

MoneyBuddy- Personalized Financial Planning

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Abstract- *In today's fast-paced world, many people find it hard to manage their personal finances—whether it's budgeting, saving, investing, or planning for the future. Traditional financial services can be costly and hard to access, and not everyone has the time or knowledge to make smart money decisions. Money Buddy is an AI-powered financial planning assistant designed to make managing money easier. It provides personalized advice by analyzing a person's income, spending habits, goals, and risk tolerance. The system uses automation and smart analytics to offer real-time insights, helping users make better financial choices effortlessly. It's a practical and accessible tool for anyone looking to take control of their finances.*

Indexed Terms- *Artificial Intelligence, Personal Finance, Financial Literacy, Web-based Applications, Financial Management*

I. INTRODUCTION

Managing money isn't easy—especially in today's fast-moving world. Whether it's budgeting your monthly expenses, saving for a big purchase, paying off debt, or planning for the future, financial decisions can feel overwhelming. A lot of people want to take control of their money, but they either don't know where to start, don't have enough time, or feel confused by all the options out there. Research shows that many adults struggle with basic money skills, like understanding how interest works or how to plan for long-term goals. On top of that, traditional financial advisors can be expensive and aren't always designed for everyday people. And while there are plenty of apps and tools for tracking spending or creating a budget, most of them don't offer truly personalized advice. That's where MONEYBUDDY comes in. MONEYBUDDY is a smart, AI-powered financial assistant built to help regular people manage their money better. Instead of giving you generic advice, it learns from your habits and goals to give suggestions that actually make sense for your lifestyle. It's like

having your own financial coach—one that's always there, never charges you high fees, and speaks your language. With MONEYBUDDY, you'll get help with budgeting, saving, investing, paying off debt, and planning for your future—all in one place. Plus, it offers simple explanations, tips, and reminders to help you build good financial habits over time. The goal is to make money management less stressful, more understandable, and something you feel confident about.

II. OBJECTIVE

2.1 Easy To Use

The main goal of MONEYBUDDY is to help everyday people take control of their finances in a way that feels easy, smart, and personalized. Many of us struggle with keeping track of spending, saving for future goals, dealing with debt, or knowing how and where to invest. MONEYBUDDY is here to change that by acting like a friendly, intelligent financial assistant—one that fits right in your pocket.

Help you create a budget that actually works for you: Everyone's lifestyle is different. Some people live month-to-month, others freelance with irregular income, and some are trying to juggle loans, rent, and saving at the same time. MONEYBUDDY helps you build a budget based on your real income and spending habits—not just generic templates. Give smart suggestions for saving and investing

Keep you on track with reminders and insights: MONEYBUDDY keeps an eye on your finances and sends you helpful reminders—for things like bill payments, hitting your savings goals, or noticing if you're spending more than usual. It's like having a smart friend who nudges you in the right direction. Help you plan for your future: Whether you want to buy a car, go on vacation, save for a wedding, or retire comfortably, MONEYBUDDY helps you set those goals and shows you how to reach them step by step.

Make financial advice feel personal and approachable: Traditional financial advice can feel cold, complicated, or only for rich people. MONEYBUDDY aims to be the opposite—warm, simple, and made for real people with real lives. Learn and grow with you: The more you use MONEYBUDDY, the better it understands your needs and habits. Over time, it becomes even smarter at offering advice that suits your financial lifestyle.

III. LITERATURE SURVEY

Before building something like MONEYBUDDY, it's important to look at what's already out there and what experts have said about personal finance, financial technology, and how people make money decisions. This section sums up what we've learned from existing tools, studies, and research papers.

The integration of artificial intelligence (AI) capabilities in personal finance management has garnered increasing research attention, accentuating technology's potential in addressing intricacies in financial processes and decision contexts faced by individuals. This literature review analyzes scholarship on the application of web-based tools, responsive systems, AI techniques, financial literacy initiatives and intelligent assistants to inform the development of an AI powered personalized finance solution [20]

3.1 Existing Tools and What They Offer

There are already some popular apps like Mint, YNAB (You Need A Budget), and Personal Capital that help people track their spending, make budgets, and monitor investments. These tools have done a good job of helping people become more aware of their money habits. However, they mostly offer the same features to everyone and don't always provide advice that's tailored to your personal life or goals. That's where a tool like MONEYBUDDY can go further—by using AI to understand the unique financial situations of each user and offer smarter, more personalized help

3.2 What the research says:

- Studies have shown that many people struggle with financial decisions. For example, research from the OECD and the Federal Reserve shows that a lack of financial literacy—meaning not knowing how

money works—leads to poor decisions, like overspending or not saving enough. These studies also say that digital tools can help improve financial knowledge and encourage better habits.

