes management of personal finance easier than anything else in history. This is intelligent automation's success in the real world. FinAlze is designed to be a platform that is both smart and safe; it offers exceptional user-friendliness. That has meant both profit and pleasure for individual entrepreneurs, home businesses and large corporate enterprises. This new development in financial services more effectively helps people lead fuller richer lives. With FinAlze underpinning everything that's positive about the 1990's and forward-thinking individuals, households will be able to manage their wealth so as to live longer, better.

5. Future and scope

FinAPI is set to have an amazing future. We plan to add deeper insights into market trends and personalized investment strategies, in the form of more advanced AI predictive models. To this end, we are considering expanding the system so that it can support not just a single bank entity or brokerage, but rather all of your finance accounts and institutions. At the same time, this platform urges development of an online application. The addition of machine learning for fraud detection and anomaly alerting is another level lockdown in security. It may be worthwhile to look into integrating blockchain technology into transaction logs (for the sake of security) and adding some DeFi functionalities as well.

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