



Empowering Your Finances with GenAI

HackPrinceton 2024

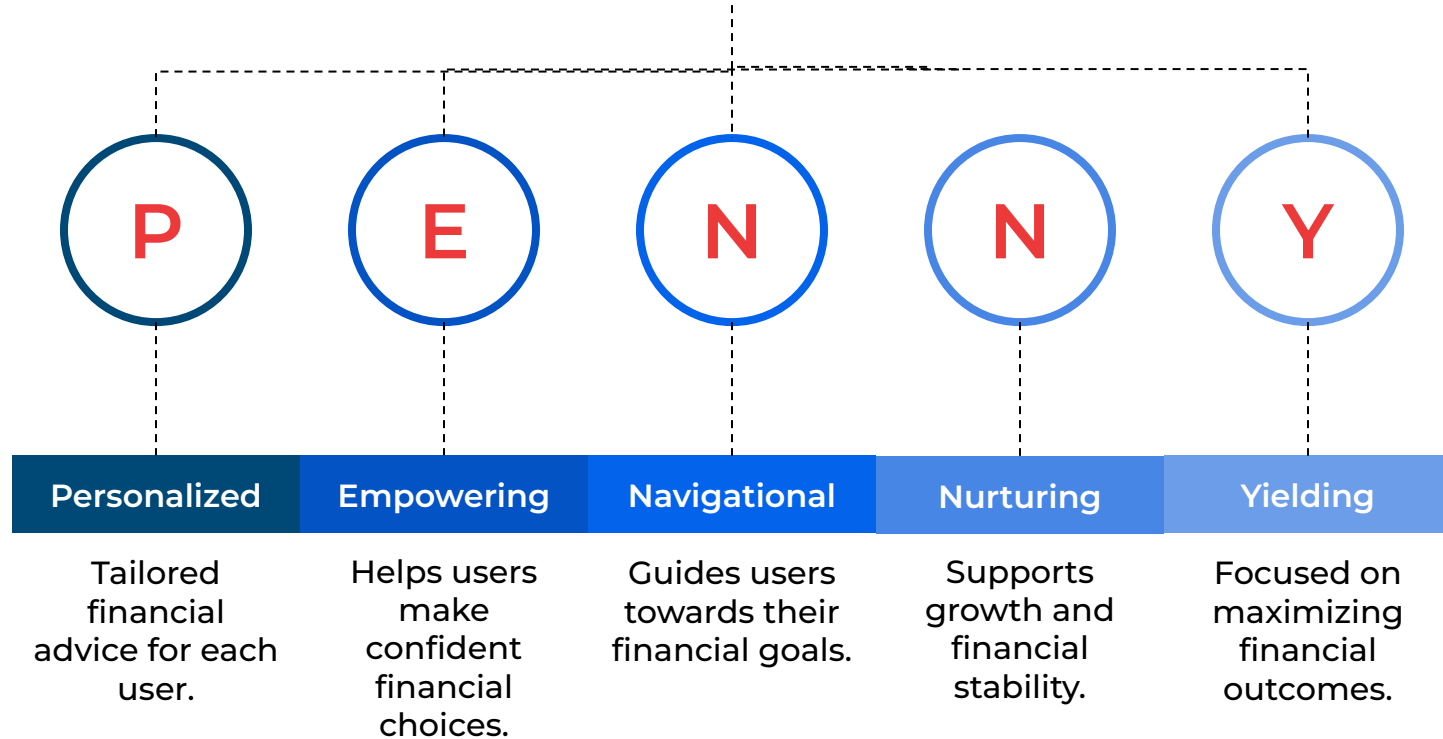
Team

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Project Workflow

Step 01

Collected and processed financial data using NessieAPI, focusing on income, expenses, and spending habits.

Step 02

Built an intuitive frontend interface using HTML, CSS, and JavaScript to ensure user-friendly interactions.

Step 03

Set up backend with Express.js and Django to manage data flow and handle API requests.

Step 04

Integrated OpenAI's LLM for conversational responses, enabling Penny to provide natural, personalized financial advice.