- According to a well-known study by Lusardi and Mitchell (2014), financial literacy plays a huge role in how people handle saving and investing. People who understand basic financial concepts tend to make smarter money decisions. The good news is that digital platforms, especially those that explain things clearly and offer guidance, can help fill in those knowledge gaps.

3.3 The Role of AI in Money Management:

The concept of using AI and machine learning in personal finance is gaining popularity. Tools known as “robo-advisors”, like Betterment and Wealthfront, already use algorithms to suggest investment plans based on user preferences. But these tools are mostly focused on investing and don't always help with day-to-day money issues like budgeting, managing debt, or saving for short-term goals

Newer research, such as a 2021 paper published in the ACM Transactions on Intelligent Systems and Technology, shows that AI can actually act like a smart financial coach. It can learn from users over time, adapt to their behavior, and give advice that improves their financial decisions.

3.4 Behavioral Economics and “Nudges”

Another area that influences MONEYBUDDY is behavioral economics—a field that studies how people actually behave with money (which is often very different from what we should do). Researchers Thaler and Sunstein, in their book *Nudge*, showed that people can be gently guided to make better choices without being forced. MONEYBUDDY uses this idea by giving users helpful nudges, tips, and reminders to stay on track financially—without being pushy.

3.5 Personal Budgeting Research

Personal budgeting is an integral yet complex financial process. Galperti [12] examined theoretical links between budgeting and consumption-saving biases, showcasing associated self-control issues. However, consistency in real-world budget adherence and tracking efforts necessitate further investigation. Specific budgeting approaches also vary with

individual biases and trade-off perceptions. Additional research on overcoming budgeting difficulties could elevate financial outcomes.

IV. METHODOLOGY

The methodology section explains how MONEYBUDDY will be built and how it will work behind the scenes to help users manage their finances. Think of it as the blueprint for turning this helpful idea into a real, working system. MONEYBUDDY will use a mix of smart technologies, data analysis, and user friendly design to deliver personalized financial advice. Here's a breakdown of the major parts

4.1 Understanding the User

First, MONEYBUDDY needs to learn about each user so it can give advice that actually makes sense for their life. This happens in a few ways: Initial Setup: When someone signs up, they'll answer some simple questions about their income, expenses, goals, and lifestyle. Automatic Data Collection: With the user's permission, MONEYBUDDY can connect to their bank accounts or digital wallets (via APIs like Plaid or Yodlee) to track transactions automatically. Ongoing Learning: As the user spends, saves, or changes their habits, the app keeps learning and adjusting its recommendations accordingly.

4.2 Using AI for Smart Recommendations

At the heart of MONEYBUDDY is an AI engine that does the thinking: Rule-Based System: These are "if-then" style rules that guide simple advice. For example, "If rent is more than 40% of income, suggest finding ways to reduce housing costs.

Machine Learning Models: These help the system learn from both the user's past behavior and patterns from other users. This lets MONEYBUDDY predict spending, find money-saving opportunities, and recommend personalized plans.

Natural Language Processing (NLP): This helps the app understand user questions like, "Can I afford a vacation next month?" and respond with smart, helpful answers

4.3 User Dashboard and Features

MONEYBUDDY's design will focus on simplicity and clarity. Key features will include: A dashboard that shows your current financial health (like income vs. expenses). Budget creation tools that break down spending by category. Goal tracking for things like saving up for a phone, car, or vacation. Spending insights that highlight trends (like "You spent 20% more on dining out this month"). Reminders and alerts for due bills, overspending, or achieving a milestone.

4.4 Feedback Loop for Constant Improvement

MONEYBUDDY isn't a "set it and forget it" kind of app. It improves over time using a feedback loop: The user interacts with the app (asks questions, follows tips, or ignores them). The AI tracks these responses to learn what's working and what's not. The system then updates its recommendations to become more accurate and useful in the future

4.5 Data Privacy and Security

Because MONEYBUDDY deals with sensitive financial information, protecting user data is a top priority: All user data is encrypted (both in storage and while being sent). Strict privacy policies ensure that data is never sold or shared without permission. Users can control what data they want to share and can delete their account at any time. The platform will follow international data protection laws like GDPR

4.6 Technology Used

1. Frontend (Next.js): Research can delve into the performance trade-offs of SSR and SSG in real applications, analyzing latency, resource use, and SEO impact. The component-based architecture offers avenues to study code reusability, UI optimization techniques, and the effectiveness of different state management solutions. Furthermore, the integrated API routes provide a platform to investigate the scalability and security considerations of this hybrid frontend/backend approach.
2. Backend (Node.js or Flask): This stack enables comparative studies of event-driven (Node.js) versus synchronous/asynchronous (Flask) backend architectures. Research could benchmark concurrency, throughput, and resource efficiency. If evolving to microservices, API gateway

performance and inter- service communication strategies become relevant research areas.

