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AI-Based Web Application for Personalized Finance Tracker

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Abstract: *This research paper presents a detailed study on the development of an AI-based web application for personalized finance tracking. With the increasing number of digital payments, credit card usage, and online banking transactions, individuals find it challenging to monitor their financial activities efficiently. Traditional applications like Mint and PocketGuard provide users with budgeting tools but fail to offer predictive, personalized advice. The proposed AI-based solution leverages machine learning, natural language processing, and data visualization techniques to provide real-time insights, predict spending patterns, and recommend investment opportunities tailored to each user. The system allows users to input their income, monthly expenses, and risk appetite. The system integrates financial data from multiple sources, categorizes transactions automatically, and provides budget planning features with future predictions. The study emphasizes accuracy, usability, and security, ensuring that personal financial information remains protected while delivering valuable recommendations. An easy-to-use and visually rich dashboard displays categorized expenses using graphs and charts to enhance financial visibility This application aims to encourage better financial discipline, promote awareness, and empower individuals to make smarter financial choices through the support of Artificial Intelligence and data analytics. The research concludes that AI-enabled finance trackers can transform financial literacy and decision-making for individuals across different income levels.*

Keywords: Artificial Intelligence, Personal Finance, Budget Planning, Investment Advisory, Web Application, Predictive Analytics, Financial Technology

I. INTRODUCTION

Managing personal finances has become increasingly complex in today's digital era, where multiple payment systems coexist, including bank accounts, digital wallets, and credit cards. Users often struggle to maintain an accurate overview of their spending, savings, and investments, leading to poor financial decisions. Traditional budgeting applications offer limited insights as they rely heavily on user input and provide static financial summaries. Artificial Intelligence (AI) provides an opportunity to enhance personal finance management by analyzing user data, predicting future spending, and offering adaptive recommendations. The proposed system aims to automate the tedious process of manually monitoring and optimizing financial behavior. By leveraging technologies such as machine learning, data visualization, and secure databases, FinancePal serves as a digital financial assistant that not only tracks income and expenses but also forecasts future financial needs, recommends savings plans, and helps users make informed investment decisions.An AI-based finance tracker acts as a virtual financial assistant, capable of categorizing expenses automatically, suggesting tailored budgets, and providing investment guidance based on individual risk profiles. This research paper explores the design and methodology of building such an application while comparing existing approaches and proposing an advanced AI-driven system for future financial management.

II. LITERATURE SURVEY

Existing literature on financial management tools emphasizes the use of mobile and web applications to track income, expenses, and savings. Applications like YNAB and PocketGuard have demonstrated the effectiveness of simple

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expense categorization, while advanced tools like Cleo and Plum attempt to incorporate AI for chat-based financial advice. However, academic research shows that these tools often lack depth in predictive analytics and personalized recommendations. Recent studies highlight the role of natural language processing (NLP) in transaction categorization and machine learning in predicting user spending patterns. Several researchers have suggested that AI could be further utilized to integrate budgeting, investment, and debt management in a single platform, thus providing a holistic view of personal finance. Many focus solely on budgeting or expense categorization, ignoring investment recommendations or long-term financial planning. Moreover, few incorporate security protocols or open banking APIs to fetch real-time data automatically. As such, the review of existing applications reveals that while the foundation for digital personal finance tools exists, most do not offer intelligent, consolidated, and secure solutions tailored to diverse user profiles. This gap in current solutions motivates the development of a comprehensive AI-based finance tracker.

Existing Work

Current finance tracking solutions provide expense categorization, notifications, and budget summaries but remain limited in personalization and adaptability. For instance, tools like Mint allow users to track expenses but rely on predefined categories that may not suit every individual. Other applications such as Yolt provide limited investment guidance but lack integration with predictive analytics. Rule-based systems used in most trackers fail to adjust dynamically to user behavior, which restricts their usefulness in long-term financial planning. A few AI-enabled systems exist but are either too complex for average users or restricted to premium versions that limit accessibility. The shortcomings of existing work highlight the demand for an AI-based application that combines predictive analytics, personalized financial advisory, and easy-to-use dashboards for everyday users, making financial literacy more inclusive and effective.

III. METHODOLOGY

The methodology for developing the AI-based finance tracker involves multiple stages. First, financial data is collected securely through APIs provided by banks, credit cards, and digital wallets, or alternatively entered manually by users. The second step is preprocessing, where data is cleaned, normalized, and categorized using natural language processing techniques. Next, machine learning algorithms such as supervised classification and clustering are applied to detect spending patterns, predict future expenses, and recommend optimal budgeting strategies. Reinforcement learning models can be incorporated to provide adaptive financial recommendations that evolve with user behavior. The web application will be developed using technologies such as React for frontend, Spring Boot for backend, and a secure authentication mechanism for data privacy. Finally, the system will be evaluated on accuracy, usability, and financial improvement for users, ensuring it meets real-world financial needs.

Proposed Work

The proposed system is an AI-driven finance tracker that provides comprehensive financial insights and recommendations. It will automatically categorize transactions, track spending patterns, and generate predictive budgets to help users control expenses. The system will also provide personalized investment suggestions based on a user's financial goals and risk appetite. Debt and loan management modules will allow users to receive repayment reminders and strategies for minimizing interest payments. Additionally, the system will feature data visualization dashboards, giving users clear insights into their financial health. Unlike existing tools, the proposed application combines predictive analytics, personalization, and user-friendly interfaces, ensuring accessibility for individuals across different income levels. The system aims to empower users by providing them with the knowledge and tools necessary to make informed financial decisions in real-time.

IV. CONCLUSION

In conclusion, this research paper has presented a framework for an AI-based personalized finance tracker that addresses the limitations of current financial management tools. By integrating expense tracking, budget prediction, investment advisory, and debt management into a single platform, the system provides a holistic approach to financial

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planning. The use of artificial intelligence ensures that recommendations are personalized, adaptive, and predictive, making them more relevant than traditional rule-based methods. The proposed application not only helps users monitor their finances but also enhances financial literacy and long-term decision-making. Future work will focus on improving the accuracy of AI models, incorporating voice-based assistants for accessibility, and enhancing data security to maintain user trust. The study concludes that AI has the potential to transform personal finance management into a more intelligent, efficient, and user-friendly experience.

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