EXPENSE TRACKING SYSTEM

FULL-STACK PERSONAL FINANCE TRACKER USING STREAMLIT AND FASTAPI

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Problem Statement
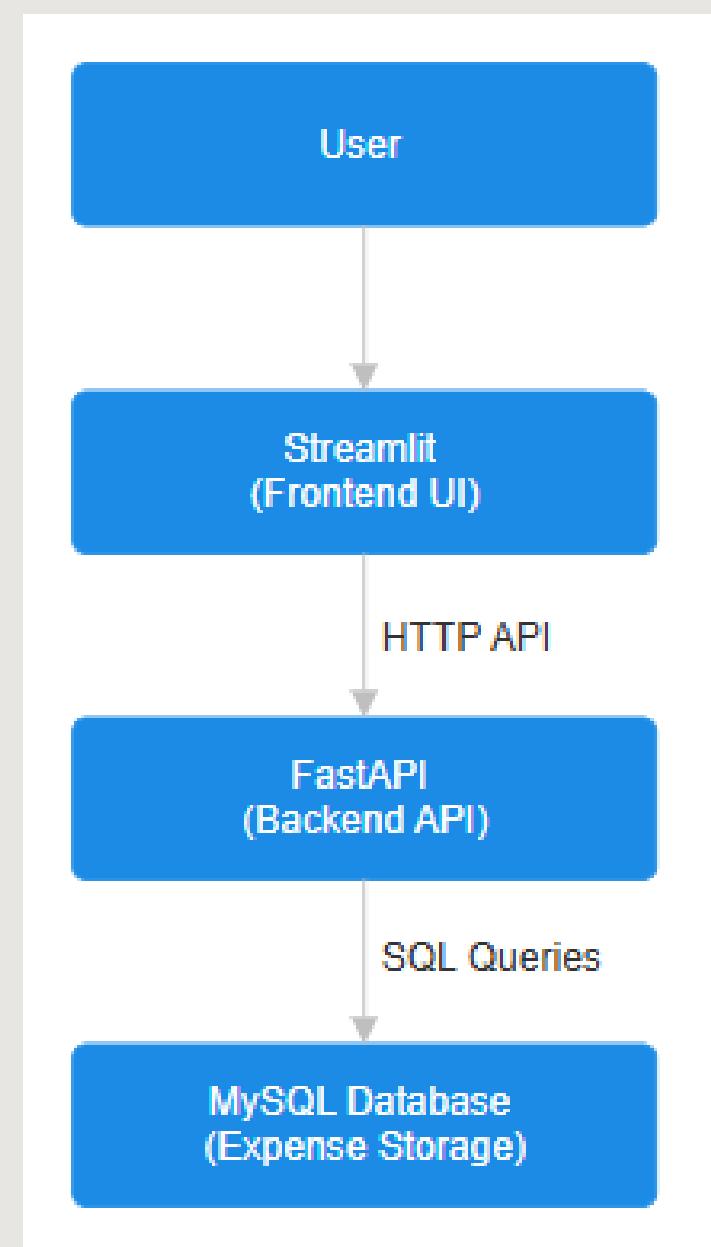
- Manually recording daily expenses is time-consuming and error-prone.

- Users often lack visibility into their monthly spending patterns.

- Categorizing and analyzing expenses using spreadsheets is not intuitive.

- No centralized platform to track, update, and visualize spending efficiently.

- Difficulty in identifying areas of overspending or optimizing budgeting habits.

Project Objectives

- Build a user-friendly web app for recording and managing daily expenses.

- Categorize expenses and visualize spending patterns across time and categories.

- Provide actionable insights through interactive and intuitive dashboards.

- Ensure smooth and responsive performance using a FastAPI backend.

System Architecture

- User Input (Add/Update/View expenses)