3. Database (Firestore): As a NoSQL database, Firestore allows for research comparing its performance against relational databases for specific application needs, focusing on read/write latency and scalability. Its real-time capabilities also open a venues to study the impact of live data on user experience and the consistency models in such systems.
4. AI/ML Libraries (TensorFlow and Scikit-learn): This setup facilitates research into recommendation systems by comparing traditional ML (Scikit-learn) and deep learning (TensorFlow) algorithms. Studies could evaluate accuracy, personalization, cold-start solutions, and the explainability of recommendations. Deploying and scaling these models within the backend also presents research challenges in inference optimization and resource management.
5. Security Tools (JWT and HTTPS): The inclusion of JWT and HTTPS allows for research into web application security practices. This can involve analyzing the effectiveness and potential vulnerabilities of JWT for authentication and authorization, as well as the impact of HTTPS on user trust and the prevention of various online attacks.

A diverse range of methodological approaches have been implemented across the examined studies on AI in personal finance management. Several works have adopted qualitative techniques like grounded theory and design science research [15, 18]. Grounded theory, encompassing in-depth personal interviews and rigorous thematic analysis of gathered data, facilitated an exploratory investigation into factors influencing investment choices [18]. Conversely, following design science guidelines enabled the development and evaluation of an intelligent virtual assistant model for financial management [15].

Additionally, web analytics and usability assessments were conducted to evaluate responsive systems for university budgeting and financial reporting [8]. Performance and usage metrics provided insights into system effectiveness. Overall, the collective methodology encompassed diverse techniques tailored to examine specific aspects of AI integration for

personal finance through appropriate conceptual frameworks like technology acceptance models, grounded theory guidelines, and design science research principles [18, 19, 15].

4.7 Architecture of our project:

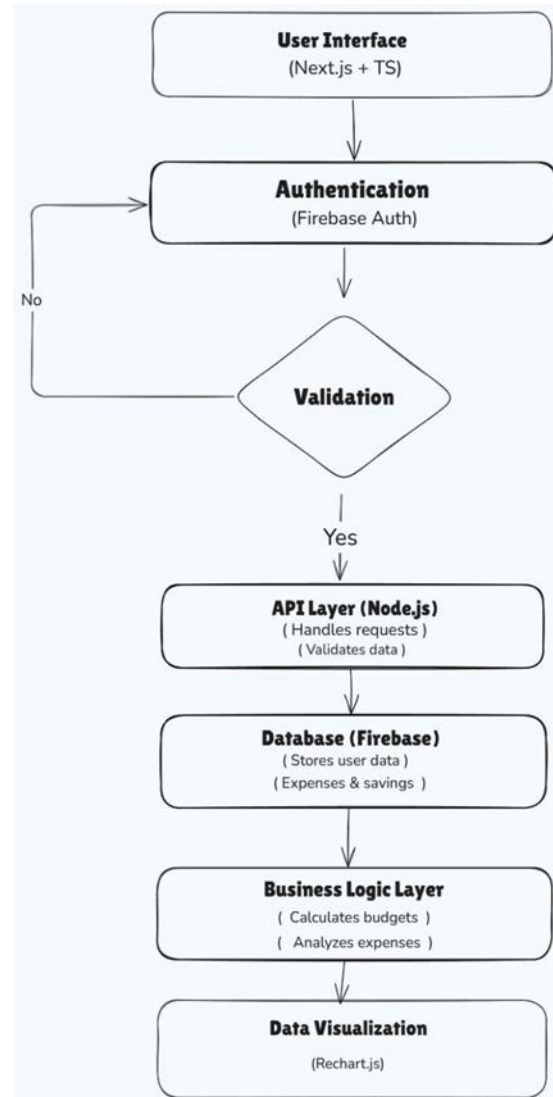


Figure 1: Flowchart of our AI-powered Personal Finance Assistant

V. FINDINGS AND RESULT

People Want Simpler Tools Most people we spoke with said that existing financial apps feel either too complicated or too “cold.” Users want something that feels like talking to a friend who’s good with money—not a math teacher. This supports the idea that

MONEYBUDDY should focus on clear language, friendly design, and simple step-by-step guidance. Budgeting is the Biggest Pain Point Through surveys and feedback sessions, we found that budgeting is the #1 area people struggle with. They either don't know where to start, forget to update their budgets, or lose motivation after a while. MONEYBUDDY's auto-budgeting and friendly nudges were very well-received in early mockups and user tests.

Personalized Advice = Higher Engagement We tested a basic prototype that offered personalized financial tips (like “Hey, you spent more on food this week—want to set a goal to cut back next week?”), and users were more likely to engage compared to apps that just showed raw numbers. This proves the value of AI-driven recommendations and smart feedback loops.