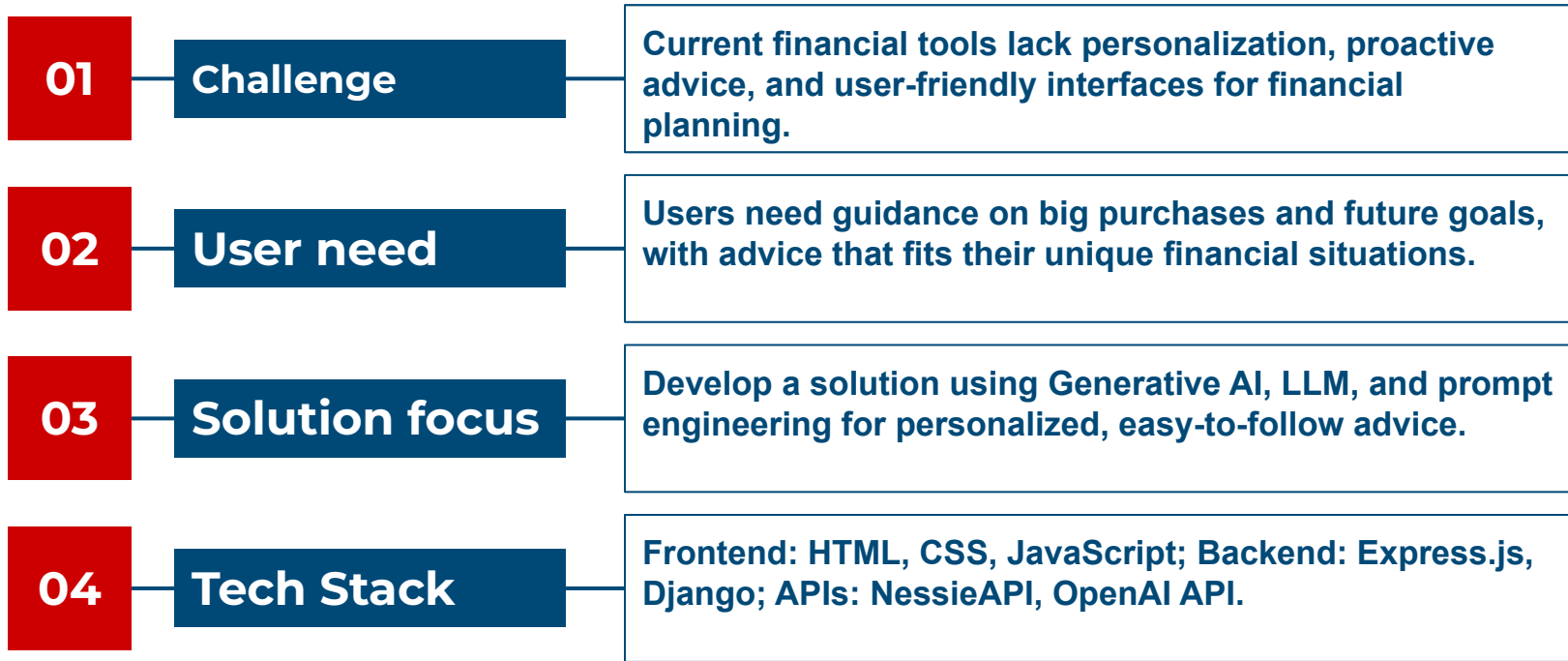
Step 05

Engineered specific prompts for accurate answers tailored to each user's unique financial queries and goals.

Step 06

Visualized spending trends and forecasts with Chart.js, helping users understand current and future financial outlooks.

Situation



Task



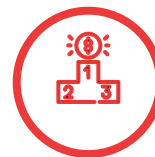
Goal

Build **Penny**, an AI-powered advisor offering customized advice to help users make informed financial choices.



Objectives

Enable Penny to use **Generative AI and LLM** to understand user queries, provide relevant responses, and forecast outcomes.



Technologies

Data Processing:

Python web-crawling, data loading

Data Visualization:

Chart.js for clear financial trend displays.

Action

Used OpenAI's **LLM** to interpret and respond to user questions, ensuring accessibility through natural language.



Based on personal spending and income data, Penny offers guidance that adapts to changes in users' financial profiles.



Conversational Responses

Prompt Optimization

Real-Time Recommendations

Real-Time Modeling



Applied **prompt engineering** for accurate, context-aware answers tailored to individual queries.



The **LLM** forecasts potential financial scenarios, guiding users on large purchases and investments.

Result



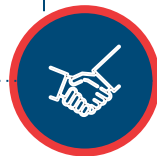
Tailored Guidance

Real-time advice specific to each user's financial situation, providing clarity and control over finances.



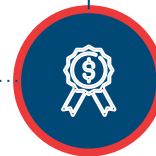
Proactive Planning

Scenario-based insights support users in reaching goals like saving for purchases or investments.



User-friendly

Generative AI makes complex financial advice approachable, ensuring users feel supported in planning decisions.



Data-Driven Confidence

Users gain confidence in their financial choices, with data-backed advice that aligns with their goals and financial behaviors.

Use case Scenario

User

Can I afford to buy a car costing \$30,000 with a \$5,000 down payment, and how will it impact my savings?

Penny

- 1. Affordability Analysis:** Based on your current income, expenses, and savings, the monthly payment of \$425 for a 60-month loan would reduce your savings by \$425 each month. This may limit your ability to allocate funds toward other goals.
- 2. Timing Recommendation:** To optimize your financial position, consider delaying the purchase by a few months to build additional savings. Alternatively, adjusting expenses temporarily could help you cover the car payment without significantly impacting your savings.
- 3. Additional Income Opportunities:** To offset the financial impact, you might explore short-term investment options or freelance work. This additional income could balance the monthly payment and support other financial goals.
- 4. Long-Term Impact:** If you proceed now, this purchase will affect your long-term savings rate. Adjusting your monthly budget slightly could help you stay on track with both your car purchase and other financial objectives.