- Frontend: Streamlit for forms and visualizations

- Backend: FastAPI for processing requests, validations, and serving data

- Database: MySQL for persistent storage

Tech Stack

- Frontend: Streamlit

- Backend: FastAPI

- Database: MySQL 8.0+

- Other Tools: Pandas, Plotly, Uvicorn, Pydantic

- Testing: Pytest

- Logging: Structured logging using Python's logging module

Key Features & Dashboards
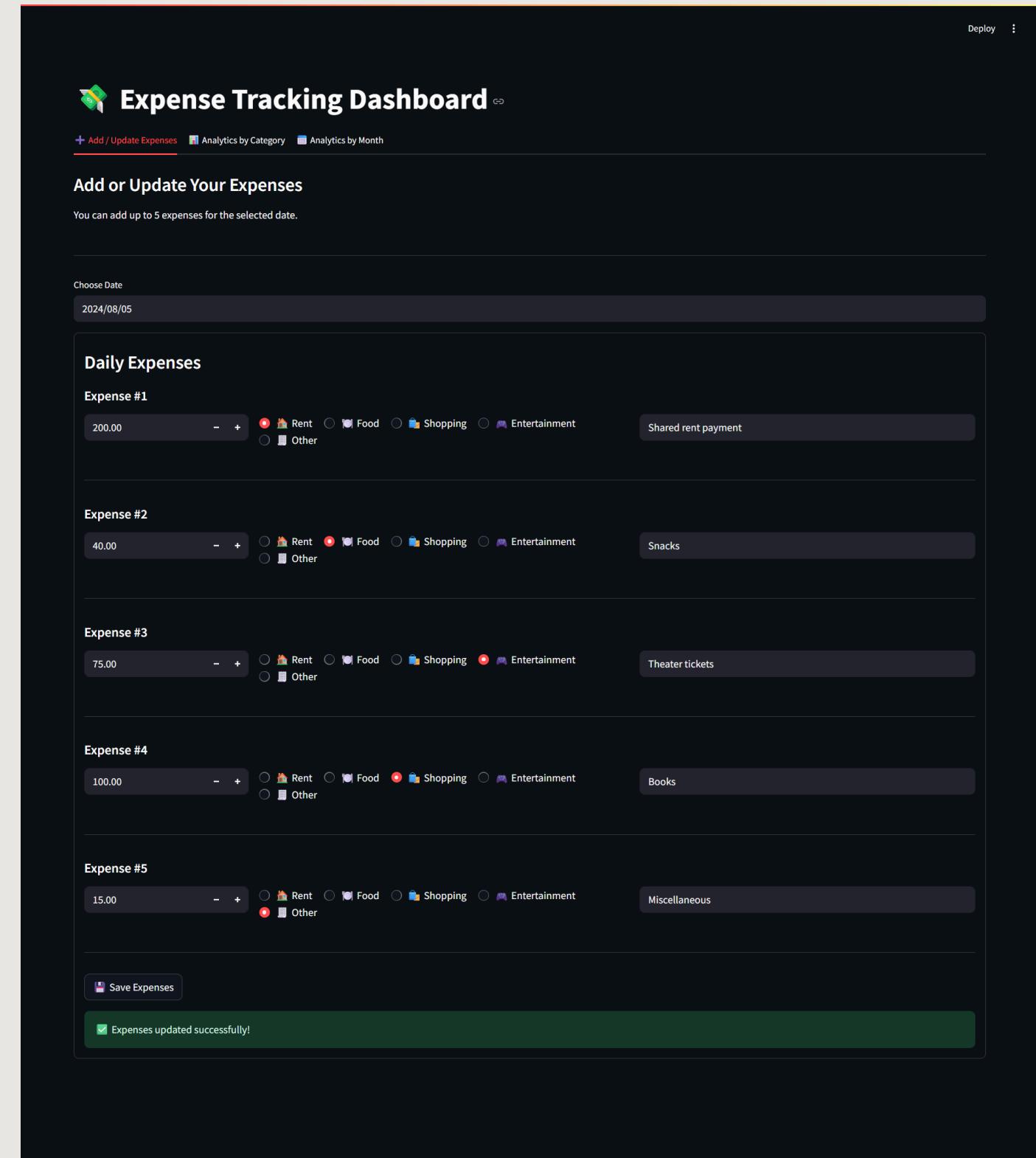
- Core Functionality

  - Users can add, update, and view their daily expenses.
  - Expenses are categorized into types like Food, Rent, Travel, etc.
  - Fully functional REST API backend via FastAPI.

- Powerful Dashboards for Financial Insights

  - Category-wise Analysis
    Visualize how spending is distributed across categories in a given date range.

  - Monthly Expense Trends
    Track and compare monthly totals to identify changing habits.

  - Daily Expense Summary
    View day-by-day spending breakdown for granular insights.