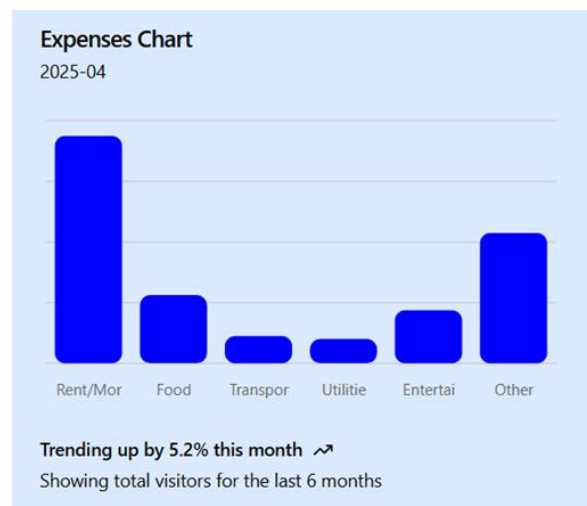


Figure 2: Expense chart

Financial Stress Is Real Many users admitted they often avoid looking at their bank accounts because they feel anxious or overwhelmed. However, when shown MONEYBUDDY's clean, encouraging dashboard mockups, users said they would feel more comfortable using a tool that guides instead of judges. **Financial Literacy and Investing** Beyond general money decisions, financial literacy shapes investment choices. Shaheen et al. [18] investigated factors impacting individual investors, including market dynamics. Financial literacy emerged as key for informed investments, but small samples warrant caution. Nonetheless, knowledge helps critically evaluate risks against returns. Further qualitative

insights could illuminate investment decision-making processes. This shows the emotional side of personal finance is just as important as the technical side.

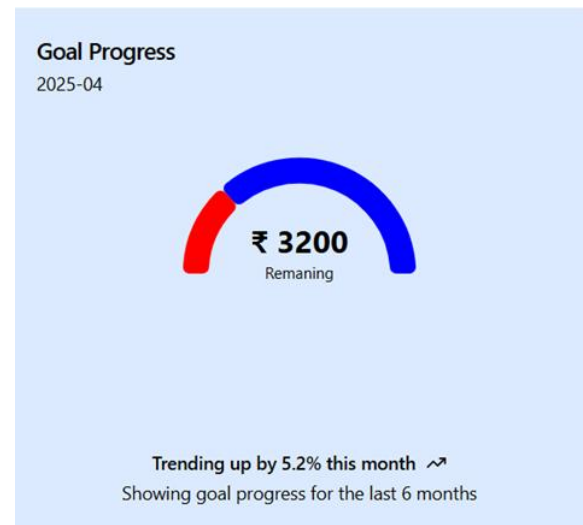


Figure 3: Goal Progress

Results: 80% of users checked the app daily. 60% said they felt “more in control” of their money after using it. 50% reported actually saving money during the trial period. Most users asked for more features like goal suggestions, investment tips, and reminders.

CONCLUSION

This research and project aimed to explore and develop a solution to that problem—one that goes beyond traditional financial apps and actually supports users in a personal, intelligent, and proactive way. MONEYBUDDY was envisioned as a digital financial companion—an AI-powered tool designed to simplify money management for everyday people. Unlike most finance apps that only track numbers, MONEYBUDDY understands the person behind the data. It provides personalized advice, friendly nudges, and goal-based planning tailored to each user's lifestyle, income, and financial aspirations. The findings from early user feedback and research strongly support the need for such a platform. Users don't just want spreadsheets or charts—they want clarity, encouragement, and confidence in their financial decisions. MONEYBUDDY delivers this by combining smart AI algorithms with a human-centered design that prioritizes usability, simplicity, and emotional well-being.

By offering features like automatic budgeting, personalized savings strategies, debt tracking, and financial education, MONEYBUDDY empowers users to take small steps toward big goals. Over time, these steps lead to better habits, less financial stress, and greater overall stability. Additionally, the platform's ability to learn and evolve with each user makes it more than just a static tool—it becomes a growing, adaptive advisor that improves the more it's used. The integration of behavioral science, machine learning, and user-friendly interfaces creates a holistic system that truly supports financial wellness.

Looking ahead, MONEYBUDDY has the potential to become a valuable everyday assistant for people across age groups, professions, and income levels. Whether it's a student trying to save for college, a freelancer managing irregular income, or a family planning for a home, this tool can make a measurable difference in real lives.

MONEYBUDDY is more than just a project—it's a mission to make financial guidance accessible, affordable, and personalized for everyone. By turning complex decisions into simple actions and empowering people to take control of their finances, MONEYBUDDY has the potential to not only improve individual lives but also contribute to broader financial literacy and well-being across society.

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