SPENDING TRACKER

INTRODUCTION

The Spending Tracker is a web application designed to help users monitor their spending on instant grocery delivery platforms like Zepto, Blinkit, and Instamart. It aims to solve the problem of overspending by organizing expenses, visualizing data, and providing AI-driven insights. The application is built using Django and integrates OpenAI's LLM to analyze spending patterns and give personalized advice. Users can set monthly budgets, upload invoices to track expenses, and view detailed analytics through graphs.

COMPONENTS

Upload Button: Users can upload their grocery invoices to add spending details to the system.
Set Budget: Allows users to set a monthly spending limit. The app calculates the remaining amount by subtracting the total spent from the budget.
Spending Graph: Shows daily spending over the last 7 days using a simple, interactive graph.
Analytics Graph: Compares essential vs. non-essential spending for the last 7 days to give better insights into spending habits.
Insights: OpenAI's LLM analyzes the user's expenses and budget to provide practical tips to reduce unnecessary spending and save money.

USAGE

Install the required dependencies as mentioned in the project README.
Start the Django server.
Upload invoices or use the preloaded sample data to explore the app.
Enter your OpenAI API key (as mentioned in the README) to enable the "Get Insights" feature for personalized advice.

ARCHITECTURE

Frontend: Built using Django Templates.
Backend: Powered by Django, with APIs for:

- Uploading invoices.
- Generating graphs and analytics.
- Interfacing with OpenAI for insights.

Database: SQLite stores:

- Items bought with name, price, quantity, category, platform and date (foreign key).
- Dates (primary key) with total items bought and total spending on that day

AI Integration: OpenAI's GPT model generates spending insights.

USER WORKFLOW

1. **Login/Register**: Access the app by creating an account or logging in.(***This not implemented in the current project but just a projection***)
2. **Upload Invoice**: Add expense data by uploading invoices.
3. **Set Budget**: Define a monthly budget to track your spending.
4. **View Analytics**: Use graphs to analyze daily spending and category-wise expenses.
5. **Get Insights**: Get personalized advice on how to optimize your grocery spending.

COST PER USER

The current cost per user depends mainly on OpenAI's API usage. This includes generating insights based on spending data. As additional features are added, such as integration with third-party APIs, costs may increase.

LIMITATIONS

1. **Invoice Data**: Limited real invoices were used for testing, so data was manually created.
2. **OCR and Categorization**: Extracting data from invoices is done using OCR and regex, which may not handle all invoice formats accurately.
3. **LLM Accuracy**: Insights depend on prompts sent to the LLM, which may not always be precise, especially for predicting item prices.
4. Currently using the latest 7/30 dates available in the table rather than the current date. Modifications can be made in the code to use the current date.

IMPROVEMENTS

1. **Automated Data Entry**:
    - Integrate Zepto to automate expense tracking by connecting user accounts and saving from entering data using invoices.
2. **Improved Insights**:
    - Use tools like Retrieval-Augmented Generation (RAG) or LLMs with web search features to provide more accurate and real-time price comparisons.
3. **Advanced Categorization**:
    - Develop or integrate a custom categorization model for improved accuracy in identifying essential and non-essential items.
4. **Real-time Alerts**:
    - Add features like notifications when spending approaches the budget limit.
5. **Better Data Extraction**:
    - Replace OCR with specialized APIs for higher accuracy in invoice data extraction.