- Other Highlights

  - Structured logging for backend monitoring and debugging.
  - Unit-tested backend for enhanced reliability.
  - Fully local and extensible architecture.
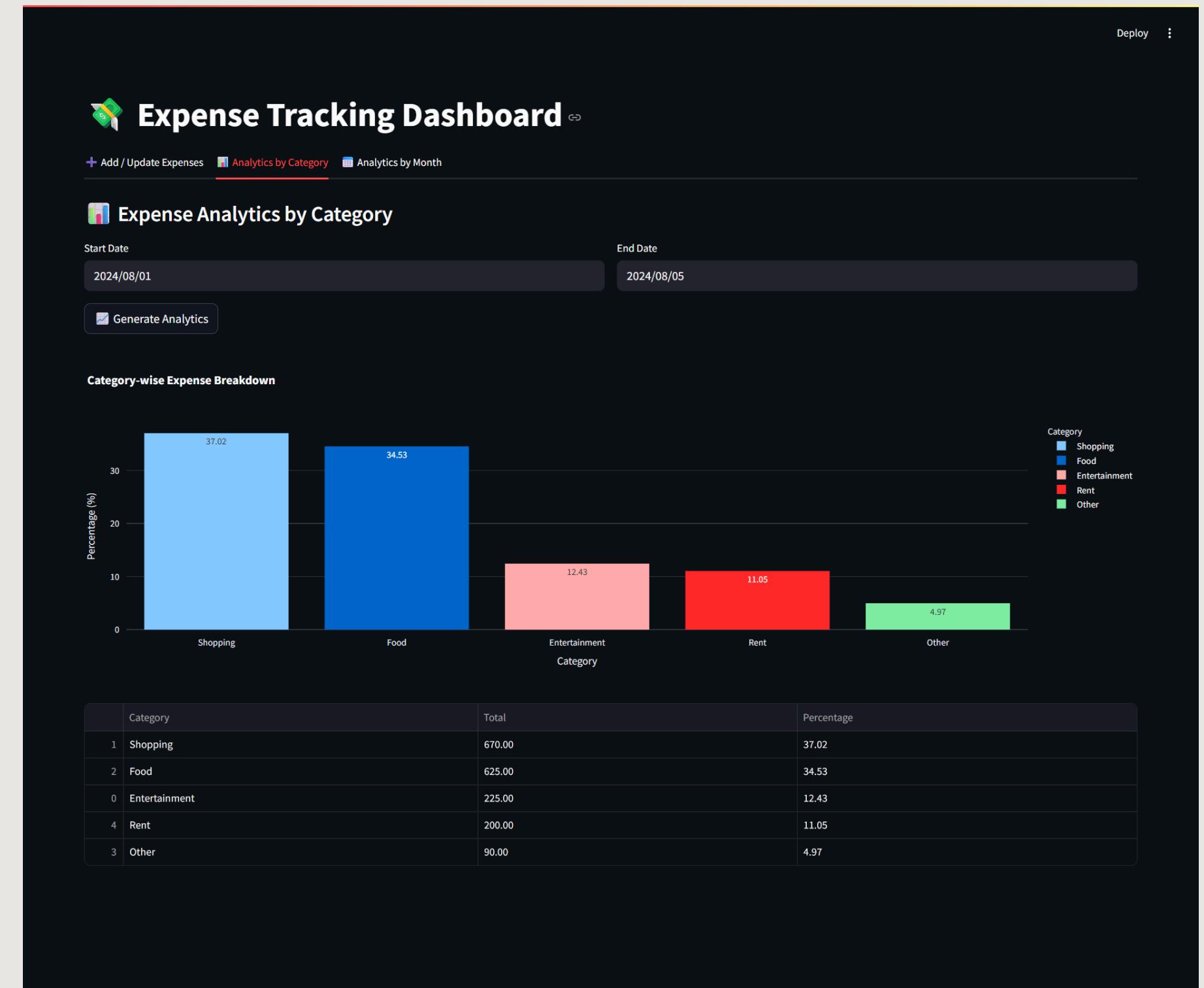
Application Screenshots

- Add/Update Expenses Page

  - Allows users to add or update up to 5 expenses for a selected date.

