

# Personal Expense Tracker

A Python-powered solution for mastering your spending habits — built by students, for students and anyone looking to take control of their finances.

**Group No: 2**

**Team No: 2**

## Team Members:

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# The Problem We're Solving

## Financial Blind Spots

Many people struggle to track where their money goes each month. Without clear visibility into spending patterns, it's easy to overspend and lose sight of financial goals.

Existing solutions are often complex, expensive, or require sharing sensitive financial data with third-party services.



# Project Objectives



## Simplify Tracking

Create an intuitive interface that makes logging daily expenses effortless and quick



## Visualize Spending

Generate clear, actionable insights through charts and category breakdowns



## Secure Storage

Implement reliable JSON file storage for long-term data persistence and privacy

# Related Work & Inspiration

We analyzed popular expense tracking solutions including Mint, YNAB, and Splitwise to understand best practices in personal finance software.

## Key insights:

- Users want local data control without cloud dependency
- Visual feedback increases engagement with financial data
- Simplicity wins over feature bloat for daily tracking
- Export capabilities are essential for flexibility
- Users want insightful summaries of their weekly and monthly expenses





# Technical Architecture



## Tkinter GUI

Clean, responsive interface for user interactions and data entry



## Python Core

NumPy & pandas for calculations and data manipulation



## JSON Storage

Lightweight local file storage for all transaction records



## Matplotlib

Dynamic visualization of spending patterns

# Core Features in Action



Log expenses instantly with category and notes



View automated monthly and weekly summaries



Generate colorful pie charts by category



Export complete history to CSV & PDF format



AI-powered summarizations & suggestions for future spending optimizing



# Technology Stack Deep Dive



## Python 3.x

Core language providing robust performance and extensive library support for rapid development



## NumPy & pandas

Power the mathematical calculations, data aggregations, and summary statistics behind the scenes



## Matplotlib

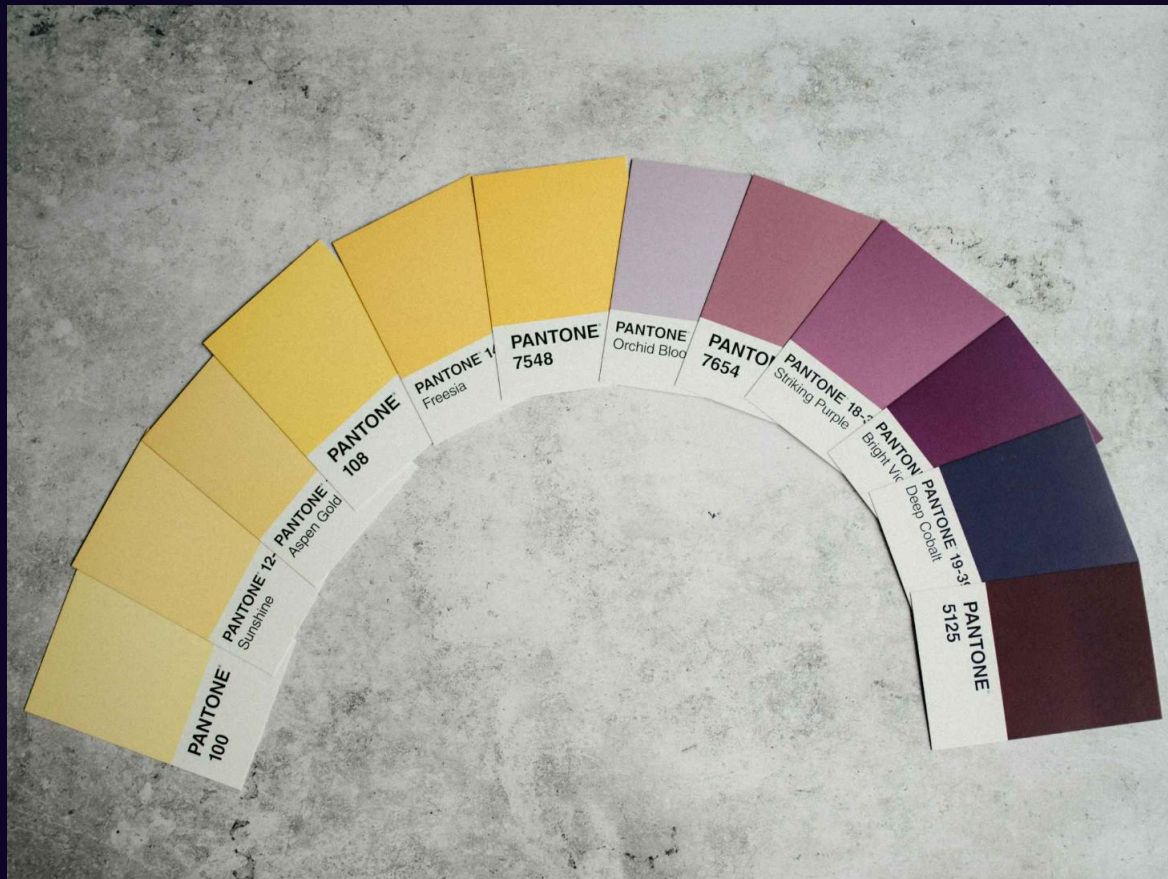
Creates publication-quality pie charts and visualizations that make spending patterns immediately clear



## JSON File Storage

Lightweight local storage ensuring data privacy with simple file-based persistence and easy backup capabilities

# Results & User Experience



## What Users Can Achieve

- **Instant clarity:** See spending breakdown by category at a glance
- **Trend awareness:** Track weekly and monthly patterns automatically
- **Full control:** Filter by date ranges and export for external analysis
- **Privacy first:** All data stored locally in JSON files with easy export in CSV or PDF Format
- **AI-powered insights & suggestions:** Analyses expense data and provides a summary with actionable suggestions



# Performance & Impact

100%

## Local Control

Complete ownership of your financial data without third-party access

<5s

## Quick Entry

Average time to log a new expense from launch to save

∞

## Storage Capacity

Unlimited transaction history with lightweight JSON storage

The system successfully handles daily expense tracking with real-time chart generation and maintains responsive performance even with thousands of transactions.

# Conclusion & Future Enhancements

## What We Achieved

Built a fully functional expense tracker that combines simplicity with powerful analytics. The application successfully demonstrates practical use of Python data science libraries in a real-world financial context.

## Future Roadmap

- Budget alerts and spending limits
- Mobile app companion
- Multi-user support for families
- Predictive spending insights with ML



GitHub: <https://github.com/BikramMondal5/Expense-Tracker>