  - Each expense entry includes:
    - Amount
    - Category
    - Notes

  - Simple, form-based layout using Streamlit.
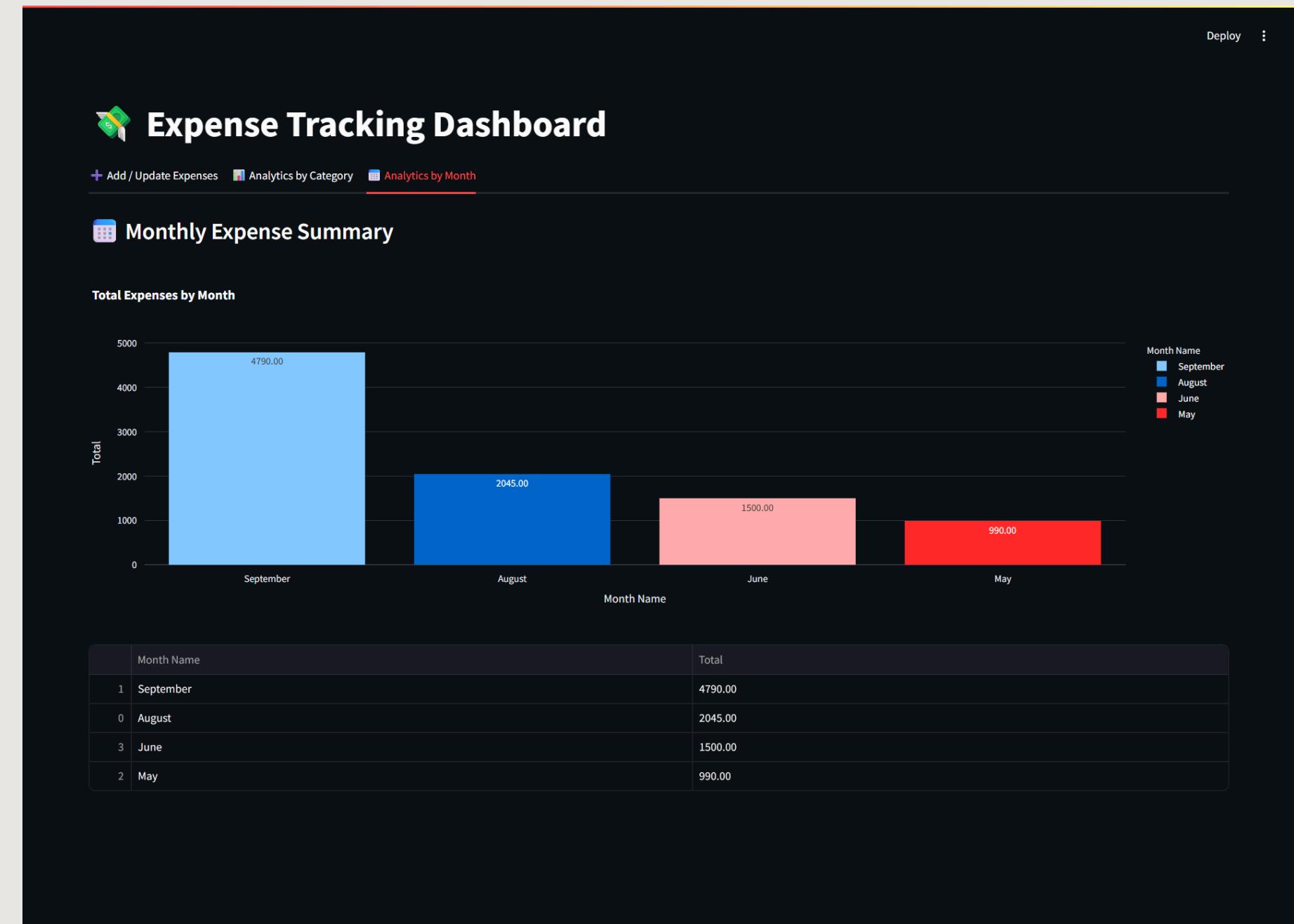
- Category-wise Analytics

  - Displays a visual breakdown of expenses across categories.

  - Supports filtering by a custom date range.

  - Helps users identify spending habits across categories like Food, Rent, Shopping, etc.

- Monthly Expense Trends

  - Shows aggregated monthly spending across all categories.

  - Useful for tracking long-term financial patterns.

  - Visualized using bar or line charts for clarity.

PROJECT SUMMARY

- Developed a full-stack web application to simplify expense tracking.

- Used Streamlit for a clean, interactive frontend experience.

- Built a FastAPI backend to manage expenses and analytics efficiently.

- Enabled users to add, update, and visualize expenses by category and month.

- Integrated structured logging and unit testing for robustness.

- Designed with modularity and future extensibility in mind.

- GitHub Repository: https://github.com/vaibhavgarg2004/Expense-Tracking-System

THANK YOU